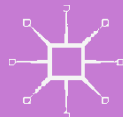


THE PRECARIOUS FUTURE OF EDUCATION

*Risk and Uncertainty in Ecology,
Curriculum, Learning, and Technology*

edited by
jan jagodzinski

Education, Psychoanalysis, and Social Transformation



Education, Psychoanalysis, and Social
Transformation

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jan jagodzinski
Editor

The Precarious Future of Education

Risk and Uncertainty in Ecology, Curriculum,
Learning, and Technology

palgrave
macmillan

Editor

jan jagodzinski
Department of Secondary Education
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Edmonton, Alberta, Canada

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This book is dedicated to Terry Carson, Professor Emeritus. Terry served as Chair of the Department of Secondary Education at the University of Alberta from 1997 to 2004. I thank him for the many years of friendship and mentoring.

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I would first like to thank all those participants who took part in the lecture series *After the Future of Education* that took place in the winter semester of 2014 at the University of Alberta, Edmonton, Canada. Many of them appear in this collection. I would especially like to thank my dearest colleagues Terry Carson and Hans Smits for their many years of devotion to the curriculum field, and their attempt to improve the quality of teaching in schools by placing their energies into teacher education. The depth of their experience is reflected in their essay. Both are now emeriti. I wish to especially thank Terry Carson for the many years, over thirty, that we have been department members, and to acknowledge all the support he has given me over those many years. Without Terry's continued encouragement, I would not have sustained my own devotion to teaching. He showed me how one can be gracious throughout the toughest moments in life. This book is dedicated to him as a poor cousin to a proper *Festschrift*.

I would like to thank my colleague Jackie Seidel whose devotion to ecology and education is equally passionate. Her work in this area is well known and respected. Equally so my admiration goes out to Alexandra Fidyk. She is one of the best-known Jungian scholars working in the field of education, and I am proud that she is a colleague in my department. Her essay exhibits her depth in this field. It is a treat to be able to include her in this collection. I would like to thank Jim Parsons, my oldest and most enduring colleague. Jim's modesty and positive orientation toward life always inspired me. An author of too many books to ever list in a biography, Jim places his efforts into schools, improving their climates and

networking with teachers and administrators to make each a better place. He has an extraordinary talent to do this. Always supportive of his grads, it has been a pleasure to call him a colleague in a department that made its reputation on curriculum thought and theorizing. I thank him for his interesting meditative chapter on what is happening in schools today as influenced by the changes in technology.

Certainly close to my heart are the issues Greg Thomas raises in this collection as well. Greg has many years of experiences in teaching science education. He has placed his pragmatic wit and knowledge to vivify what the issues are in that field today. Greg, Australian born, travels regularly to Southeast Asia where his expertise is on call. Once more, I am proud to have him as a colleague, to call him a “mate” in the same department as he shows leadership in this area. I wish to thank Derek Britton, whose insights into school and Internet life are well established, as are his political savvy and acumen that are quickly recognized through his writings. I am grateful for his contribution as he brings a Lacanian perspective to the table, which uncovers the fantasy life of learning and teaching, a discourse that remains under-represented in the educational literature. Kent den Heyer enables me to further boast of the capacities of our department. Kent has always raised the critical issues concerning social science education. The political stance of Alain Badiou is often brought up, and his concern for Indigenous rights and treaties comes across in his classroom teaching. Thank you Kent for your contribution on the vicissitudes of learning and the uses and abuses of curriculum reform for educators.

Many thanks also go to Kedrick James, whom I had the good fortune to meet at the University of British Columbia. Kedrick is an accomplished poet, dramatist and musician, who brings all of his talent to questions of communication and technology. In a shrewd and insightful chapter, Kedrick raises issues that are not likely to be embraced by educational technocrats. His exposé provides the needed questions of media and communication literacy today, and I thank him for that. As I equally thank Cathy Adams for a revealing chapter on the use of technologies in our schools today. Once more I can take pride that Cathy’s expertise in technology and phenomenology is well-recognized in those circles where there is no immediate glib acceptance of the latest technologies for schools. Cathy is remarkably astute when it comes to the dangers of the blind acceptance of technology. She is well versed in computer programming and in assessing the need for programming in today’s schools. Many thanks to my friend Joe Norris, who now teaches at Brock University in the drama

department; Joe was a former colleague in the department and his legacy continues to linger as he has been credited for developing a new research strategy, which he names, Duoethnography. It is a pleasure to have Joe part of this collection as it rounds out the arts—drama in this case. Lastly, and never the least, is Jessie Beier, whose artistic talents and ability to push the edges of thought is so welcoming. Her contribution to this collection stands out in its address to our species precarity as to where we stand on this Earth. Thank you Jessie.

I thank all of you for making this collection a historical document for acknowledging the spirit of the Department of Secondary Education as all of you have a connection to it in one way or another. I hope that your contribution to the discussion “after the future of education” continues with the distribution of this book. It belongs to us all as I am merely a messenger. I thank you for your energies and support to make it happen.

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Gregory P. Thomas focuses predominantly on researching metacognition and learning theory within the field of science education. Since beginning his career as a high school chemistry and biology teacher in 1988, he has had a keen interest in issues and trends in science education pedagogy and curriculum, and why some questionable educational views become dominant at the expense of those with evidence-supported potential and sociopolitical influences on science education. His teaching, research and professional development activities in Australia, Thailand, the Peoples’ Republic of China, Hong Kong, Canada and South Africa have afforded him a broad knowledge and understanding of these issues and trends. Most recently he has begun to look at the sometimes problematic nature of what it means to be an “academic” in science education and the future of science education as a more ethically oriented form of praxis.

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The Precarious Future of Education: The Speculative Fictions of Education

jan jagodzinski

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.¹ 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).²

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.³ 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.⁴ 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.’⁵ 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.⁶ 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,⁷ 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.’⁸ 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.⁹ 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 lecture¹⁰ 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.¹¹

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.¹² 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 Leadbeater¹³ 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.¹⁴

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.¹⁵ 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.¹⁶ 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). 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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PART I

Curricular Difficulties: Ecology,
Globalization and Pedagogy

After the Future in Teacher Education

Terrance Carson and Hans Smits

PROLOGUE

We would like to begin these reflections by thanking our friend and colleague jan jagodzinski for the provocation. The papers that follow are in response to an invitation from jan to speak at a University of Alberta Faculty of Education lecture series that he organized around the theme: “After the Future in Education”. The theme was intriguing, and both the topic and manner of presentation were left generously open.

jan’s invitation came at an opportune moment for the two of us. We had each recently retired after a number of years spent developing, thinking about and administering teacher education programs. Although we had worked in different institutional settings, our two universities shared a common mandate within the same provincial context. Thus now retired, and freed from the burdens and immediacy of teacher education

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practice, we were able to step back and consider what we have been doing—all of this thanks to the openness of Jan’s invitation.

Thinking about and living through attempts to reform teacher education is the preoccupation of both papers. The fact that teacher education consumes the attention of education faculties is well known. This is especially true in the province of Alberta, which in 1945 was the first jurisdiction in Canada to close teachers’ colleges and to entrust the education of teachers entirely to the universities. Given the stakes, the desire to get teacher education “right” is perfectly reasonable. Such a desire underwrites a myriad of curriculum reform efforts. But the pedagogical challenges of teacher education resist the normal assumptions of curriculum development. Each of these papers constitutes an exploration of these resistances.

PART I: ON THE ORIGINAL DIFFICULTY OF CURRICULUM AND PEDAGOGY IN TEACHER EDUCATION

Terrance Carson

The education of teachers is unquestionably the central mission of a Faculty of Education. And yet, developing appropriate programs and pedagogies for teacher education is a surprisingly complicated and puzzling enterprise. The puzzle might be traced, in part, to an existential difficulty of trying to provide a suitable course of study to achieve competency in teaching, teaching being an activity that is inherently dynamic and context specific. Because teaching is inherently situational and dynamic, how it gets represented in campus-based education courses inevitably pales against the reality and variety experienced by teaching in actual school situations. This produces the oft-noted “gap” between theory and practice lamented both by student teachers and by teacher educators alike, and a concomitant impetus to wish to reform and improve teacher education programs to somehow “close” this gap.

While impulses to reform teacher education programs can be driven by any one of a number of specific concerns, common to all is the desire to improve the preparation of neophyte teachers for the “real world” of life in schools and classrooms in contemporary society. Much effort is expended in trying to reduce this gap between theory and practice programmatically by adding to, subtracting from and changing existing courses. And while these efforts begin energetically enough, they frequently end in the frustration of faculty members and departmental turf wars, disappointed expectations,

flawed implementation, while offering very little in the way of resulting changes in the experience and in the actual preparation of new teachers.

Dissatisfaction with existing teacher education programs and the ineffectiveness of reform efforts place Faculties of Education in an ongoing dilemma. Faculties cannot abandon their search for better programs, because teacher preparation is their central purpose, but routes to real improvement continue to be opaque—at least in terms of traditional content-centered curriculum change. Why is this so? What is it that makes curriculum reform so difficult in teacher education?

Finding a way forward suggests that there is a need to pause and to consider again the sources of the essential difficulty of planning programs for context-bound pedagogical encounters. Clearly the failure of reform is not for the want of expertise. Normally, teacher education faculty members are specialists in their respective subject areas and in possession of considerable school teaching experience. Having had this professional background and experience, the pedagogical task of teaching would seem for most experienced educators to be a relatively straightforward matter of sharing this expertise, buttressing it with a substantial body of relevant professional and academic literature, and then presenting it to willing neophyte teachers.

Certainly, the wisdom of experience backed by the accumulated weight of teacher education scholarship does find relevance in the project of learning to teach. But the relevance continues to remain somewhat peripheral to student teachers' main concern for the self actually becoming a teacher. Knowledge for teaching involves more than simply acquiring information about teaching; rather, it is knowledge that must be shaped and negotiated in the service of personally becoming who one is going to be as a teacher. As Deborah Britzman points out learning to teach is fundamentally a “psychic event ... [entailing] a time of biographical crisis (1991, 220)”. The psychic stakes involved in learning to teach readily become apparent in the form of uncertainties, doubts and resistances that frequently attend the process of acquiring the knowledge for teaching. This is evident, for example, in learning something like lesson planning, which is obviously important information for teaching. But learning of lesson planning is often resisted by student teachers, because it is accompanied by so many uncertainties, and awakened fears about knowing enough, having sufficient organizational skills, and having the necessary personal authority to managing as yet unknown classrooms.

