

# The Precarious Future of Education: The Speculative Fictions of Education

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## UP IN THE CLOUDS: TAKE 1

William Gibson offers a rather interesting and reflective statement regarding the future that is worth quoting in full:

We have no idea, now, of who, or what the inhabitants of our future might be. In that sense, we have no future. Not in the sense our grandparents had a future, or thought they did. Fully imagined futures were the luxury of another day, one in which ‘now’ was of some greater duration. For us, of course, things can change so abruptly, so violently, so profoundly, that futures like our grandparents’ have insufficient ‘now’ to stand on. We have no future because our present is too volatile. (William Gibson 2003, 58–59)

*The Precarious Future of Education* presents the paradox of the future itself. It is based on a series of talks titled *After the Future of Education* held at the Department of Secondary Education, University of Alberta, in

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the winter semester of 2014. The title is more in keeping with the Möbius twist that is the future.<sup>1</sup> At one point the future meant progress, a telos that aimed at reachable social transformations made possible through scientific progress. Then came postmodernism, and the grand narratives fell away, a melancholia settled over us. The question of the future in the post-postmodern world has come to a standstill. Precisely what is it that we are moving toward these days? If there is movement, it seems to be embodied by a world of migrations, refugees and asylum seekers fleeing their war-torn lands for a 'better' life. That life no longer etched by the idealizations of a dream of riches, rather, shaped by the minimalism of being recognized as a 'human' being now in search of a place to live in peace. The question of the future on many levels is in balance, for now it has been infused with survival and precarious life. To play the card of 'resilience' seems so disingenuous.

The academy is slowly awaking to the realization that the 'world' that we have 'created' for-us as a work of 'art,' where everything is aestheticized so that it can be sold, the lawns manicured and the housing plots landscaped to present us with an urban landscape reflective of our control and mastery over Nature, has finally come to haunt us. The story of 'progress,' shaped by Enlightenment thought, forwarded by a capitalist class whose interests were instituted through 'democratic' forms of nationalism based on colonial conquest in the name of what is 'human' and 'civilized,' has finally come to a reflexive turn, now that the melancholia of postmodernism has been able to face its lost object of modernism, only to face the void of our own species extinction. What 'story' is compelling enough to face such a void if the telluric imagination of technology is but a Faustian dream that continues to reinvent itself so that we can continue to repress our self-destruction? Is this not what is happening to education in general?

Might there be room to write a 'dark' pedagogical introduction given these times when our species extinction is on the horizon? So much of the educational imaginary is wrapped in the folds of technology and the entertainment industries. That is where the jobs are after all. The historical dovetailing of capitalism with the educational schooling is a fundamental reality. Childhood, adolescence and currently post-adolescence, each has been shaped by the capitalist industries of their times. Global capitalism now demands a new subjectivity: the flexible performative self, who must now show her wares of productivity, change or shorten her last name so it does not sound 'foreign,' especially Middle Eastern, so as to be competitive enough to find a productive job in the symbolic order. This subjectivity is

the creation of our own making. That is to say, education is complicit in continuing such a trajectory, maintaining its reproduction despite knowing better, as many, many educators do, who lament over this state of affairs.

I came across what I felt to be an extraordinary reflection of our contemporary world by Robert Macfarlane (2015). Two of his most provocative paragraphs read like this:

Is there a word yet for the post-natural rain that falls when a cloud is rocket-seeded with silver iodide? Or an island newly revealed by the melting of sea ice in the North-West Passage? Or the glistening tidemarks left on coastlines by oil spills? We speak memorably of a murmuration of starlings, to describe vast flocks of those birds dancing and palpitating in the air above reed beds and wetlands. But as yet we have no term to denote the gulls that swirl above our landfill sites, or the red kites [birds] that turn above the meat factories of the Cotswolds [south central England].

Such language stands in a fascinating and provocative relationship to the idea of *wonder*. For Descartes, wonder was ‘the first of all the passions.’ It was also at the heart of the scientific method, because in Descartes’ view, the experience of wonder provokes a twofold response: first we are amazed (wonderstruck), and then we seek an explanation for that amazement. Reason is exceeded, then provoked. In this way wonder is distinguished from our sense of the ‘sublime,’ that form of affect so powerful that it presents an outrage to the understanding.

Wonder and sublime: the two ends of intensive affect, the former opening the world up and the other recognizing that this world can swallow us up. But the ‘world’ that Macfarlane is alluding to is not the (Kantian) world-for us, it is a world-without us, a world for-itself that will remain long after our species is gone. Should not the educational imagination become drawn to this extraordinary paradoxical tension? Is this not the problematic of our ‘times’? Perhaps, without this redress, we have no ‘future’ as it is commonly thought as a chronological movement of time, whereas philosophers such as Gilles Deleuze tell us, drawing from the Stoics, that there is a time of Aion, a timeless time, the time of the Cosmos. Earth is but a speck of dust in the galaxy, which is but a speck of dust in our quadrant of the universe. The limits of comprehension quickly fade.

Against this backdrop and given the ‘event’ of the Anthropocene, education is in need of some serious fabulation. New possible imaginative narratives are needed, possible worlds that engender thought, like that of

science fiction, or as Deleuze would have it: ‘sci-phi’ as a philosophy of the future (Flaxman 2008). What we have instead is the pressure to turn education into programming. As the UK prepares to change its national curriculum, which has been dragging its feet given the present government turmoils, the poster boy for such a push is an adolescent programmer, who in a scripted speech gives the impression that his whole life is now engaged around his ability to write programmes (BBC News 2014).<sup>2</sup>

Programmers will become the new ‘secretaries’ for the continuously growing technological industrial complex, and so the reorientation of education in this direction should be of no surprise. The cybernetic ‘brave new world’ that is being shaped seems, more and more, to be confirming the prescient thoughts of Gilles Deleuze (1992) and Félix Guattari’s succinct summation of ‘societies of control,’ where the modulation of affect is continuously channelled in ways that make the populace believe that democracy is indeed ‘progressing’ as choice and free will are being promoted within all too specified and invisible constraints as to who can and cannot participate. Jacques Rancière’s (2004) call for a ‘distribution of the sensible,’ requiring a rethinking of the educational imagination, seems too optimistic today as the continual developments of smart technologies, computer apps, wearable recording and communication devices take us into the unknowable direction of identity theft, hacking frauds, cyber-bullying, surveillance technologies, tracking and imprinting, genetic manipulation and so on. The increase of surveillance and tightening of access are amplified in a time of ‘perpetual terror.’

