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Toward Ecocentric Futures: On Children's Literature, Universal Climate Literacy, and a New Vision for Education

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Introduction: Areti Dimitra Douka

Interview with Marek Oziewicz: Eleni Mitsoula

Professor Marek Oziewicz is a distinguished scholar whose work bridges the crucial intersections of literature, climate and environmental crisis, and justice. Professor Oziewicz, a Polish-born comparative literature scholar and theorist of story systems, currently holds the Sidney and Marguerite Henry Professorship of Children's and Young Adult Literature at the University of Minnesota. He is also the Director of the Center for Climate Literacy, a testament to his dedication to fostering understanding and action in the face of our planetary challenges.

Central to Professor Oziewicz's research is the understanding of the Anthropocene as a profound challenge to our existing story systems. He coordinates international efforts to design universal climate literacy education, advocating for education as "ground zero for building universal climate literacy and ushering in a just, sustainable world in which human and nonhuman lives can reach full potential. Professor Oziewicz's work can be broadly understood through several interconnected themes: *Climate Literacy and its Transformative Power*:

He argues that climate literacy is not merely about scientific facts, but a broader "socioscientific and cultural competence" that can be taught across all subject areas and grade levels.

His "CLICK framework" (Climate Literacy Capabilities and Knowledges) proposes four domains: Earth Care, Kinship Care, People Care, and Systems Care, drawing inspiration from Indigenous Worldviews.

He emphasizes that stories, particularly those for young people, are the most effective technology for the social transformation our planet needs, believing they can boost young people's justice literacies, cognitive capacity, and impact on the world. Addressing the "Accountability Paradox" and Climate Guilt:

Professor Oziewicz highlights the "accountability paradox," a state where individuals internalize climate emergency as everyone's or no one's fault, leading to climate guilt. He argues that this climate guilt, often a result of deflection strategies by petronormative institutions, is a significant obstacle to meaningful climate action. His work aims to help students understand and navigate past these feelings by focusing on the systemic drivers of climate change.

Literature as a Lens for Climate Justice:

A significant portion of his scholarship focuses on how literature, especially children's and young adult literature, can serve as a powerful tool for exploring climate justice and environmental racism.

He champions the use of speculative fiction, fantasy, and myth in the Anthropocene, not as escapism, but as modes for "imagining futures and dreaming hope." This includes examining how these genres can counter "ecocidal fantasies of human exceptionalism" and foster "planetarianism" – an "applied hope articulated through stories."

His work often explores how narratives can help young readers develop "global consciousness built on inclusiveness and equality," advocating for narrative fiction as a tool for developing climate and justice literacy.

Justice in Speculative Fiction:

Beyond environmental justice, Professor Oziewicz has extensively explored the concept of justice in young adult speculative fiction.

His book, *Justice in Young Adult Speculative Fiction: A Cognitive Reading*, links the expansion of YA speculative fiction with the emergence of human rights movements and advances in cognitive sciences. He analyzes how different types of justice – poetic, retributive, restorative, environmental, social, and global – are represented in these narratives. He is the Senior Editor of *Climate Literacy in Education* and Editor-in-Chief of *Climate Lit*, an invaluable online resource hub for teaching climate literacy with children's literature and media.

Professor Marek Oziewicz's work stands as a vital contribution to our understanding of the climate and environmental crisis, particularly through the lens of literature and justice. By focusing on the power of stories, especially for young audiences, he illuminates pathways for fostering climate literacy, cultivating hope, and inspiring collective action toward a more just and sustainable future. His research empowers educators and readers alike to critically engage with environmental challenges and imagine alternative, more harmonious relationships with our planet.

We deeply thank him for this enlightening conversation.

We live in a world which seems to drive itself towards self-destruction. Only to name a few: Temperatures around the planet rise. By extension, climate change makes our weather more extreme and unpredictable. Air pollution is considered as a global public health emergency. Safe drinking

water has become scarce and costly. Glaciers are melting and consequently, the sea level has considerably risen and keeps on rising. As an expert in the field of universal climate literacy and the Director of the Centre for Climate Literacy, you constantly designate the urge for creating environmental awareness, as the stories we are used to tell ourselves – until recently, at least – about ourselves and the world, dangerously accentuated human exceptionalism. What is evident from your work is that you place considerable amount of attention on the role of children’s literature towards making a difference for the Earth’s future. In which ways do you aspire this innovative approach to alter the way we, as humans, look at things?