Shoshanna Felman suggests that one possible source of the difficulty with knowledge in teacher education might lie in the fact observed by Lacan that “teaching is knowledge that cannot be exchanged (2012, 27)”.

As Lacan explains, like the knowledge of the analyst, the knowledge necessary for teaching cannot be acquired once and for all, but must be used in each case differently. We might conclude from this observation that there is an essential misrecognition of the nature of knowledge within teacher education that lies at the heart of continuing dissatisfaction with our programs. Important matters of how to plan lessons, how to maintain order in the classroom, how teachers are to fashion appropriate relationships with students and many other possible questions crucial for success in teaching cannot simply be passed on from expert to neophyte. It is knowledge requiring pedagogical judgment and a sense of the appropriate occasion for the proper application. The essential mistake, to which Lacan's aphorism refers, is that while generalizable knowledge about teaching may undoubtedly be correct, it is not necessarily pertinent for the self who is now becoming a teacher.

Curriculum in a New Key and Teacher Education

Compounding this difficulty with the nature of knowledge in teacher education is the complexity of curriculum making. Some time ago, William Pinar acknowledged the limitations of understanding curriculum as a fixed course of study with the inauguration of a "reconceptualization of curriculum studies (1974)". The metaphor of a "curriculum", literally meaning a racecourse, denotes that there is a secure and already established track of knowledge to be followed. This is a rather limited view of what curriculum needs to be. Accordingly, Pinar suggested replacing the nominative form of the word curriculum with its Latin root "currere", the verb to run, in so doing denoting curriculum as an active project. Curriculum understood as *currere* expands the notion of curriculum to an enterprise that acts in the service of interpreting the course of personal and collective lives.

In a similar fashion, while also seeking a more dynamic understanding of curriculum, Ted Aoki published an influential essay, "Curriculum in a New Key (1980)", that drew upon the critical theory of Jürgen Habermas. Following Habermas (1970), Aoki proposed three modes of understanding curriculum, each of which related to fundamental human interests. The first and dominant form of curriculum thinking was identified as privileging empirical analytic knowledge rooted in a human interest in control. Inspired by Habermas, Aoki introduced two other forms of knowledge based upon other human interests. The first was hermeneutic interpretive knowledge, produced by a human interest in communication, and

the second was critical theoretical knowledge that resulted from a human interest in freedom from oppression.

In subsequent years, Aoki would become critical of the structuralist presumptions inherent in his original interpretation and application of Habermas to curriculum studies. However, it was the thinking in “a new key” that enabled Aoki to come to interpret and describe teaching as an “in-dwelling” within the space of “curriculum-as-plan and curriculum-as-lived (1991/2005, 159)”. The planned curriculum, which prescribes the goals and suggested activities for reaching these, lies obviously within the ambit of an empirical analytic interest in control. Descriptions of the curriculum as lived reflect a hermeneutic interpretive interest in communicating the life world of students and teachers. Aoki’s description of teaching as an in-dwelling between two curriculum worlds reflects the manifold tensions existing between planning and doing, aspiration and contingency, social responsibility and pedagogical response that characterize teaching.

For Aoki a curriculum language appropriate to teacher education dwelt constantly within a space between the curriculum-as-lived and the curriculum-as-plan. This “conjunctive space”—the space of the “and”—formed the centerpiece of Aoki’s curriculum theorizing. And while the conjunctive space might be adequate to describing the life world of teaching, it is in constant danger of vanishing institutionally in the pragmatics of program planning and maintenance. Aoki took note of this when he chided his former colleagues about the disappearance of the “and” in the education course designations in the 1990s. In a keynote talk given on the occasion of the 50th anniversary of the University of Alberta Faculty of Education he slyly remarked, “Had I realized that it was simply a matter of changing the course prefixes from C and I (curriculum and instruction) to EDEL and EDSE (designating Elementary or Secondary Education departmental offerings), I would have saved myself a lot of trouble”.

The “trouble” to which Aoki referred was the trouble borne out a refusal to take the easy way out, and to stay with the original difficulty of trying to fashion a pedagogy and curriculum appropriate to the education of teachers. Institutions, as Aoki intimates, will habitually avoid staying with difficulty for reasons of clarity and efficiency. It follows that an unwillingness to face up to the original difficulty involved in institutionally sustaining programs for learning to teach, which is an activity that is inherently situational and unfixed, will have to come at the cost of systematically misunderstanding teaching and the true task of teacher education.

Some assistance in charting a way forward and out of this dilemma for teacher education might yet be found in consulting the literature on radical hermeneutic thought, which is a scholarly tradition that analyzes the same tendencies in philosophy that has tried to avoid the original difficulty of life.

Radical Hermeneutics and the Original Difficulty of Life

John Caputo describes radical hermeneutics as “a hermeneutics of facticity (1987, 1) ... [that] attempt[s] to stick with the original difficulty of life, and not to betray it with [a] metaphysics [of presence] (1)”. The hermeneutic tradition itself was originally concerned with the interpretation of sacred and literary texts—a tradition that is now characterized as “regional hermeneutics”. Beginning in the nineteenth century, and concomitant with the rise of the natural sciences, thinking turned toward the possibility that the various forms of regional hermeneutics might serve as the basis for a general hermeneutics that would be appropriate to the development of a uniquely human science inquiry (a *geisteswissenschaften*—literally the sciences of the spirit) that would be distinctive from a (*naturwissenschaften*) inquiry in the natural sciences. Human science inquiry was developed in the twentieth century, principally through Heidegger, Gadamer and Ricoeur who extended hermeneutics to ontological inquiry and the interpretation of questions of meaning and being in the world.

Taking on questions of existence and understanding human action necessarily require that all interpretation will be provisional. The openness of interpretation is reflected in the image of the hermeneutic circle, but the openness and creativity of interpretation is also disciplined by what Paul Ricoeur (1974) has called the “interpretive arc” that moves between moments of explanation and understanding in the hermeneutic circle. For Ricoeur explanation and understanding exist in a dialectical relationship in the interpretive process. Caputo’s point of departure in the radicalization of hermeneutics is that while acknowledging the ongoing tension between explanation and understanding, the historical tendency of western philosophy has always been to want to privilege explanation over understanding.

In his book *Radical Hermeneutics: Repetition, Deconstruction and the Hermeneutic Project* (1987), John Caputo seeks to counter this tendency. In so doing, he outlines a hermeneutics that steadfastly holds to the project of understanding movement and the flux of life. He begins with a discussion of the work of the Danish existential philosopher Søren Kierkegaard,

who set himself against the dominance of Hegelian philosophy in the mid-nineteenth century. In Hegel, Caputo argues, “[t]he effects of time are made safe, unfolding in accordance with the [preset] categories of reason (19)”. The originality of Kierkegaard’s insight that Caputo draws upon provides a different conception of time. Where Hegel understood change as a being a “recollection” of times past—a recouping of past cognition—Kierkegaard introduced the notion of “repetition”. According to Caputo, recollection “is the sort of thing that philosophers, who distrust movement are always doing when they speak in the name of movement (13)”. By contrast, change understood as a “repetition” is not a lost actuality, but is rather a “remembering forward ... “a possibility yet to be seized (14)”.

For Caputo, Kierkegaard’s concept of repetition is the inaugural move for the development of a radical hermeneutics that is capable of interpreting the flux and contingencies of everyday life as movement. It is a hermeneutics that works from below, from encounters with practice, remaining open to what Kierkegaard calls “the original difficulty of life”. Caputo goes on to trace a tradition of radical hermeneutic thought from Kierkegaard, through Husserl’s early phenomenology, and Heidegger’s existential hermeneutics, all of which are given a deconstructive reading through Derrida.

The references to existentialism, phenomenology and deconstruction brought by Caputo in fashioning a radical hermeneutics offer theoretical support for understanding movement as the unfolding of possibilities, as well as serving as a continuing reminder of the temptations to still the flux by interpreting change as recollection. In invoking the tradition of radical hermeneutics it is interesting to note, in passing, that existentialism, phenomenology and deconstruction are scholarly orientations that have been well represented in curriculum research at the University of Alberta over the past several decades.

The Difficulty of Being in an Over Familiar Profession

To be sure, manners of thinking rooted in a metaphysics of presence have frustrated curriculum development and change in teacher education. Radical hermeneutics offers some philosophical insights as to the sources of the problem, but does not provide much in the way of practical pedagogical assistance. Pedagogy of learning to teach must face the particular problems inherent to being employed, in the words of Deborah Britzman (2003), “an over familiar profession”. Students enter the Faculty having

already spent many hours and years observing teachers. This produces a deep reservoir of impressions about what it is that teachers do and the requirements for success in that role. As Britzman points out, this collective and taken-for-granted knowledge concerning teachers' work assumes the status of a cultural myth. She outlines three cultural myths concerning teachers' work that, taken together, serve to disorganize teacher education pedagogy. The first myth is that everything depends upon the teacher. The second is that teachers are self-made, and the third suggests that the teacher must be the expert. Having the status of cultural myths means that while these ideas circulate widely as taken-for-granted assumptions about teaching, the veracity of such assumptions is seldom challenged.

Thoroughly imbued with cultural myths about teaching, students enter into their teacher education programs already wondering if they know enough, or if they have the requisite authority to control a classroom environment. Knowing enough is particularly a concern in secondary education where subject matter expertise is especially valorized. Convinced that teachers are ultimately self-made, many student teachers are often ambivalent about the campus-based components of their teacher education, feeling that it is ultimately field experience practice that determines their learning how to teach. This might explain why student teachers are often impatient with the academic literature and regard much of the talk about teaching as being "too theoretical". Meanwhile they inordinately value their own teaching practice and the securing of practical tips from others.

