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# Voices of the Future: rhetoric, myth, and science in children's climate discourse

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## ABSTRACT

This article addresses the rhetorical dimensions of the language of children and young people around trees and climate change. Via an analysis of statements and stories by children, made in educational settings, the complex constellation of experience, meaning, scientific understanding, mythical imagination and the affective dimensions of fear and hope, that structures children's environmental awareness, is brought out. In particular, the mythical use to which scientific ideas and terms are put is discussed. In order to foster agency and empowerment with respect to climate futures, environmental education should not only rely on the epistemic regime of scientific thinking but should also adopt a critical rhetorical perspective.

## KEYWORDS

Rhetoric; science curriculum; myth; discourse studies; climate change; futures literacy

## 1. Introduction

The climate crisis has become a defining challenge for future generations, yet discussions about environmental futures are often shaped by scientific discourse rather than the voices of young people. *Voices of the Future* (2021–2025), an interdisciplinary research project under the Treescapes programme, funded by UK Research and Innovation (UKRI)'s Natural Environment Research Council (NERC), sought to address this gap by engaging children and young people in imagining and shaping the treescapes of the future. This article explores a critical-rhetorical approach to one particular feature that we observed in the workshops and dialogue sessions with primary school children (all years), namely the mythical narratives that were woven around key scientific terms the children had been exposed to in the science curriculum's content relating to climate change. This topic is part of a wider consideration of how children use rhetoric – through dialogue, storytelling, and play – to construct their own visions of climate futures and their own experiences of being in nature. This perspective is informed by the methodological framework of the *Voices of the Future* project, which used Ruth Levitas' utopian method, the Imaginative Reconstitution of Society (Levitas, 2013) as a basis for developing alternatives to colonising approaches

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to the future. The rhetorical approach we explore in this article must be seen within the context of Levitas' triad of an archaeological, ontological, and architectural approach to imagining desired futures, with its strong commitment to creative imagination as a way of knowing. This article does no more than suggest that a rhetorical view of children's imaginative language about the environmental worlds they inhabit may allow us to become aware of layers of lived experience and meaning-making that often go unnoticed.

Moving beyond traditional science communication and education, we address how children navigate the rhetorical tension between scientific authority, myth, and imaginative agency in a situation of uncertainty, a situation in which science provides an interpretation of the facts that needs to be addressed by society, but does not provide the answers as to what is to be done. This is typical for the rhetorical situation: we have to act in the light of a prevailing exigency but the course of action remains a matter of deliberation and choice, so words become central to action (Bitzer, 1968). By placing rhetoric at the heart of primary education, we can not only gain a clearer understanding of the uses and misuses of scientific explanations and their place in the developing imagination, but also through fostering futures literacy alongside science literacy children can be empowered to actively shape environmental discourse rather than passively inherit it. Children already do this anyway, as is clear from the way in which they spoke, during the project, about trees and climate change. This original rhetorical creativity deserves to be given more attention in primary school curricula as it is the basis of critical thinking as much as of creative agency. Both rely on human beings acquiring over time a conscious relation to the words they live with. We touch here upon a widened and renewed sense of eloquence as 'the timely expression of morally resonant truth'.<sup>1</sup> With this article we hope to contribute to raising awareness of the importance of this kind of eloquence for education.

In the recent report by the National Association for Environmental Education, *Engaging the Next Generation*, the recommendation is formulated 'to facilitate a holistic understanding of sustainability issues' (Talks & Finnegan, 2024, p. 4). Here, holism refers to an integrated understanding of the interconnectivity of human action and the natural world, but also to an integration and weighing up of epistemic regimes in the light of practical action, linking understanding to action and to a sense of what is required and what is possible in concrete contexts. The science to understand the facts of the situation is as necessary as the ethos that fosters a sense of care for ourselves and nature, and as necessary as the imaginative capacity to think beyond the confines of present-day social practices and institutions. These considerations make up so many means of persuasion as to how to act. The rhetorical tradition, concerned with 'the faculty of observing in any given case the available means of persuasion' (Aristotle, *Rhetoric* 1355b26f, in Ross, 1959) addresses precisely such a holistic understanding, won collectively in the face of many unknowns. There is a need for rhetoric education already at primary level, in order to equip the next generation with the communicative and cognitive skills to develop and use this holistic understanding. Rhetoric addresses the individual person as *you*, as this speaker and listener, across different aspects of our lives, understanding, experience, and co-creation of the world, and across different epistemic regimes (Siebers, 2019). Rhetorical awareness as an awareness of *owning my words* (while realising we do not fully control them) thus lies at the heart of the effort to nurture a holistic understanding of our place in