Indeed, it is my firm belief that children’s literature can make a difference towards this direction. In fact, I suggest that children’s literature and education are ground zero for designing ecocentric futures in an ecological civilization. The argument rests on the premise that the core design features of the current global industrial civilization are ecocidal, locking us in an accelerating, self-replicating system whose operations are tearing apart the planet’s web of life and human societies alike. The other premise is that we have the opportunity – a narrow window of perhaps a decade – to lay foundations for an ecological civilization. This ecological civilization, comprised of multiplicity of local, ecocentric shifts across all areas of human functioning has the capacity to replace the current ecocidal system from within, by accretion, and starting today. I propose that the current petronormative order was imagined into being – and is allowed to continue to operate – by a climate illiterate civilization; and that only climate literate societies can imagine viable alternatives to it. How do we create a climate literate society then? My suggestion is that one way is through climate literacy education that leverages the power of children’s literature and media. Thus, the primary aim of my work is to conceptualize a vision that would employ public education as an unstoppable socio-cultural force to usher in an ecological civilization, drawing on the work of the Center for Climate Literacy at the University of Minnesota-Twin Cities.

Could you, please, elaborate a bit more on the core idea of your work?

Well, I consider the cultural work of stories, especially children’s books used in classrooms, to envision how these stories can be harnessed in the service of transforming education to make a difference for the Earth’s future. The reflection is framed by two stories: the story of facts and the story of a vision. These are plotted onto a larger map of where we are today as a global civilization on a rapidly climate-changing planet. A vast body of scientific data collected since the 1970s confirms that human-induced climate change has reached critical levels and is leaving us less time each year to ensure livable futures for ourselves

and future generations. In the context of accelerating planetary ecocide, should we helplessly watch it happen just because we are not climate scientists? Or should we take an active role in defense of our planetary home? If so, what is our role as the children's literature people? By this I primarily mean students, academic scholars, classroom teachers, librarians, authors, and illustrators. However, the children's literature people label also includes a much wider professional group: from animators, game designers, media creators, media studios, and companies to professional organizations, publishers, bookstores, libraries, and many other stakeholders – including children themselves, their parents, grandparents, and families.

So, what you are saying is that the children's literature people should understand the imperatives of the current situation and need to take a stand on this issue, so as to contribute decisively to the creation of climate literacy? If so, do you identify any serious obstacles that may hinder the evolution of such a vision and furthermore, how could this situation be changed for the better?

Indubitably, the children's literature people, are uniquely positioned to help accelerate a transition to an ecological civilization. We can do so by leveraging stories that build young people's climate literacy across all grade levels, all subject areas, and in all schools everywhere. This is how we build *universal* climate literacy. We build it not as a narrow expertise area for the few, but as a broad, inclusive literacy for everyone from kindergarten up and integrated across all the learning we offer at schools. Universal climate literacy creates a climate literate society. And only such society is able to design an ecological civilization.

Of course, young people today are already far more climate literate than their parents and grandparents. The problem is, they don't call the shots. Young people have the most stake in the future. Yet they have the least say in decisions – made today by the generation of their parents and grandparents – that expand the ecocidal order which destroys the possibility of livable futures. Another problem – one that we, educators, need to consider – is that most of what young people learn about the climate emergency happens outside of schools. The current education systems offer little to nothing in terms of climate education that is adequate to the scope and scale of the transformative challenge we are facing. How do we change these entrenched patterns?

One good starting point is to grasp the context of the challenges we're facing. This can be helped by articulating two stories: the story of facts and the story of vision. Literature scholars often think in terms of genre conventions and such too is my proposal. Reflecting on these stories, I invite you to consider which story *you* want to live out and help unfold.

In the “Introduction” of *Fantasy and Myth in the Anthropocene: Imagining Futures and Dreaming Hope in Literature and Media* you sound the alarm, so we don’t get carried away by the “dominant ‘facts & rage’ formula”, as it “is antithetical to creating thought-spaces necessary for a radical transformation of how we imagine ourselves in relation to the biosphere”. More specifically, you claim that “this has been the unintended failure of dystopias. Although meant as warnings, they have helped reinforce the belief in ecocide is unavoidable.” Given this assertion, could you, please, administer a definition of the term “facts story” and explain why it is so important to us to be aware of what it represents?

