Background paper for the Futures of Education initiative

Futures in education: Towards an ethical practice

by Keri Facer

University of Bristol, UK

March 2021

Abstract

This paper argues that ideas of the future play a central role in educational thinking, policy and practice and that there is an urgent need to reflect upon how these ideas are produced and the sorts of work that they are doing in education. It outlines 5 broad orientations or traditions for thinking about and working with ideas of the future in education:

Orientation I: **'Educational Futures'** is concerned with the question 'what might education be like in the future', it takes the form of scenarios, projections and visions of the future of education and is familiar in consultancy, policy, social movement and financial investment fields. Orientation II: **'Education as preparation for the future'** is familiar in development arena and government policy, as well as characterising mainstream educational discourse, and is concerned with adapting young people to fit envisaged futures, or equipping them to create desired futures. Orientation III: **'Education *about* futures'** engages with pedagogic questions about how students might be supported to think reflexively about futures and is concerned both with Futures Literacy and developing students 'capacity to aspire'. Orientation IV: **'Liberating education *from* the future'** derives from new developments in educational philosophy, posthumanism, complexity theory and quantum physics and questions the association of education with futures, making the case for education as a time of suspension *from* futures. Orientation V: **'Reparative Futures'** is concerned with education as a space for addressing the injustices of the past and for radically pluralising and provincialising western temporalities.

The paper outlines the distinctive contribution and core questions and practices in each of these orientations as well as the intergenerational tensions and ethical questions that they raise. It also draws attention to the emerging field of financial futures speculation in education and the risks that this poses to education.

From these five orientations, the paper proposes nine areas of ethical examination for ethical futures work in education: reflexivity and multiplicity; transparency; curating decay; repair and healing; intergenerational responsibility; emergence and observation; organising hope; limiting pathological speculation; and care for the distinctive temporality of education. It concludes by offering nine questions for policy makers, consultants, researchers, educators or students seeking to work with the idea of the future in education. These are:

What and whose knowledges are being used to create these ideas of the future and where are the absences? What processes were used to make these ideas of the future, and why? How does this work address the necessity of decline as well as the possibilities of the new? What are the injustices upon which futures are being envisaged and how are these being addressed? How do principles of intergenerational justice inform the practice? Who will attend to the consequence of these ideas of the future being put into the world and how? What is the role of these futures in creating hopeful politics and practices in the present? Might these futures be used for pathological and extractive speculation, if so, how might this be prevented? How can the distinctive temporality of education be preserved not subordinated to the futures proposed?

These questions form the basis for self-reflection and dialogue amongst educators, futures professionals, governments and and others seeking to work ethically with futures in education.

Introduction: Futures in education – tacit, tokenistic and taken for granted

The idea that there is a relationship between education and the future is taken for granted. As politicians and singers constantly remind us: 'children are the future'. From this assumption spring political promises to create 'schools for tomorrow', to invest in education 'for the future', and to prepare young people for a 'world yet to come'. Ideas of the future, and desires for better futures are profoundly constitutive of educational practice, policy and values. They shape what it is we think education is for, why we educate and how we think education should be conducted.

As the scholar of education Noel Gough observed, however, this relationship between education and the future is seen as so natural that it tends to be evoked tacitly, tokenistically and in a taken-for-granted manner.[1] How and what this relationship actually consists of, what relations of causality might be in play between what happens in schools and colleges and the futures that then follow, how exactly particular futures that we envisage should shape what happens in classrooms, are rarely made explicit. Despite this, ideas of the future from climate collapse to AI workplaces are mobilised around the world to justify educational change, and education is routinely singled out as essential to the creation of better futures such as those envisaged by the SDGs. In other words, 'the future' is both intimately and ubiquitously associated with education and yet this relationship remains poorly conceptualised in mainstream educational thought.[2]

My aim in this paper is not to analyse the rise of this idea – whether its philosophical framings from Rousseau to Arendt, its entanglement with particular ideas of the biopolitical state, or indeed, its cultural specificity which relies on particular conceptions of time, change and speculation.[3] Rather, it is to trace what happens when we take seriously, rather than rhetorically, this question of what education's relationship with the future might be and reflect carefully on the relations of causality, responsibility and imagination that underpin this relationship. To do so, I trace the outlines of five broad 'orientations' towards thinking about and working with 'futures' in education. These emerge from many different fields, are dominant in different sectors and make particular claims about the relationship between different generations. None can claim authority over the others, all provide some tools for understanding and interrogating the relationship between education and futures. All have their own weaknesses and blind spots. Each of them brings, in particular, distinctive ideas about the proper relationship between adults and children and across generations in relation to 'the future'. Finally, I build on these five traditions of thinking, research and practice to outline for the UNESCO Commission, what might constitute a set of principles for ethical and reflective approaches to working with futures in education.

Five framings of education's relationship to the future

Education's relationship with the future is the subject of significant theory, practice and research. To make sense of this, we can work with a rough heuristic that clusters this work around five key questions:

  I.   What will education be like *in* the future?
  II.   What sort of education will prepare students *for* the future?
  III. How can students learn to think reflexively *about* futures?

IV.   How can education be liberated *from* the future?
V.   How might education *heal* the future?

	I: Education *in* the future	II: Education as preparation *for* the future	III: Education *about* futures	IV: Liberating education *from* the future	V: Education *healing* futures
Indicative questions	What might education look like in the future? How can we profit from educational futures?	How do we prepare young people for the future? How do we create futures through education?	How can students learn to think reflexively about futures? What pedagogies offer tools for engaging with possible futures?	How do we liberate education from the future? How can education be recognised as a site of suspension from time?	How might educational futures *repair* past injustice?
Core orientation	Predictive/ Imaginative	Preparatory/ Prefigurative/ Pedagogic	Pedagogic/ Reflexive	Critical/ Emancipatory/ Posthuman	Reparative
Central Fields of Study	Educational Technology, Futures Studies, Design, Architecture, Planning and Policy, Financial markets and economics	Mainstream educational research, Educational Technology, Education for Sustainable Development, Democratic Education, Workforce planning.	Futures & Anticipation Studies, Anthropology, Education for Creative practice.	Critical Pedagogy, Critical Futures Studies, Educational Philosophy, Posthumanism, Relativist Physics, Biology, Feminist & Queer Theory	Critical Race Theory, Peace and Conflict Studies, Decolonisation
Familiar Techniques	Trends analysis, Forecasting, Scenario development, CLA, Design, Action Research, Utopian theory +++	Mainstream educational research and policy, Prefigurative practice, +++	Futures techniques, Critique, Futures workshops, Improvisation, Modelling, Foresight +++	Critique, Deconstruction, Critical Pedagogy, Action Research, Philosophical Inquiry, Decolonisation, +++	Social Cartography, Memory Studies, Truth and Reconciliation, History, Dialogue and Assembly Fugitive Practices ++

In practice, these five orientations overlap and feed each other and many of us will find ourselves moving between them at different times. Equally, these clusters create bedfellows between researchers, practitioners and schools of thought that may not see themselves as allied in a shared endeavour. Despite these caveats I persist with this heuristic primarily with the hope that it will support reflection upon how we each - as readers, teachers, policymakers or researchers, positioned in different traditions of thought and histories of relationship with 'futures' – are locating ourselves in relation to these questions and practices.

Orientation I: Educational Futures – or Education in the future

The cluster of research and practice that I bring together under this orientation is broadly concerned with the core question – *what might education look like in the future*? It is concerned with predicting or envisioning the ways in which schools, universities, teaching and learning, curriculum and education, may be subject to change either as a result of wider trends or because of intentional educational and political change. This strand of work is often given the name 'Educational Futures' and involves the production of images, designs and plans for future educational practices. In its 'predictive' form this work often sits between architecture, planning, design and policy fields, associated as it often is with long-term educational planning decisions such as the development and building of new schools, universities and infrastructure. In its envisioning form it forms part of the repertoire of educational activists, scholars and politicians, oriented towards statements of desired change. In both forms, this production of imagines of the future of education can be immensely powerful, creating what Jasanoff and Kim call 'sociotechnical imaginaries' that serve to coordinate social actors around particular trajectories which can then be very difficult to disrupt.[4] Equally, the absence of such imaginaries can also be a significant problem for those seeking to create different educational futures or to push educational practice in a new direction.

Today, the production of visions of the future of education that are oriented towards prediction and foresight is often led by actors outside education, in particular by groups who might self-define as futures or foresight specialists, as well as by commercial technology companies. The most well known of these activities is arguably the OECD Future Scenarios work – in which they present four potential scenarios for the future of education, explicitly aiming to think beyond the short term to situations in which both social and technological arrangements for formal education might be radically transformed.[5] Another key site for the production of educational imaginaries is the world of commercial technology companies, who actively create futuristic visions of technologically mediated education practices designed to mobilise policy and practice to orient in these directions. Indeed, too often much commercial educational futures work can be better understood as the speculative wing of the educational technology field rather than a principled attempt to engage with all the many different factors that might shape education in the future.[6]

Most futures professionals working in education today and seeking to understand possible futures of education, will resist calls to create predictions about the future, preferring instead to encourage the creation of a set of potential scenarios for the education landscape within which desired futures can be assessed and envisaged. Nonetheless, the majority of this work in policy fields is often still conducted within relatively constrained assumptions about possible future trends, much of which reflects the dominance of professional consultancy and commercial work in this area. For example, while the possibility of radical technological change is a common subject for educational futures work, there are far fewer scenarios that model the future of schools and universities in conditions of environmental degradation, or radical geopolitical conflict, or increasing economic and social polarisation, or indeed positive transformation to sustainable modes of living.[7] As a result educational futures work tends to be dominated by a familiar set of questions: will schools be replaced by virtual provision? What is the role of a teacher in the age of robots/AI/machine learning/the internet? How can data provide more personalised educational resources?