How the field experience is structured and placed within the teacher education program are telling artifacts of the effects of the cultural myths on teacher education programs. It is common to withhold much of a student's teaching practice until late in their program. This is presumably to allow for better preparation to enhance teaching performance. Once the field experience begins students often teach excessively, taking responsibility for many classes and even being advised to take on a full load of teaching responsibility by the end of their practicum. Excessive teaching withheld until late in program has become standard procedure over number of years, and is supported by student's desires for classroom experience, often endorsed by teacher educators as well as many practicing teachers. Few would deny the importance of good planning and performance in competent teaching, but a focus on performativity reduces the possibilities of what can be learned about the self, others and subject matter through encounters with the diversity of contemporary classroom

life that is potentially afforded by the field experience. A focus on performance curtails possibly rich opportunities for inquiry, as the emphasis is on the evaluation of an individual's teaching under the gaze of the expert, rather than what can be learned about teaching from engagement in actual classrooms.

Forging New Paths for Curriculum and Pedagogy

Theorizing, study and research are especially important for curriculum and pedagogy to become mutually informing discourses in teacher education. This is critically important given the exigencies of working in an overfamiliar profession. Faculties will always be subject to an array of advice and opinions about teacher education freely given from many quarters. Much of this advice leans heavily on the voice of experience. There is no denying that student teachers and teachers in general appreciate receiving advice and ideas from those with experience. Over their careers teachers accumulate files full of lesson plans and teaching ideas. Collections of best practices are valuable and regularly shared among colleagues in teaching. And to be sure, practical ideas from others are especially important for neophyte teachers in the absence of their own direct experiences. However, a mere compendium of the practical is a very thin basis upon which to build the pedagogy of teacher education.

I want to suggest in these reflections that we cannot and should not shy away from the original difficulty that learning to teach is an uncertain enterprise of preparing for future and, as yet, unknown pedagogical engagements. Teaching is always going to be context bound. And while planning and having a storehouse of teaching ideas may be important in making preparations, a lack of teaching experience places serious limitations on the utility of suggestions from others, as well as hinders the ability to create one's own plans. What a beginning teacher chiefly needs are opportunities for practice. Most importantly, by engaging in opportunities for practice, students will also be trying out themselves as teachers.

Superficially, the trying out of oneself as a teacher may appear to be the same thing as learning from experience, but the pedagogical intent of trying out the self is quite different and much more subtle than the trial-and-error pragmatics of learning from experience. As Deborah Britzman (2003) has explained, learning to teach is a psychic process, in which student teachers are fashioning their identities by negotiating a variety of authoritative and personally persuasive discourses. Authoritative discourses arrive

from a multiplicity of sources in the lives of student teachers: in the voices of their mentor teachers, from university instructors, by reading teaching guides, through the demands of the official curriculum, and—most subtly and pervasively—in the weight of the cultural expectations that are historically invested in teachers. In fashioning their teaching identities these various authoritative discourses are vying with other—and equally strong—personally persuasive discourses that originate in a student teacher’s biography. Personally persuasive discourses are made up of the deeply ethical, social and political commitments that constitute a person’s belief system. These beliefs are often the reason why a person goes into teaching in the first place. The process of negotiating these authoritative and personally persuasive discourses will take time as it is fashioned through teaching practice, observation, feedback and making constant revisions. Ultimately, of course, learning to teach and becoming a teacher will be a lifelong process, but pedagogically it begins and takes on the shape of its scholarly character in the undergraduate teacher education program.

Learning from the Original Difficulty of Learning to Teach

Aoki’s project of dwelling within the conjunctive space of the “and” (Pinar and Irwin 2005, 159) has provided a suggestive space for curriculum and pedagogy to mutually inform one another. Changes inaugurated by the reconceptualization of curriculum studies as *currevere* have opened the curriculum field to a broad range of scholarly discourses with potential to inform teacher education. There are many discourses pertinent to teacher education: gender and sexuality, wisdom traditions and post-colonialism come immediately to mind. In these reflections, I lean heavily on psychoanalytic theories of learning and radical hermeneutics as being two curriculum discourses that seem to be especially relevant to gaining better insight into the sources of dissatisfaction with present programs and offering directions for future reforms in teacher education.

Psychoanalytic theories of learning provide a deeper insight into the dynamics of teacher identity formation. A psychoanalytic understanding of learning indicates that knowledge for teaching is far more complex than the mere acquisition of sets of prescribed knowledge, skills and attributes of being a teacher. Rather, learning to teach needs to be appreciated not as a time of knowledge acquisition, but as Deborah Britzman advises, a time of learning that inevitably will entail biographical crisis. It is a time in which student teachers are consumed “with negotiating, constructing,

and consenting to their identity as a teacher (Britzman 1991, 220)". The phrase "teacher identity formation" has become common currency that is employed in describing what we are up to in teacher education. This may be a much needed acknowledgement that learning to teach is a psychic event. But one wonders how much this has been understood or really appreciated in the protracted negotiations that take place during the teacher education reform process. If identity formation were actually given priority, there would be much greater attention to the architecture of programs, to the shaping of school- and campus-based experiences, with a much lesser consideration to the contents and arrangement of university course work. In this regard Britzman's caution is worth keeping in mind—that spaces for negotiation will be constantly under threat "because ... orientations to autonomy, authority, certainty, and order, taken up by those already there, work to dismantle [opportunities to negotiate identities] and threaten to make [being a] *student teacher* an oxymoron (1991, 220, original emphasis)."

While the planned curriculum of the teacher education program may enable and provide spaces and potential for understanding teaching, radical hermeneutics has something to say about the limits of planning in the face of the original difficulty of life. Pedagogy is relational and contextual, and happening in the moment. Max van Manen (2001) and his students have eloquently explored and expressed these moments through an impressive body of phenomenological writing. Of course these moments might be sensitively described and interpreted as somehow defining the "essence" of pedagogy, but the life-world resists being summed up and it continues to have the power to surprise. While this may seem to be an obvious observation, the cultural myths of teaching, as Britzman (2003) suggests, have given the existence of surprise a negative valence. It is as if surprise needs to be feared, because it demonstrates a loss of control, a lack of adequate planning and a failure to anticipate possible outcomes.

Radical hermeneutics offers an alternative interpretation, more positive view of surprise. Radical hermeneutics provides a counter narrative to teacher education's traditional emphasis on planning and methods of classroom management. A program more informed by radical hermeneutics values watching, interpreting and actually learning from experience. In this respect, the implications of Kierkegaard's distinction between recollection and repetition may serve as a productive starting point for a reconceptualization of teacher education by inspiring programs that are more truly centered on practice and reflection. Such programs could function in

the spirit of learning to teach as a “remembering forward” in the interests of a teacher education dedicated more fully to the fostering and formation of teacher identities.

PART 2: ON THE ORIGINAL DIFFICULTY OF CURRICULUM AND PEDAGOGY: BEING “OUT OF ORDER”

Hans Smits

Introduction—Being in the World as a Teacher

We are...so completely submerged in the human world, in what Heidegger called the ontic, that we have little time any longer for what he liked to call the question of Being. (Fredric Jameson 2015, p. 125)

I am indebted to Terry Carson’s insights about the original difficulty of curriculum and pedagogy. His eloquent framing of difficulty is informed by psychoanalytic, hermeneutic and cultural understandings of the precarious ways knowledge is held in relation to our practices and being in the world, and that our responsibilities for educating—in this case we are talking about educating teachers—can never be foreclosed by technique or uncritically accepting the dualisms of theory and practice or curriculum and pedagogy to which we can fall prey. My contribution to the second part of this chapter attempts to take up the challenge posed by Terry, that, as he writes above, “Teacher education lives within the difficult space of having to provide an organized curriculum for learning to teach, which is an activity by its very nature contingent and dependent upon context.”

I appreciate that “original difficulty” is not just a philosophical concept, but a recognition of the complexities of lived experience. Thinking back on my own earlier career as a junior high school teacher, I can now appreciate better, I think, Terry’s understanding that “learning to teach will be a lifelong process”. That process of learning to teach of course is not a smooth journey uninterrupted by events and life around us. Gadamer (1998) reminds us that to become experienced is not simply an accumulation of what we do and have learned, but rather involves a “venturing out”, the origin of the word Gadamer uses to capture the meaning of experience, *Erfahrung*. As Gadamer suggests, to become experienced is a process of negation, a realization that sometimes things are counter to what we might expect based on our previous engagements with the world

and others. Describing the quality of experience as negation, Gadamer writes,

In fact this process [of experience] is essentially negative. It cannot be described simply as the unbroken generation of typical universals. Rather, this generation takes place as false generalizations are continually refuted by experience and what was regarded as typical is shown not to be so. (p. 353)

If we reflect autobiographically we can recognize events in our lives that to a lesser or greater degree refute, as Gadamer suggests, what we take as typical about our daily lives. Gaining awareness of ourselves is thus deeply historical, an awareness marked by encounters with events and others. Ricoeur (2004) expresses this idea of historical consciousness evocatively; that it is not simply an accounting of our work or ourselves and that “[o]ne does not simply remember oneself seeing, experiencing, learning; rather one recalls the situations in the world in which one has seen, experienced, learned” (p. 36).

Ricoeur’s more complex notion of memory is echoed in what Terry writes above about radical hermeneutics. It “offers a counter narrative that values watching, interpreting, and actually learning from experience.” When we reflect on difficulty as an existential quality of our lives as teachers, it is thus not simply recollection, neither ruing nor celebrating what could have been or has been. Rather thinking about ourselves in relation to contexts, the cultures and worlds around us, and how we enact our ourselves are measures of what Bill Pinar (2011) has evoked as *currere*, a vibrant notion of the complexities of the lived experiences of teaching.

Working with the notion of recollection as I have outlined here, there were some signal events in my own life as teacher that illustrate, I think, the original difficulty of which Terry writes, as well as shows that experience is indeed an experience of negation. I will mention only a couple of such events briefly as way of furthering my reflections on the difficulties inherent in teacher education that follow. First was my experience in peace education as a junior high school teacher in the 1980s. Although it is difficult to fully summon the acute anxieties that accompanied our concerns as teachers—and children—during that time, many of us were moved by the fears of nuclear catastrophe and the need to think about our teaching responsibilities in a larger context. As teachers we also felt ill prepared to engage our students in understanding the enormity of crisis that seemed to confront us. Yet the very realization of that difficulty began to enable us

to focus on learning that recognized more fully the needs of the children, to whom we were entrusted, for experiences of peace in their everyday lives.