The facts story is a data-backed story with two plots: one written by science and research across multiple disciplines, another written by politics – governments, international organizations, and the market system. Both plots tell the story of our relationship with the planet, except that the first plot tells it in charts and numbers, the other in political declarations and financial commitments. Both plots are unfolding and we don’t know how they end. Yet, both have observable dynamics and patterns, which are the best clues we have to build reasonable expectations about what is likely to happen next.

The science plot gives us an insight into at least the past 100 years, and a really detailed picture of the last 40 years. In literature studies, we call this type of story a horror. The science plot is a crime horror about ecocide, which is demolishing species, ecosystems, and the life-support systems of the planet. The destruction of life across the board – from global warming and biodiversity loss to soil erosion, endocrine-disrupting plastic pollution, nitrogen flows, and the killing of the oceans – is *accelerating* at a pace and scale that is almost incomprehensible to human minds. I was born in 1970 to a world of 3.4 billion humans, 325 ppm (.3 C global warming), and a state of the world’s ecosystems that – although already damaged – were later taken as a benchmark of 100 % health for any future studies. By 2023, we’re in a world of 8 billion, 417 ppm (1.2 C global warming), and with the planetary ecosystem diminished by the loss of 69 % of wildlife populations (as compared to 1970 population levels).

All of the droughts, megafires, heat waves, food insecurity and other climate-driven disasters we’ve seen so far have been unleashed under conditions of 1.2 C temperature rise above preindustrial levels. More warming is coming, and soon. 2023 was not just the hottest year on record, but saw the hottest week ever and the hottest day ever “in at least a hundred and twenty-five thousand years” (McKibben). By 2023 we have also broken six out of nine planetary boundaries that define a safe operating space for humanity (since ever) and scientists expect the arrival of “unsurvivable heat extremes” in many parts of the world this decade (Vanos et al., 9). It is in this context that Hansen urges “anticipatory action” (2), especially with young people, in preparation for a period

when “climate will become less tolerable to humanity, with greater climate extremes, before it is feasible to reverse the trends” and restore the climate to its Holocene levels (26). We don’t know how the Earth system will react to this continuing abuse called BaU or “the Business as Usual scenario” (Herrington 615). Yet, models show BaU is most likely to lead to “a halt in welfare, food, and industrial production” already in the 2020s (614), and “a sharp decline [of welfare indicators] starting around 2030” (615). In other words, science is clear that we may be able to continue running human operations on Earth *the way we have so far* for only a few more years.

Turning to the politics plot of the facts story, literature scholars may be torn here between three appropriate genres: fairy tale (say, like Andersen’s “The Emperor’s New Clothes”), satire (say, like Karel Čapek’s *The War with the Newts*), or tragifarce (say, like *Don’t Look Up*, dir. By Adam McKay). No matter what name you choose, the politics plot – including humanity’s key strategy of “addressing” climate change through negotiations at Conference of the Parties (COP) summits – is a story of what Amitav Ghosh calls “the Great Derangement”: a tale of self-destructive descent into wishful thinking, myopia, short-termism, irresponsibility, ignorance, hypocrisy, cynicism, lies, and a wholesale disconnect from reality.

No event illustrates this more clearly than the most recent COP28 in Dubai. The conference was unprecedented in revealing the shameless determination of Big Oil to question, disrupt, deflect, slow-walk, and flat-out refuse any meaningful change. Not only was the summit led by an oil executive: the CEO of the UAE’s Adnoc, one of the major oil companies in the world (which used COP28 to strike new oil deals). The Prince distinguished himself by being the first-ever COP President to declare that there is ‘no science’ behind demands for phase-out of fossil fuels and the summit included in negotiations at least 2,456 fossil fuel lobbyists, “almost four times as many [as] the number registered for Cop27 in Sharm el-Sheikh – which itself was a record year” (Lakhani). With so many high-level professionals pushing the fossil fuel interests, COP28 was largely – and more than ever before – a fossil fuel trade fair. In particular, the final resolution – article 28, subsection d – replaced the call to *phase out* fossil fuels with a call to transition away from fossil fuels, and specifically “in energy systems” rather than across all emission sectors and industries.