What it means to be ‘human’ is changing on the physiological level of the brain and the body that affect the changes to the psyche. With nano-microchip devices implanted into our brains and bodies as forecast in the near future the modifications to our species will become even more remarkable and drastic. If Freud thought neurosis was the (dis)order of the day during the transition into the twentieth century, and Slavoj Žižek (2012) can address contemporary paranoia in popular culture (i.e., via Radiohead’s music video *Paranoid Android*), while Deleuze and Guattari (1987) banked on schizophrenia as a projection of what it takes to think the unthought, it seems today that the range of the so-called neuronal disturbances, from attention deficit hyperactivity disorder (ADHD) to the many varieties of autism, is increasing as there is no ‘normativity’ per se but a ‘drift’ to a new psychic orientation that modifies our species behaviour in relation to the new media and the increase in social isolation. Difference, used both representationally and non-representationally, is the

order of the day. Difference in relation to sameness now becomes a way for capitalism to cater to ‘individuality,’ the oxymoron of ‘mass customization’ becomes a reality, while the Deleuze–Guattari ‘becoming’ of difference has been perverted by being taken up by neuromarketers to increase sales via the mining of affect.<sup>3</sup> The more the earth’s population rises, let us project the figure at 11 billion by 2100, the more likelihood that a post-postmodern Bubonic plague, a pandemic will happen, as it is only a question of time. Such projections of these disasters are ubiquitous on our small and big screens, now made easier through the wizardry of digitalization.<sup>4</sup> On the one end, the zombies are to be found everywhere, on the other end the clones cannot be differentiated from humans, and in the middle are the ‘missing’ or disappearing people from ‘The Rapture.’<sup>5</sup> To ward off this apocalyptic scenario Marvel has released its hoard of action hero movies, this revitalization of superheroes assures us all that we will be saved at the end, much like the perennial rash of crime and nurse–doctor televised series when it comes to our health and victimhood. And, of course, the weaving of anti-terrorist films and television series is there as well.<sup>6</sup> So what can be done given this precarity in the world?

## UP IN THE CLOUDS: TAKE 2

The contemporary educational visionaries are compelled to be heard through the social media, and no better place than one framed by an entertainment venue, not quite pecha cucha, but close: The Technology, Entertainment, and Design (TED) Talks make a perfect sales pitch: compelling, riveting, interesting, believable and convincing—the descriptors continue. So what are the ‘best minds’ in education promising for the future? What are the current fabulations that are being pitched to the public imagination? I wish to start with the vision of Sugata Mitra,<sup>7</sup> who is a professor of educational technology at the School of Education and Language Science at Newcastle University, England. His Hole in the Wall experiment and his development of Self-Organizing Learning Environment (SOLE), as well as his projected future school called The Cloud, are perfectly suited for the next phase of advanced technological thinking. And suited well for a capitalist class that needs the *brainpower* of a labour class, which (sadly) can be found among the children in the poor sectors of the social order who are eager to learn. They are the source of potentially a new asset, not to be exploited, of course, but to be ‘helped.’<sup>8</sup> It should be pointed out that Mitra is the chief scientist, Emeritus, of the for-profit trading company NIIT Technologies.

Mitra's vision is extrapolated from the second-order cybernetic theory, the cognitive biology of autopoiesis based on the work of Humberto Maturana and Francisco Varela (1980). It is a form of constructed enactivism that has a great deal of popularity, especially among mathematics education and management education for change. The 'magic ingredients' to make learning happen are a combination of broadband communication (technology), collaboration (among peers) and encouragement (an outside source). With these components the structure becomes self-sustaining, autopoietic and self-correcting, students self-learn as they are motivated to do so. In this model, knowledge is obsolete, or falls out in terms of centrality, the 'school' is completely decentred, more as a 'space' where learning can take place around the most important piece of contemporary technology: no, not the cell phone, but the computer.

Unquestionably wonder and the curiosity of children are captured as, in Michael Hardt's (1999) terms, immaterial and affective labour. Mitra sees his model as opening up jobs and the entrepreneurial spirit. The source of this seemingly endless energy to be harnessed is found in the poor districts throughout India where his 'experiments' were conducted. Just give poor children a computer to play with and they will figure it out. The role of the teacher is no longer a pedagogical one, that is, someone who is to guide children's development. Rather, the teacher is more as someone who encourages and applauds the exploratory work the children do on their own volition. Mitra calls this a 'granny' factor; grandmothers always give their children the motivational boost they need through such encouragement. The School Cloud, however, only needs 'one' grandmother, or rather a 'built-in' grandmother to keep up the motivation: 'good job kids!'

All of this is very appealing. It is part of the Social Entrepreneurship programmes established in many schools where the 'big questions' are being raised that address the future: What does it mean to be human? What is our responsibility today? How do we understand the world? This is sort of philosophy snuck in the back door under the business model of life. Aspirations are harnessed early. Along the same lines, Apple marketing executives concur that the education system is outdated, and they are there to help.<sup>9</sup> Mitra's model is really not 'the future.' It is already in place in such tech companies as Google, Apple, Microsoft and Mitsubishi; their way of the future is *now*. In the USA, it is billionaires who influence how education should be run: Bill and Melinda Gates, Eli and Edythe Broad and The Walton Family Foundation form the Gates–Broad–Walton triumvirate. They set the direction for the future of education in the USA so as

to have a workforce that can compete globally in the twenty-first century (Barkan 2011).