the world and our ability to act in it. Rhetorical education has a unique power to integrate our sense of being, and to provide an antidote to one-sided or manipulative, ideological communicative strategies (which we normally call 'rhetorical').

## 2. The Voices of the Future project and its interdisciplinary scope

Voices of the Future ran from 2021 to 2025, funded by NERC/AHRC/ESRC (Natural Environment Research Council/Arts and Humanities Research Council/Economic and Social Research Council) as part of the UKRI Treescapes Programme. Led by Kate Pahl (Manchester Metropolitan University), it involved a collaboration between tree scientists, artists, social scientists, humanities scholars, educators and conservationists, and children and young people, across a range of settings, including schools, conservation areas, and urban green spaces, across the United Kingdom. The project's aim was to develop ways of including children and young people in imagining and designing the treescapes of the future. The total coverage of woodland in the UK is set to rise significantly in the years to come as a result of climate mitigation strategies. How can we create situations now for the people who will be living as adults then, to participate in formulating a vision for our lives with trees? We hypothesised that such an endeavour would not only provide the basis for a lifelong commitment to sustainability of the natural environment, but might also help today to address the widespread climate anxiety, which is often rooted in a combination of threatening future perspectives and a failing sense of agency (Norgaard, 2011). It is becoming increasingly impossible to envisage that life will go on, that a future is possible and can therefore be hoped for, even if we do not yet have the words available to express what that future will look like. This ineffable form or source of hope, Lear (2006) called 'radical hope', as distinct from the already defined things we may hope for and that move within existing frameworks. Radical hope is the faith that there will be a meaningful life. Our environmental anxiety is so great that the frameworks for a meaningful life can no longer define our hopes for our life with the natural world. In the absence of trust in the environmental stability that circumscribes virtually every life project, how can we even begin to act? Even the current wave of climate change fatigue, and the waning interest in sustainability, that we see in many parts of society and which often go hand-in-hand with populist and atavistic sentiments, seem more a pathos-level response to, and expression of, an overwhelmingly impossible situation, than a considered evaluation of the facts of the matter.

How, then, do we access radical hope and allow our words, meanings, and imaginings, and ultimately our actions and engagement with the world, to flow from it? Through a programme of workshops, tree-planting events, and classroom dialogue sessions we sought to co-create spaces where the language of trees could come to resonate and instruct us, where we could learn from the children and vice-versa and find new words to express new ways of being with trees, that might eventually come to influence environmental educational practices, policies, and planning. The Voices of the Future project was, in an essential dimension of its research design, an exercise in attentiveness, in a hopeful waiting for the unhoped-for that might show us the way to a different relation to nature and to the avenues of expression that such a relation would give rise to. We need to emphasise how important this level of deep listening, of 'listening into being' (Lipari, 2014), was to many of us who worked in the project, partly because it is alien to much

methodology in the social sciences and because the practice of listening into being is an intrinsically vulnerable one that can easily be distorted, lost, or overlooked. Yet one of the central overall findings of the project could be summarised in the observation that the cultural inability to adopt, learn, and teach this attitude goes hand-in-hand with the environmental devastation we see around us and to which the Treescapes programme as a whole tried to respond.