A very different tradition of educational futures practice draws on Critical Futures Studies and creative practice. Critical Futures Studies, for example, encourages educators and policy makers to consider which 'used' futures are being inherited, what assumptions are framing the boundaries of thinking about potential trajectories, what underlying narratives about students, schools, society might be framing thinking and what alternative futures for education might be being missed or overlooked as a possibility.[8] This sort of critical and creative practice often

focuses on imagining the potential for sustainable or transformative futures of education. Indeed, the work is often conducted precisely *not* as a predictive practice, but as a means of supporting participants to articulate desires, hopes and dreams, to creatively play with and imagine alternatives and to explore the potential for change and action in the present in order to achieve plausible and credibly hopeful futures.[9] It can be oriented towards reflection on long term trends and developments that provide the potential for substantial disruption of business as usual (including social, economic and cultural change) and that might create conditions for very different practices of education oriented towards more equal, sustainable and fairer futures. It can be oriented simply towards the identification of desires and hopes for a different sort of educational future, shaped primarily by harvesting ideas about what people *want* in the future. It can be oriented towards the creation of robust, plausible images of hope – as in much of the work on climate futures at present. This critical and creative tradition of educational futures work is, fundamentally, about creating powerful images of plausible futures of education that people can envisage today, in order to open up seeds of possibility and to mobilise change in educational practices.[10]

I conclude my reflections on this first orientation of educational futures work, however, with specific attention to the practice of speculative futures – specifically the practice of financial investors speculating on educational futures in financial markets. This is a practice which sees 'investors' betting upon and hedging against future educational developments, creating derivatives and even shorting educational futures. I separate this discussion from the other practices in this orientation because – while it can be understood as the intensification of educational futures foresight and visioning practices in its concern with building predictions about the future - its orientation and purpose is profoundly different. Its goal is financial profit rather than educational development.

Speculation can be understood as a distinctive feature of a particular form of capitalist wealth creation that frames the future not as a common world, but as an 'empty' future, where different potential trajectories can be traded against each other and different outcomes bet upon.[11] Speculation upon potential outcomes and hedging against the risks of those outcomes, has underpinned large scale ventures and expeditions throughout the long rise of colonialism and modernity, reaching new heights in free market speculation on (for example) low income housing that fuelled the financial crisis of 2008.[12] Speculation (and insurance) can provide the foundation for new ventures that are hard to conceive and fund within existing institutions; equally speculation can lay the foundation for unsustainable bubbles, massive wealth extraction and large scale desolation. Importantly, it is worth noting that the object of desire in speculation is not with the matter being speculated upon – from people's housing to the natural landscapes in which rare minerals might be found – but in the potential for wealth extraction from such matters. This is important when we consider the implications of speculation around futures of education.

It is here that emerging research on educational futures speculation is significant.[13] Ben Williamson, for example, draws attention to the interaction between data industries in education and processes of market speculation that are growing around the education sector. Janja Komljenovic's work in economic sociology highlights how markets in education are actively being made by turning educational practices and resources into assets by assessing their potential future value and returns on investment.[14] In particular, Williamson draws attention to organisations such as HolonIQ, a 'market intelligence' agency for education technology that processes data about the education technology sector to produce 'predictive intelligence' and future scenarios for investment, and in so doing, positions the education sector as a site for financial investment and speculation. Williamson argues:

> As a meta-edtech platform and an emerging financial actor in education, HolonIQ not only catalogues edtech market movements but actively catalyzes future edtech market dynamics. It exemplifies the growing power of new kinds of market and finance actors to influence education,

particularly as the edtech sector and its investors seek to capitalize on the 'catalytic effects' of the Covid-19 pandemic in 2020[.15].

The role of companies such as HolonIQ is important for our discussions here. These are organisations concerned with producing 'insights' about educational futures in order to enable financial speculation about educational developments and investment. Some features of such futures practices are worth noting: this intelligence is not open access – it is available only to paying customers. The scenarios and visions that such companies produce are not transparent or accountable – they are proprietary systems and the way that they work is confidential and therefore cannot be challenged or checked. The basis for such claims, the data upon which they are based, is necessarily shaped by the data that can be gathered and, where this is dependent upon educational technology data, will necessarily be shaped by the specific interests and blindness of these tools which are well documented. Finally, the processes are oriented towards creating education as a market for speculation and wealth creation not towards assessing the potential for enriching and sustaining education as a global common good. Such processes are not restricted to activities such as large scale investments through public private partnerships or the launch of new ventures, but are becoming central to the funding of Higher Education through hedge fund speculation on student debt (amongst other practices).

Reflections

A useful contribution of Educational Futures practice – in both its predictive and envisioning modes - is its foregrounding of education as entangled with wider societal, technological, environmental and other changes that will make important contributions to taken-for-granted ideas of how and why we educate. At its best, asking the question 'what might education be like *in* the future' this strand of educational futures work offers a challenging and provocative invitation to explore a wide variety of potential changes and their implications for education. It can usefully unsettle taken for granted assumptions and a compelling vision of the future of education can provide a useful resource to mobilise action. This practice of imagining alternatives futures of education can provide an imaginative and creative space for playful exploration of what it might mean to do and think things otherwise, productively opening up the space for rethinking the present.

At worst, this sort of practice is an attempt to colonise the educational imagination in ways that support the development of policies that will primarily benefit those organisations selling their particular visions of the future. Notably, these practices are dominated by disembodied and 'rational' epistemologies of calculation, a point I will return to later on as a point of distinction between different orientations. The development of financial speculative futures practices in education in particular – as well as the panoply of educational scenarios infrastructure and (partial) educational data that supports it - requires much more urgent attention than it is currently receiving from governments and regulators. The intentions of financial investors are necessarily not the same as those of educators, governments and students, and yet they are seeking to become central to directing flows of investment in the education arena. They are actively creating future visions and scenarios as a means of coordinating investment and policy. We might want to ask ourselves whether such speculative imperatives are the imperatives that we want to guide the collective global imagination of educational futures and possibilities, and indeed, whether education should be considered as just another sector for speculation. If not, now is the time to act.

Imagining and predicting futures of education is an exercise of power. These visions of the future are used to produce effects in the present. As with all exercises of power then, practices of representation, equity, diversity and inclusion have to be considered – not only for ethical reasons, but because futures imagined from a narrow band of experience are likely to be profoundly impoverished and provide limited insight. As with all participatory practices, moreover, the links between engagement and translation into decision-making have to be rendered

transparent. At present, educational futures work has a very poor track record in this field – both practically and conceptually.

The intergenerational relation

The intergenerational relationship assumed in producing visions of education in the future tends to address 'future children' rather than young people or students today. Produced in the main by adults for adults, young people have little voice in this tradition of educational futures work, and even where invited to contribute it can be difficult to trace the extent to which their voices are heard. Recently this intergenerational imbalance has been challenged by the development of participatory futures practices in which young people are invited to envisage the education they would like. Thoughtful projects such as Burke and Grosvenor's 'The School I'd Like' provide evidence of the sorts of educational futures that young people over many generations have wanted to see come to pass. In the main, however, youth engagement in educational futures work is too often tokenistic and superficial, offering limited leverage for young people in the production of educational imaginaries.

And indeed, there are challenging questions of representation that come to the foreground when we think about intergenerational relations in relation to imagining the future of education. Which young people today *should* speak for all young people in this imaginative process? Can young people today in fact speak for the 'future generations' who will experience these educational futures? What is the nature of the expertise and experience that young people bring to these conversations and how does it relate to the expertise of adults when it comes to talking about something none of us have experienced: the future?

New directions are required, and for these we might turn both to the field of participatory politics and to the intergenerational mechanisms that have been developed elsewhere, from the commonly (mis)cited Haudenosee tradition of thinking with 'seven generations'; to Robin Wall Kimmerer's concept of 'becoming indigenous' and thinking and acting as though your grandchildren will be affected; to the Welsh Government's establishment of a Commissioner for Future Generations with responsibility to speak for those not yet born; or the work of the Jan van Eyck Academie building on Japanese political movement and decision-making strategy of *Future Design* that creates advocates for the future to speak to the present.[16] We might look also at the practices of youth wisdom councils and the growth of 'intergenerational councils' – in which the memory of older adults are understood to have as much to contribute as the experiences of younger people, to the imagination of the future. These practices will necessarily also raise profound questions about whether young people's future incomes, jobs and livelihoods and society's educational institutions, should be subject to forms of financial speculation and wealth extraction.

Orientation II: Preparatory Futures – or Education for the future

The second cluster of research and practice to consider is the work that clusters around the question: *What sort of education today can help prepare young people for the future we envisage? How can young people today make the futures we desire?* This cluster can be split into what we might call *adaptive* or *agentic* preparation, both forms of which are primarily concerned with optimising the capacity of students and societies to navigate, resist and make futures that 'we' desire today.

First, *adaptive preparation*. This is the relationship between education and future beloved of politicians. A particular future scenario – of economic change or technological disruption - is presented, and the politician,

like a knight in shining armour, or a master engineer, rides to the rescue promising that education will ensure all children are equipped to thrive in this new world. Here the future is treated as if it is known and the primary question is how students can be equipped to live well in that world. Students' roles in relation to these futures, then, are conceived primarily as adaptive – the future cannot be changed, the job is to work out how to thrive in these conditions. Take, for example, a situation in which global futures are defined as characterised by a 'fourth industrial revolution' shaped by artificial intelligence, robotics, machine learning and biotech. Here, adaptive preparation is concerned with ensuring that students are equipped with the skills that will allow them to live well under these conditions – probably involving a priority on STEM education and the capacity to develop relevant scientific skills, or perhaps developing the ethical, reflective and social understanding needed to live well with and alongside intelligent machines. Or again, consider a situation in which the future is assumed to be one of radical and disruptive climate change. Adaptive preparation might be oriented here towards supporting students to work out how to adapt to significant weather events, create rich local food systems and create resilient communities, find work and employment. At systemic level, adaptive preparation is oriented towards ensuring that the skills and capabilities of a population match envisaged future demand.