Aiding and abetting in the great derangement has been our global financial system and the market economy. In 2018, the same year when IPCC published a report that revisited Paris Agreement’s goal of 2 C and warned of catastrophic consequences if warming exceeds 1.5 C, the Nobel Prize in economics was awarded to Yale economist William Nordhaus. Nordhaus was distinguished for inventing a method that measures the economic costs of reducing greenhouse gas emissions against the benefits of maintaining economic business as usual (BaU). In Nordhaus’ model the sectors most vulnerable to global

warming – agricultural, forestry, and fishing – contribute relatively little to global GDP, only about 4 percent. So even if the entire global agricultural system were to collapse in the future, the costs, in terms of world GDP, would be minimal. Accordingly, Nordhaus' conclusion was that the economically “optimal” amount of warming was about 3.5 or 4 degrees: a Mars on Earth. Such arguments offend common sense even when they are questioned. Yet, as long as Nobel Prize winners continue to reassure us that the collapse of Earth's habitability is good for the economy the BaU political plot will continue in the current trajectory.

The facts story is hard but important to know. Young people have a right to know about the climate emergency to make their own judgments. They have a right to know – and often they already do – that states, corporations, and main players in the current economic system have all incentives to cling on to the fantasy that we can carry on the way we've done before. And they have a right to know that the institutions that created the climate emergency have not been able to stop it and may not be able to stop it in time. This, of course, is where climate literacy education comes in: the kind of education that empowers students with the conceptual and emotional tools, courage, and honesty to see our predicament for what it is, to see what brought us here, and to be able to reflect on where we go from here. Education is not a solution: it is a precondition for building a civic society that is capable of designing such solutions.

Alongside the facts story, you also referred to the vision story. Could you, please, tell us a bit more about this term? Where could one come across this type of stories and eventually, in what ways might these stories empower the vision of an ecological civilization?

The vision story goes into the realm of passion and imagination, to envision the world in which we want to live. The vision story is mostly told in the space of literature, art, music, and other narrative media, but it is also being imagined into being in the space of everyday life, accessible to ordinary people. Morag Gamble's Permaculture Institute in Australia is inspiring and educating millions to adopt permaculture practices that heal our relationship with the land. In the US, biologist Doug Tallamy's idea of a Homegrown National Park – transforming the entire continental America, one private lawn at a time, into wildlife havens and pollinator incubators – is spreading like wildfire. In the UK, the Climate Majority Project, co-directed by Rupert Read and Liam Kavanagh, is rallying hundreds of thousands of ordinary citizens in local communities, workplaces, and professions to build citizen climate action toward systems change. Other thought leaders are living the vision story in their everyday work, inspiring change in food habits, consumer behaviors, energy use, conservation efforts, and across all other spaces of human activity.

Literature and film for young audiences have been at the forefront of forging this new vision. Since the 1990s many stories have engaged with the climate emergency in the dystopian mode, extrapolating from the facts story to imagine future worlds of apocalyptic destruction and severely diminished biospheric environment. The rise of dystopia has stimulated an increasingly nuanced debate about the role of dystopian imagination as a response to our predicament. One question is whether such stories are able to mobilize active resistance or are rather symptomatic of a resigned, disillusioned acceptance the wider late-capitalist dystopian ambience. My sense is that it is more productive to examine specific dystopian texts or films for how they engage with the dominant intersubjective imagined order of our global civilization: an order Tom Moylan refers to as a “hegemonic culture of resignation” (184) and a “dystopian structure of feelings” (188). Of course, as hope scholars have argued, we also need stories that offer new visions of an ecological civilization. In my own scholarship, I describe this vision as planetarianism (see Oziewicz, “Planetarianism NOW”). As a fantasy scholar, I have argued that the capacity to use hope-oriented anticipatory imagination makes fantasy – and, to an extent, other genres of speculative fiction – especially useful in helping young audiences imagine alternatives to ecocide and dream out visions of ecocentric, just, and sustainable futures (see Oziewicz, “Fantasy for the Anthropocene”).

Indeed, you have stated in “Planetarianism NOW” that “one of the greatest challenges facing education in the Anthropocene is to empower young people everywhere to believe that we are able to transition to an ecological civilization.” Indisputably, you place special emphasis on how to convince them that a transition from an ecocidal to an ecological civilization is viable. Which is, would you say, the novelty you are introducing with this work to the field of Climate Literacy in Education?