Technology continues to be on the agenda by upgrading the ‘learning machine’ where the teacher drops out yet again (as above). This is the futures push under the rhetoric of ‘humanizing the classroom’ via technology, as the claim is that each student is different and special, any learning problem can be overcome if there is an opportunity to repeat the problem often enough (ten times it is recommended) before mastery sets in. Unlike Mitra, who seems to accept Nicholas Negroponte’s (1999) (co-founder of MIT’s Media Lab in 1985) claim that ‘knowledge’ is a dead issue in education as it now becomes simply more information, Salman Khan, founder of Khan Academy, turned ‘good guy’ from being an analyst at a hedge fund, upgrades the ‘learning machine’ of the twentieth century into neo-Taylorist terms. Students now work at their own pace to ‘master’ as he puts it, the knowledge that is expected of them. Through data monitoring, teachers facilitate this ‘learning’ by calling on peer help to show the ‘slower’ ones how to accomplish the task. Teacher complicity in this programme is absolutely essential as they are the ones who help track the students through various differentiated speeds. Here differentiated learning fits the ‘mass customization’ in a more narrow way, as there is a hierarchy to the knowledge that is being taught. Once you master one level you push onto another more complex level. The whole idea of edutainment (i.e., Gee 2003) is built on this premise so that learning can be ‘fun.’ Khan boasts that homework and schoolwork have been reversed: students now come to school to experiment and play, following what has already happened in some workplaces where work and play have collapsed.

The fantasy of this approach is that a ‘learning machine’ programmed to the right level to the right individual will enable even the ‘slowest’ and most mentally challenged student to achieve a ‘mastery’ of that level. Students achieve points and badges just like in a video game. And, much like in a video game, one never ‘dies’ or fails; you can keep making mistakes until you ‘get it.’ So, progress is couched in a different sense of complexity theory, as there is an assumption that all knowledge begins with a simple base and moves up in difficulty. It is no surprise why mathematics is the subject that the Khan Academy caters to in what is now a non-profit organization. It is the educator’s dream of believing that even the most difficult concepts can be simply broken down into simpler components so that the student is able to comprehend, and thereby apply the knowledge in ‘game-type’ situations. Above all, it is time that is made *flexible*, and,

as we all know ‘time is money.’ Flexible time is usually the prerogative of the wealthy class. It is now being passed down to those with less fortunate circumstances to make them productive, passed down only now when the school can no longer manufacture the type of ‘worker’ needed for the digitalized economy. Flex time, or an ‘individual’s’ time, is now recognized for its variation so that the knowledge (or ‘job’) will eventually be accomplished. Khan’s academy can now free up time for a street kid in Calcutta (his example) to help his family during the day, and then spend two hours that are now possible in school. All possible schedules can be (theoretically) met, and all forms of age differences that can create embarrassment overcome, like the shame of being an illiterate adult. Khan believes in a ‘global one world classroom’ as peer-to-peer teaching possibilities via technologies become available (via Skype and so on). Khan’s TED lecture<sup>10</sup> ends with Bill Gates asking him questions that flesh out why this is the future of education. It is, after all Gates’ vision of educational achievement.

This approach to learning is best delivered by the so-called elite ivory universities around the world (Stanford, Oxford, Cambridge, MIT, Columbia and Harvard). Not only do elite universities now have satellite campuses around the world, they are now in the business of online courses, what are often called ‘machine learning classes’ where upwards of 100,000+ students are registered around the world. Whether ‘free,’ as with [Coursera.com](https://www.coursera.com), or students pay a modest fee to complete the course, the mega numbers of students make them lucrative. Given the edutainment mentality of this futures approach, it is the best professors who are chosen to deliver the ‘material,’ thereby assuring the dominance, not only of the institutions that package the delivery, but of a particular approach and interpretation of the ‘material’ that is being delivered in the name of ‘global reach’ to those who would otherwise never have access. Online courses deliver the ‘information,’ reversing the usual need for students to come into the university to ‘receive’ the information. Every elite university has a network of branches where faculty and ex-faculty are able to teach.<sup>11</sup>

These courses are made ‘real,’ in the sense that they are graded and have deadlines, offer credit and certificates for job resumes and credit transfers to other institutions where possible. The ‘material’ is ‘delivered’ in short segments that may be repeated as long as it takes to ‘master’ the ‘material’ before the next level is possible. A ‘retrieval’ practice is put in place to assure an endless loop that refreshes the screen so that another attempt is made possible redefining ‘failure.’ Such ‘machine’ courses are claimed to



be ‘personal,’ again humanizing, catering to the time and place constraints of the individual who is ‘plugged in.’ The ‘goods’ so delivered promote the needed skills ‘out there;’ they are said to promote lifelong learning so that the mind is always ‘expanding,’ and such courses can reach innovators ‘out there,’ who would never have had the opportunity to develop ideas and inventions without such a base understanding of the ‘material.’

‘Machine learning courses’ assume that knowledge is commodifiable and deliverable, like any skill. Peer grading is used to ensure that standards are maintained, and self-grading assures that an internalization and a self-policing take place as the content is ‘mastered.’ Given the global reach of these courses, they operate 24/7 as there is always someone online in some time zone who can ‘answer’ queries to questions. The idea of learning is understood basically as the ability to go through a curriculum and master its content through quizzes and feedback answers, sometimes with an instructor, in what are referred to as ‘blended course.’ The teacher or professor ‘delivers’ the package.

Perhaps more insidious is how learning now becomes ‘big data,’ as every click, every homework submission, every forum post from the thousands of online students can be now mined for data. With such data the efficiency of the course can be improved as ‘mistakes’ that a large majority of students make can now be reworked so that more of a percentage get the right answer. The more the misconceptions are cleared up, the greater improvement in learning to succeed is achieved. The ideal is that every student will get the right answers eventually as they work through the course, just as if they had a private tutor. Such online courses that deliver commodified knowledge have become the standard money maker for higher education.

Aside from the obvious reductionism as to what is ‘knowledge,’ these courses are most applicable to the sciences rather than the humanities, and rather useless when it comes to the arts (drama, visual art, dance, poetry, music and so on). The question of interactivity is always claimed to be plus feature of such learning. Few think of the obverse side of such interactivity, which is *interpassivity* (Pfaller 2003). The learning machine course, through its formatting, structures the type of student subjectivity desired, a subjectivity that complies with the programme’s structure that has been programmed. The exchange is one sided as the mastery of knowledge as content information is the overriding goal. But this is mastery not of the student; rather, it is the mastery of the programme that ‘desires’ such mastery to take place. Machine-learning, of course, is a naive way to think of

knowledge. It overlooks the important relationships that need to be established between the teacher and the learner. How bodies affect and are affected (Deleuze 1988), which is not part of the University Discourse that Lacan had articulated. Mitra recognizes this in his machine-learning model, but in a very simple way, as if a machinic facilitator is able to impart the needed encouragement.