In contrast, what we might call *agentic preparation* is concerned with building students' capacities to critique, challenge and create new possibilities and trajectories that resist the futures that are currently envisaged. It might be captured in Freire's aphorism that education does not transform the world, it changes people and people change the world.[17] It is an orientation that is familiar in mainstream Global Citizenship Education and in mainstream Education for Sustainable Development where the child is conceived as vector, a programme or virus projected into a future where they perform the actions desired and envisaged in the present.[18] In this orientation, the future is still known although usually cast as undesirable. But students are envisaged as agents of change, able to move the world away from undesirable assumed futures towards the creation of desirable alternative futures. Take, for example, the same assumed future of a 'fourth industrial revolution' shaped by artificial intelligence, robotics, machine learning and biotech. Here, agentic adaptation might be oriented towards developing students capacities to resist and challenge the reliance on and interaction with such technologies, to create deeper commitments to and relations with humanity and nature; or to learning to develop technical skills in order to transform current trajectories of development. Or take, again, an assumed future trajectory of radical and disruptive climate change. Agentic preparation, under these circumstances, might be oriented towards building students capacity to resist climate change in the present, developing active campaigning against emissions and building understanding of how to live well without high levels of emissions. Agentic preparation in education can also take the form of prefigurative practices, creating the opportunity for students to experience what it might be like to live in alternative futures, and strengthening the capacity to realise, envision and create them – consider, for example, practices such as ecovillage education, or democratic education. Here, we see preparatory futures beginning to work on the bodies of students, encouraging them to inhabit and embody the practices that are to come.

At system level, agentic preparation is concerned with creating educational practices that are anticipated will work against current trajectories and towards desired futures. Indeed, in many ways we can consider much of the educational agenda associated with the Sustainable Development Goals to be positioned in this orientation of agentic preparation, in which the sociotechnical imaginary of a 2030 characterised by peace, equity and wellbeing is mobilised against assumed futures of collapse, climate crisis and disfunction, and education is identified as a primary mechanism for moving from this feared future to a desirable alternative.

Reflections

Both of these perspectives fundamentally frame education as a site of *preparation* for the future – whether an envisaged future to adapt to, or to resist and transform. They characterise, in many ways, longstanding currents

of mainstream educational thought, conservative (adaptive) or progressive (agentic), around the world. Both are, quite reasonably, concerned with education as a practice that builds capabilities amongst students to act in and on a changing world that we are beginning to envisage. They recognise that the world exists outside the school and the student, that it has its own independent reality, preparation for the encounter with which is, in this perspective, the central function of education. In practice, most educators will recognise that they are commonly working with both adaptive and agentic modes of preparation when they work in this orientation.

The extent to which we consider these preparatory approaches reasonable depends on a number of factors. First, what and *whose futures are being presented* as a warrant for educational change? Here we return to the questions in the previous section – what are the grounds for this vision, what evidence, who is presenting it and why? Critiques of modernist and colonial narratives of development, for example, demonstrate how preparatory narratives of education and the future have been used to consign states and children to the 'waiting room' of history.[19] Education as preparation becomes a site for the exercise of power – those who are able to claim 'knowledge' of the future are able to claim authority over the practice of education in the present, a power that was violently employed in settler-colonial education.[20] Second, timescale – *is the vision of the future for which students are being asked to prepare a near-term or long-term trajectory*? Claims that any specific form of education will provide adequate preparation for the next 80 years of 'the 21st century' for example, might need to be treated with caution; whereas the idea that learning certain skills as an workplace apprentice who is about to begin employment in the next six months are likely to be more reasonable. Third, agency – *what assumptions about the capacity to effect change are embedded in these propositions?* What and who are the actors to whom students are being asked to adapt, or that they are being asked to transform and resist? How/do these invitations make young people responsible for issues that might be seen as the responsibility of adults? How/do these invitations to adapt to or transform the future reproduce or unsettle historical patterns of acceptance and resistance, or older relations of power?[21] And here, I come to a central critique of framing education as preparation for the future: its intergenerational ethics.

The intergenerational relation

A key problem with the preparatory framing of education is that it necessarily subordinates the demands and concerns of the present to the demands and concerns of a future constrained by the imagination and foresight of particular adults today; as well as subordinating the demands of an unknown future to the projects and desires of adults in the present. In this orientation, it is the projected future, its envisaged promises and risks, that acts as the measure for judging the value of students' interests, concerns and desires in the present. This raises fundamental questions about intergenerational justice and exchange – and indeed about freedom. What should be the balance between students' present curiosity, interests and ideas and their preparation for the sorts of futures that we as adults foresee, fear or desire? It raises longstanding questions about children's rights – do children have rights in the present, or are they only 'in preparation' for having rights in future? And indeed, what of the futures' rights?

A second concern with this preparatory orientation, is that it can present problems of the future as problems for the next generation rather than responsibilities of adults today. Such an analysis takes the form of Lee Edelman's critique of the 'Ponzi scheme of reproductive futurism' which asks why it takes an appeal to childhood and futures to mobilise political opposition to unacceptable conditions and practices.[22] Consider, for example, the ethics of teaching about climate change as a problem that 'the next generation will have to fix/live with'. Here, education as a practice of what Kessel & Burke call 'terror management' becomes uncomfortably visible – the projection onto young people of the fears of adults as a way of overcoming our own mortality.[23] Indeed, the reproductive urges of education – the desire to continue one's own values through education – are strong in the preparatory model of educational futures. The critique of this position is growing from young people themselves

– consider the arguments of the Fridays for Future movement, their demand to 'be in school' not having to fix the world. Greta Thunberg's arguments, and those of her fellow campaigners, raise profound questions about the ethical basis of framing education as the practice through which major social problems will be addressed (tomorrow).

Two (related) responses to these critiques of the preparatory position are now emerging. The first (which I will discuss next) seeks to engage young people in the ongoing practice of futures thinking and making, inviting them, alongside adults, to participate in the active process of interrogating and generating ideas of the future around which they might wish to live, which they might choose to resist or learn to survive. The second, which I discuss in Orientation IV, is the development of what we might call 'emergentist' or 'presentist' theorisations of education which seek to challenge the use of 'the future' as a rationale for educational practice at all.

Orientation III: Futures Literacy – or Education *about* futures

The fourth question around which researchers and educators are clustering in this area is: *how can students learn to think reflexively about futures?* While this question of reflexivity about the future is implicitly part of some of the orientations I have already discussed, I want to discuss two areas of practice that explicitly position the creation of ideas of the future as a site of educational concern. The first, which is variously known as futures literacy or futures education, argues that there is a coherent body of theory and practice that can be drawn upon to support young people to develop what is often called 'social foresight'.[24] The second is the thinking and practice that informs Appadurai's concept of the 'capacity to aspire'.

The field of Futures Literacy (formerly Futures Education) draws in particular upon a constellation of Futures Studies, Sociology of the Future, Peace Studies and Environmental education. Scholars and practitioners such as David Hicks, Richard Slaughter, Hedley Beare and Jennifer Gidley amongst others have all, since the 1980s, proposed pedagogic practices that support students explicitly to reflect upon how they think about futures and their relationship to the future. More recently, Riel Miller at UNESCO and a network of scholars including futurists such as Peter Bishop (of Teach the Future) as well as educators and philosophers such as Roberto Poli (the UNESCO Chair in Anticipatory Systems) have been leading the call to make 'futures literacy' a core educational capability.

Futures literacy is understood here as the capacity to distinguish between different ways of thinking about the future (when these may be more or less appropriate) and to 'use the future' (more specifically, to use ideas of the future) in order to think about the present with openness and creativity.[25] Framed as a generalised capability, its fundamental aim is to develop the ability to reflect upon the 'anticipatory assumptions' that are framing ideas about the future, and to examine how these might be challenged or unsettled, in ways that allow the discovery of new possibilities in the present or new routes to create desired futures to be uncovered.[26] In other words, futures literacy disentangles ontological, epistemological and normative considerations – it is possible to care about and seek to create better futures without being wedded to the idea either that the future is an ontological reality or that we can know the future in advance. This paper is in many ways indebted to this tradition, seeking as it does to support critical reflection upon assumptions about how futures are imagined in education.

This work brings into the educational arena insights and practices from futures studies and challenges the rhetorical and tokenistic uses of 'futures' in education. While many countries have explored futures as a

curriculum area over the last 40 years (in particular Australia) and while courses in Futures Studies are well established in many universities (and it is a growing field), it is yet to find a curricular 'niche' equivalent, for example, to history. Nonetheless, there is a growing network of researchers and educators who are beginning to develop tools and methods that can be adopted across the curriculum.