Around the same time, the school in which I taught was part of a community that was devastated by a tornado in which some of our students lost their lives and almost all of them lost their homes. For the better of a year my colleagues and I struggled with attempting to hold together some sense of community and caring for our students, calling for forms of pedagogic engagement for which we were not prepared by our professional training and emphasizing that teaching, as Terry terms it earlier, is not simply a technical practice, but indeed a “psychic event”.

As Jonathan Lear (2006) has written so evocatively, devastating events can suddenly expose the frayed adequacies, in our case as teachers, of our professional and technical knowledge. Yet, we also begin to see glimmers of hope in actions that can be understood as taking up difficulty with courage and practical wisdom, as Lear suggests, drawing on deeper wells of human being and knowing. It is what Caputo (1987) suggests is a turning back to life in all its difficulty, a “hermeneutics of facticity” that re-orient us to the messiness of the world, rather than the neat ordering of technique, and accepts that doing good is always in process.

Not long after that tragic year, but also hopeful in witnessing acts of courage and resilience among children, parents and teachers in the community, I started graduate work in curriculum studies. I further encountered a sense of the difficulty about understanding teaching and myself as a teacher through a summer course offered by Madeleine Grumet at the University of Alberta, where we had to work through our self-understandings as teachers through the concept of *currere* and the work of autobiography, ways of thinking about teaching *and* curriculum that unsettled certainties about the very meaning of being a teacher, indeed certainties about my own subjectivity as a [white male, heterosexual and approaching middle age] junior high school teacher.

I do not write the terms of my identification facetiously, but only to illustrate how Grumet’s teaching and pedagogy opened up questions especially around gender, how understanding and—how I started to grasp further—my own teaching practice is mediated through subjectivity. And reading her own work on the relationships between curriculum and gender (*Bitter Milk*, 1988), the powerful novels she had us read, Marilynne Robinson’s *Housekeeping* (1980) and D.M. Thomas’ *The White Hotel* (1981), could not fail to leave you unmoved about what it means to live

out gendered identities on the one hand, but at the same time to begin to understand how gendered hierarchies, and both personal and organized violence has permeated our histories.

I suppose this is my way of saying that curriculum and pedagogy do not exist innocently in blithe disregard of history, or the world in which we find ourselves. And this is perhaps where, for me, the original difficulty lies, at the intersections between worldly contexts and our subjectivities as teachers. It is particularly the difficulties around questions about “an organized curriculum” for teacher education and the relationships to contexts that have concerned my own work, and hence attempting to understand our work as teacher educators in historical context (Lund et al. 2012).

These ideas gained some amplification during an experience I had while sightseeing in the Catalan city of Barcelona. It is not necessarily that it was Barcelona because I could have had the same experience at home in Edmonton. But as the itinerant journalist Ryszard Kapuściński (2008) suggests in his compelling accounts of the experience of travel, being somewhere else can help us see differently, fleetingly lifting the blinkers from our usual perceptions. It is in this spirit that I relate that experience as a way of reflecting on the themes of this chapter.

Rather than following a prescribed tour, sometimes the most interesting thing is just doing some unplanned strolling and observing people as they go about their daily lives. On a lovely sunny and mild spring day, we encountered several school groups on field trips. On one of our days in Barcelona we came upon one such group, probably junior-high-age students and their young teacher. They were standing outside an old cathedral attached to remnants of an ancient Roman wall that represents the border between the old, Gothic part of Barcelona with its maze of narrow streets, and the newer obviously modernist Barcelona beginning across the street. Outside the wall of the old Barcelona cathedral the teacher was talking animatedly and pointing things out to his students. As a former junior high school teacher myself, I was taken with the evident rapport between the teacher and his students.

My first thought was what a wonderful, albeit literal, illustration of Arendt's (2003) discussion of the teacher's place in bridging the old and the new in students' lives: a living example, if you like, of how a teacher mediates his relationship with his students in attempting to honor both the old and the new, and the difficult task to help them understand the possibilities inherent in both past and future. I could not discern the backgrounds of these children. I would guess that they were public school stu-

dents but depending on their class backgrounds, already placed differently in relation to past and future. And the children were a diverse group, at least visibly, of various cultures and backgrounds. In their individual experiences they may represent Spain's rich, but problematic and contested colonial past. That history complicates what it means to students who live in or near historical forms of life that were not necessarily that of their parents, making the confluence of old and new so interesting in this encounter.

The example I offer is belied by the vibrant simplicity of the scene. As much as it was about a happy and engaged teacher and his students, it also showed on reflection the complexity and intricacies of that teacher's task. In the first instance the children's experiences, even though they may live in Barcelona (but likely not in the old area), may not be that different from that of a tourist, in that the "old" is simply part of an interesting spectacle, part of the museum of the past, but not something necessarily enduring in their lives. Turning from the old to the new, the lessons are also uncertain. Spain, like other European countries, is in the midst of a stubbornly severe economic crisis, undergoing an imposed program of austerity, which especially affects the young in terms of prospects for employment and productive careers. As the children were being attentive to the teacher's gestures and words while facing the medieval cathedral, across the street there were bank signs dominant on glass towers representing the modern Barcelona. The "old", so to speak, offers ambiguous lessons in terms of origins and identity; the "new" is also ambiguous and uncertain in its offering for future lives and possibilities (the lack of employment or permanent unemployment, fewer public sector jobs, the limiting or eradication of social supports such as pensions and so on).

If I had been nosier (and understood Catalan) I may have tried to listen in on the teacher's lesson: How was he taking up historical understanding? Was he merely a tour guide, or showing the old as one might observe artifacts in a museum? Was it only to instill a sense of justifiable pride, evident in his animation, in the rich heritage still vibrantly alive in their city? Or in that pedagogical moment, something else, something that might spark the children's thinking about their places in that moment, both spatially and historically? Or do those questions even matter in the scheme of things? It was a beautiful spring day, in a beautiful, if flawed in contemporary political and economic terms, part of the world. Perhaps the teacher and children were simply enjoying being outside the walls of a school. It was, by what any observer could see, an apparently happy moment in the lives

of these people. Why burden this with questions of intent that perhaps are difficult if not often impossible to follow in the workdays of teaching and learning?

And yet it is these kinds of questions and concerns that bother our work as teachers and teacher educators. My story perhaps points to what is “educational” and what constitutes learning in contrast to simply fulfilling what is demanded by programs. Michel Serres (1997) asked, “Do schoolmasters realize that they only fully taught those they thwarted, or rather, completed, those they forced to cross?” (p. 7). Further, in following this question, he wrote evocatively of learning as a kind of voyage, requiring

a rending that rips a part of the body from the part that still adheres to the shore where it was born... whoever does not get moving learns nothing.... The voyage of the children, that is the meaning of the Greek work pedagogy. Learning launches wandering. (pp. 7–8)

The Challenges of Natality and the Limits of Programs

“Wandering”, echoes Hannah Arendt’s (1958) emphasis on the importance of natality, as in terms of our responsibility for creating spaces and openings that might allow wandering into the unknown. Whether the teacher in my Barcelona story was conscious of his actions, it is possible that his work with students could allow them to glimpse, whether in the present or more likely longer term, possibilities for themselves as members of the community or communities in which they will find themselves. But being well-trained and prepared, for example, in his discipline of teaching, or organizing learning at age-appropriate levels, or the refinement of his ability to communicate well and authoritatively, which may have been the emphases of a “program” that formed his training as a teacher (all of which is important in terms of professional preparation) still would not fully explain his work and responsibility as a teacher, and about who he is as a teacher and his place in the world.

I offer my story of the Barcelona teacher and his students to illustrate the complexity, particularly in the current era of economic transformations of societies, of providing any firm footing in history, or any certainty in temporal hopes and teleologically oriented goals of education. It is against backdrops like these that there has been a lot of talk, research and activity around reforming teacher education programs. The response to the need for preparing teachers in a “changing world” as Linda Darling-Hammond (2005) and others have put it most often seems to accentuate the form

and structure of teacher education; that is, change in terms of programs. For example, discussions about such issues as program coherence, design and construction, the length and placements of field experiences, how to meet external accreditation standards and so on are prominent in the literature and dominant in the activity of faculties of education. There are also ongoing concerns about how we may ensure stable contributions of our work as teacher educators, in terms, for example, of generating and disseminating knowledge of the disciplines, or one of the other areas of scholarly expertise characterizing teacher education programs.

While not denying the importance of these questions as aspects of our work, we may wonder what may be lost or forgotten in the desire to channel legitimate concerns for doing teacher education well into what sometimes seems like obsessive concern with programs, and how program reform comes to dominate what it is we do in faculties of education. Rather, it is to try to think about what it means to work with and within programs as organized and formally legitimated structures of activity, and actions that are fundamental in the way that we as humans organize our responsibilities.

Two Poles of Tension

There are, I would suggest, two “poles” of an ongoing tension here: one is the organizational, practical aspect of how we organize our work, how we arrange ends and means, and the other is how we think about those as addressing our responsibilities, the larger ethical aims and purposes that underlie the question of responsibility. As Ricoeur suggests, there is always a tension at work in institutions around what is considered “just”: what is just can be an orientation to the good, especially in relation to others, or it can refer to the legal exercise of power and authority, or what he calls “constraining rules”.

In his discussion about what sustains and nurtures good practice (practice in terms of working in terms of an ethical aim), Ricoeur (1992) defines institutions as structures “of *living together* as this belongs to a historical community...what fundamentally characterizes the idea of an institution is the bond of common mores and not that of constraining rules” (p. 194; italics in original). Institutions (and here I am thinking about programs as organized forms of activity) are structures not reducible to interpersonal relations (p. 194) nor the manipulation of things, but rather reflect the interests of a larger community in enabling Ricoeur calls “action in

concert”, a term he cites from the work of Hannah Arendt (p. 195). It is important to emphasize that action here denotes not bureaucratic or technical activity, but rather a concerted effort to practice good judgment in the interests of a larger community.

Ricoeur (1992) cites Arendt directly on this idea: “Action, the only activity that goes on directly between men [sic] without the intermediary of things or matter, corresponds to the human condition of plurality” (p. 195). Plurality denotes not simply differences in terms of people and the positions they hold in organizations, but also differences in orientations, languages, interests and ways of understanding the world.