In complete opposition to such ‘teaching machines’ is the message of the future delivered by ‘Sir’ Kenneth Robinson.<sup>12</sup> Perhaps no one does it better in terms of entertaining an audience than he? Robinson essentially says the same thing: schools are outdated and in order to release ‘creativity’ it is high time to recognize differentiated talents that can be encouraged to bloom so students find their place in the social order. Robinson is sort of a ‘gun for hire’ type. He speaks to corporate types as well as to school boards, and is sought as an inspirational speaker at educational conferences. He is right to point out that the question of what kind of education is needed for the future is impossible to answer. And, rehearses, each and every time, the mind–body split of subject areas that are a holdover from Modernism. So what is the alternative if, unlike Salman Khan, whose academy is backed up by Gates to promote interests in technology, there is to be hope and faith in a young generation? Of course it is creativity. Robinson tells many stories of ‘creativity’ by young people in their ability to ‘risk’ and be ‘wrong’ as they experiment early in life. He simply maintains that adults ‘grow out of creativity,’ and become less flexible, rigid.

A strong believer in the arts, creativity is the magical substance that speaks of the richness of human capacity. Robinson’s pitch for the future is appealing, and (sadly) perhaps that his message has been heard loud and clear by the communication and entertainment industries. Creativity is put to work for innovative means to maintain the consumption of ‘goods.’ Creativity for Robinson is ‘having an original idea that has value.’ The difficulty is in the term ‘original,’ as creativity is a ‘rare’ occurrence. If one looks at the artists who are not part of the entertainment and capitalist means of production, one finds a much more difficult story. Not only do artists ‘resist’ the social order, many, as is historically known, are unable to maintain their stability in the social order that has little to no place for them. For Robinson’s message regarding creativity to be heard, a future with a different set of transformative values would have to exist; otherwise, creativity becomes synonymous with affective labour. Cognitive capitalism is now simply supplemented by affective (bodily) capitalism.

Robinson's 'creativity' becomes reduced to innovation when it is applied to the decentralizing of schooling for the 'future.' Creativity becomes harnessed via entrepreneurial learning as praised by such organizations as the Organization for Economic Co-operation and Development (OECD) and the European Commission. Some of the most successful models are found in Sweden (Leffler 2014). But, it seems the targets for this entrepreneurial push are the populations that are the most vulnerable, in slums and favelas where the thirst for change to improving one's survival and qualities of life awaits just below the surface. 'Radical innovation,' as it is said, 'often comes from where there is huge need,' which should not surprise anyone.

Social entrepreneurship is touted as the future of education globally as it facilitates low cost ways for learning when it comes to large-scale populations in the so-called developing countries. But it also works all too well in countries such as China where class sizes are staggering in relation to even those of North America. Here management thinkers such as Charles Leadbeater<sup>13</sup> promote a style of education where technology is again fun and accessible, where gaming theory is put into action. This 'futures' model is rather 'simple.' The key is always to tap desire (usually called motivation); this desire is driven by a way to improve one's survival and lot in life. There has to be a payoff and so the pragmatics of learning has to be in place as such programmes must be relevant for life. Based on projects and questioning, their basic idea is taken from Paulo Freire's model of participatory education, but now put to entrepreneurial use rather than any left-leaning claims of socialism that Freire followers have. The most common technologies in place in such 'developing countries' to broadcast entrepreneurial educational programmes happen to be the mobile cell phone, and not the computer.

Creativity is that allusive 'daemon' that each one of us is asked to 'discover' in a society of control. Finding our 'thing' make us 'productive.' It is not easy to find your 'thing' in contemporary society. Although the arts are rather 'useless' in relation to placing a price tag on them, yet this is precisely what happens. As the saying goes, 'What is shit to one is gold to another,' as the transubstantiation of matter continually depends on context, desire and current marketing practices. Creativity, the way it has been taken up via capitalist interests, trades on characteristics that fit the neo-liberal entrepreneur; they emerge from the inside as the genius of the creative artist. For those philosophers, such as Deleuze (1987) where creativity always comes from the outside, it is an apprenticeship of signs that matters. An ability to have the world 'stare' back at you, so to

speak, and answer back. Artists are symptomologists for Deleuze; they are often delirious and ‘visionary’ in terms of the ‘possible worlds’ they create, providing new intensive affects and percepts that have never before existed. There are always inherent emotional risks when ‘creativity’ is not taken glibly as simple innovation, and the idea of genesis is given its full understanding of experimentation and invention. It makes ‘learning’ quite another matter where, again wonder and curiosity are explored without the pressures of meeting client demands, regardless if time has become flexible in the workplace.

Deleuze and Guattari had the idea of ‘becoming child,’ and Robinson is right when he says that children are fearless in their experimentation. Mike Leigh’s film, *Happy-Go-Lucky* (2008), presents us with a character we seldom come across—a primary school teacher named Poppy, who acts like a child, but she is an adult. How can that be? She seems to go through life accepting the fate that life brings in such a child-like way. From a Deleuzian standpoint, the question of relationships in the teacher–student transference is thought through assemblages of productive desire. Enigmatically Deleuze and Guattari say, ‘Children are Spinozists’ (TP, 256). By this they are referring to the Spinozian adage ‘what a body can do.’

The turn is towards pre-subjective affects, the intensities that increase or decrease the body’s capacity to act. Affects concern the *puissance* of a body, where power is relative and contrasted to *pouvoir*, where power is dominant. ‘Body’ refers to an assemblage, that is, a composition or a consistency of competing or unequal forces. These forces act differentially on one another within the entanglement of their relations to produce a singular individual. When bodies encounter one another, this relational encounter is a question of *puissance*; impersonal affects circulate or transfer between bodies. Relationality so understood, say between the teacher and the student, takes into consideration these affects, but also recognizes that these affects *do not* ‘belong’ to the individual, *it is what emerges in the encounter*. This can happen optimally, as well as what Deleuze and Guattari call reaching a ‘pessimist threshold,’ a degree zero when considering the intensity of affective composition. Optimal threshold refers to the highest possible degree a ‘subject’ is able to affect and be affected before the subject becomes something else. On the other end, a decomposition or deterritorialization takes place in relation to the pessimist limit. The subject is destroyed, disassembled and the degree of power diminished to non-existence. This range plays itself out in the classroom depending on the assemblages of power that are formed.