Appadurai's concept of the 'capacity to aspire' is an important parallel and (potentially) corrective development to Futures Studies and Futures Literacy. It foregrounds the way in which the articulation and identification of needs and desires are more than just 'bundles of individual and idiosyncratic wants' and are, instead, tied up with more generalised ideas about 'the good life'. These ideas of a good life, Appadurai argues, are enriched, developed and strengthened through diverse experiences, through encounters with different ideas of what might be possible and through having the opportunity to articulate and explore aspirations. As a result, he argues, 'the capacity to aspire […] is not evenly distributed in any society. It is a sort of meta-capacity, and the relatively rich and powerful invariably have a more fully developed capacity to aspire'.[27] Appadurai's capacity to aspire is understood as a mode of social organisation, central to the envisioning and mobilising of collective projects and bringing them to fruition. The uneven distribution of this capacity (as a result of experience and resources not intrinsic capacity, Appadurai notes) underpins, he argues, the reproduction of poverty. This unequal distribution, however, can be challenged, as Ana Dinerstein in her analysis of social movements, documents.[28] The capacity to aspire can, in Dinerstein's terms, be 'organised'; indeed, as she observes, drawing upon Bloch's Utopian philosophy, there is an 'art of organising hope'. This work differs from prefigurative practices discussed in the earlier section as its purpose is not to bring into being a particular vision of the future, but to consistently cultivate practices of hope and aspiration, to mobilise and organise the social resources to begin to achieve these in ways that are able, in Appadurai's terms, to 'withstand the deadly oscillation between waiting and rushing'.[29]

The implications of these observations are that poor students as well as rich students must be given opportunities to navigate and articulate a broader 'cultural map of aspirations', to explore opportunities to exercise voice and coordinate aspirations, and to create the 'ethical horizons within which more concrete capabilities can be given meaning, substance and sustainability.'[30]

Reflections

Both of these perspectives – Futures Literacy and Appadurai's Capacity to Aspire – are seeking to trace the contours of an educational strategy oriented towards greater reflexivity about the ideas that shape our assumptions about the future, both as individuals and as collectives. They offer important complements to each other – Appadurai's anthropological analysis proposes a socially and culturally situated account of both aspiration and the ability to act on such aspirations as well as the need for intentional equalising strategies to address the impacts of poverty upon the capacity to aspire. Future Literacy, arising from the words of philosophy, futures studies and futures consultancy, foregrounds a repertoire of conceptual and pedagogic tools that are being and might be used to support critical reflection upon assumptions about the future and the possibility of opening up new futures. There is a risk that both approaches become framed and captured in a universalising and normative language – the risks of which (erasure of other forms of knowledge) are well documented. [31] However, both approaches point to a need to attend to the different cognitive and imaginative resources that individuals and groups might draw upon to frame their ideas about the future, and the different ways in which these might be patterned.

An important potential complement to and development of these perspectives is emerging from the field of Temporality Studies. This field is beginning to enrich and interrogate foundational conceptions of time, change and the future. Here, scholars from decolonial and feminist traditions in particular, are drawing attention to the

cultural specificity of particular ideas of time, change and development.[32] They are making visible the multiplicity of traditions of 'aspiration' and 'futures literacy', the different forms that these might take and indeed the fact that a key condition of coloniality has been the imposition of a singular and linear narrative of time. Ethnography in this field is also meticulously documenting the different experiences of time that shape the capacity of different groups to take 'time out' to think about futures. Indeed, Sarah Sharma's work provides a strong critique of the concept of temporal suspension – the idea of the non-time of the public sphere – as a precondition for exploring and making possible futures.[33] This critique echoes and speaks to De Certeau's analysis of the different positions and resources accessible to those operating 'strategically' (the structurally powerful) and 'tactically' (the grassroots) to create new ways of living.[34] This work begins to open up new directions for the development of human imaginative practices.

Alongside the 'temporal turn' we might also point to the renewed interest in embodiment and affect that are beginning to draw attention to the fact that 'thinking' about the future is also 'feeling' about the future. The field of climate change education and some areas of education for sustainable development for example, are drawing attention to the way in which emotions and affect, bodies and lived experience shape the resources available to individuals and groups for 'thinking' about, feeling with and grasping possible futures. The centrality of the emotions in any proposed pedagogy for teaching 'how to think about the future' is particularly clear in analyses of socially organised denial around climate futures, for example.[35] Equally, the critical importance of the body in futures practices and pedagogies is beginning to be acknowledged.[36] Futures literacies, then, might begin to be conceived of as the interconnected meshwork of anticipatory assumptions, socially stratified access to resources and experiences, conceptions of time, embodied feelings and experiences and emotional responses. There is not, yet, a pedagogic practice that encompasses all of these aspects, but it is a lively site of inquiry and emerging practice.

The intergenerational relation

The intergenerational relation in Futures Literacy as it currently exists in educational practice, however, is strangely unexamined and indeed, often replicates the teacher/student relationships found in both the adaptive and agentic preparatory orientations to the future. In other words, teaching futures literacy when presented as a new capability can often be framed as an 'investment for the future' along the lines of another '21st century skill'.

The fundamental ontological and epistemological resistance of the future as a domain of study and settled knowledge, however, means that adults and children's dialogues about the future are necessarily conducted on different grounds from other areas of the curriculum. Indeed, the pedagogies that may emerge from these perspectives – when they take their own ontological and epistemological statements seriously – might therefore soon come to be framed as a co-constructed practice, in which dialogue between different ways of thinking about the future are brought into the classroom as a subject for creating new common knowledge.[37] Central to such a pedagogy is likely to be the practice of listening and attending to and supporting the articulation of the nascent broad conceptions of a good life that underpin more immediate statements of needs and wants. In this way, elements of futures literacy practice and theory begin to point to the practices in our fourth orientation: emergentist/presentist education.

Orientation IV: Emergentist/Presentist Education – suspending education from the future

This orientation towards education and the future is not one that exists as a coherent network, community or practice, hence the ambivalence about how we might name it. The actors involved are highly diverse, in some cases with very different interests in the educational field, and draw on distinctive education traditions. What brings them together, in my analysis, is that they are all fundamentally concerned with asking: how can education be liberated *from* the dominance of ideas of the future? Or, in the words of some of those in this orientation, how might education be understood as precisely a practice of 'suspension' from time? Indeed, the distinctive nature of this orientation lies precisely in resisting the subordination of the present educational moment to the demands of the future characteristic of the 'preparatory' orientation. It takes a number of forms:

First, drawing on traditions in critical pedagogy, popular education and critical theory, there are educators, scholars and activists for whom the use of ideas of future to determine educational goals is seen as a performative move that is always political, usually allied towards dominant interests and which necessarily create unhelpful limitations in the understanding and perception of what is possible in the world.[38] Drawing on Gramscian concepts of the future as a hegemonic space that serves to colonise the imagination, this perspective works with pedagogic practices intended to unsettle or critique the ideas of the future with which students and teachers are being presented. Fundamentally resistant to discourses that present the future as singular and lacking in alternative trajectories, this work allies together all those concerned with emancipatory educational and political practices. The educational implications vary but are, in the main, oriented towards foregrounding questions of who has control over the production of images of the future, and towards opening up the potential for alternative narratives. In some cases, this work allies with the work of Critical Futures Studies in Orientation I, wih agentic preparation in Orientation II and with Futures Literacy in Orientation III, but I include it here precisely for its insistence on the active resistance of the hegemonic role of inherited and inevitabilist uses of the future in education.[39]

The second tradition in this cluster has its home in educational philosophy, and in particular in discussions of education as being characterised by a distinct temporality of its own. In this line of though, educational temporality is understood precisely as a suspension of time, a stepping out of the flow of past, present and future. This is beginning to be framed within a recovery of the idea of 'study' as a time and a practice that allows past identities, trajectories and knowledges to be unsettled and brought into encounter with each other. This suspended moment, characterised by dialogue and openness, is seen as the moment in which something new can emerge that has – and this is critical – not been foreseen by the adults or the young people in the educational process prior to the encounter. In other words, the orientation here is *not* towards a known set of educational outcomes or indeed towards a definable desirable future. Rather, it is about creating the conditions for existing ways of being to be suspended, new conditions explored and new possibilities of being to emerge in encounters between students, teachers and domains of knowledge or subjects of inquiry.[40]

The third set of ideas in this cluster is emerging from a mash-up of relativistic physics (in particular quantum theory), complexity theory, queer theory and posthumanism.[41] Bringing together the insights from these fields is beginning to trouble the core conception of the human at the heart of education, in particular in so far as we envisage the human *in time*. These insights profoundly unsettle the dominant framing of the human as a rational individual, clearly separated from the world around them, making strategic plans with a view to self-reproduction and self-enhancement that has governed much western thinking since the Enlightenment. Instead, this cluster of ideas would suggest that the 'self' is better understood as a 'cloud' identity, always and already

interconnected with complex systems, contaminated by the world, participating in a universe of multiple loosely coordinated temporalities, made up of multiple systems and processes over which there is not complete sovereignty, and the consequences of whose actions cannot be known. Agency, in this conception, is not impossible, but metaphors of plans, foresight and blueprints, or indeed of reproduction and better futures, that govern conceptions of the autonomous individual are seen as fantasy rather than reality.[42] Instead, the agency of the cloud individual is framed more by conceptions of interventions and interactions in complex flows and dynamics, of lashing together processes to enable coordinated action in an only partially shared universe. These perspectives begin to fundamentally challenge the conception of education as a site through which futures can be known, controlled and mastered, and instead, draw attention to education as practices of learning to coordinate and network ourselves as assemblages in emergent processes of ongoing interaction, resistance, reversals, immersion and presence.

It is in a concept such as Keats' 'negative capability' which is taken up by liberation scholar and lawyer Roberto Unger, and which foregrounds the ability to live well with in the sorts of conditions of radical emergence, that some of these sets of ideas begin to find points of contact.[43] Rather than anticipation of the future, or preparation for the future, this work foregrounds practices of critique (as an intervention in temporality and reality), suspension, refusal, study, complexity and emergence.[44] Indeed, the cardinal values in this framing of education's relation to the future might be understood as the interconnected practices of what philosopher of communication Lisbeth Lipari calls listening and attunement, what archaeologist and educational philosophers Tim Ingold and Jan Masschelein gesture towards in their ideas of the education of attention, and what sociologist Hartmut Rosa calls 'resonance'.[45]

One might argue that what we are witnessing here is the belated discovery by western science and philosophy of traditions of thought and inquiry into time and the future that have been around for some time in other philosophical and religious traditions. Jainist and Buddhist traditions of thought for example, variously invite attention to the present as a moment of becoming (bhava) and to enlightenment as characterised by the eradication of attachment to time, as well as to the interplay of attention between that which endures (body) and that which is fleeting (the mind). Indeed, much of the western philosophy oriented toward practices of attention draws on Chinese Taoist and Indian Vedic traditions.[46] But I will return to this question of the cultural specificity of how 'futures' are discussed and conceived in the discussion of the fourth and fifth orientations.