Rhetorical theory and practice help us to access this attentiveness. Through it we become aware of the unique individuality of each human being as a rhetor and also of the coordinates of communicative relationality and the creation (and contestation) of shared meaning. As human beings we live in the 'kingdom of speech' (Wolfe, 2016), in which language is both a natural given and a reality we constantly create, re-create, and artificially enhance. Our life in language is a continuous making of language (Harris, 1980). It was Wittgenstein who pointed out that hope and language are intrinsically related: 'Can only those hope who can talk? Only those who have mastered the use of a language. That is to say, the phenomena of hope are modes of this complicated form of life' (Wittgenstein, 1953/1986, p. 174). Insofar as rhetoric is the study and the practice of using language to relate and in doing so build a common future, rhetoric is a practice of hope. This perspective provides a corrective to the traditional dismissive view of rhetoric as the knack of manipulating, seducing, or deceiving others or ourselves with words, and instead sensitises us to a much deeper understanding of the discipline that concerns itself with what it means for us to use words and how to grow in our unique use of them (Vanderwees & Adleman, 2023). Today, rhetorical education can salvage a sense of hope in how we communicate with each other, in private as well as in public. Communicative hope then might lead to a renewed understanding of truthfulness, care, and trust.

We can look at the climate discourse of children to investigate the role rhetoric (in this enhanced sense) plays in their engagement with the climate crisis. How does children's language construct and negotiate climate futures? In this way we may start to envisage a new place for rhetoric education in primary environmental education: beyond science communication towards persuasion, narrative, and imagination as sources of radical hope. 'Saying it in your own words' was always a pedagogical staple. As a rhetorical practice it gains additional importance and becomes a source of rhetorical *inventio* and a renewed sense of children's linguistic and social agency.

The conceptualisation of children as competent social agents (James & Prout, 1997), whose perspectives are shaped by their lived experiences, necessitates a critical and respectful engagement with their voices in relation to the environments they inhabit. Current scholarship increasingly recognises the right of children to articulate their views and to be meaningfully heard in decisions that affect them (Lundy, 2007), including those pertaining to environmental challenges (Cutter-Mackenzie & Smith, 2003). When children are provided with opportunities to communicate their observations, concerns, and aspirations about the natural world, it cultivates a sense of agency and supports relational, experiential learning (Chawla, 2020). Such engagement aligns with transformative educational aims that seek to empower children to informed action (Ojala, 2016) and to participate in the co-construction of just and sustainable futures.

Listening to children's perspectives on their environment constitutes not only a matter of rights, as established in Article 12 of the United Nations Convention on the Rights of the Child (UNCRC), but also represents a transformative intervention capable of challenging

adult-centric narratives surrounding environmental education (Cutter-Mackenzie & Edwards, 2013). Children's lived experiences, emotional connections to place, and imaginative capacities provide distinctive insights into knowledge about outdoor environments (Freeman et al., 2022). As Ojala (2012) argues, nurturing hope and a sense of agency among young people is vital to fostering environmental engagement that is simultaneously critical and constructive.

Re-imagining planetary futures through the lens of childhood necessitates an openness to alternative ways of knowing and being (Hackett & Somerville, 2017). Children's narratives often convey a more-than-human awareness, highlighting interdependence, care, and relational ethics, and associated values (Taylor & Pacini-Ketchabaw, 2018). Integrating these diverse and multimodal expressions within environmental education enables the co-creation of learning spaces (Ambreen et al., 2025) that not only address the immediacy of environmental crises but also cultivate the radical re-imagination essential for envisioning just and liveable futures.

Perceiving children as relational and collective beings (Spyrou, 2019) affirms that their perspectives are intricately situated within social and ecological contexts (Taylor et al., 2023). This recognition challenges dominant anthropocentric and individualistic frameworks and supports pedagogical approaches that transcend conventional verbal and written modes of communication (Hackett, 2022), favouring instead those attuned to the multimodal expressive capacities of children (Ambreen et al., 2024).

Ambreen et al. (2024) advocate for an expansive conceptualisation of voice that counters the erasure of children's perspectives, particularly in linguistically and culturally diverse contexts. Rooted in anti-colonial methodologies, their work foregrounds children's distributed knowledge systems and lived experiences with nature. This approach disrupts traditional, adult-centric models of environmental education, calling instead for pedagogies that respond meaningfully to children's unique ways of knowing and communicating. Central to this is the engagement of children as co-researchers through story-based and arts-based methods (Ambreen et al., 2025). Extending this line of inquiry, their work illustrates how children express nuanced environmental values when afforded space to do so, thereby enriching environmental education and widening the scope of children's imaginative and ethical relationships with the natural world.