Currently, rather than exploring planetarianist elements in specific narratives, I want to share a larger vision: a vision of leveraging stories in the service of climate literacy to transform education from within and create an unstoppable wave to accelerate a transition to an ecological civilization. This vision informs the work of the Center for Climate Literacy. Launched in April 2022, the Center is housed at the University of Minnesota’s College of Education and Human Development. Our work is framed by 2 premises and 3 commitments:

The premises include a recognition of where we are (the facts story) and a vision of where we want to be (the vision story): parts of which were already outlined. The recognition part includes a realization that we are waging a war with the planet and we are winning. All main systems of our civilization – our politics, industries, law, finance, agriculture, education, media, market economy, and others – were created without concern for the biosphere and are

tearing apart the web of life on Earth that supports us. We are destroying our home like we have no other choice, except we do.

This leads to our second premise, which is that a different future is possible. We can leave the ecocide behind: it is not who we are. We have the knowledge, the ability, and the means to transition to a sustainable, just, and ecological civilization. An ecological civilization is a world where humans thrive alongside animals and plants; where the air is clean, the ocean has fish, not plastic, and the Earth's web of life is strong: supporting us and the nonhuman life too.

We believe that education is key to accelerate this transformation, and this informs our three commitments:

Commitment to Climate Literacy. We believe that in order to transition to an ecological civilization we need to achieve universal climate literacy. Climate literacy can be understood as a narrow scientific competence, and as a holistic socio-cultural competence. Both are correct yet they each lead to very different outcomes: outcomes that can make a difference between emergency and emergence. The science-focused definition was proposed by NOAA in 2007 in a brochure *Climate Literacy: The Essential Principles of Climate Science* (2007, revised 2009). This climate literacy is a synonym for “climate science literacy” and means learning about the science behind climate research and the science behind how the Earth system works. Or, in NOAA wording, “an understanding of your influence on climate and climate’s influence on you and society” (NOAA). A large body of research continues to view climate literacy as a science competence. The holistic definition of climate literacy has a much longer ancestry. Some ideas go back to the original definition of environmental education in the 1960s (Kopnina 702). Newer ideas were first articulated in the mid 1990s – for example, in David Orr’s *Earth in Mind* (1994) – and then in the UN frameworks: Millennium Development Goals (2000-2015) and then the Sustainable Development Goals (2015-30). Both of these included an educational component called, variously, education for sustainability (EfS), education for sustainable development (ESD), or environment and sustainability education (ESE) (UN Climate Change Education, 2010). Our work at the Center builds on this holistic tradition. Like scholars in the environmental humanities, we see climate literacy as a broad narrative competence – rather than a narrow science competence – that is available to all humans from a very early age. Climate change, in this approach, is not a science or technological issue, but a world-view issue, entangled with our beliefs, values, and identities. All of which, in turn, shape our thought patterns and actions in the real world. Accordingly, we define climate literacy an understanding of the climate emergency that includes facts and numbers (i.e. climate science, biology, ecology and data from other science fields), but focuses primarily on developing values, attitudes, and behavioral change aligned with how we should live to safeguard

the Earth's integrity in the present and for future generations (see Oziewicz, "What Is Climate Literacy?").

Commitment to Education. We believe that teaching about climate change should be at the heart of our educational practice. We have sleepwalked into the climate emergency because we are a climate illiterate society, caught up in what environmental sociologist Eileen Crist calls a "human-supremacist worldview" (3). We can turn this around and schools are ground zero for this effort. Climate literacy can be scaffolded and must be taught to all K-12 students and across all subject areas (see Oziewicz, "The CLICK Framework")

