

Imagination and the Future University

Between Critique and Desire

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ABSTRACT This essay argues that thinking about university futures requires not only practices of critique and desire, but practices of rigorous and reflexive imagination. Building on Bill Sharpe's three horizons framework, it argues that debates about university futures are dominated by horizon 1 thinking (critique of the current situation) and horizon 3 thinking (normative aspirations toward desirable futures) but that there is limited exploration of horizon 2 (the emerging possibilities that may create radical disruption). The article draws on futures and anticipation studies, in particular Ziauddin Sardar and John Sweeney's "postnormal menagerie," to model a set of imaginative inquiries into the blind spots, blank spots, and different forms of ignorance through which highly divergent university futures might be explored. It concludes by proposing two scenarios for university futures—the "Campus of the Sky" and the "Pirate University"—as sites of generative experimentation and further research, and with a call for a radical diversification of participation in dialogues about the future of the university.

KEYWORDS futures, higher education, universities, time, method

An invitation to write about "Global Higher Education in 2050" is an invitation to the imagination. On a thirty-year time horizon, in conditions of radical uncertainty fueled by climate crisis, transformative technologies, new populisms, and rogue elites, any claim to knowledge of the university of 2050 is likely to be wrong. The challenge, then, is to imagine the future of the university in ways that respect its epistemological ambiguity; to work out how to avoid being locked simply into the preoccupations and presumptions of the present, or drowned in wish fulfillment and escapist fantasy; and to explore how thinking with this other, strange time of the "not-yet" might open up glimpses of a university capable of engendering sustainable and socially just futures.

My response to this invitation, then, is less a normative aspiration for a future university than a brief inquiry into the problem of even thinking about the future

of the university; a set of proposals for conceptual tools that might be of use; and an exploration of potential sites for experimentation with the form and practice of the university that might ensue if we use them.

Thinking about University Futures

The terrain of contemporary debates over the future of the university is a crowded field, populated by academics specializing in higher education, university leaders and academics speaking from within their own institutions, policymakers and pundits generating prognoses of various failings and potential solutions, and a growing “education” industry making confident predictions about future transformations. These contributions tend to fall into one of the two categories familiar from Bill Sharpe’s “Three Horizons.”¹ First, we have an abundance of what we might call horizon 1 critiques of the current neoliberal university and its failings (as in the raft of publications that have followed Bill Readings’s *The University in Ruins*, although we should note that critiques of the university have been around since its inception). Second, we have a variety of horizon 3 projections of the desired future, whether these manifest as workarounds with its existing failings (as in Stefano Harney and Fred Moten’s theory of the “undercommons”); defenses of Enlightenment research (as in the work of Stefan Collini and colleagues); or radically transformative objects of desire (as in the techno-fantasies of the Singularity University or the ecotopian visions of the pluriversity).² In the space between these competing critiques of the present and competing desires for the future lie both philosophical accounts of ideal-typical universities and sociological analyses of the contemporary mechanisms of day-to-day incremental change within higher education: studies of new public management techniques, or research into new forms of academic identity, student experience, curriculum innovation, technology adoption, and so on, reflecting the increasing complexity of what is increasingly called “the sector.”

Few of these analyses, however, particularly help us to think of the range of potential futures that might emerge for the university of 2050. They point us toward the weaknesses and failings of the current system, they show us our desires for a different future, and they tell us what is happening now. But they are limited in their capacity to help us consider the as-yet-unthought possibilities of what a university might be and become over the next thirty years—or to help us to work through an unfolding and complex reality that may be indifferent to both our fears and desires. Nor do they necessarily point us toward the cracks and possibilities for disruptive change that may be emerging at the margins of the present, cracks that might be needed if we want to find openings for a university adequate to working toward “sustainability” in all its ambiguity.³