Apart from the reality of plurality within our institutions (e.g., different disciplines and ways of understanding the world), plurality becomes more complex in terms of how we think about our relationships to others who are not directly part of our programs, but nonetheless whose existence is critical to what we do. Here I am thinking not only of our own students but also of our colleagues in schools, and even more diffusely, to a larger public to whom we assume responsibility in terms of the work of educational practical and renewal in which we are engaged.

An orientation to the “good” thus may exceed the boundaries with which we attempt to enclose and define our work. Ricoeur’s concerns about plurality and action in concert suggest concern about how programs may be restrictive by limiting questions of purpose and enacting forms of power that constrain how we think about excellence and the nature of responsibility with which we are entrusted as teacher educators.

It is possible that in our desire to develop better programs we also desire to control that which escapes our efforts to produce good teachers, if limited by the terms of the disciplines, norms and other bodies of knowledge that mark our own subjectivities as teacher educators. As an interpretation of our responsibility, we do desire our programs to be in Arendt’s (1958) terms, the beginning of something, of “being prompted into action” (p. 177). But as she emphasizes, as natality, “this beginning is not the beginning of something but of somebody, who is a beginner himself” (p. 177). To be a beginner requires the question, as Kristeva (2001) suggests, not what we are, but rather who we are (p. 56). Fundamental to our work, in relation to natality then is this ontological question of who can engage well in the world, in terms of its plurality and difficult challenges to renewal.

Thinking and Action

The manifestation of the wind of thought is no knowledge; it is the ability to tell right from wrong, beautiful from ugly. And this indeed may prevent catastrophes, at least for myself, in the rare moments when the chips are down. (Arendt 2003, p. 189)

My discussion about the limits of programs and the challenges of natal-ity is offered as an affirmation of Terry's call to engage with and indeed embrace difficulty, to take up the task of thinking and meaning that hermeneutics demands of us. I understand such thinking with how we keep open certain possibilities and ways of being in the world that can respond to its difficulties and the gift and challenge of plurality. And while much of our responses to challenges of practice are necessarily consumed in the demands and needs for research prompted often by questions of practice, research in itself does not necessarily deal with such questions, or as the Italian hermeneutic philosopher Vattimo (2011) puts it, "science doesn't think." Vattimo echoes Gadamer's (1997) defense of practice in terms of practical judgment, which means that we cannot simply take [research] as the truth of things without an attunement to the very contexts that demand careful attention and understanding

In referring to Hegel's "tragic vision" in the context of recent and ongoing social and political tragedies in the world, and the continuing neoliberal transformations of our societies, Slavoj Žižek (2010) questions the legitimacy of existing political ideologies and structures for addressing the difficulties we face, suggesting that events and catastrophes throw us into the unknown. But as he emphasizes every intervention can be an acceptance of openness, "guiding ourselves on nothing more than ambiguous signs from the future" (pp. 134–35).

While Žižek is asking us to think about the import of global social movements, there is a resonance for thinking about our work in teacher education and what we might call, with the risk of being too dramatic, its tragic dimension. There is a somewhat obscure origin of the word tragedy, which in ancient times related to "goat-song", a reference to the sacrifice of a goat to appease human misfortune and a lament for a world lost or not attained. But tragedy also refers to an ode or song. Tragedy in that sense turns us back to the world in all its ambiguousness—that we live between loss and hope. Hence we might say that in questioning programs, we are by intent or perhaps more likely through the precariousness of our

positions in education, realizing a “tragic vision”: programs do not ever complete the project of education in which we are in the first instance committed.

Yet commitment is central. The kind of hermeneutic engagement with our practices and the language and concepts that hold our attention are critical to our work. Hannah Arendt (2003) has written that thinking which does “not serve knowledge and is not guided by practical purposes” makes thinking the “handmaiden of knowledge, a mere instrument for ulterior purposes...”; and citing Heidegger, she writes thinking as a mere instrument is “out of order” (pp. 165–166).

Perhaps being “out of order” in another sense of that term is what we need more of. Being out of order implies accepting life in its original difficulty, which echoes Arendt on the purposes of knowledge and thinking as an even more urgent task today. The Italian philosopher Giorgio Agamben (1998) has written that one of the fundamental questions challenging us in the face of unremitting global and neo-liberal transformations of the social order is what constitutes a life, what it means to be human as more and more people are, in his terms, exempted from fuller participation in productive and democratic lives. The old categories of politics and programs perhaps fail us, but on the other hand, as Agamben (1993) emphasizes, we can think more determinedly and ethically about the means that can pull us together and creating what he calls “a coming community”. They are invitations to us to create opportunities for “concert in action”: to create odes to possibility, as fragile as that might be in relation to those with whom we share the task of renewing the world. That should make us think about what it is we think we are doing when engaged in teacher education.

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Curriculum Lessons from Ecopsychology

Jackie Seidel

What children should learn in school is a perennial question for which there are no definitive answers. However, my studies in the emergent and growing field of ecopsychology have helped me understand more deeply some possible orienting questions and gestures that might ‘revive’ curriculum for this time. While preparing for writing this chapter, I hoarded stacks of books and articles, and bookmarked numerous sites online. The news is very bad. A never-ending flood of numbers: climate change, mass extinctions, human sufferings, even while life in schools seems to grind on with terrible normality. While I probably collected enough material to write several books of my own, I began to feel there was nothing more to say about any of this into the clamoring noise of the world and little point to attempting it. I decided that perhaps storytelling was the best approach.

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This chapter is composed of three ‘lessons’. They are interconnected and each explores similar ideas in different ways. The first, *Grandchildren*, is addressed essentially to myself. In it, I tried to imagine the last future human descendants offering a commentary on the present day through the form of a letter (to me/‘us’). A reader of an early draft commented that the letter is ‘too hard to read’. This might be true. She suggested that a sufficiently condensed form would read ‘Dear Homo Sapien Ancestors: WTF?! Love, your Descendants.’ Readers who prefer that version might skip Lesson One. When I watched the film *Warm Bodies* (2013), it conveyed everything that I had hoped to write, but much more perfectly. Art is like this. The film storifies and exemplifies the central tenets of ecopsychology. Thus, the second lesson, *Exhuming the World*, is a meditation on what might be learned from this film. The third lesson, *Contact*, focuses on the field of ecopsychology and might serve as an interpretive key to the former lessons and vice versa.

Lesson One: Grandchildren

Dear Homo Sapiens Sapiens Ancestors,

This is our eulogy, our obituary, our benediction; a requiem of sorts, to what you/we have been and how we came to be here. It matters not that this message will never be received, for it is in the composition of these words that we now compose ourselves in gratitude, grief and final freedom from this corporeal, gravity-bound life.

Addressing particularly those of you (so many of you!) who lived in the twenty-first century, we say ‘Homo sapiens sapiens’ because you referred to yourselves as such: Separate big-brained walkers in love with your own specialness. That was a big thought mistake. You thought, therefore you were? Ha ha. Deeper understanding came lately (and also much earlier by many of you). Ancestry is a more complicated matter that you chose to forget—both evolution and extinction were inextricably co-arisen and codependent with all the others, including those uncountable numbers of animals, birds, insects, reptiles, plants and fungi, whose eternal disappearance you barely marked in your own time. That was a subtraction beyond all accounting. You might have wept over each disappearance as if they were your relations, but you did not even learn their names.

You so loved your taxonomies! Divide and conquer. Separate and fragment everything into smaller and smaller pieces. You were so into all that.

Blah blah blah. It may have been helpful sometimes, but it was a bad habit that caused much destruction and ignorance. We think you understood that you were living in a momentous time which (some of) you yourselves had initiated. You did, after all, rename it Anthropocene on your geological timescale. These kinds of things really mattered to you. Naming things after yourselves. Because of your own specialness. Such a (re)naming may have afforded you the opportunity for reflection and transformation, but perhaps like so much of what you built, the idea was too big for you. Now we live amongst your ruins, your excess and your waste. They are too big for us.

Destroying what supported the breath of life didn't come conveniently wrapped in fossil fuel products after all. The psychological distance you created between the 'human' and 'non-human' contributed greatly to everything that happened. There is no such distance, by the way. We can understand that perhaps it was too difficult to comprehend, too painful to think about. To apprehend what was happening would have required you to stop. To say no. To be simple. To be grateful. To share. Even to take less than many of you thought you needed, so that others could have enough, and yet still exist in the life-bound nature of this planet. Probably impossible, we know. It was easier to anaesthetize yourselves. To be zombies.

You did yoga to calm down and find some peace. Then you shopped until you dropped.

LOL.

We hope you enjoyed the stuff.

Teachers. Spiritual and regular quiet folks. You marched in the street and called for change. Some of you gave life a chance through your actions. You made a difference not because you saved the world, but because you gifted yourselves and others with existential purpose. You rescued your fellow humans and bees alike. You committed crazy and dangerous acts, you risked your lives to 'save the whales'. You did not eat flesh or fruit of poisoned lands. Blessings upon your memory. You showed the possible, even while you dreamed impossible dreams.

Bees! We would have liked to see them. You should have worshipped them. Their demise caused some of you panic; this we can see in the archives. But the collective shrug and glacial pace of action betrayed the urgency of the situation. And glaciers! We would have liked to see them too. Long gone, their memory-ghosts haunt our stories. Licks of ancient water. We imagine that in these parched days.

You were brilliant, really, a bright flare in the history of the universe. You acted like immortals. And in a way you were truly gods for a while. You controlled the future while oblivious to your powers. You flew above the ground in the millions per day. Even went to space long after it made any sense. Even when you understood the consequences, you had to take one last trip. And then one more. This identifies you for what you were: Addicts. Billions were already hungry in your time, while very few others consumed too much both literally and materially. Consumption is a disease. You were afflicted. The cure was available to you but it was painful. You saw the symptoms. Millions were wandering the earth, looking for a place to lay their heads, to feed their children (never mind their grandchildren), while some of you built fences higher and higher, to keep them out. To protect what was yours. ‘Good luck with that’ is the message we would send to you.