Commitment to Stories. We believe that stories for young audiences are the primary tool for building universal climate literacy. Stories are easy tools inasmuch as they speak to even very young Earthlings, yet they are also the most advanced tools we have, capable of evoking emotional response and rewiring our cognitive architecture no matter what your age. This commitment to stories emerges from the consensus – shared in a vast body of scholarship in the Anthropocene literary studies, the environmental humanities, cognitive literary studies, and other fields – that human cognitive architecture is evolved for narrative understanding. "Narrative reflects our mode of understanding events, which appears largely...to be a generally mammalian mode of understanding" (Boyd 131). We process causality, chronology, memory, events, emotional states, and all other content of meaning-making processes as stories or components of stories (Herman, 2002; 2013; Hogan, 2003; 2011; 2013; Shank, 1990; Turner, 1996). Our storied understanding frames not only our personal experiences – the so-called "stories of our lives" – but also our grasp of abstract concepts like nationalism (Anderson, 1983, Hogan, 2009), justice (Oziewicz, 2015), worldview (Lent, 2017), economy (Joseph, 2017), political order (Monbiot, 2017), and relationship to the nonhuman (Kimmerer, 2013; Crist, 2019; Ghosh, 2021). It also includes responses to the climate emergency (Oreskes & Conway, 2010; Norgaard, 2011; Marshall, 2014; Moore, 2016; Klein, 2019; Mann, 2021; López, 2021; Oziewicz et al., 2022). Whether called rhetoric, ideology, narrative, secular mythology, legitimizing myth, discourse, or yet something else, story is everything. The implication here is climate change is not primarily a challenge to our technologies or politics but a challenge to our story systems. Our future will be determined by developments in the space of language and imagination: by whether we are able to embrace new, ecocentric ways of thinking, a new ethic of partnership with the non-human, and a new story about who we are, as a species, in relation to all other forms of life on the planet. In this unprecedented transformation, literature, film, games, and art for young people are not additional but the most important avenues for raising climate awareness and mobilizing social adaptation to the realities of a climate-altered world.

Although the Center shares many of these core principles with other organizations, the combined commitments to climate literacy, education, and

stories are unique to our vision. Likewise unique is our professional expertise as teacher-educators, operating from within the system called education.

Imagine teachers, across all grade levels and subject areas, plugging in stories to build students' climate literacy from preK through high school. Imagine this happening in all schools everywhere. Imagine teachers getting resources, training, and support – including funding – to incorporate more and more of climate literacy education in their classrooms. Imagine academic scholars working with teachers to prepare these resources, imagine publishers sending teachers book copies to work with, and imagine teachers mentoring other teachers in workshops, summer institutes, and conferences for which they are paid. Imagine everyone involved in this work – teachers, librarians, authors, academics, school administrators and others – sharing their experiences and tips in online events or publishing them in an open access journal such as *Climate Literacy in Education* so that more educators can read about this work and implement these models. This is how we build a global community of educators and teachers dedicated to implementing universal climate literacy education in their classroom practice. If you can imagine all this, you have just imagined a grassroots revolution (see Oziewicz, “The Climate Literacy Revolution”) that has the potential to transform education into an ecocentric engine of transformation, taking us toward an ecological civilization.

Thanks to the dissemination of such valuable knowledge, there is an undeniable shift in academia towards the cultivation of an ecological culture, which is very promising as these ideas spill over into the lower levels of education. In their chapter “Introducing Sustainability Topics with Ursula Le Guin’s ‘The Ones Who Walk Away From Omelas’ and Richard Power’s ‘The Seventh Event’ ” in the edited volume *Literature as a Lens for Climate Change: Using Narratives to Prepare the Next Generation* (2022), Sarah Wyman and Rachel Cohen discuss the idea that “storytelling in words and images [...] acts as a commons-of-thought or an arena of invention where new conceptualizations and innovations come to be”. By association comes to mind Ursula K. Le Guin’s comment in her 2014 National Book Awards Acceptance Speech: “I think hard times are coming when we will be wanting the voices of writers who can see alternatives to how we live now, who can see through our fear-stricken society and its obsessive technologies to other ways of being, and even imagine some real grounds for hope”. Given that hard times have arrived, in what specific ways would you describe your work as fundamentally revolutionary?

I believe this work is revolutionary because it brings together two large systems of our civilization. One is our story systems: books, films, games, authors, publishers, illustrators, creators, libraries, media companies, and other spaces

where stories live. The other is education: a massive system in our societies that directly reaches anywhere between one sixth to one tenth of any country's population.