In Search of the Second Horizon

What might it mean, then, to study horizon 2—this space between critique and desire? How can we conceptualize the terrain of the second horizon? In Sharpe's original framework, this is understood as the space of "short-term innovation." Other framings of this site of possibility, however, also come to my mind. We might see it as the multilayered space of Donna Haraway's "thick present" and the domain of Roberto Unger's "negative capability," of Brian Massumi's abundant and rich contradictions, of Slavoj Žižek's (and Antonio Gramsci's) monsters, or of Lynn Margulis's symbiosis.⁴ Studying this second horizon, then, may require heightened attention to latent possibilities and unexpected coemergence. We require not only the tools of critical theory, practice theory, and actor network theory that trace the contours of the present and the past, but tools that can snag our attention on what is beginning to happen at the edges, what is growing beneath, and what has the potential for mutation. This requires an interplay between the empirical and the imaginative. It demands attention to processes of what we might call futures-in-the-making, which arise from contingencies, symbiosis, and emergence and cannot be fully known in advance.⁵

From the perspective of higher education scholars, horizon 2 might also be understood as the domain of Sharon Stein's world "beyond reform," where we leave behind strategies of managerial incrementalism or battles over current power hierarchies and begin to attend to the generative potential of experiments in emergent practice.⁶ Central to this experimental space beyond reform and without guarantees is attentiveness to the possibility of change that emerges beyond our control and at the edges of our knowledge. It is premised on an ontological assumption that provincializes the human as a distinctive part of wider networks and processes. It is driven by a position of epistemological modesty: there is much that we do not and cannot know about the futures that will arise from such experiments.

Donna Haraway invokes "SF"—storying, fictions, science, speculation, fabulation—as tools to think with in this space, and there are some novel experiments emerging using these tools to envisage new university futures in the second horizon (including, for example, Dylan McGarry and colleagues' "Pluriversity for Stuck Humxns").⁷ We can also, however, turn to the contested field of futures and anticipation studies.⁸ This field's refusal to settle tamely in the land of the evidence or to be relegated to the realm of pure speculation continues to position it at the edges of universities bound by disciplinary arrangements that separate the empirical from the imaginative. This unruly field today spills over into disciplines ranging from technology innovation to education and from philosophy to anthropology, and defines itself variously as futures research, anticipation studies, critical futures, Indigenous futures, heritage futures, speculative futures, and in many other ways. It comprises, as Jenny Andersson's comprehensive historical account demonstrates,

both Cold War warriors allied with fossil fuel, colonial, and neoliberal interests; and activists, philosophers, political theorists, and critical pedagogues seeking to challenge them.⁹ Indeed, it is the struggle between moves to colonize the future by existing powers and the possibility of sustaining plural, open futures that has shaped much of the field as it stands today.

This struggle between the colonization of the future and the attempt to keep open the possibility of alternative futures has spawned an array of practices that we might understand as reflexive tools for the imagination, hooks and lures that help with the process of fishing in the deep waters of the thick present. These include frameworks for reflecting on anticipatory assumptions, the long history of scenario practices, the consultative work of Delphi processes, the playful tools of speculative design, the growing field of climate fiction, and practices drawing on Indigenous wisdom traditions. Together, these offer resources for reflecting upon and enriching the imagination of what is and may be emerging in the present. Sharpe's three horizons process, which structures this special section, is also one of these: a sensitizing tool to encourage attention to both different time horizons and different orientations to the future.

Attention to the problem of thinking the future is also emerging across multiple disciplines more loosely allied to futures and anticipation studies. Literary and philosophical traditions of utopian thinking are being recovered (for example, in Ruth Levitas's work on utopia as method);¹⁰ historians and archaeologists are adding insights into relations between futures and processes of curated decay, of loss and decline;¹¹ peace and conflict studies draw attention to the active processes of memory and reparation as a bases for transformed futures;¹² the study of time and temporality, and the provincialization of European conceptions of time, are radically transforming the foundations of "futures" thinking.¹³ For those of us working and thinking with the question of the future of higher education, these theoretical and methodological resources offer many different ways of approaching this second horizon and its primary question: What is emerging now?