He was not the first or the last. In 2015, one of your spiritual leaders made a dramatic and urgent call for you to change. He begged you to recognize the unequal and even wicked forces at work, to recognize that ‘justice’ for the poor and oppressed and ecological justice were one and the same. He said you were changing too slowly, creeping along in a disaster, in an effort to continue your consumeristic ways. You did not love the world. It appears, from this here and now, that you loved yourselves most of all. And in so doing, you did not create the conditions for future life to be, to live. Why did this not matter to you? From our vantage, this is incomprehensible.

You had schools and universities where you taught your children and young people. Where you blatantly repeated and multiplied your bad habits. This was a key cultural nexus, where you could have transformed yourselves, where you could have engaged together in learning about how to support the continuance of life’s diversity and multiplicity, where you could have practiced discernment and wisdom. But instead you allowed your places of learning to become capitalist marketplaces worshipping at the money altar. This was a sin in every religion. All those gods have died now—or perhaps they abandoned us. You were caught in endless mind-numbing debates about being the best, or about what kind of clothing girls should wear. Or not wear. These debates, and not the girls’ clothing, were tremendously successful distractions from, well, everything else. Oceans rose with the temperature, billions starved, deserts grew and the rapid loss of bio- and cultural diversity radically decreased life’s possibilities for all future planetary time. But your zombie brains continued to sleep. Maybe

you thought it was someone else's problem. Or that there was still time. Your curriculum taught distance and separation and political correctness, rather than the practice of a principled ethical stance that placed the service and sustaining of life at the top of your concerns. We understand that you inherited these ideas and structures from some of (y)our ancestors who initiated the energy and production gluttony upon which you gorged yourselves for several centuries. Actually, you were completely ridiculous. On this matter we have no further comment.

In rousing speeches, you told your young to 'leave the world better than they found it'. We can only conclude that you didn't really mean it. We say right back at you: WTF?! In some texts you left behind, you exhort yourselves to care for your grandchildren's futures. This was erroneous thinking, still placing your hopes in the unrealized time to come. Quite possibly your worst habit. You failed to recognize that you were already the grandchildren, and that the grandchildren were already alive. Grandchildren are not a future abstraction. While you should have been planting trees, you cut them down. You poisoned your own food and water. Our food and water and soil. And yes, that of your ubiquitous grandchildren. You cut us down.

You openly tolerated, and even caused, the suffering of so many of you and also the other living beings. Your spiritual teachers, your wise teachers and your philosophy teachers for thousands of years offered wisdom and advice on such matters. They and your many gods told you not to kill, not to be greedy, not to be jealous, to be kind, to love one another. You were constantly trying to find 'solutions' that money could buy. It could not. For this money god that you named the economy, you killed, you violated, you stole and you harmed. You risked everything.

We can barely imagine 10 billion people, the human population you eventually achieved. And you, you could not imagine the possibility of just a few remaining. We couldn't really, either, at first. When we realized that there would be no more descendants, at least not for us mammals, we were moved to understand so much. Language, in the ways you used it, cannot really articulate it. Perhaps some words can describe these awakenings: friendship, love, connection, music, dance, art, poetry. We delight in these gifts that remain and are of infinite and abundant value to us. This is the kind of desire that causes us to kiss the earth when we awaken, to bless the water before we sip, to praise the sun even when it burns us, to weep both joy and sorrow, to touch the cheek of the other as we say goodbye.

Because.

Because you made predictions about extinctions, yet failed to imagine y(our)selves amongst them. No imagination is necessary now. You focused so much on the future but it wasn't ours. You were creatures of fantasy and wishful thinking. Putting your faith in your science, and in your descendants to figure out what you could not in the time beyond you. Nuclear waste. Thanks a lot. We never did figure that one out. We tried, we really tried. For this particular mess, with its DNA-bending power, for this inheritance we might curse you but to what purpose now? We couldn't fix it. We couldn't control it.

We are mammals.

Do you understand?

What you did to the milk?

To the breasts of all the mammal mothers. Whale mothers, squirrel mothers, bat mothers, sheep mothers, bear mothers, cat mothers and all the (m)other relations. To all the future grandchildren of all the mothers.

Because of this we now say goodbye and amen.

There was no other world. Only this one. Only this once. At least for us. It isn't about hope or not hope, anymore. We are ok and not ok. It is time and not time. We do not grieve. We are tired. We are glad. We forgive you and we do not forgive you. Life goes on differently.

love,
the last grandchildren

I did not wish to live what was not life.

Henry David Thoreau, cited in Harris (2014), p. 198

Lesson Two: Exhuming the World

It might have happened like that.

Imagine another scenario:

The film *Warm Bodies* (2013) begins with scenes of a destroyed world. Zombies are grunting and stiffly lurching the pointless walk of the undead around a huge airport, ubiquitous in its recognizability. Everything is grey. Airplanes sit on the runways. Equipment for moving suitcases and airport paraphernalia lies scattered and purposeless. Escalators stand still. The loudspeakers are silent. The lights are off. The parking garage is full of dusty vehicles. As the film opens, the zombie teen narrator, R, says:

‘It doesn’t matter how the whole apocalypse thing happened ... but this is what we are now.’

In the early moments of the film, R wanders through the airport talking to himself. He admits: ‘I’m lonely, I’m lost.’ And he muses in frustration, ‘Why can’t I connect with people?’ He wonders what everyone used to do before the apocalypse and if they were connected all the time. In a prophetic fantasy moment in his mind, we share a momentary glimpse of the concourse hall in the airport in vibrant color. Every single person in R’s vision is staring at a screen, even those walking or riding escalators are looking at their phones. A parent and a child sitting next to one another have each their own device. R shudders and shakes his head, and the vision abruptly disappears. This few seconds, easy to miss on first viewing, seem significant yet ironic in this former hub of global contact, network and exchange. Perhaps R’s brief vision signifies the moment of profound disconnection, the moment of becoming zombie. Indeed, although he doesn’t think it matters, his flash of insight reveals how the ‘apocalypse thing’ happened. In becoming screened, in distracting the gaze of the eye(s) from the actual life world, life is severed from all source of sustenance, fragmenting world from body, heart from heart. This is both the affliction and the infection (and the addiction). Everyone is together yet alone. Zombies.

We come to know R, a distinctly ‘unzombielike’ zombie, through listening to his halting narration and observing his ‘lifestyle’. He is fleetingly aware that he is somehow different from the other zombies but not able to apprehend how. R is a hoarder. He lives in a plane on the tarmac, and has decorated it with vast collections of objects that he finds interesting or soothing. Despite his minimally lingering humanlike qualities, R, like other zombies, must sustain himself by consuming human brains. ‘I don’t like hurting people,’ he says, ‘but this is the world now.’ He admits that he craves brains because for a moment he gets the memories and feelings of the human he’s consumed. This makes him ‘feel better’ and ‘a little less dead.’

Meanwhile, the few surviving humans exist behind a massive, guarded wall they have constructed. In this ultimate example of the gated community, they live in fear of the zombies and are obsessed with their own safety. They leave their compound, heavily armed, only to scavenge for packaged or canned food and medicines from their lost civilization. Like the zombie world, their life is portrayed as grim and grey. They aren’t self-sufficient in any way. They do not hunt or raise animals for food. They do not garden. There is no beauty. They exist in the ruins of the previous

human civilization and it isn't pretty, nor does it make existential sense. Indeed, one wonders watching it how long these human survivors can truly have—until the food cans, the Prozac and antibiotics run out? They don't seem to know how to do anything else except war and processed food (sound familiar?). They do not play or have joy. They lack imagination, unable to see other solutions or possibilities. Indeed, they might be zombies of another sort. They are literally the nearly dead. Their community resembles a military base and they are led by a harsh commander, Colonel Grigio. His only purpose is to 'be safe' and to kill zombies. And worse than zombies are the ultimate enemy: the 'boneys'—dangerous 'uberzombies' without flesh that move swiftly in packs and thrive on lust for killing. Even the zombies fear them. R explains them with a shrug: 'We all become them. We give up hope.'

Julia, the camp commander's daughter, is out with a group of young people on a supposedly safe expedition to get medical supplies when they encounter a group of ravenous zombies, including R, hunting for food/brains. Several of the humans are killed, and R eats the brains of Julia's boyfriend. When he accidentally makes eye contact with her where she is hiding, something happens to him. A connection! He is compelled to save her from the other zombies and brings her back to the only safe place he knows—his airplane home. It is not love at first sight for Julie. She is terrified of R, and rightly so. He ate the brains of her boyfriend. After a few days of captivity and observing R, she realizes that he is not what she thought a zombie was, that he is not going to eat her and that he in fact saved her and is protecting her. She cannot figure out what is happening. She is curious about him and her experience does not match what she has been taught.

Without giving away the entire plot, as they try to stay away from the other zombies, Julia and R begin to form a connection; in the beginning it is a nominal and tentative kind of friendship. She wants to go home. He is in love with her, magnified by his consumption of the brains of her boyfriend. She uses him for her purpose. In his zombie gestures and language he communicates that he will take her home, and thus begins the slow awakening of the zombies. As they try to leave the airport, there is a scene in which they are running from the other zombies who sense a human is near. They become trapped in a parkade. As the zombies draw closer, and their demise seems assured, Julia and R hold hands. Upon witnessing this zombie-human contact, the approaching zombies stop, frozen and confused, and they let them go without harm. Later in the film, R's

zombie friend and a group encounter an old romantic and cliché advertisement poster in the airport. It portrays a familiar image: two humans holding hands, walking into the sunset. At this echoing reminder of Julia and R holding hands, tears form in one of the zombie's eyes. R's friend asks, 'Do,—do—you—f-e-e-l—it... feel it?' The other nods and in that moment we see their hearts glow red with warmth and life, and begin to beat in their chests. They weren't so zombie after all.

The undead do not sleep. But while hiding in a house on their journey to the human compound, R does sleep and he dreams a memory dream from Julia's boyfriend's brains. The dream is in vivid color. Birds are singing; three teenage friends sit together in the grass, by an orchard, talking about life, apocalypse and what is happening to the world. The conversation goes something like this:

- Julia : I think someday someone's going to figure out this whole thing. Exhume the whole world.
 Female friend, Nora : What does that mean?
 Julia : Exhume means to ... like, revive.
 Boyfriend : It means to dig up, as in digging up a corpse.
 Julia : Whatever!!!