This article deepens the agenda by exploring how children articulate their environmental awareness through rich and layered language, especially in relation to trees and their role in mitigating climate change. By rhetorically analysing their stories and statements in educational settings, we explore how children interweave scientific knowledge, lived experience, imagination, and emotional responses like fear and hope. The complexity involved in children's contributions highlights the significance of children's perspectives and affirms their capacity to shape knowledge about natural environments around them and the language used to speak about them.

### **3. A rhetorical framework: science, myth, and future-making**

Rhetoric's persuasion is a way of world-making – a means through which we imagine, negotiate, and construct possible futures (Hariman, 2018). In climate discourse, science often operates in an authoritative rhetorical mode, structuring knowledge through empirical evidence and predictive models. However, this authority coexists with mythic

and narrative dimensions, particularly in children's environmental discourse, where storytelling, metaphor, and speculation play a crucial role (Killingsworth & Palmer, 1992; Lakoff, 2010). This section explores the interplay between science literacy and futures literacy, considering how different rhetorical modes – such as logos-driven scientific discourse, pathos-driven climate anxiety, and imaginative ethos-building – shape young people's engagement with climate change.

We have four dimensions:

- (1) Rhetoric as world-making: language as an instrument of future imagination (Hariman, 2018). In language we articulate the things that might be, share and shape them. The stories we tell about past and present stand in the light of the future; our speech acts condition and create social reality (Seuren, 2009, p. 139).
- (2) Science as an authoritative rhetorical form: its implicit epistemology and limits in primary education (Gross, 1990). Science in public discourse occupies the place of the rhetoric of no rhetoric and promises a world without persuasion. Indeed, the truth is often not persuasive; is this not the source of the rhetorical urge? The rhetoric of facts is an essential component of eloquence as the practice of speaking truthfully, and respect for the facts central to the development of ethos. Facts are valuable and therefore vulnerable. Our speaking can be a way of doing justice to the facts and whatever objective explanation or predication we can produce regarding them, but our speaking itself cannot be reduced without loss to a purely factual process. It is not easy to find the right way to think about what happens when I utter a word.
- (3) Myth and imagination in environmental discourse: children blend knowledge, storytelling, and affect (Killingsworth & Palmer, 1992) in ways that ask for attentive listening.
- (4) Futures literacy as rhetorical agency: the role of participatory, imaginative discourse in shaping climate action (Miller, 2018). By imagining the future we can better understand the present and the courses of action open to us now. Futures literacy empowers agency and diversity. Miller's work with UNESCO on futures literacy addresses the role of future-orientation in education.

These dimensions can be used to analyse the classroom dialogues and child-led media recordings collected during the Voices of the Future project. Part of the project took place in a primary school in North-West England, where children participated in structured discussions about trees and climate change and engaged in tree-planting workshops. We can examine these dialogues and recordings through the lens of rhetorical analysis, identifying key linguistic and affective patterns. By focusing on persuasive aspects, metaphorical framing, and affective appeals, we can uncover how children construct and communicate their visions of climate futures. Rhetorical methodology also incorporates ethos-related dimensions, ensuring that children's voices are analysed in ways that respect them as creative rhetorical agents rather than passive subjects of scientific discourse.

Children engage with climate futures not merely as abstract scientific problems but as narrative spaces, using storytelling, metaphor, and play to make sense of ecological change. In classroom dialogues, we observed how children develop collective visions

of future treescapes, blending personal experience, environmental knowledge, and creative speculation. Their discourse often incorporated elements of heroism, transformation, and moral responsibility, positioning trees as both ecological actors and cultural symbols. By examining these rhetorical strategies, we explored how children frame their own role in climate action – not just as learners, but as co-authors of environmental futures.