For this essay, however, I will use just one of the conceptual tools that derive from the field of futures studies—what Ziauddin Sardar and John Sweeney call their "menagerie of postnormal animals"—to go fishing for mutant futures of the university that may emerge from the murky and multilayered waters of the deep present.¹⁴

Working with the Postnormal Menagerie

The postnormal menagerie is a collection of metaphors to think with that emerge variously from the imaginations of Nassim Nicholas Taleb, Vinay Gupta, and Sardar and Sweeney.¹⁵ The idea of postnormal times posits situations in which confidence in knowledge and prospective assumptions is profoundly unsettled by

complexity, chaos, and contradictions. These situations are complex because their uncertainty cannot be managed statistically through risk, nor can a single viewpoint offer a complete overview; chaotic because these are moments that sit on the edge between stability and turbulence, in which small changes can have significant transformative effects; and contradictory because they contain trajectories and viewpoints that cannot be reconciled or negotiated, only transcended.¹⁶ Such situations are also characterized by a temporality of urgency, in which the demand to respond to rapid and seemingly transformative change impedes slow reflection and analysis while requiring new thinking, diverse perspectives, and the radical questioning of existing assumptions.

The postnormal menagerie, in turn, is a set of tools for thinking that consists of three animal metaphors that point to different routes toward the emergence of postnormal conditions. First, the familiar and usually misused idea of the “black swan”—deriving from the old idea that a black swan was impossible (until it wasn’t)—proposed by Nicholas Nassim Taleb in his 2007 book of the same name.¹⁷ This phrase is commonly used to refer to unforeseen, radically improbable new realities that are assumed to be impossible according to current probabilities: a black swan (or in Taleb’s case a radical change in the economic system) that is assumed to be impossible—until it is discovered or happens.

Second, we have the “black elephant,” a term coined by the humanitarian engineer-turned-blockchain-futurist Vinay Gupta with his usual blend of humor and acuity, as a mash-up between the “black swan” and the “elephant in the room.” The black elephant describes those things that a group of people close to the subject are pretty sure is a major and likely problem but that everyone else is trying to ignore—until they happen. The current pandemic is a case in point. The reality is being thought, but only by some.

Third, the “black jellyfish” is a metaphor developed by Sardar and Sweeney to describe a phenomenon—the everyday jellyfish—that looks like something normal and unproblematic now but that, pushed to rapid change by a slight bifurcation in the surrounding system or interaction with a small shift in another everyday phenomenon, emerges into a radically disruptive phenomenon. Here they point to the example of a mass jellyfish bloom that shut down a German nuclear power station in response to changes in sea temperature. In trying to grapple with the black jellyfish, we might also turn to Anna Tsing and Elizabeth Pollman’s work on the generative potential of contingency arising from everyday objects in interaction, such as their tales of the interactions between the Arab astrolabe and Chinese compass that helped Europeans aim their guns and thereby transformed warfare radically and unpredictably. These interactions of mundane or everyday knowledge or materials to form a historically transformative event or process are instances of what they call a “historical coalescence.”¹⁸ There is much unpicking

to be done of the distinctions between these coalescences and Sardar and Sweeney's postnormal "bursts," but that is more properly the subject of another article. To note that both foreground the potentially radically transformative interactions between seemingly everyday processes and actors, which create new realities from their conjunction, is sufficient for now.

These three animals, in turn, draw attention to three different forms of ignorance.

The black swan foregrounds the ignorance of time, the impossibility of knowing what will happen next until something new is discovered. This is defined by Sweeney and Sardar as "vincible ignorance"—ignorance that, given time, will diminish as the novelty previously seen as vanishingly unlikely occurs.

The black elephant foregrounds the ignorance of standpoint and habit: the lack of attention to known information that could easily be found given attention to other perspectives and the limits of any one person's, group's, institution's, or tradition's knowledge. This ignorance Sweeney and Sardar call "basic ignorance," and they argue that it can be addressed through finding out more, talking to others, listening, or asking questions.

The black jellyfish, however, foregrounds a different sort of ignorance, what Sardar and Sweeney call "invincible ignorance," which points to the impossibility of knowing in advance how the coincidence of different everyday elements might create a rapid and disruptive transformation. This form of ignorance is perhaps best captured by D. H. Lawrence:

Imagine that any mind ever *thought* a red geranium!