Whatever, indeed. When R wakes from his dream, the world has more color, literally. He is reviving. Julia and R gradually make their way back to the human community, and she smuggles him into the walled and heavily armed camp and into her father's house where she recruits her best friend, Nora, to help her convince the humans that something is happening to the zombies and that not only can they be revived, but that they need to join together to get rid of the boneys, their ultimate shared danger and enemy.

The conversions and transformations are not easy or straightforward. When Julie is talking with her father, attempting to convince him to consider what R is saying about connecting and collaborating with the zombies to get rid of the boneys, he aggressively says to her: 'I want you to wake up!!!'

- R responds : We're getting better.
 Julia's father : No! Things don't get better. They get worse!

Even as the zombies are awakening, even with the evidence of R standing right before him, it is nearly impossible for Colonel Grigio to imagine

the world otherwise, to shed his patronizing and violent views or his own belief in impending danger and doom.

The zombies and the humans eventually begin to connect across difference, across life, in a heartfelt and genuine way; first, in a shared project to get rid of boneys, and then in friendship. Suffice it to say: in the end there are no screens, no walls, no separators, just the close intimacy of the face-to-face, heart-to-heart and body-to-earth transaction. Contact. A different kind of saturation. Color returns to life and to the film. Once-zombie children run and play amongst trees. Adult zombies walk stiffly, but increasingly humanlike, in a park on the grass. Humans patiently teach zombies to play ball. The big wall is gone. The zombies awaken and are reanimated and reconstituted. Their bodies learn to move again, at first clumsy and stiff. Their voices come back and their tongues speak, at first halting. Language returns. Their ears hear one another and they connect. They appreciate beauty. The sound of children laughing. In their awakening, they once again become conscious. This contact also softens the hearts of the patriarchal warrior father. Colonel Grigio wakes up. Everyone can ‘get better’ and there is healing all around, not just for human bodies but also for the greening and sustaining natural world that is simultaneously revived.

The film closes with R narrating: “This is how it happened. This is how the world was exhumed”.

To exhume the world... Exhume comes from the Latin *exhumare* [ex (out of) + humus (earth)] (‘Online Etymology Dictionary,’ 2015). We are all humus: the ground of life. We are of the soil from which everything grows, is sustained, and returns. Julia explained to her friends that exhume means to ‘revive’. Their world was dead and grey and unsurvivable for life itself. When R described the boneys and said that ‘we all become them’ and ‘we give up hope’, he was anticipating all of their futures, a future without flesh, a future without humus. But revival—getting ‘better’—was possible even with the extent of devastation, disconnection and loss of hope that they had suffered. Exhuming the world meant taking care of the humus, taking care of the world and of one another. If the myth of virtual connectivity caused the zombie apocalypse, it was actual contact and connection with one another and the world/earth that revived life. To feel, to love, to dream together.

Perhaps this sounds tacky, silly and utopian against the deluge of overwhelming ‘bad’ news flooding our lives these days. But I think not. This film can be read as a fun zombie rom-com, or it can be read in a deeper,

more nuanced and even pedagogical way. Even, maybe, in a prophetic way. Catherine Keller (1996) suggests that we are already living in apocalypse, a chronic condition initiated by 500 years of patriarchal colonialism pressing its apocalyptic (i.e., ends-driven), power-hungry, endless growth- and progress-focused Judeo-Christian timeline upon all living creatures, including humans, and the planet itself. This film suggests that even in the midst of apocalypse, the world might yet be exhumed, and that the ultimate end (becoming all-consuming, all-violence fleshless boneys) might still be averted. It is through contact and connection that life and color, diversity and multiplicity, return to the world.

What does this have to do with curriculum, teaching and schooling? If exhuming the world means to take care of the ground of life, of the infinite interconnections that support the breath of the world, then it first means awakening to our historical condition and conditioning, to the times and places we inhabit. It means schools, teachers and curriculum awakening to our various entanglements in neoliberal capitalism's destructive and consumptive power and to the fact that a tiny percent of humans (boneys) are entirely literally invested, no matter what, in the continuation of this system, that is, in maintaining the zombie status of the others, in convincing people that holding hands is weak, and that buying and possessing more stuff is the only way to a 'happy' or 'prosperous' future. Insofar that mass and compulsory schooling remains driven by and even invested in this vision, it remains a curriculum for zombies or at least for potential zombification rather than a curriculum for present and future health, connection and peace.

In these days in apocalypse, of being alive during a mass extinction event that includes human cultures and languages, of rising tides, and the largest number of refugees ever fleeing war, persecution and climate-change-caused ecological devastation, it seems impossible to take the message of a film like *Warm Bodies* lightly. The suffering seems incalculable and unending. Building borders and enclosures, and killing what one hates or fears, is one conceivable, yet terrible, path. As possibly hundreds of thousands of refugees flee toward Europe in the summer of 2015, we witness such a building of walls and closing of hearts, the media manipulations and discourses about safety and terrorist threats emerging. This feels a familiar story. Yet everywhere also there are those who are taking their eyes away from the screens, offering sanctuary, holding hands with the homeless, feeding the hungry, crossing walls and borders both literal and metaphorical, and saying 'come in'.

At the end of the film, Julia asks R what he wants his name to be. He significantly chooses to remain R, are, the present and plural of the verb to be. Like ‘R’, we are. We are/R here. It is now. Is it possible, through contact, and in love, to wake up, hold hands and exhume the world? What kinds of curricula and schools belong in this vision?

Contact with the pain of the world, however, does not only bring grief but can also open the heart to reach out to all things still living. It holds the potential to break open the psychic numbing (Per Espen Stoknes 2015)

Lesson Three: Contact

There is a moment in Emily St. John Mandel’s (2014) post-apocalyptic novel, *Station Eleven*, where some of the adult characters argue over what should be in their curriculum, and what their children should learn. Should they learn about the nostalgic human past, objects like cell phones and airplanes and so on, when this is totally irrelevant to them? When both the knowledge and capacity to create or use such items have been lost by the rapid decimation of the human population and they are unlikely to ever reproduce or use such objects again? Should they learn about the present and what is happening to them now? While the first two ‘lessons’ in this chapter were attempts to illuminate some of the insights and principles of ecopsychology through examples and story, this final one offers some summarizing thoughts about two ecopsychological principles for reviving curriculum, schools and thus, ourselves: (1) orienting our work in a life-serving direction and (2) contact.

Ecopsychology is a complex, interdisciplinary and emergent field with diverse historical influences and origins back to the 1960s; however, the term was first formally described and initiated by Theodore Roszak (1992). Since then it has burgeoned with multiple publications, journals, conferences, online groups and so on. It is suffering all the growing pains of any discipline, including splinter groups and painful but necessary arguments over what constitutes the field. For readers interested in exploring further the dimensions of ecopsychology, I recommend beginning with Theodore Roszak’s books (see Roszak 1992; Roszak et al. 1995), Linda Buzzell and Craig Chalquist’s (2009) edited collection *Ecotherapy*, and two excellent and extensive historical discussions of the field and literature by Mark Schroll (2007) and Whit Hibbard (2003).

For the purpose of this chapter, I am drawing upon the scholarship of Canadian ecopsychologist Andy Fisher. The title of his book, *Radical*

Ecopsychology: Psychology in the Service of Life (2002, revised edition 2013), describes the major tenants of his position and arguments: first, that for ecopsychology to do good and healing work, it must be ‘radical’, and second, that such radicality places the discipline of psychology in the ‘service of life’. Radical, used as descriptive adjective, derives from the Latin *radicalis* or ‘having roots’. It is from the Latin *radix* from which the word radish also emerged (‘Online Etymology Dictionary,’ 2015). He suggests that ‘(t)he thought of ecopsychology shakes us to our modern foundations’ (2013, p. 9). Contemporary, or modern, epistemology is based on dichotomies and separations, most notably the split between human mind/psyche and nature. He writes:

... the split between humans and nature – as well as a near endless stream of related ones – runs through most of modern philosophy, science, and art. Such a bifurcation of reality, however, is historical; it reflects a withdrawal of reality into the head of the modern Western individual and a corresponding estrangement of that individual from the ‘external’ social and ecological world. Modern psychology, like most things modern, has nonetheless taken this dichotomized reality as its starting point. (p. 9)

Recall the *Warm Bodies* zombies—they stand as an ultimate exemplar of this kind of bifurcation and dichotomization. Like psychology, curriculum and schools are also founded on this starting point. Efforts at healing reforms that don’t begin with this understanding are probably doomed to fail. Andy Fisher’s primary analysis is a critique of the way conventional or traditional forms of psychology co-emerged with industrialization and capitalism, using the natural world and creatures, including human bodies and psyches, for its own purposes, namely, the serving of capital and economic growth. The industrial vision, driven by its profit motive, is utterly disconnected from any understanding of what the sustenance of life on the planet requires. In the name of efficiency and profit, it relies on fragmentation and distancing, on splitting everything into pieces and parts, whether it is human labor or pieces of a product or machine, or children in schools. Fisher argues that in materially destroying the relations that sustain life over time, the human psyche is also profoundly wounded and that human beings suffer from what he calls chronic low-level trauma.

Ecopsychology, and Andy Fisher’s work in particular, offers several important insights for thinking about curriculum and schooling, given that schools as institutions are bound to the same historical industrial narrative as the discipline of psychology, while they also continue to be

heavily dominated by the discourses of conventional psychology (i.e., particularly its individualistic focus on measurement, achievement, diagnosis and ‘fixing’ children who are determined to be problems to the efficiency of the system). Additionally, despite uncountable attempts at reforming schools and curriculum over the past century, many curriculum practices, classrooms and even the architecture of brand new schools continue to strongly resemble industrial-era schools. The description of this could be endless but it most obviously includes dividing children and young people by grade and age, further separating them into ability levels, separation into square box classrooms, constant measurement and tracking for purposes of competing or achieving certain predetermined standards (same holds true of factory-produced tires, telephones or jeans) and always focusing on future ‘ends’ that justify the means.