All this is to say ‘becoming-child’ in Deleuze and Guattari’s terms has nothing to do in relation to a child–adult dualism, that is, the child will ‘become’ an adult. Becoming-child refers to the formation of a consistency of affects, which presents a particular degree of power. It is the capacity to relate to the world like a Spinozian, that is, one assesses the signs that are posed by the milieu or situation and then finds creative ways to solve them. Each chronological age, in this respect, has a ‘becoming child.’ As they write, ‘the child is the becoming-young of every age. [...] Knowing how to age does not mean remaining young; it means extracting from one’s age the particles the speeds and slowness [that is, the affects], the flows that constitute the youth of *that* age’ (TP, 277, added emphasis).

This brief diversion into the thought of Deleuze and Guattari is simply to be reminded that ‘learning’ and the relationships to further learning are never so easily understood as simply being technical. Learning for Deleuze and Guattari is much more disruptive and much more ‘risky and dangerous,’ for it requires a formative transformation in the encounter. It happens when the given assemblage is at the ‘edge of chaos,’ and perhaps then new worlds open up by those who stay in tune to the signs from the Outside that come to them.<sup>14</sup>

### UP IN THE DARK, DARK CLOUDS: TAKE 3, THE FUTILITY OF RESISTANCE?

Few realize that the largest university in the USA is a corporate university, University of Phoenix (UOP), with over 200 locations scattered across the USA in 39 states, which boasts 240,000 students around the globe and over a million graduates. It has the largest business school in the USA, graduating 14,000 masters of business arts annually. It caters to working adults and employees of transnational corporations (TNCs) such as AT&T, Boeing, IBM, Intel, Lockheed Martin, Motorola and of course the US military offering online degrees composed of, as the online advertisement puts it, ‘industry responsive curriculum.’ E-learning, flexibility of chronological time and a wide selection of courses is the obvious future here. No need to put your life on hold for four years or find a parking space on campus. ‘Resistance is futile,’ when it comes to this vision of education ... so get used to it. The future is already here.

‘Resistance is Futile!’ a phrase that immediately conjures up the image of the Borg of *Star Trek* fame. How are we to interpret the iconic image of The Borg’s ‘cubical ship,’ the *least* aerodynamically shaped vessel in the

imaginative world of spatial science fiction? They do not move, but colonize from a quadrant of control. Is The Borg our technocratic educational elite who will eventually take over our species, assimilate us into their mould? Perhaps they are the ‘true’ commune—the threatening image of communism in disguise assimilating all differences so that banal sameness will prevail as the will is evacuated and the body or mind is put to use as a social drone: some will say that is what capitalism already is. China has become the mutant capitalist-communist country. We now sell our brainpower, if not so much our body power, often referred to as cognitive capitalism now that the manufacturing sectors are waning and disappearing. The permanency of capital is here to stay, as stable as The Borg cube, as are the ingenious technologies of the creative industries that sustain it. We all have our Macs and PCs, but few of us are hackers in the true sense of the term, and still fewer of us are familiar with copy left software and the Linux operating system that would make us free agents of corporate technology and the growing cloud technology that spreads its mist to *cover* us. It is just too time consuming to ‘resist’ given our busy ‘productive’ performative lives to keep up with the new operating platforms that are being introduced. In the past few years, my university, the University of Alberta in Edmonton, Canada, has introduced three new platforms that had to be learnt—a new e-mail service operated by Google; a new centralized telephone service; and an expectation that all of our courses will eventually go interactively online using Moodle (that is the Modular Object-Orientated Dynamic Learning Environment), a free source e-learning software platform, thereby making the future of learning a cyberspace event. The similarity of logos between MacDonald’s and Moodle should give one pause to think. Is this paranoid thinking or a fall into ‘becoming-schizo’?

Another meaning of ‘resistance is futile’ emerges with the recognition that resistance today is to be found everywhere; today’s art is resistance and resistance is art. Resistance has become a way of life and a very profitable activity. Today resistance exists on every corner but nothing changes. Resistance is just another brand like FCUK. In a contemporary context, artworks are staged within a binary of a critical model based on negation, deferral and lack, or an aesthetic model based on the ideas of transcendence.<sup>15</sup> In 2011, TIME placed the ‘Protester’ as the Person of the Year, a 25-year-old woman who decided to protest against the Bank of America. Even the non-sanctioned Occupy Wall Street protests were removed through fire regulations and municipal laws governing public parks and festivals. To protest today is to occupy no ground whatsoever;

one must become a perpetual moving sign with placard in hand, a zombie routed through streets ‘peacefully’ by police on horses or motorcycles. Does this simply confirm that the public–private divide has all but disappeared? You can eat your lunch and read in a park, but in what spaces you can truly protest have all been repressively desublimated: in other words freedom of speech and civil liberties have become restricted through the structural manipulations of open spaces; only cyberspace is left that is not yet fully controlled and regulated to get your message out. But this too is being shut down slowly, regulated incrementally. Modern liberal politics as we once knew it has all but disappeared. It is the lament that a liberal arts education and the humanities are no longer ‘useful,’ that there is an aversion to social values and civic mindedness, and a waning of intellectual integrity.<sup>16</sup> The future that the humanities once entertained seems to have dimmed and even in some universities gone out.

Romantic resistance in ‘societies of control’ emerges around the agency over the body: notably punk, Goth, body tattooing, piercing and modification, and porn-chic (the so-called slutwear and hookerwear—belly shirts, visible G-strings, sexercise), and plastic surgery of private parts such as vaginal rejuvenation and penis enhancement and abdomen tucks for men. Now, as a number of sociologists have argued, even the headscarf or hijab has become commodified and marketed (especially in Turkey) as a form of class distinction and rebellion against orthodoxies of Islam (Göçek and Balaghi 1994). The bulk of these resistances is metonymically located in girl’s bodies. In all these cases, however, resistance is equated with autonomy and agency over one’s body, which is tied to commodity consumption for special niche markets, which then feeds back into the neo-liberalist agenda of capitalism—namely, freedom as attached to chains of debt.