Scientific discourse plays a dominant role in how climate change is communicated, yet its rhetorical function is often overlooked. Among children, science is frequently invoked as an authoritative yet restrictive framework, structuring discussions around facts, data, and expert knowledge. This is the understanding of science and the scientific method as it features in many primary school curricula. It is also the view of science that children may encounter in the media. However, we found telling moments where science takes on a mythic quality, particularly in its framing of catastrophe and urgency. Some children echo narratives of inevitable environmental collapse, while others use scientific language to justify speculative, utopian visions of green cities and technological solutions.

A significant example of this tendency to mythologise, if not carnivalise (Tallant, 2017), scientific explanation can be found in the use and understanding children made of key terms such as ‘oxygen’, ‘carbon’ and ‘carbon-dioxide’, ‘green’, and ‘nature’. In this article we are not so much concerned with a full data analysis at the level of the utterance (this work is ongoing), so we present some high-level excerpts from a film that was made during the project, in which children were prompted to speak about trees and about climate change by posing simple questions.<sup>2</sup> The collection of these data was organised and carried out by Samyia Ambreen, Kate Pahl, and Steven Pool. The ethical aspects of the participatory dimension of the project, as well as the set-up of the conditions in which the children could express themselves, were designed and implemented by Samyia and Kate, while Steve filmed and edited the final product. Ethical approval was obtained via the Manchester Metropolitan University research ethics approval procedure. While these curated data lack the relative spontaneity of the self-documented data that we asked the children to capture, they still provide an insight into the frames, and creativity, present in the children’s discourse. We have made no attempt at producing transcripts of the statements with the detail needed for a conversation analysis, but we will analyse the statements using the rhetorical approach of world-making, science, myth and imagination, and futures literacy.

(I) Prompt: why are trees important?

- (a) *it gives us oxygen and it helps with climate change*
- (b) *I like climbing on them and then just looking down at everyone*
- (c) *[starts?] to feel like just random stuff in the forest or [summat], it makes it a bit more private*
- (d) *(child 1) I have a question: how do trees make oxygen? [...] (child 2) Well, they breathe in carbon dioxide and they breathe out oxygen*
- (e) *trees give us oxygen and they take carbon dioxide out of the air, and that stops pollution, so, if uhm ... and pollution needs to be stopped*

- (f) *trees do take in all the carbon dioxide that we basically don't need and they provide good habitats for lots of animals, such as bugs, squirrels, birds, that kind of thing*
  - (g) *by taking oxygen, uhm, carbon dioxygen away uhm if you got too much carbon dioxygen it does get too hot, the ice will melt and there will be too much water*
- (II) Prompt: tell me about trees
- (a) *they look good, they're green and it, and, and green is the favourite colour*
  - (b) *because it is growing leaves and it has that big bump on it, looks like it is pregnant*
  - (c) *for me trees they kind of hide the things you don't want to see by showing you something better*
  - (d) *we like this tree because it is very unique and as you can see, you can see the little lines as well and we like it because it goes like this, is really bent and then it goes like up straight, and so it is very unique because none of the other trees like look bent like that, as you can see*
  - (e) *all the other trees behind us they're looking fine but this one is like really bent and it is cool*
  - (f) *I was running in happiness [from one tree to another]*
  - (g) *one time I fell out of a tree and I banged me head so I had to go to t'hospital*
  - (h) *you can make like a little hide-out, like a secret place*
- (III) Prompt: what do we need to do in the future?
- (a) *we should probably plant more trees in the world because lots of people are cutting down trees just for paper, but we don't need paper, like, a lot. But we need trees more than the paper because the trees are making us live and the paper is giving us something to do*
  - (b) *we should help them grow, nurture them, make sure they actually do grow into like what they are meant to be*
  - (c) *I think if people listen to us, to everyone that teaches to keep no no pollution, I think there would be more trees*
  - (d) *and nature and keeping the planet clean for nature and little animals to not get hurt*
  - (e) *a bit more because trees give us lots of fresh air and most people cut them down because they're hitting their cars or they are blocking the road*
  - (f) *plant a lot of trees, then mother nature will come*
  - (g) *I just think trees are always important because sometimes – you need trees to breathe, so, and you can climb on them, that's fun too*
  - (h) *(continued) I just think they're very important to this world. Without them we, there wouldn't be, uhm, there, it wouldn't be very fun*