Reflections

These three fields are not, at present, engaged in particularly rich dialogue with each other, even as they are all, in different ways, seeking to dismantle the power of ideas of the future to determine the values that govern education in the present. Nonetheless, they together open up the possibility to sketch out a non-teleological orientation to the future that nonetheless does not pre-empt the capacity to care for what emerges. Attending to what is happening now, seeking to see it anew and afresh, unsettling and exploring how it might be different, bringing to bear a deep attention to the experiences of others and curiosity towards the world as unknown and abundant, indeed, offers a form of care characterised by openness, attentiveness and responsiveness rather than control. This relation between past, present and future offers an educational approach that promises both care for the world and care for the child as non-teleologically determined becomings, that have the potential to emerge into something new and unforeseen. Indeed, it begins to offer a framework for conceptualising how, in the ongoing discovery of the world by the student, and of the student by the world, that what David Orr calls the 'vocation' of the student might emerge in the growing awareness of the gifts that student and world might offer each other.[47]

The intergenerational relation

An important element of these conceptions of education as emergent is the reframing of the intergenerational contract in education in which adults no longer play the role of 'seers' of the future, bringing knowledge to young people about the world that they need to prepare for or create like young pioneers. Nor are children seen as harbingers of the future (another common trope that I've not discussed here). Rather, adults in this conception are both responsible for the world in which they live (no simple projection of adult desires or fears for the future onto children) *and* tasked with creating conditions for study, suspension and learning. These conditions are understood to be those in which adults and children can *together* create a situation in which new common knowledge, ways of being and ways of knowing are enabled to emerge from the abundant materials and ideas of the present. An often-referenced source to capture this relation between generations and between pasts, presents and futures is Arendt's description of education:

> Education is the point at which we decide whether we love the world enough to assume responsibility for it and by the same token save it from that ruin which, except for renewal, except for the coming of the new and young, would be inevitable. And education, too, is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, nor to strike from their hands their chance of undertaking something new, something unforeseen by us, but to prepare them in advance for the task of renewing a common world. (Arendt, The Crisis in Education, 1954, 13/14)

In this orientation, then, the world is held in common, it is being renewed and cared for together in the present, but it is not known or predicted in advance.

Orientation V: Reparative Futures[48]: Addressing past and present injustices in educational futures

Our final orientation acknowledges the emerging reconciliation of history and futures, and the growth in interest in memory to futures thinking in education. Fields such as peace and conflict studies, history of education, comparative and decolonial education are increasingly interrogating disciplinary divides between history and future as domains of inquiry. Such approaches are both critical of the linear narrative of time associated with developmental traditions; and of the erasure of histories from discussion of futures characterised by techno-centric and modernist traditions. Specifically, this work argues that if there is a desire to create futures characterised by freedom and justice, then understanding and addressing historic injustices, erasures, violence and trauma will be essential. They ask: *How might educational futures repair past injustice?* Futures created on the illusion of common experiences of history will, this perspective argues, merely reproduce those histories. Therefore transgression and dismantling of existing structures are understood are preconditions for allowing new realities to emerge. In these perspectives, hospicing the old world and curating the decay of harmful structures in order to allow something new to be born are as important as practices of visioning, imagination and collective agency.[49]

Scholars working in this emerging orientation are grappling with some of the most difficult problems of our era – the ongoing histories of racial violence, colonialism, human exploitation and inequality and the destruction of natural life and ecologies. In doing so, they are beginning to develop conceptual and practical resources for

working through these histories in order to uncover possibilities for new relations premised upon equality and dignity in the present. Critical to this work is a principled resistance to easy oppositional narratives and a commitment to dialogue. As Arathi Sriprakash and colleagues argue:

> reparative futures cannot be based either on systemic silences or on oppositional models of remembering. Reparative futures requires recognising that we are all differently marked by historical processes; that we all have capacities for affect and cognition and that dialogue – however challenging and difficult – is a starting point for all educational relationships that are selfconsciously orientated toward material justice. We must not come to inhabit a future that carries with it uninterrogated injustices of the past and present. It is precisely through education that new forms of recognition of these injustices and a solidarity for creating something different can be fostered. Education is, therefore, necessary for reparative futures.

Indeed, groups such as the Gesturing Towards Decolonial Futures Collective are beginning to demonstrate the forms of education that this might take, offering tools such as 'social cartography', designed to enable individuals from different historical positions to approach difficult conversations without humiliation or guilt and from a position of humility. Equally, in fields as diverse as archaeology and heritage studies, the contours of an orientation to the future that allows the decay of the past, and reframes this as a generative moment, are becoming visible in concepts such as 'curated decay'.[50] While feminist scholars in science and technology argue for the need to 'compost' modernity, drawing on metaphors of symbiosis from biology to propose fundamentally different theories of change.[51] Social activists and transition scholars are drawing on some of these ideas when they adopt three horizons approaches to futures work, where the attention is as much to exploring how to dismantle an old and unfunctioning system as it is in navigating the emergence of changing patterns and new ideas.[52] Similarly, some Afrofuturist practices explicitly position themselves against futures thinking as a continuation of business as usual, and instead call for practices of generative historical analysis, contemporary critique and futures-oriented imagination of multiple, playful, powerful futures.[53]

Perhaps equally as important for thinking about futures in education, is the way in which these analyses are also historicising and particularising 'futures thinking' itself. They foreground its historical specificity and emergence in particular conditions and particular traditions, demonstrating its roots in western orientations towards time and possibility deeply associated with particular forms of modernity.[54] They also foreground how professionalised 'futures expertise' (as Jenny Andersson has meticulously documented) is a practice that has emerged as part of and alongside histories of militarism, industrialisation and environmental exploitation[55].

This critique, however, is not new, consider Shiv Vasvanathan's powerful 1991 critique of the Brundtland commission on 'sustainable development':

> If the first waves of modernity sought to caricature the past, the second wave seeks control of the future. Note the use of the singular. It is not a promise of multiple futures. It is fixture. We thought the future was a place of dreams, a realm of possibility. Freedom was essentially the freedom to dream differently, and have different languages for inter- preting our dreams. Today, a group of experts tells us what to dream. They threaten to colonize our dreams and reify our nightmares. The future is suddenly no longer fiction or fantasy. It is being colonized by an oracle of international civil servants who have mapped it with cyber- netics and systems theory. The future has become a territory of surveillance; a group of grammarians has moved in before the poet has uttered a word. They have already decided that the future is a different country, where all of us must behave alike. The future is not carnival time, where dreams spoof the pomposities of the present.

Or the Indian Futurist Rakesh Kapoor's 2001 critique of 'future as fantasy', where he describes future studies as 'dominated by western, instrumental perspectives and by pro-rich and corporate concerns, and it ignores alternative cultural perspectives as well as the interests and concerns of the majority of human beings.' (Kapoor, 2001: 161).

A key feature of this orientation towards futures thinking in education is its critique of the assumption that education (and indeed global society) is necessarily oriented towards the realisation of transcendent futures through the ongoing march of 'progress' and 'development'. This critique emerges from two directions – first it foregrounds the hidden history of progress written as much by violence and extraction as by scientific and technological developments. Education, in these perspectives, becomes a critical site for encounter and dialogue with history, with different experiences of history and a moment of experimentation with new relationships, values and desires without the guarantee of transcendent futures. This is futures work in the key of hope and against the background of life in the ruins of settler colonialism rather than riven with the fragile optimism of techno futures and transcendence. Second, it challenges the empty temporalities of modernity, making visible that other ways of thinking about time, temporality and relations have pre-existed and exist alongside the world of clock time, linear projections and empty futures, from the rich interconnected temporality of Sankofa in Ghanian traditional thought to the place-based and multi-layered temporalities of many indigenous traditions. Indeed, this work begins to invite exploration of different relations of time and the future, and attention to the immanence of both pasts and futures in the present.

Reflections

This work promises to introduce a much needed engagement with histories of violence, conflict, inequality and domination into educational futures, to begin to unsettle colonising traditions of futures thinking and the limited palette of temporalities that constitutes modernity, and to open up the potential for profoundly creative dialogues about pasts, presents and futures between people marked differently by history. At present, there is limited engagement between this perspective and other, potentially complementary approaches such as orientations III and IV, but this is likely to change.

The intergenerational relation

The intergenerational relationship here is complex. This work requires expertise, knowledge and emotional wisdom to support engagement with difficult pasts. Such expertise might be understood as 'elderhood', a property not of particular generations, but of wisdom and experience. There is no doubt that there are newcomers to these ways of thinking; these may not, however, be children. Instead, such newcomers might be those adults deeply rooted in current settler-colonial forms of practice and modern institutional behaviours. For example, those who have benefited from systems of class, racial and gender domination may not yet have developed ways of understanding their consequences because these have not formed part of their life experience – younger people who have such experiences may therefore be the elders in this situation. The challenge that reparative futures invites us to consider the structural antagonisms and inequalities that frame the present and to explore what forms of dialogue and pedagogy might lead to forms of repair that are not necessarily oppositional. They foreground the capacity and obligation for all actors in a pedagogic relationship to explore the different positions and relationships that might be moved towards. There is no intrinsic association in this work, therefore, between authority and generation. There is, however, a profound responsibility to examine how histories have shaped and are still shaping relations and the possibility of healing and repair that must necessarily underpin futures of justice and freedom.