These forms of resistance are the remaining vestiges of the disciplined society as outlined by Michel Foucault that have now become commodified in their own right. The trend is oxymoronically towards mass customization or designer capitalism of the ‘goods life’ (jagodzinski 2010). In control societies resistance is an assemblage of flows: The G-string or belly shirt can mean fashion in one context, sexual availability in another, pride in one’s body, or functionality—it is hot outside or simply sheer habit. The headscarf can be a sign of fashion, of religious belief, political ideal, all or none of these depending on the assemblage that is formed where desire is circulated and holds the meaning in circulation for a given period of chronological time. Any stability of a defining image no longer holds for long.

The diagram of the panopticon has been supplanted by a reconfigured abstract machine, the synopticon, which now regulates and modulates a smooth, continuous and uniform space rather than as a striated or hierarchical one. One has to spray a mist over such space to make visible the forces that are at work, much like in many action sci-fi movies where a spray reveals the laser beam lights that crisscross and define the space to set off the alarms; many boundaries remain invisible, without detection, so that the body can be choreographed and positioned without coercion.

‘Resistance is futile’ in a control society has to be rethought for the future of education, especially now that digitalization has brought to fore what now characterizes globalization or the contemporary world order in general where the modern dialectic of inside and outside has been replaced by a play of degrees and intensities, of hybridity, artificiality and immaterialism. Immaterialism, after Jean-François Lyotard (1991), has nothing to do with being the opposite of matter; rather, it is the manipulation of matter via structural rules of organization (matrixes and algorithms) that no longer are human measures of space and time. The collapse of art, science and technology is one such obvious occurrence of the posthuman, where artists must now share with technologists and engineers the co-creation of the ‘work,’ thus separating the artwork from the collaborative team that made it happen, desubjectivizing its creation. The creative assemblage of tool making (or instrumentalization), composition, performance and reception through the intra-personal collaboration of a production team, best thought of as a cell, like Critical Art Ensemble, provides the implosion of disciplines that necessitates the creation of a new nonsense signifier for art—something like ‘art-techno-sci’ since this is no longer ‘art’ in the modernist sense. Art-techno-sci is created as much by accident, technology, the structure of matter, the context of presentation than by an entity called an ‘artist’ who expresses him or herself consciously through the so-called language of art. Agency is not only dispersed throughout this network of forces, but desire as the unknown factor X only emerges once the ‘work’ is released. ‘Work’ has the specificity of affect in this way of understanding, as an *event*.

The posthuman is a neurological shift in human understanding of precisely that which cannot be controlled in a society of control, which tries to control that which cannot be controlled through surveillance, tracking and marketing, and through various conservative reclamations of the social justice agenda such as postfeminism, postracism and green capitalism. Above all the shift to creativity is constantly captured by designer



capitalism. This is how posthumanism rewrites itself as humanism, preserving anthropocentric thought and managing the so-called ‘crisis’ of resistance and protest rather than becoming a *Durcharbeitung* (a working through) of the death of Man. *Anamnesis* is continually thwarted or repressed. In other words, it is the continued colonization of the virtual Outside where thinking can still take place. What cannot be controlled are things like fate, accident, contingency and unconscious desire as drives; these are the vestiges of unknowability which philosophers such as Deleuze named the Outside, Lacan the Real and Freud the uncanny. It is also the interiority of the body, the intrinsic body as opposed to the extrinsic body. Although both ‘bodies’ are intimately related, it is their continual capture in terms of the control that is at issue. The challenge is to have ‘art-techno-sci’ that can still think the Outside that has vanished or rather controlled by global forces of capitalism and the technologies that support it. This is the worry Bernard Stiegler’s (1998) work presents when he maintains that ‘tertiary memory’, or mnemotechnics as the exteriorization of the human, has become an ‘industrialization of memory.’

Within the context of the Anthropocene, is resistance futile as well? The big existential questions of human survival seem oddly silent in our public education systems, although the awareness of climate change grows only because the threat and damage of storm systems and unusual weather conditions just keep on occurring. What of the future here? All of the projected educational futures that I have discussed in this introduction are about a *world-for-us*, nothing about the *world-without-us*. This directly speaks of the title of this collection: the precarious future of education, whose state is now in the balance.

The following collection of chapters addresses the concern raised in this introduction. Rather than the precarious, sombre if not dark tenor of my introduction, the slate of chapters recognizes the current precarity of education and attempts to redress them. It is divided into three parts. Part I, ‘Curricular Difficulties: Ecology, Globalization and Pedagogy,’ addresses the worries that are happening within classrooms and what might be done. The lead chapter is by Terry R. Carson and Hans Smits, ‘After the Future in Teacher Education’ (Chap. 2). As emeriti, together they bring over 70 years of experience to the question of teacher education. What then needs to change in teacher education to meet the contemporary challenge? They address the necessity of recalling the importance of teacher subjectivities in pedagogical situations, and querying just what *is* curriculum thought by turning to psychoanalytic theories and radical hermeneutics. Carson

and Smits both raise the question of ‘difficult thought’ by dwelling on the conjunction ‘and.’ Smits’ contribution follows with a meditation on hermeneutics, emphasizing what Gadamer and Ricoeur can add to the question of ‘difficult learning.’ Both dismiss any simplification that learning is merely the transfer of knowledge without a profound recognition of the pedagogical responsibility of the teacher.

Jackie Seidel offers us ‘three lessons’ in her meditative chapter, ‘Curriculum Lessons from Ecopsychology’ (Chap. 3), which address the ecological concerns raised in the last paragraph of my introduction. Seidel’s narratives are poetic and thoughtful as she grapples with issues with the findings and concerns of ecopsychology as they apply to issues of the Anthropocene. Provocatively presented, the first lesson is an eulogy, an obituary to us *Homo sapiens sapiens*. The second addresses the question of ‘humanness’ or perhaps ‘human(e)ness’ through the zombie film, *Warm Bodies*. The last provocation, simply called ‘Contact,’ explores two ecopsychological principles: orienting education in a life-serving direction and contact. Seidel rests her hopes of redress in this direction maintaining that ecopsychology provides the tenets for the future of education.