As if the redness of a red geranium could be anything but a sensual experience and as if sensual experience could take place before there were any senses.¹⁹

If we take this form of ignorance seriously, then this is an ignorance that cannot ever know itself as ignorance. It is like a three-dimensional mind attempting to imagine life in a twelve-dimensional world without knowing those other dimensions exist. This is not a form of ignorance that will be overcome, but it is a form from which, instead, a generative and exploratory playfulness might ensue.

Before using these terms, it is worth noting that despite their advocacy by scholars of color, they derive from a Eurocentric framing of blackness as other, alien, and unexpected. Today, the racist consequences of uniformly framing otherness, particularly when associated with risk, uncertainty, and anxiety, as blackness cannot be ignored—in particular when the color is incidental to the point being made. I suggest, then, that we rename these creatures—as we are in the land of metaphor and imagination—the black elephant, the pink swan, and the rainbow jellyfish. The black elephant takes its meaning from the mash-up of the elephant

with the original idea of a black swan, and so its blackness is worth keeping. A pink swan, in contrast, more accurately represents the highly unlikely novelty that we assume cannot exist, which the original black swan concept implied. And a rainbow jellyfish perhaps gets closer to the potential of everyday realities to coalesce into very different forces and to radically transform the terrain of action (as a rainbow emerges from water and light into a new formation).

How, then, might we work with these intentionally absurd creature-metaphors—the pink swan, black elephant, and rainbow jellyfish—as cognitive tools to help us delve into the abundant possibilities of the second horizon? How can they help us to explore new sites for generative experimentation with the idea of a university?

Working with the Menagerie

Let's begin with some black elephants. What is being ignored that is already in train? What are we as writers and thinkers about the futures of the university being warned of that we are attempting to ignore? Who is the “we” in our conversations? What is this “we” too embarrassed to consider? What is being said by voices we do not wish to hear? Several candidates (among many others) spring to mind.

One is climate catastrophe. Extrapolating from the current commitments of state parties to reduce greenhouse gas emissions, the Intergovernmental Panel on Climate Change (IPCC) forecasts three to four degrees Celsius of global warming before the end of this century. The last time the planet was three degrees warmer, there were camels in the arctic. The speed of warming is one hundred times faster than natural systems can respond to. Biodiversity loss is escalating, not decreasing. Eighty-five percent of wetlands that filter water and provide flood protection have been lost. Sea level rise of twenty to thirty centimeters is broadly predicted, and, under the IPCC's second-highest scenario, coastal and tidal cities face losing huge areas of land this century. There is a strong likelihood of these effects happening much more quickly than the “net zero by 2050” goals currently dominating public debate imply.²⁰

Another possible black elephant is demographic change. There were 2.5 billion people on the planet in 1950 and 7.7 billion in 2019, and the UN forecasts 9.7 billion in 2050. This change is uneven. Europe is aging. Africa is young. China is encouraging its people to have three children. India will take over from China as the world's most populous country in the near future. The demographic dividend of declining fertility and increasing working-age populations is shifting away from Europe and the United States toward Africa and Latin America. The world is reaching “peak child,” and our current economic structures are not designed around aging populations.²¹

Another black elephant that receives less attention is fertility collapse. The global penetration of water and food supplies by plastics globally is causing

significant concern among increasingly large groups of medical researchers and bioscientists about their impact on sperm counts. Current projections suggest a twenty-year window of time for a reduction of plastic in the environment before all reproduction will require assistance. What will happen to the global balance of power as fertility decline coincides with uneven global demographic shifts?

Of course, many more people now understand the risk of new pandemics than was the case when we held our workshop in March 2020. And yet even with this global experience, many governments are ignoring medical advice about the risks of the rapid elimination of masking and distancing restrictions as this section goes to press in the spring of 2022. Authorities still ignore warnings that don't seem important from their vantage point far from the streets, hospitals, and laboratories where knowledge is being created. They will do this again in the future, in a process in which our "basic ignorance" of the black elephant is repeatedly renewed.