Our work is also revolutionary because the core strategy of climate literacy education we advocate for is practical, modular, scalable, and easy to integrate in your teaching at any level. The strategy consists of using stories – books, clips, games, etc. – to generate discussion which allows introducing a climate literacy concept (or more) in a process called concept mapping. This strategy normalizes conversations about specific aspects of the climate emergency. It builds students' vocabulary, emotional resilience, and a conceptual toolset they need to grasp the human-planetary predicament of the Anthropocene. The beauty of this strategy is that you can use even a single page, or part of a film or book, to spark a discussion that anchors understanding of specific concepts to specific stories. This conceptual mapping is extremely important because the climate emergency is not just about global warming or biodiversity loss. It is also about slow violence toward poor and BIPOC communities; it is about extractivism, social justice and climate justice, externalities, economy, food chains, energy, transportation systems, native plants, keystone species, ecosystems homeostasis, human expansionism, insects, food deserts, corporations, holobionts, human-animal kinship, Earth emotions, water, ecocide, light pollution, food labels, urban gardens, and ten thousand other things. This is what climate literacy is all about. We need stories to help young people see the connections. We need stories to help them to start caring. And for this to happen, we need to start in kindergarten. To nourish wonder and appreciation of the nonhuman, to build the vocabulary, and anchor the complexity of these connections in the stories we share with young people. The more connections and concepts you see in the story, the better.

For example, Bill Peet's *Wump World* (1970) offers excellent openings to discuss the notions of extractivism, biospheric limits, and market externalities. This story helps young people understand that we can stop behaving like space alien colonists toward the only planet we call home. It helps them confronting our ecocidal economy, whose exploitation, domination, extraction, and destruction are cloaked under positive-sounding terms such as "progress" or "growth."

It would be easy to list more examples and I'm sure the reader can provide their own too. What all of them suggest, however, is that the climate literacy-oriented cultural work of stories occurs when the story 1) offers glimpses of the *emerging orders* post-carbon ecological civilization, visions of thriving human and nonhuman life without domination, pollution, and destruction; when the story 2) prompts readers to register these visions as alternatives to the *dominant* petronormative order. To realize that there are alternatives. And 3) when the story helps the reader consider *the essence* or core operations of the

dominant order. The dominant order goes by many names – Capitalism, market economy, petrocivilization, Capitalocene, and others – but it is a Mortonian hyperobject and its story is never expressed fully or openly. Bringing it to the surface of our consciousness is a cultural work of stories that is a precondition for any meaningful change and is thus central to climate literacy efforts.

Throughout the whole interview one could assume that you mainly speak about imagining applied hope through stories and infusing it into younger generations. So, I will borrow one of your questions and ask it here: “What are the forms or thresholds of hope?” or alternatively, what would be the focal point you would like to recapitulate before closing this interview?

In closing, I would like to reiterate the central point of our work. Climate literacy education is urgently needed to address a massive gap in today’s education. It is needed to start a conversation about the world that may be coming apart before our eyes and about the world we want to build together going forward. Stories are the best tools we have to tease out questions, dilemmas, work through our pain, anger, confusion, and other emotions. Stories can show us how we got here, what ideas brought what consequences, and how ideas can both enslave and liberate us. If we are able to transform our civilization into an ecological one, it will be transformed by people with changed minds, people with a new vision. The transformation will not be accomplished by people with unchanged minds, people of old vision offering new programs. This has been the failure of our education systems so far. What climate literacy education seeks to achieve is a new vision, not a new program for an old vision. Recycling is a program, earth-friendly legislation is a program, electrification is a program too. They each have merits. But as long as they are programs within the old vision – keeping the status quo of human expansionism and fossil fuel energy extravaganza going for a bit longer – they will fail.

At this moment of multiple crises, of Earth shouting to us in pain and rage of polluted soil, drought and floods, heatwaves and species extinctions, tweaks of the old vision are not enough. We need a new vision and we need new stories that inspire us to get us there. This is the systems-tipping dynamics we need to activate. With every step we take toward building young people’s climate literacy, we are laying the foundations for an ecological civilization. Incorporating stories and story-based activities, we have the opportunity to revolutionize education from within without waiting for standards and incentives to trickle down from state or federal levels. The ecological civilization we all want to see will require millions of small steps, such as what you can do in your classrooms. It will unfold organically, like a flower meadow, from a multiplicity of local, ecocentric shifts across all areas of human functioning, including in your classroom and your scholarship. Such education will not only survive the

approaching demise of the ecocidal petro order. It has the capacity to replace it organically from within, by accretion, starting today. We may be heading toward crises and disruptions of the civilizational transition, but we believe that as the transition accelerates, climate literacy education will become more urgent and more important in all schools everywhere. We invite you to lead the change and teach for a world you want to see.

Thank you for the enlightening interview.

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