The chapter that follows by Alexandra Fidyk, ‘The Influence of Cultural and Familial Complexes in the Classroom: A Post-Jungian View’ (Chap. 4), provides insights garnered from Jungian psychoanalysis to illustrate the vital importance of understanding the unconscious when working in education, especially the cultural and familial layers of the psyche. As Fidyk points out, the classrooms of today are home to traumas that are both compounded as well as acquired through the violence of schooling; both teachers and students unconsciously carry such traumas intergenerationally from their places and by events. Her chapter addresses these complexes of the psyche exposing the precarity of existence that is found in school environments.

The last chapter in this section by Jim Parsons, ‘Silent Schools? On the Re-emergence of Oral Language and Culture in Education’ (Chap. 5), presents a provocative thesis when it comes to the pervasive precarity of schooling. Parsons questions the predominance of written literacy in schools and raises a simple question that is rarely asked, ‘Why do we attempt to make schools quiet places?’ As social spaces, Parsons raises the need for oral literacy, which has been a repressed discourse given the advent of modernism. The chapter ends with suggestions as to how to increase the face-to-face communication that is fading, a point clearly made in the introduction where online courses are the order of the day.

Part II is titled, ‘Learning Explored,’ which again raises questions what precisely *is* learning, especially when we leave the naive notions that it is simply recalling a body of knowledge. Greg Thomas opens this section with, ‘What is and What Will be Science Learning (Theory) in Science Education Reform and Practice? Stories and Reflections’ (Chap. 6). Thomas reflects on four personal experiences in relation to what learning *is* in science education. His chapter raises questions that technological education seems to ignore or dismiss. The first reflection is in relation to his analysis of PISA and OECD’s influence on science literacy and learning to improve science education. He finds this development questionable. Thomas’ second reflection is on the ‘No Zero’ policy and its impact on assessment in relation to science education, while his third reflection tackles the well-known STEM initiative (Science, Technology, Engineering, and Math Education). Thomas ends with his experiences of reviewing essays and having his own essays reviewed when submitted to educational science journals in relation to his specialty, metacognition. Thomas laments just how inadequate such a review process can be, and queries just what can be done about reviewers who seem not to know the field of expertise. His chapter ends by raising the need to question more strenuously the science education enterprise, and the need to recall the fundamental questions concerning science education that have been forgotten or lost given the state of the global situation.

Derek Britton knows the culture of online courses very well as he is a member of Athabasca University, located in Edmonton, Alberta, Canada, which is primarily involved in distant education. In light of the introduction concerning the issues with such courses, Derek brings a Lacanian psychoanalytic perspective to the table regarding big data. In ‘Big Data and Learning Analytics: The ‘New’ Teaching Machine’ (Chap. 7), he explores the fantasy space of such learning. He exposes this learning fantasy by applying the insights of psychoanalysis through the trope of a personal narrative. Especially clever and revealing is his exposé, which tellingly illustrates the role of desire that unconsciously circulates in cyberspace interactions. Britton’s point is that the recognition of these fantasy formations is absolutely essential when it comes to online courses.

This section closes with Kent den Heyer’s, ‘The Case of Wondering ‘Its’: The Future as More of the Same in the Name of Change’ (Chap. 8). Den Heyer makes the claim that what is happening today is simply the latest repeat of past attempts at educational and curricula reform and change, simply more of the same. There is no ‘future.’ ‘Learnification,’ taken from

the work of Gert Biesta, fixates on learning and learners. The paradoxical statement, ‘learning to learn,’ for instance, has become the new slogan for education that seems to continually stretch itself out past post-adolescence as perpetual retraining goes on. Den Heyer makes the point that curriculum ‘doesn’t matter’ as it simply becomes a management tool designed to mute rather than amplify change. What we have are ‘token futures’ that are merely clichés, and the use of pithy sayings as rallying cries to market such change. Den Heyer ends his thoughtful chapter on the question of a ‘frozen futurism’ by wondering how teachers can meet the challenge of ‘more of the same in the name of change’ without falling into pessimism, or worse cynicism.

The last section, Part III, is titled ‘Technological Dilemmas.’ Certainly here we come face to face with the technologizing machine of education that trades on the latest array of ‘smart’ innovations to improve the learning of ‘knowledge.’ Kedrick James’ chapter, ‘Big Data and Learning Analytics: The “New” Teaching Machine’ (Chap. 9), is a sweeping examination of the automated digital devices that are supposed to enhance communication in schools. James’ analysis directly addresses the ‘control society’ mentioned in the introduction as he explores the way school life is mediated, networked, recorded and observed so that lived-life becomes increasingly dependent on AI devices. With this backdrop, he addresses what this means to the future of learning, creativity and literacy in our schools.

Cathy Adams picks up the same theme in ‘Technology’s Hidden Curriculum and the New Digital Pharmakon’ (Chap. 10). Her chapter reflects on the Digital Age and its implications and significances for humans, especially the way it affects teaching and teachers’ lives. She maintains that our relationship with designer algorithms should be productively understood as pharmacological, after Bernard Stiegler’s work. Employing a scene from the *Matrix*, the choice of red or blue pill as parodied by the political documentary *Marx Reloaded*, Adams opens up the pharmacological implications via Marshall McLuhan’s ecological approach to technology, which provides suggestive approaches to teaching educational technologies, including abstaining from their use. Adams’ conclusion echoes the introduction: ‘resistance is futile’ as she mediates on how the future of our human consciousness is changing, and the difficulty of being fully aware as to what is happening at levels below our consciousness.

Joe Norris’ chapter, ‘Pioneering the Use of Video in Research and Pedagogy: A Currere of Media(tion)’ (Chap. 11), follows. Norris explores the use of video technology in drama educational research and its pedagogy.

An innovative essay that asks its readers to coordinate their reading with many examples of video clips available on his website ([http://www.joenorrisplaybuilding.ca/?page\\_id=1949](http://www.joenorrisplaybuilding.ca/?page_id=1949)). It is a rich chapter of raising questions why arts-based research is a suppressed discourse, and why representation should no longer be the dominant paradigm in arts literacy. Norris' chapter is a personal journey in the sense of 'currere,' which denotes a personal curriculum as a site of autoethnographic study. Norris relates his early involvement with media in education, and then relates his doctoral research where video was used in an innovative way, a prescient event as video has now grown in popularity in qualitative research. He continues to show how that early exploration of video opened up multimedia explorations in the years that followed. Through Mirror Theatre, a participatory performance drama group that explores student issues in schools by way of workshops, Norris develops a way of incorporating video to illustrate learning techniques that could then be easily disseminated and posted on the Internet to reach a wide range of audiences. The last section of his chapter is an articulation of the processes involved in undertaking such performative research of live recording where the use of video presents the concerns of understanding the milieu of interaction: camera positions, number of cameras, audience participation and reaction, issues of improvisation, rehearsals and so on. In brief, Norris is attempting to create a new lexicon of video in educational drama research. He ends with a meditation that this should be the future of education where multiple forms of knowing can be made available to teachers and students via multimedia productions, but with the proviso that this direction continues to be a 'literacy' that remains critical.