As we think about university futures, the appearance and indeed convergence of any of these black elephants has the potential to shift the context for university operations into "postnormal" conditions of rapid disruption and change. Taking this seriously might mean preparing for scenarios of migration and collapse with visions for universities as hubs for adaptation, welcome, and sanctuary. It might mean beginning more creatively to explore what happens in a university oriented toward education for older adults, in conditions of long-term reduced international movement, or in conditions where there are no more eighteen-year-olds coming through the door. Just a quick scan of these reasonably well-recognized black elephants shows up the limits of contemporary thought about the futures of universities.

Pink swans are, by definition, invisible from our current perspective in time and place. As far as we are concerned, they don't exist, are too outlandish to consider, and cannot happen. The use in seeking them out and beginning to imagine them is to draw our attention to the taken-for-granted assumptions about the future that we are working with and that preclude our attention to them. Here Sarder and Sweeney invite us to ask: What do we think will never happen? For those of us working inside universities, answers might include the following:

- The mass withdrawal of young people from university education as part of a mass disenchantment with the idea of a future in which education matters;
- The renationalization of all universities as part of critical state infrastructure along with their full funding by governments suddenly concerned about knowledge;
- The invention and free distribution of a form of artificial intelligence that can harvest online information and provide basic introductory university courses, at minimal cost, to any student who wants them to the same standard as a currently stressed, precariously employed, junior lecturer;

- The transformation of all prisons into centers of higher education;
- The voluntary salary reduction by the professoriat and university leadership to create universities with pay scales equivalent to the US military—that is, where leaders earn no more than eight times the pay of any employee.

Naming these impossibilities usefully, then, generates the reverse question: Why are these things not possible? And are these impossibilities useful sites for experimentation?

Of course, these examples reflect my own preoccupations and demonstrate my own blind spots. Which is why these discussions are best when they happen in rooms with people with highly diverse lives and experiences. Again, the purpose here is not to create robust predictions but to make visible the limitations and ignorance of our current thinking, to clarify assumptions about what we think will never happen, and to question these. We might also begin to ask what we are using to fuel our imaginations, what cultural and media sources shape the familiar narratives by which we become anesthetized.

Finally, we might begin to consider the components capable of creating rainbow jellyfish—the everyday actors that align and mutate to form historical coalescences that radically transform the concept of what we understand by a university. Here I work through two examples and two processes. First, I draw on Anna Tsing and Elizabeth Pollman’s “Futures Game” to scaffold my imagination. In this game, they invite players to achieve a mission through building narratives of potential coalescence between different ideologies, ideas, or actors displayed on a set of forty-nine cards, in which the actors transfigure each other. An image of the Eiffel Tower and of the Great Wall of China, for example, might turn into a French Maoist movement.²² Second, I simply ask the question Sardar and Sweeney invite us to ask: What is seen as everyday and normal in universities today, but might, with a slight change in conditions, transform into something highly disruptive? From these two processes, I create two different stories of university futures.

The Campus of the Sky

My first example is inspired by my hometown of Bristol, in England, as I explore what might happen to Bristol University as various everyday forces begin to interact to create a potentially radically new reality. Consider the possibility that over the next two decades, to address global heating, the everyday question of where and how food is produced continues to change. This creates a huge boom in aquaculture food production in urban environments as well as limits on the use of land for housing. Pressures on the city (already struggling to provide housing for everyone) intensify: carbon capture, biodiversity, food production, and rich investors competing for land, and the inexorable rise in real estate prices. By the mid-2020s

most students can find nowhere to live in or near the city, and the university can no longer afford to rent or buy land. At the same time, within the university, Bristol's environmentally engaged staff and students push for serious climate action, and by 2030 the university commits to ensuring that all international travel and student engagement is carbon-neutral. This means it needs to find new ways to engage with its international students if it is to continue to generate income. In the local area, some serious developments in energy ownership and use are also emerging. The economic, social, and environmental failures of the new Chinese-owned nuclear power station at nearby Hinkley Point drive research into the miniaturization and local ownership of small nuclear energy reactors as a core area of research, and the local, community-owned renewable energy supply reaches a rate of nearly 80 percent subscription by the citizens of the city. At the same time, the long-standing hot-air balloon industry in Bristol combines with the equally long-standing airplane industry to create a new fleet of air villages to address the problems of land availability and carbon neutrality—where people are able to live and work in the sky for sustained periods.