In 1a) the reference of the singular pronoun is unclear, but it refers in some way to trees. Trees give us oxygen and help with climate change. This casual statement actually expresses a clear understanding: the oxygen-providing function of trees is distinct from, although related to, their role in mitigating climate change. The trees 'give us' oxygen: an anthropomorphism accentuates the interdependence and relationality of nature; the trees become benefactors of those who live in their shade. The anthropomorphic identification is continued in 1d), where also a question is presented. How do trees produce oxygen? It is as if the child posing the question has realised

that there is a big unknown in the discourse. The answer comes from another child: the tree breathes in carbon dioxide and breathes out oxygen. Trees have no lungs but their breath provides us what we need when we use our lungs. In *le*) we encounter the giving character of trees again and a rational argument is developed: taking carbon dioxide out of the air stops pollution and pollution needs to be stopped. The enthymeme is made explicit by stating pollution needs to be stopped. But now that this has been rendered explicit, it can also be questioned. Pollution is not normally used in the language around global warming; the statement makes us aware of the fact that we don't consider carbon dioxide to be pollution. Too much of it is suffocating. *lg*) develops the scenario into a full-blown catastrophe, linking flooding to the melting of ice. A logical thought, even if factually not the whole story. The confusion of terms stands out, with the speaker ending up combining oxygen and carbon dioxide into 'carbon dioxygen'. The terms are mere, or abstract terms, without an experiential correlate other than the tale of a looming threat. As in the other statements that mention oxygen and carbon dioxide, these terms develop a mythical cathexis that is reminiscent of the gods in mythology that personify forces of nature. Science becomes an organising myth. The tree-nymphs blow oxygen towards the people, in the same movement in which the trees absorb the mess we make and provide a safe embrace for 'little animals to not get hurt', a 'secret place', a 'fun' place to climb and take distance from the world, something 'private', a place that is even compared to a womb (*llb*). The unconscious question 'What do we give the trees?' remains, almost as a transgression of natural law: people cut the trees down, for paper or because they keep getting in the way. But trees 'are making us live'. Our responsibility towards trees is overwhelmingly, in these statements, a matter of enlightened self-interest and denouncing it a matter of adults. The intrinsic value of nature is expressed by 'mother nature', again a containing metaphor, who comes when enough trees are planted, in the place trees give to the little animals and birds, and in the acknowledgement of the role of humans to 'help' trees 'grow into' what they 'are meant to be'. The trees are also 'unique', the carriers of individual existence. A remarkable intertextuality exists here. The remark about the 'bent' tree that is cool even if not like all the others, who are 'fine', reminds us of Chuang Tzu's tale of the gnarled tree that was never cut down because the people had no use for it. Unlike the other straight trees it lived a long life, providing shade and repose to everyone who came to sit under it.

An axis of consubstantiality (Burke, 1945) marks the speech of the children in these fragments. We live with the trees, they are like us and yet not the same. We share what we are as living beings with the trees, who look after us and give us what we need. The forces that mediate the interdependence of nature are clothed in the terminology of science and the concomitant pseudo-rationality of the instrumental arguments attempted by the children (trees give us 'fresh air'). The authority of the scientific-political discourse is unmasked grammatically in *lla*), where the trees look good because they are green, and green is not 'my' favourite colour, but, fully objectified, exclusive and sanctioned, 'the' favourite colour. Yet, through the attempts at rational mastery of the situation, the pathos of belonging and the ethos of identification promulgate the energy of the children's speech. Syntactically, *llf*) shows belonging and identification by using a marked form with an abstract noun ('I was running in happiness') rather than the more conventional 'I was

running happily', thus giving expression to an enveloping, oceanic sense of being in tune with nature and avoiding the more isolating syntax of a statement that ascribes a feeling to a subject.