The very last chapter by Jessie Beier is an extremely appropriate ending to this section and the book on the future of technology in education. With the provocative title, 'The Future is Cancelled: From *Melancholia* to Belief in the World' (Chap. 12), Beier addresses the last concern of the introduction, the Anthropocene. It is the only chapter that dwells on the world-without-us, and forms a stark contrast to self-centred technologies of control. What *is* teaching at the End-of-the-World then? Is it even possible given the possible scenario of human extinction? Our precarious existence is brought front line and centre as the recognition that it may well all be too late to change things around, for the Earth does not care whether we do or do not exist. Beier calls for a new image of thought if our 'future' is already foreclosed and thus 'cancelled.' Riffing on the quite extraordinary film by Lars von Trier, *Melancholia*, an exception when it comes to

Hollywood's Apocalyptic imagination, Beier attempts to think alongside its narrative as to what possibilities are left for education. Deleuzian in its orientation, she calls for the renewal of a 'belief in the world,' but a belief that is specific to the work of Maurizio Lazzarato (2008); it lies in action and actualization. Lazzarato belief is 'utopian,' not in the sense of an idealized impossible state to reach, but as Deleuze and Guattari think utopia in *What is Philosophy?* a belief in an invisible or possible world that is to come, which is nowhere but *now*. It needs to be actualized and affirmed. Beier ends her chapter by addressing ecological and micropolitical forms of resistance that take their trajectory in another direction than those of modernist emancipatory movements. Guattari's 'three ecologies' form the inspiration for this ecological force. Ultimately she says, it becomes a question of subjective enunciation; that is, how one might live and *still* 'believe in the world.' In this way, her educational project is one where the future is kept open, to fabulate new possible words so that a future is produced to meet the challenges of our current precarity, that of the Anthropocene.

## NOTES

1. 'After the future' is the title of a book first coined by Franco 'Bifo' Berardi (2011). The thesis of the book maintains that the future as developed in modernism seems to now be impossible.
2. The video is available on the BBC News (<http://www.bbc.com/news/education-28990191>). 1 September 2014.
3. The so-called 'affective turn.' See Andrejevic (2013) for a readable analysis of these developments.
4. Aside from the rash of zombie movies, there are those without special effects, which are much more compelling and nerve wrecking such as Michael Haneke's *Time of the Wolf* (2003) or Fernando Meirelles' *Blindness* (2008).
5. Here I am thinking of the television series *Humans* (2015–), a British-American science fiction where Artificial Intelligence and robotics have reached a point 'beyond' the famous character of Dada on *Star Trek*. Anthropomorphic robots called 'synths' have become the new 'slaves' of the social order. On the other end, we have *The Leftovers* (2014–), which takes place three years after a global event called 'Sudden Departure' that remains inexplicable as 2 per cent of the world's population (140 million) have disappeared.
6. Perhaps the iconic example here is *24* (2001–2010) where Jack Bauer (Kiefer Sutherland) is part of the Counter Terrorist Unit (CTU), who in 24 hours of 'real' time must stave off devastation.

7. Sugata Mitra is very popular on the TED circuit, listed as a TED prizewinner for his idea to create a 'School in the Cloud.'
8. One should listen to Sugata Mitra TED talk, 'Build a School in the Cloud' (2013), and concentrate on his 'jokes' through a Freudian lens, as the jokes he tells, which make the audience laugh and give him a standing ovation, are telling of what is behind the Cloud School. This same 'help' to the poor of India (including the Untouchables as Marx's *lumpenproletariate*) has been made possible by microloans for them to become productive, as developed by the Nobel Laureate Muhammad Yunus, the founder of Grameen Bank. Blake Mycoske, the founder of TOMS Shoes, donates a pair of TOMS shoes to the poor for every pair a customer buys. There is also Pencils of Promise (PoP), where 'for profit' is modified as 'for purpose,' which is supposed to blur the line in relation to non-profit organizations. PoP builds schools, but they also further their own agendas through them and in them. Slavoj Žižek (2010) is quite good at exposing this new form of benevolence by the business elite. See his 'RSA Animation; First as Tragedy, Then as Farce.' Who can criticize this development that claims the high ground of justice, self-help, and aid to move out of poverty, all in the name of capitalism without questioning the capitalist machine that creates these issues in the first place. Corporate businesses are, after all, the 'good guys' for they have now discovered 'responsibility.'
9. One example of many is Phil Schiller, Apple marketing chief who promotes apps for teachers, along with whiteboards, electronic grade-books that require software to keep track of the kids. We move from the nineteenth-century factory model to the modulated school model where the tracking gets easier and seemingly more 'flexible.' See Rose (2012).
10. Salman Khan's (2011) 'Let's Use Video to Reinvent Education,' TED talk.
11. For instance, XSEED is an educational approach in India developed by iDiscoveri Education, an Indian education company that works with alumni from Harvard, Cambridge, MIT among others.
12. Robinson is very popular with the TED organization. See for instance: Do Schools Kill Creativity? (2007).
13. Leadbeater is backed by Accenture, a management consultancy that ranks him as one of the 'top' management thinkers in the world. He is a TED regular. See, for example his, Education Innovation in the Slums (2010), TED talk.
14. The TED talk by Elizabeth Gilbert, the author of the best seller, *Eat, Pray, Love* (2006), which unfortunately was a terrible screenplay as acted by Julia Roberts, offers a meditation on creativity that is quite at odds with the entrepreneurial understanding. See Gilbert (2009).

15. See the four lectures by Suhail Malik (2013) on the state of contemporary art.
16. See Liz Coleman's TED talk, A Call to Reinvent Liberal Arts Education (2009).

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