Drawing on this local expertise, Bristol University prototypes a new “university of the air.” After much trial and error, it catches on. Universities, the new airland industry, and controlled biosphere agriculture combine to create a new sky campus, which moves staff and students to different venues around the world to provide educational experiences, picking up students from their homes as the campus slowly drifts around the globe. Students and staff live in a carbon-neutral, wildlife-friendly environment, drifting with the air currents, participating in an idyllic campus in the fresh air that is gently moved by the breeze and takes in different countries in a nomadic university life. Over time, the many universities of the air facilitate a massive shift of young knowledge workers disillusioned with the high cost of living from Europe and the United States to rural areas across Africa, where they partner with local, equally young knowledge workers to create ecologically and economically sustainable communities, supported by small-scale nuclear power, locally owned and generating viable water supplies and low-cost energy in the middle of what were previously seen as ecologically marginal sites. As with all scenarios, this vision creates new forms of inequalities and patterns of life—who moves and who drifts with the campus? Who gets to set down roots and who gets to voyage?

This example, rapidly sketched, offers a historical coalescence in Tsing and Pollman's terms, and raises some interesting questions about where a university is and what its material dependencies are. How would a new fleet of sky campuses, tethering across the world, building truly global student experiences, creating a new idea of the “local” university, create new forms of knowledge, require new forms of governance, and generate new forms of exclusion or inequality? How different is this from what is currently going on with student mobility and international campuses?

The Pirate University

The second example that I want to think with here, using Sardar and Sweeney's framing, is an experiment with pulling out just one everyday phenomenon to explore what might happen if it went "rainbow jellyfish." The candidate I want to explore is the banal and near universal precarity of graduate students and early career academics in universities today. This, I want to suggest, is an everyday phenomenon with latent potential for radical transformation given only minimal changes in environmental conditions. What would it take to tip this community of scholars into a postnormal shift?

It might be helpful to look to history in order to fish out this particular possible future in the second horizon. Consider the case of the British navy in the sixteenth century. After many years of war, and having trained a highly skilled generation of sailors, the navy was now facing peacetime conditions and treating its sailors very poorly. There were many more of them than could find jobs, and they were increasingly vulnerable to exploitation. After a while, these sailors stopped trying to find secure work in the navy and instead set themselves up in competition. The pirates, for this is what they became, flourished, adopting radically new rules that transformed power relations, setting up new countries run along democratic lines, and inspiring, among others, Thomas Paine and the French Revolution.²³ The simple fact of the overproduction of skills and underemployment of people produced postnormal effects, transforming fundamental ideas of power and decision-making. Perhaps today's graduate students, and the decisions they are making every day, are a postnormal phenomenon in waiting.

Reflections

Thinking about futures is an exercise in admitting the many different varieties of our ignorance, identifying the work we need to do and the voices we might want to hear in order to address our basic ignorance, and developing the modesty and imagination required to creatively play with invincible forms of ignorance. Both critiquing the present situation and naming our desires for a different future are critical means of unsettling the present. But fostering and feeding the imagination, and bringing something new into being that can be used as a hook to snag our attention on unexpected or unfamiliar aspects of the present, are also required if we want to create sites of experimentation that might open up the possibility of futures that we cannot yet imagine. In other words, imagination is essential if we want to explore and engage with the questions and possibilities raised by the generative monsters of the second horizon. In this short contribution, I have attempted to outline some of the resources available to us to engage in this sort of reflective imagination about the future of the university and to indicate some of the

directions for experimental practice that might open up if we use just one of these frames—the postnormal menagerie.

As promised, the essay also arrives sideways at some normative claims for the future of the university.

First—that contested, contradictory spaces with awkward ideas, difficult people, and many, many different backgrounds are required to move universities beyond their (our) own distinctive forms of ignorance. Andrew Barry and Georgina Born call this agonistic interdisciplinarity; Isabelle Stengers calls it slow science, the sort of bumpy, argumentative dialogues and debate that might get us seeing the backs of our heads, our blind spots, for the first time.²⁴ There are many black elephants in the room when we think about university futures; it's time we started hearing what they might be saying.