The point here is not to give a stylistic analysis, however. Rather, we want to draw attention to the speech that we encounter here, to what it says and how, and to indicate that the teacher is not there to correct by instructing the right speech, but to listen to what is being said and respond to it, in all its complexity, in which the irresistible urge to do justice to the world by enchanting it with our speech and the birth of rationality, explanation, and responsibility live together and might grow into what they are meant to be.

The speculative imagination of future treescapes begins in these fragments as personal experiences of privacy, hiding, secrets, and safety: nature is not a threat but a place of belonging, even one where we can become ourselves, away from the demands and desires that others, care-givers, teachers, and so on, place on us. Nature is a playground and a gift. There is a strong contrast between these expressions of experience and some of the dominant metaphors in scientific thinking that present nature as a struggle, a zero-sum exchange of energy and resources, a selfish economy of preservation and propagation. We might say that a split runs through the language. On the one hand there is an instinctive trust in nature while on the other the discourse of threat and fear structures the *logos*. These strands are manifested at all levels of language, down to the syntax. (A discussion of the prosodic level cannot be included here.)

#### **4. Affect and persuasion: the role of fear and hope**

Climate discourse is deeply affective, often oscillating between apocalyptic fear and radical hope. Among children, this dynamic is particularly pronounced: their language reflects both existential anxieties about climate change and utopian imaginings of restored ecologies as dwelling places. Rhetorically, fear often manifests in hyperbolic expressions, dystopian metaphors, and fatalistic reasoning, while hope is constructed through agentive storytelling, collective problem-solving, and appeals to fairness and justice. We see this tension in the data. Understanding how these affective structures shape environmental discourse can inform pedagogical approaches that move beyond climate anxiety towards rhetorical empowerment.

Traditional science education prioritises evidence-based reasoning and empirical validation, but this procedure can be limiting when engaging with uncertain, long-term futures and the need to act now in the face of them. Futures literacy, by contrast, embraces speculation, counterfactual thinking, and rhetorical creativity as tools for anticipating and shaping possible worlds (Miller, 2018). In our data, children frequently shift between these modes even within single statements: sometimes relying on scientific authority, sometimes engaging in imaginative storytelling, and sometimes blending both. Climate education must move beyond a fact-based paradigm to integrate speculative, persuasive, and participatory modes of reasoning that connect the personal, close-up experiences of being with trees that children report (and that many adults remember from their own childhood) to the vision for the future. In this sense we need to acknowledge the limits of evidence-based discourse in motivating to action as well as in bringing about the holistic understanding of

sustainability the primary curriculum ought to develop. Evidence needs to be balanced with rhetorical skill and imagination. Truth and truthfulness in action need both knowledge and persuasion, the ‘timely expression of morally resonant truth’.

## 5. Conclusion

Climate education has traditionally focused on scientific literacy and behavioural change, but our findings suggest that a rhetorical approach – one that integrates persuasion, storytelling, and attentiveness to the way we are present in our words – is an essential addition in climate change education, not just to motivate action and behaviour change, but to become aware of the meaning of nature, of our relationship with other species and with each other. By working with children from an early age to raise awareness of what it means to be a speaking and listening being, we can help them develop a more agentive relationship with climate discourse and ultimately with social communication in general. Moreover, in this way we can learn from them and their words, as we hope to have shown in this brief analysis of some of the data collected in *Voices of the Future*.

It demonstrates that children’s climate discourse is shaped not only by scientific knowledge but also by rhetorical agency – the ability to persuade, narrate, and reimagine ecological futures. By analysing how children creatively and imaginatively navigate the tension between science, myth, and imagination, we highlight the importance of futures literacy as a complement to science education. As climate anxiety rises among younger generations, rhetorical pedagogy offers a means of moving beyond fear towards empowerment, equipping children with the discursive tools to shape, rather than merely inherit, environmental futures. Future research may benefit from the findings of the *Voices of the Future* project and explore how these insights can be integrated into curricula, policy, and public discourse on education, to foster a more participatory approach to climate action.

## Notes

1. Peter Simonson, personal communication, April 2021.
2. Steven Pool, *Voices of the Future: What We Think*, produced for the Future Treescapes Closing Conference, Glasgow University, June 2024.

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