Towards an ethical framework for thinking about futures in education

The aim of this paper was to foreground the many and different orientations to working with futures in education, to the tensions between them, the possibilities that they offered and the different intergenerational responsibilities that they imply. As I have, I hope, made clear – there are many different rationales and approaches for working with futures in education, all of which have important and different roles: prediction, imagination, speculation, adaptive preparation, agentic preparation, critique, emancipation, suspension, reflection and repair. These different orientations have fundamentally different ontological and epistemological assumptions – some operate with a future that can be known and traced, others with the future as open and emergent, some operate with singular ideas of the future, others with a riotous multiplicity of possible futures. Some are oriented towards creating visions of education as a whole, others to the work in classrooms and lecture halls. They engender different relationships between generations – from relations of collegiality and co-production of knowledge, to relations in which children's rights are set aside 'for their own good'.

Whatever orientation we consider, however, it is clear that the practice of forecasting, invoking, suspending, resisting or repairing futures is a practice of power that has performative and material effects in the world. We can no longer treat 'the future' as a rhetorical flourish in education. It matters what we mean when we invoke it, it has effects upon the world and upon students when we claim its authority. It produces and justifies particular relations. We need, therefore, to approach futures with caution and with an ethics of care in education.

I conclude therefore by proposing nine elements that might form the basis for an ethics of futures research, theory and practice in education. They speak in particular to organisations such as UNESCO and others, who are seeking to mobilise communities at local and international levels around the discussion of education and its role in, for, against and beyond futures. These proposals are intended to stimulate critical dialogue about the practices, intentions and assumptions of futures practice in education rather than to act as a universalising blueprint for 'good practice'.

1. *Reflexivity & Multiplicity*
    All claims to the future are socially, culturally and historically situated and are therefore partial. An ethics of futures in education, then, might seek to create futures that reflect the multiplicities of the present and actively enrich the repertoire of experiences and lives used to construct images of futures not as singular trajectories but as creative and abundant possible worlds. Such practices would recognise the limits of epistemological monocultures and actively learn from and across different traditions of thought.

    Key question:
    What and whose knowledges are being used to create these ideas of the future and where are the absences?

2. *Transparency*
    Any ideas of the future not only come from somewhere but are premised upon existing ideas and assumptions. An ethics of futures in education would tend towards transparency, sharing its workings, being clear about the foundations upon which any claims about the future are made. It might seek to reflect publicly upon the ideas, desires and experiences that did (and did not) inform these futures. It would reflect upon absences and oversights and explain the choices made about how these ideas were produced and why.

3. *Curating decay*

   The practice of making futures is necessarily also a practice of dismantling and letting go. An ethics of futures in education might therefore draw attention, then, as much to the necessities of unpicking harmful practices and institutions as to envisaging and experimenting with new possibilities.

   Key questions:
   How does this work address the processes of decline
   as well as the possibilities of the new?

4. *Repair & Healing*

   If there is a desire to create futures that do not reproduce the violence of the past, then an ethics of futures in education will turn itself to the task of listening to and engaging with the experiences, desires and beliefs of those who have been harmed and marginalised, exploited and oppressed. It would create conditions in which the differential distribution of time and material resources that inform the formation of strategies of collective aspiration can be rebalanced. Equally, remembering that the past is also a site of unrealised possibilities, an abundant reservoir of lost knowledges, unfulfilled talents and hidden capabilities, an ethics of futures in education might attend to lost futures from the past as much as projected anticipations of what is to come.

   Key question:
   What are the injustices upon which futures are being envisaged
   and how are these being addressed?

5. *Intergenerational inquiry*

   Acknowledging that futures will be experienced differently by different generations, an ethics of futures in education might create conditions for active dialogue and co-construction between generations to imagine, desire and resist futures. It would resist a desire to project onto subsequent generations the responsibility for addressing difficulties in the present, challenging the constant deferral into the future for contemporary problems. Equally, it would recognise that futures are not the province of childhood alone, but that making worlds is a collective, intergenerational practice of ancestors and future generations, adults and children today.

   Key question:
   How do principles of intergenerational justice inform the practice?

6. *Emergence & Observation*

   Recognising that ideas of the future are acting in and upon a complex and dynamic world in which unintended consequences will necessarily entail and out of which unanticipated futures will emerge, an ethics of futures in education should also be characterised by an attentiveness to what is emerging. Practices of care, learning and responsibility for the worlds that unfurl from envisaged futures, might therefore play a central role. Futures in education, then, cannot be conceived on a project based model, but as programmes of inquiry, reflection and ongoing responsibility for what happens next.

   Key question:
   Who will attend to the consequence of these ideas of the future
   being put into the world and how?

7. *Organising Hope*
Recognising the performative nature of ideas of the future and their capacity to mobilise collective action (for good or ill), an ethics of futures in education would attend to the responsibility that such performativity brings. Such responsibility might include the creation of ideas of the future themselves intentionally designed to challenge harmful futures narratives in education. It might also include the principled refusal to generate futures in education. Attending to how ideas of the future might be used as coordinating devices, for what interests and with what potential consequences is central to taking ethical responsibility for the uses of futures in education.

Key question:
What is the role of these futures in creating hopeful politics
and practices in the present?

8. *Limiting pathological speculation*
Acknowledging the potential for significant harm to emerge from financial educational speculation as an extractive futures orientation unconcerned with educational value and purposes, ethical futures practice will create conditions which set clear limits to the use, influence and impacts of commercial speculative futures practices in education.

Key question:
Might these futures be used for pathological and extractive speculation,
if so, how might this be prevented?

9. *Care for the distinctive temporality of education*
Above all, in exploring the relationship between education and the future, an ethics of futures in education would attend to the distinctive temporality of education as a space and time in which something 'new and unforeseen' by us might emerge. This social temporality is both of the world and suspended from it. It is a time in which pasts can be encountered and examined and new possibilities explored. The ethical responsibility that flows from this in educational futures work, is precisely to resist the colonisation of the present by the future (or the past) and to keep open the regenerative potential of education as an encounter capable of caring for and creating new worlds.

Key question:
How can the distinctive temporality of education be preserved
not subordinated to the futures proposed?

Conclusion

The future is an idea, an emotion, a trajectory and a desire that we think with. It is a time and a place that does not yet exist and yet with which we are intimately entangled as all that we care for and all that we have and will become depends upon it. It is an idea that both wields immense power, justifying rapid transformations of everyday life – and no power, a hope that can be brushed aside as unrealistic or implausible in an instant. Our ideas of the future, then, matter. They shape our assumptions, hopes and actions in the present. How we think about and create our ideas of the future matter even more. It matters, in Donna Haraway's words, what things we use to think things with; what ideas we use to shape our ideas with.

Thinking about the future in education, then, is not without consequence. The ideas of the future that educators, policymakers, teachers, and students work with shape assumptions about possibility in the present, close down avenues and open up others. They justify investments and behaviours in the present. *How* we think

ideas of the future in education therefore matters not because 'education is the future', or because 'education shapes the future', but because these ideas fundamentally shape what we think education is and can be today. An ethics of futures thinking in education is therefore required. The outline proposed here is a heuristic, a draft vocabulary for discussing how we are thinking (and not thinking) the future in education. It invites us to think about the roles of imagination and evidence, the relationship between histories and presents, the absences and silences in our visions of the future, and the relationship between generations. It is a starting point for thinking with care and with responsibility of the stories that we tell about education and the future.

Acknowledgements

Notes

[1] Noel Gough (1990) Futures in Australian Education: Tacit, Tokenistic and Taken for Granted, *Futures,* 22 (30) 298-310. See also Lee Edelman's critique of the mobilisation of childhood and reproductive futures as a basis for framing political discussion: Edelman, L (2004) No Future: Queer Theory and the Death Drive, Duke University Press: Durham & London

[2] This rhetorical treatment of futures is not restricted to policy fields. It is worth noting, for example, that the journal Educational Futures 'aims to provide a forum for the contemporary academic research of education in its broadest sense.' And the book series 'Foundations and Futures of Education' focuses on 'emerging issues'and 'continuing debates' within the field of education. Neither, in other words, explicitly engage with the question: *what is distinctive about attempting to understand educational futures as opposed to educational presents or pasts?*

[3] The sociologist of childhood, Nick Lee, traces this carefully. See, for example, Nick Lee (2005) Childhood and Human Value, Open University Press; or Nick Lee (2002) Childhood and Society: Growing up in an age of uncertainty as well as Nick Lee (1998) Towards an immature sociology, The Sociological Review. Equally, Ashis Nandy discusses the child as projective device and source of utopian fear: 'Reconstructing Childhood: a critique of the ideology of adulthood'. Alternatives X. Winter, 1984, pp. 359–375.