Second—and taking seriously my own jellyfish hunting—I want to propose that many different forms of “the university” are now already likely in development as precariously employed graduate students and postdocs begin to explore what form it might take. Gig working, online courses, embodied and land-based work, ecovillages, network-based alliances, portfolio careers: all are being combined to create different forms of learning, knowledge, and exchange, particularly through the Ecoversities movement. Whether it is through more senior academics walking away and allying with these movements, or through prospective undergraduates refusing the current financial arrangements and looking elsewhere, or through climate-forced migration patterns, the Pirate University may already, rapidly, be coming into existence. We don't know whether this shift will constitute a step toward or away from the university as a site that can drive sustainability and social justice. This useful ignorance, however, points us toward a generative site for experimentation and research.

And, indeed, it is in this identification of spaces for inquiry and experimentation that practices of rigorous and reflective imagination make their most useful contribution to thinking about the futures of universities. They encourage us to attend to areas of the present with which we might not be engaging and invite us to confront what we may intentionally or unintentionally resist noticing. Alongside the more familiar practices of critique and desire, then, a creative temporal imagination has a critically important role to play in helping us attend to both the monsters and the possibilities latent in our emerging futures.

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collection *Temporality in Qualitative Research* (with Johan Siebers and Bradon Smith), is editor in chief of *Futures*, and has recently been working with UNESCO on its Futures of Education 2050 Commission. Her work is now turning toward the question of how to cultivate the “temporal imagination.”

Notes

1. Sharpe et al., “Three Horizons.”
2. Harney and Moten, *Undercommons*; Collini, *What Are Universities For?*; Maeso and Araújo, “Eurocentrism.”
3. Amsler, “Embracing the Politics of Ambiguity.”
4. Haraway, *Staying with the Trouble*; Žižek, “Critical Pedagogy,” 43; Unger, *False Necessity*, 632; Massumi, “Potential Politics,” 213; Margulis “On the Origin,” 228.
5. Adam and Groves, *Future Matters*; Osberg, “Education and the Future.”
6. Stein, “Navigating Different Theories.”
7. Haraway, *Staying with the Trouble*; McGarry et al., “Pluriversity for Stuck Humxns.”
8. Poli, *Handbook of Anticipation*; Poli, *Introduction to Anticipation Studies*.
9. Andersson, *Future of the World*.
10. Levitas, *Utopia as Method*.
11. DeSilvey, *Curated Decay*.
12. Sriprakash et al., “Learning with the Past.”
13. Baraitser, *Enduring Time*; Nanni, *Colonisation of Time*; Adam and Groves, *Future Matters*.
14. Sardar and Sweeney, “Three Tomorrows.”
15. See Taleb, “Black Swan.” Gupta coined the term “black elephant” in Gupta, “On Black Elephants.”
16. Funtowicz and Ravetz, “Science for the Post-Normal Age”; Sardar and Sweeney, “Three Tomorrows.”
17. Taleb, “Black Swan.”
18. Tsing and Pollman, “Global Futures.”
19. Lawrence, “Red Geranium.”
20. Probably the best and most accessible introduction to the robust data on climate change and biodiversity loss, as well as the mind-shifts and strategies that might respond to this, is Kim Nicholas’s *Under the Sky We Make* (2021).
21. The concept of “peak child” derives from the idea of “peak oil”—the point of highest levels of production, beyond which production declines—so in relation to population, the parallel implies a point at which global reproduction patterns begin to decline. The term was coined by Hans Rosling; for the TED talk to which the term is usually attributed, see Rosling, “Religions and Babies.” The most accessible data source on global population data is Roser, “Future Population Growth.”
22. Tsing and Pollman, “Global Futures.”
23. Allende, *Be More Pirate*.
24. Barry, Born, and Weszkalnys, “Logics of Interdisciplinarity,” 25; Stengers, *Another Science*.

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