[4] See Jasanoff, S & Kim, S (2015) Dreamscapes of Modernity: sociotechnical imaginaries and the fabrication of power, Chicago: University of Chicago Press

[5] See Back to the Futures of Education: 4 OECD Scenarios - https://www.oecd.org/education/back-to-the-future-s-of-education-178ef527-en.htm

[6] See Wiliamson, B (2017) Big Data in Education: the digital future of learning, policy and practice, New York: Sage; See also Selwyn, N. & Facer, K. (2014). The sociology of education and digital technology: Past, present and

future. Oxford Review of Education, 40(4), 482-496. https://doi.org/10.1080/03054985.2014.933005; Facer, K and Sandford, R (2010) The next 25 years? Future scenarios and future directions for education and technology, JCAL, 26 (1) 74-93 https://doi.org/10.1111/j.1365-2729.2009.00337.x

[7] Although see the UNESCO Futures of Education/NORRAG scenarios on education in emergencies and crises as a notable exception https://en.unesco.org/futuresofeducation/news/futures-education-emergencies-and-protracted-crises-unesco-norrag-online-consultation

[8] See, for example, Milojevic, I (2005) Educational Futures: Dominant and Contesting Visions, London, Routledge or Facer, K (2011) Learning Futures: Education, Technology and Social Change, London: Routledge

[9] See, for example Inayatullah, S (2020) Co-Creating Educational futures: Contradictions between the eerging future and the walled past, ERF Working Paper 27: June 2020 https://unesdoc.unesco.org/ark:/48223/pf0000373581/PDF/373581eng.pdf.multi

[10] See for example, Hicks, D (2014) Educating for Hope in Troubled Times: Climate Change and the Transition to Post-Carbon Futures or Svi Shapiro's (2009) Education and Hope in Troubled Times, London: Routledge

[11] See Adam, B and Groves, C (2007) Future Matters: Action, Knowledge, Ethics, Leiden: Brill

[12] See Beckert, J (2013) Imagined Futures: fictional expectations in the economy, Theory and Society, 42, 219-240 https://link.springer.com/article/10.1007/s11186-013-9191-2

[13] See Williamson, B (2020) New financial actors and valuation platforms in education technology markets: https://codeactsineducation.wordpress.com/2020/12/15/new-financial-platforms-education/, December 15, 2020

[14] Komljenovic, J (2020) The future of value in higher education: why data privacy should not be our biggest concern, Higher Education, https://link.springer.com/article/10.1007/s10734-020-00639-7

[15] See Williamson, B (2020) New financial actors and valuation platforms in education technology markets: https://codeactsineducation.wordpress.com/2020/12/15/new-financial-platforms-education/, December 15, 2020

[16] See https://indiancountrytoday.com/archive/how-to-honor-the-seven-generations-0UNiIfbN5UOL36SXV6rIiQ ; See Wall Kimmerer, R (2015) Braiding Sweetgrass: Indigenous Wisdom, Scientific Knoweldge and the Teaching of plants, Milkweed Publications p 310 ; See the work of the Welsh Commission for Future Generations https://www.futuregenerations.wales/ ; https://www.janvaneyck.nl/calendar/urgency-intensive-intergovernmental-panel-on-art-and-climate-change

[17] Although this depends on reading Freirian pedagogy as normative, which is only sometimes the case.

[18] Again, there are alternative traditions in both these fields that adopt an emergent and complex framing of change, discussed in Orientation IV

[19] Dipesh Chakrabarty, Provincializing Europe: Postcolonial Thought and Historical Difference. (Princeton: Princeton University Press, 2000), p. 8. Aee also Sriprakash, A., Sutoris, P., Myers, K., (2019) The science of childhood and the pedagogy of the state: Postcolonial development in India, 1950s, 32 (3), 345-359

[20] Tuck, E and Gaztambide-Fernández, R (2013) Curriculum, Replacement and Settler Futurity, Journal of Curriculum Theorizing, 29 (1) 72-89

[21] See Sriprakash, A., Nally, D., Myers, K., & Pinto, P. R. (2020). Learning with the Past: Racism, Education and Reparative Futures. https://unesdoc.unesco.org/ark:/48223/pf0000374045.locale=en

[22] Lee Edelman, (2014) No Future: Queer Theory and the Death Drive, Durham & London, Duke University Press

[23] Kessel, C & Burke, K(2018) Teaching as Immortality Project: Positing Weakness in Response to Terror, Journal of Philosophy of Education, 52, 2

[24] See Keri Facer and Arathi Sriprakash (in press, 2021) Reimagining futures literacies as historical, entangled practices, *Futures*

[25] Miller, R (2015) Learning, the Future and Complexity: an essay on the emergence of futures literacy, European Journal of Education, 50 (4) DOI: 10.1111/ejed.12157

[26] See, for example, Peter Bishop's 'Teach the Future' resources and network (https://www.teachthefuture.org/books) Riel Miller's edited collection on Futures Literacy 9 https://www.routledge.com/Transforming-the-Future-Anticipation-in-the-21st-Century/Miller/p/book/9780367855888) , and Poli's recent work on Anticipation and Futures Literacy: http://www.projectanticipation.org/index.php?option=com_content&view=article&id=3&Itemid=472

[27] Appadurai (2013) The future as cultural fact: Essays on the Global Condition, Verso: London & New York p188

[28] Dinerstein, A (2014) The Politics of Autonomy in Latin America - The Art of Organising Hope, Palgrave Macmillan

[29] Appadurai, (2013) The future as cultural fact: Essays on the Global Condition, Verso: London & New York p192

[30] Appadurai, (2013) The future as cultural fact: Essays on the Global Condition, Verso: London & New York, p193

[31] Facer, K and Sriprakash, A (2021, in press) Reimagining futures literacies as historical, entangled practices, *Futures*

[32] See for example, Nandy, A. "Colonization of the Mind." In *The Post-Development Reader* , edited by M. Rahnema with V. Bawtree , 168–178. London and New Jersey: Zed Books, 1997; Nanni, G (2012) The Colonisation of Time, Manchester University Press

[33] See Sharma, S (2014) In the meantime: temporality and cultural politics, Durham: Duke University Press

[34] De Certeau's distinction between strategic and tactic power is potentially useful here, see de Certeau, M (2011) The Practice of Everyday Life (3rd Edition), University of California Press

[35] See Norgaard, K (2011) Living in Denial: Climate and Everyday Life, MIT Press; Maria Ojala (2015) Hope in the Face of Climate Change: Associations With Environmental Engagement and Student Perceptions of Teachers' Emotion Communication Style and Future Orientation, The Journal of Environmental Education 46(3):133-148 DOI: 10.1080/00958964.2015.1021662

[36] Bussey, M & Mozzini-Allister, C (2020) Phenomenologies of Grace: the body, embodiment and transformative futures, New York: Palgrave Macmillan

[37] Here we might draw on the traditions of education as encounter between different 'funds of knowledge' drawn from cognate debates in literacy studies, for example, Thomson, P and Hall, C (2008) Opportunities missed and/or thwarted? Funds of knowledge meet the English National Curriculum, The Curriculum Journal, 19 (2),

[38] The exemplary figure in this tradition is someone like Henry Giroux.

[39] Here we might reference the work of Paulo Frieire, bell hooks, Ivan Illich and Henry Giroux as well as Roberto Unger's work on education.

[40] See for example, Deborah Osberg & Gert Biesta (2020): Beyond curriculum: Groundwork for a non-instrumental theory of education, Educational Philosophy and Theory; Masschelein, J., & Simons, M. (2011) Experimentum scholae: The world once more... but not (yet) finished! Studies in Philosophy of Education, 30, 529– 535. ; Osberg, D.(2010). 'Taking care of the Future ? The complex responsibility of education and politics'. In D. Osberg, & G. Biesta(Eds.), Complexity theory and the politics of education, Sense Publishers; Facer, K. (2016) Using the future in education: Creating space for openness, optimism and novelty In H.Lees, & N.Noddings (Eds.), Palgrave international handbook ofalternative education, NY: PalgraveMacmillan; Amsler, S and Facer, K (2016) Contesting anticipatory regimes in education: exploring alernative educational orientations to the future, Futures

[41] See Rovelli, C (2018) The Order of Time, London: Penguin; Braidotti, R (2018) A theoretical framework for the critical posthumanities, Theory Culture and Society, https://doi.org/10.1177/0263276418771486; Haraway, D (2016) Staying with the Trouble: Making kin in the chuthulucene, Duke University Press; Shotwell, A (2016) Against Purity: Living Ethically in copmromised times, University of Minnesota Press

[42] See Edelman op.cit 2014

[43] We can also see this, for example, in Margaret Archer's concept of spontaneous meta-reflexivity as a response to a world of rapid change and cultural and social feedback loops.

[44] See Brown, W (2005) On Critique and Untimeliness: Critical Theory in Dark Times, in Edgework: Critical Essays in Knowledge and Politics, Princeton University Press

[45] See Lipari, L (2014) Listening, Thinking, Being: toward an ethic of attunement, Pennsylvania: Penn State Press; Ingold, T(2001) Essays on Perception, Dwelling and Skill; and Ingold, T (2015) The Life of Lines, London: Routledge; Masschelein, J (2012) Inciting an attentive experimental ethos and creating a laboratory setting. Philosophy of education and the transformation of educational institutions - In: Zeitschrift für Pädagogik 58 (2012) 3, S. 354-370

[46] For a discussion of this see in particular Lipari, L (2014) Listening, Thinking, Being: toward an ethic of attunement, Pennsylvania: Penn State Press

[47] See David Orr's description of education as a source of vocation in Orr, D (2004) Earth in Mind: On education, environment and the human prospect, Island Press and Robin Wall Kimmerer's discussion in Wall Kimmere, R (2020) Skywoman Falling, https://emergencemagazine.org/story/skywoman-falling/

[48] This concept was coined by Arathi Sriprakash and colleagues here: Sriprakash, A., Nally, D., Myers, K., & Pinto, P. R. (2020). Learning with the Past: Racism, Education and Reparative Futures. https://unesdoc.unesco.org/ark:/48223/pf0000374045.locale=en

[49] See Caitlin deSilvey (2017) Curated Decay: Heritage beyond Saving, University of Minnesota Press; Machado de Oliveira, V (2021) Hospicing Modernity: Facing Humanity's wrongs and the implications for social activism, North Atlantic Books; See Lotz-Sisitka, H., Wals, A., Kronlid, D., McGarry, D., (2015) Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction, Current Opinion in Environmental Sustainability,

[50] Caitlin deSilvey (2017) Curated Decay: Heritage beyond Saving, University of Minnesota Press

[51] See Haraway, D (2016) Staying with the Trouble: Making kin in the chuthulucene, Duke University Press for a discussion of 'composting' as a change process

[52] See Sharpe, B (2013) Three Horizons: The patterning of hope, Triarchy Press

[53] See Holbert, M., Dando, M., Correa, I (2020) Afrofuturism as critical constructionist design: building futures from the past and present, Learning, Media and Technology, 45:4, 328-344, DOI: 10.1080/17439884.2020.1754237

[54] See Kapoor, R (2001) Future as Fantasy: Forgetting the Flaws, Futures, 33, 161-170

[55] See Andersson, J (2019) The Future of the World: Futurology, Futurists and the Struggle for the Post Cold War Imagination, Oxford: Oxford University Press

References

Adam, B and Groves, C (2007) *Future Matters: Action, Knowledge, Ethics*, Leiden: Brill

Amsler, S and Facer, K (2016) Contesting anticipatory regimes in education: exploring alernative educational orientations to the future, *Futures,* 94, 6-14

Andersson, J (2019) *The Future of the World: Futurology, Futurists and the Struggle for the Post Cold War Imagination*, Oxford: Oxford University Press

Appadurai, A (2013) *The future as cultural fact: Essays on the Global Condition*, Verso: London & New York p188

Beckert, J (2013) Imagined Futures: fictional expectations in the economy, *Theory and Society*, 42, 219-240 https://link.springer.com/article/10.1007/s11186-013-9191-2

Bishop, P (n.d.) 'Teach the Future' (https://www.teachthefuture.org/books)

Braidotti, R (2018) A theoretical framework for the critical posthumanities, Theory Culture and Society, https://doi.org/10.1177/0263276418771486;

Brown, W (2005) On Critique and Untimeliness: Critical Theory in Dark Times, in *Edgework: Critical Essays in Knowledge and Politics*, Princeton University Press

Bussey, M & Mozzini-Allister, C (2020) *Phenomenologies of Grace: the body, embodiment and transformative futures*, New York: Palgrave Macmillan

Chakrabarty, D (2000) *Provincializing Europe: Postcolonial Thought and Historical Difference*. Princeton: Princeton University Press, p. 8.

de Certeau, M (2011) *The Practice of Everyday Life* (3rd Edition), University of California Press

deSilvey, C (2017) *Curated Decay: Heritage beyond Saving*, University of Minnesota Press;

Dinerstein, A (2014) *The Politics of Autonomy in Latin America – the art of organising hope*, Palgrave Macmillan

Edelman, L (2004) *No Future: Queer Theory and the Death Drive*, Duke University Press: Durham & London

Facer, K (2011) *Learning Futures: Education, Technology and Social Change*, London: Routledge

Facer, K. (2016) Using the future in education: Creating space for openness, optimism and novelty In H.Lees, & N.Noddings (Eds.), *Palgrave international handbook of alternative education*, NY: PalgraveMacmillan;

Facer, K and Sandford, R (2010) The next 25 years? Future scenarios and future directions for education and technology, *JCAL*, 26 (1) 74-93 https://doi.org/10.1111/j.1365-2729.2009.00337.x

Facer, K and Sriprakash, A (under review, 2021) Reimagining futures literacies as historical, entangled practices, *Futures*

Gough, N (1990) Futures in Australian Education: Tacit, Tokenistic and Taken for Granted, *Futures,* 22 (30) 298-310

Haraway, D (2016) *Staying with the Trouble: Making kin in the chuthulucene*, Durham: Duke University Press

Hicks, D (2014) *Educating for Hope in Troubled Times: Climate Change and the Transition to Post-Carbon Futures* Nottingham: Trentham

Holbert, M., Dando, M., Correa, I (2020) Afrofuturism as critical constructionist design: building futures from the past and present, *Learning, Media and Technology*, 45:4, 328-344

Inayatullah, S (2020) Co-Creating Educational futures: Contradictions between the emerging future and the walled past, *ERF Working Paper* 27: June 2020,

Ingold, T (2015) *The Life of Lines*, London: Routledge

Ingold, T(2001) *Essays on Perception, Dwelling and Skill*, London: Routledge

Jasanoff, S & Kim, S (2015) *Dreamscapes of Modernity: sociotechnical imaginaries and the fabrication of power,* Chicago: University of Chicago Press

Kapoor, R (2001) Future as Fantasy: Forgetting the Flaws, *Futures*, 33, 161-170

Kessel, C & Burke, K(2018) Teaching as Immortality Project: Positing Weakness in Response to Terror, *Journal of Philosophy of Education*, 52, 2

Komljenovic, J (2020) The future of value in higher education: why data privacy should not be our biggest concern, *Higher Education*, (online first)

Lee, N (1998) *Towards an immature sociology*, The Sociological Review, 46 (3)

Lee, N (2002) *Childhood and Society: Growing up in an age of uncertainty* Maidenhead: Open University Press

Lee, N (2005) *Childhood and Human Value*, Maidenhead: Open University Press

Lipari, L (2014) *Listening, Thinking, Being: toward an ethic of attunement*, Pennsylvania: Penn State Press

Lotz-Sisitka, H., Wals, A., Kronlid, D., McGarry, D., (2015) Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction, *Current Opinion in Environmental Sustainability*, 16, 73-80

Machado de Oliveira, V (2021) *Hospicing Modernity: Facing Humanity's wrongs and the implications for social activism*, North Atlantic Books

Masschelein, J (2012) Inciting an attentive experimental ethos and creating a laboratory setting. Philosophy of education and the transformation of educational institutions - In: *Zeitschrift für Pädagogik* 58 (2012) 3, S. 354-370

Masschelein, J., & Simons, M. (2011) Experimentum scholae: The world once more... but not (yet) finished! *Studies in Philosophy of Education*, 30, 529– 535.

Miller, R (2015) Learning, the Future and Complexity: an essay on the emergence of futures literacy, *European Journal of Education*, 50 (4)

Miller, R (2018) *Transforming the Future: Anticipation in the 21st Century,* London: Routledge/UNESCO

Milojevic, I (2005) *Educational Futures: Dominant and Contesting Visions*, London: Routledge

Nandy, A (1984): 'Reconstructing Childhood: a critique of the ideology of adulthood'. *Alternatives X*. Winter, 1984, pp. 359–375.

Nandy, A. (1997) 'Colonization of the Mind.' in *The Post-Development Reader*, edited by M. Rahnema with V. Bawtree, London and New Jersey: Zed Books

Nanni, G (2012) The Colonisation of Time, Manchester: Manchester University Press

Norgaard, K (2011) *Living in Denial: Climate and Everyday Life*, Boston: MIT Press

OECD (2020 Back to the Futures of Education: 4 OECD Scenarios https://www.oecd.org/education/back-to-the-future-s-of-education-178ef527-en.htm

Ojala, M (2015) Hope in the Face of Climate Change: Associations With Environmental Engagement and Student Perceptions of Teachers' Emotion Communication Style and Future Orientation, *The Journal of Environmental Education* 46(3):133-148

Orr, D (2004) *Earth in Mind: On education, environment and the human prospect*, Island Press

Osberg, D & Biesta, G (2020): Beyond curriculum: Groundwork for a non-instrumental theory of education, *Educational Philosophy and Theory*

Osberg, D.(2010). 'Taking care of the Future ? The complex responsibility of education and politics'. In D. Osberg, & G. Biesta(Eds.), *Complexity theory and the politics of education*, Rotterdam: Sense Publishers

Poli, R (2019) Working with the Future: Ideas and Tools to Govern Uncertainty, Trento: Bocconi University Press

Rovelli, C (2018) *The Order of Time*, London: Penguin

Selwyn, N. & Facer, K. (2014). The sociology of education and digital technology: Past, present and future. *Oxford Review of Education*, 40(4), 482-496.

Shapiro, S (2009) *Education and Hope in Troubled Times,* London: Routledge

Sharma, S (2014) *In the meantime: temporality and cultural politics*, Durham: Duke University Press

Sharpe, B (2013) *Three Horizons: The patterning of hope*, Triarchy Press

Shotwell, A (2016) *Against Purity: Living Ethically in compromised times*, University of Minnesota Press

Sriprakash, A., Nally, D., Myers, K., & Pinto, P. R. (2020). *Learning with the Past: Racism, Education and Reparative Futures.* https://unesdoc.unesco.org/ark:/48223/pf0000374045.locale=en

Sriprakash, A., Sutoris, P., Myers, K., (2019) *The science of childhood and the pedagogy of the state: Postcolonial development in India*, 1950s, 32 (3), 345-359

Thomson, P and Hall, C (2008) Opportunities missed and/or thwarted? Funds of knowledge meet the English National Curriculum, *The Curriculum Journal*, 19 (2),

Tuck, E and Gaztambide-Fernández, R (2013) Curriculum, Replacement and Settler Futurity, *Journal of Curriculum Theorizing*, 29 (1) 72-89

UNESCO/NORRAG (2020) Scenarios on education in emergencies and crises https://en.unesco.org/futuresofeducation/news/futures-education-emergencies-and-protracted-crises-unesco-norrag-online-consultation

Wall Kimmerer, R (2015) *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teaching of plants*, Milkweed Publications p 310 ;

Wall Kimmerer, R (2020) Skywoman Falling, https://emergencemagazine.org/story/skywoman-falling/

Williamson, B (2017) *Big Data in Education: the digital future of learning, policy and practice*, New York: Sage

Williamson, B (2020) New financial actors and valuation platforms in education technology markets: https://codeactsineducation.wordpress.com/2020/12/15/new-financial-platforms-education/, December 15, 2020