Thus, ecopsychology might offer insights into why it is so difficult for education to change, and also some guidance for educators trying to understand what is happening systemically, why they sometimes feel so horrible about or even traumatized by their work, and how they might proceed even in small ways, day by day, in their own classrooms and communities. If education or curriculum is to participate in exhuming the world, this could only begin (over and over again) with a psychic reorientation to what matters. While Andy Fisher initiates the gesture, already in his book title, of placing psychology in the service of life, an important parallel question is: what happens when the related disciplines of education or curriculum are intentionally placed in the service of life? This is not a simple task given that contemporary dominant discourses in education most often place schooling in service of the economy (some call this ‘the future’).

The ‘light’ or pop version of ecopsychology might suggest that a walk in the woods can cure what ails you (e.g., stress or high blood pressure). And it might! There is plenty of excellent, peer-reviewed research to support this. The important point is that while the walk in the woods might make me feel better, it leaves the deeper cause of my symptoms unaddressed. Andy Fisher argues that placing psychology in the service of life also always involves the difficult work of critical analysis, of coming to terms with the origins of psychology’s own history and illness. Similarly, education cannot ‘serve life’ without those of us interested in this engaging in serious and critical historical study of the institution’s origins and purposes. The ‘treatment’ of education’s afflictions involves encountering, untangling and understanding what exactly it is that I have inherited and am historically entangled and participating in, despite my best intentions.

This is the ethical work of coming to terms with a long, and often invisible, inheritance of colonial and capitalist relations, which in a large part have and continue to be propagated, maintained and spread around the world by the schooling institution. This is often portrayed with a missionary zeal of doing good, usually through the spread of literacy, but a little scratch on the surface reveals the names of multinational corporations whose only motive is to sell stuff they convince schools they need, like literacy programs and technologies, for the purpose of growing their profit futures (and my retirement savings—ouch!). Therefore, without such study for the purpose of gaining existential insight, it is not possible to understand the ways that putting education in the service of capitalism, profit, competition or economy, with its values of individualism, economic profit and fragmentation, is a terribly risky business. That is the zombie curriculum. And we are today witnessing the material and actual outcomes and costs of this in the numerous ways outlined in the first two ‘lessons’. The work of reviving ourselves is more than a walk in the park.

To put education in the service of humus is a radical, rooting gesture. The orienting question then is not whether we should ‘save’ the world, whether humans will survive, or not even if anything will survive (of course it will!), but what kind of life is worth living, what is worth knowing, and what is worth learning? Andy Fisher suggests that the healing orientation, or action, is contact, or living in the world in a contactful way. Like in *Warm Bodies*, this directly counteracts and even undoes the violations of the industrial, capitalist, or now neoliberal systems that depend on absolute separation and noncontact. If zombies were created by the separation of screens, every person alone, contact might initiate revival and remembering our relations; that is waking up, well, to everything!

A curriculum practice or school informed by principles of contact and serving life would be one that, prior to serving any other vision, supports first and foremost a livable, diverse habitat for all present and future beings. This vision depends on remembering that everything is interconnected. Yes, this might be a radical, utopian and impossible vision. However, it would be one that sets out to cultivate this with intention and attention. It would be non-anthropomorphic. In the current system/paradigm that is almost impossible to imagine, and thus I suggest it here as a provocation. It would be ecological, relationally oriented—contactful—in every dimension, like in *Warm Bodies*, where contact of all kinds is the healing source of awakening.

In education we are habitually future oriented, yet in this case we don't yet know what an exhumed world looks like, and therefore such a curriculum exists (and rightly so) in a place of unknowing, and not-needing-to-know-yet. Guided by such an orientation, it would be necessary to practice restraint and saying 'no.' This ethical orientation is challenging for those of us who are institutionalized. It is difficult, and sometimes impossible, to say 'no' to institutional demands for many reasons including possible loss of one's employment. Perhaps there are at least two possible freeing ways to think about this. The first is that the institutional boundaries are often both more porous and flexible than they appear, and there is more room than we first imagine for diverse practices, pushing back and subtle but powerful subversions. The second is that hardened hearts can sometimes be softened, as we saw with Colonel Grigio in the film, through contact and love. Ecopsychological principles would indicate that this might be the case. A healthy ecology thrives on diversity. Friendship, hospitality and contact between that which is multiple, diverse and different can be the way of freedom and nonviolence. This is not certain. Life is always a risk, but at least we won't be zombies.

A principle understanding arising from a contactful or interconnected orientation toward serving life is that what happens now, in the present 'are'/R, creates the future 'are'. This doesn't mean that massive reforms aren't possible or even necessary, but it does mean that even the smallest and seemingly insignificant gesture or contact can matter the most. We might not, and probably won't, even see that coming. This includes the interactions (contact) between this and that, between you and me, between teacher and student. Even in those buildings inherited from the industrial age and industrial minds, as R says, we can change—even one or two of us. That's how it started in the film. Wendell Berry (2015) writes:

The needed policy changes, though addressed to present evils, wait upon the future, and so are presently nonexistent. But changes in principle can be made now, by so few as just one of us. Changes in principle, carried into practice, are necessarily small changes made at home by one of us or a few of us. Innumerable small solutions emerge as the changed principles are adapted to unique lives in unique small places. Such small solutions do not wait upon the future. Insofar as they are possible now, exist now, are actual and exemplary now, they give hope. (np)

Pain, love and hope are felt always in the here and now.

R, at the end of the film says: "Every great thing starts out a little scary, doesn't it?"

The heart beats.
 The warm blood flows.
 It might be the only we need.
 A curriculum of holding hands.

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The Influence of Cultural and Familial Complexes in the Classroom: A Post-Jungian View

Alexandra Fidyk

INTRODUCING THE CLASSROOM

Canadian scholar David G. Smith (2006) in *Trying to Teach in a Season of Great Untruth* calls much needed attention to public education since the 1990s, which has dramatically changed under the agendas of neoliberalism and globalization:

In Canada, classrooms are increasingly inhabited by children who come to school traumatized by war, malnutrition, family disruption, language dissonance, and culture shock; yet teachers find themselves pressured to instruct only in terms of measurable achievement results, and this places them in a situation of conflict when their deepest desire is to stand pedagogically with the young, as their vocation beckons them. (p. xxvi)

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In this context, teachers who feel called to work with youth experience overwhelm and frustration because their preservice training does not prepare them with “analytical insight into the deep structure of those global events that are determining” their daily classroom reality. The stronghold of Euro-American modernity not only blinds educational vision but also reduces it to the “simple production of skilled workers for the new economy” (p. xxvi). Smith explains that to speak of a “season of great untruth” is to question the deeply embedded cultures of epistemology that work against, even shut down, more inclusive understandings of contemporary life and global reality. Further, when these ways of knowing “underwrite pedagogical and curricular practices,” students are ushered into a “sense of the world that is essentially ‘untrue’” (p. xxvi). Smith argues from and for ancient forms of wisdom, which can cut across the effects of modernity and offer an orientation to teaching that respects the “one reality in which we all participate”—“a dynamic, fluid relationship between what we know and what we do not know, what is said and what is unsaid, what is visible and also invisible” (p. xxvi). Such an orientation asks to see children, especially adolescents, not as already seen, already known through their behavior, achievement, and ego. Rather to be open to them as unfolding entities, many of whom are bound by hidden entanglements of family and systemic loyalties that influence their relationships and interactions as well as the numerous, often debilitating cultural complexes that work deep below pedagogical spaces. The current Euro-American tradition has excluded insights from epistemologies, which value the unseen, the unspoken, the invisible, and the unmanifest, particularly those that attend the many levels of the unconscious, beginning with the personal and reaching into the collective. Just as teachers find themselves left shortsighted in regard to “more comprehensive understandings of global reality” (p. xxvi), they experience a similar myopia in regard to the deep structures and understandings of the psyche and their influence upon daily classroom reality. While Smith points to changes in the outer lives of Canadian children, the focus herein aims at their inner lives, which may or may not be directly connected to their outer circumstances such as “malnutrition,” “language dissonance, and cultural shock.” Insights revealed through post-Jungian psychology, like those from wisdom traditions, subordinate the visible and manifest to the invisible and unmanifest; they honor the ancestors because they are always already working through us; and they evidence an interconnected complex web of inter-beings where the personal and collective, one and many, enfold interdependently. Pedagogically, such insights contribute to “an orientation to teaching that nurtures attunement to what lies outside

that-which-is-still-to-be-revealed while always-already-everywhere at work in our present circumstances” (Smith, p. xxiv).

AN ALWAYS ALREADY ANIMATED WORLD

In the urgency for education to value and subscribe to different ways of knowing, I draw upon C. G. Jung and select others after him—Henderson (1964), Singer (2000); Singer and Kimbles (2004)—who work from within a conception of the universe as *animated*—enlivened. The term *animated* has its etymological roots in Latin: “*animatus* [is the] past participle of *animare* ‘give breath to;’ ‘to endow with a particular spirit, to give courage to;’ and arises from *anima* ‘life, breath’” Animated, n.d. (Online Etymological Dictionary). An animated world unfolds: organic, paradoxical, in flux, discontinuous, intentional, and inclusive of its own values, “an unending process of movement and unfoldment” (Bohm 2002, p. ix). To situate oneself in a worldview that includes and values images, the unconscious, transpersonal, transspecies, transgenerational, feeling,¹ the body, the imaginal,² and emergent dimensions is to radically recognize the ways that we come to know and thereby what we know. Such a view has been named post-post-modern (Shaker and Heilman 2008; Shaker, *forthcoming*) and integral in Western cultures because it respects and integrates both ends of what has previously been categorized as polarities: mind and body; intellect and emotion; subjective and objective experience (Wilber 1982; Gebser 1984). Here, “matter and spirit, outer and inner are no longer separate” (von Franz 1980, p. 91). “In actual psychological experience,” von Franz (1980), in agreement with Jung, writes “a distinction between the two realms is unavoidable; [yet] in the realm of the deeper layers of the collective unconscious, ... no such distinction can be made with a high degree of certainty” (p. 92; Jung 1960/1969, par. 840; Jung 1963, par. 661). I refer to it here as *animated* in an effort not only to acknowledge its life energy but also to bring its spirited dimension, holographic, and implicate-explicate order to the foreground (Talbot 1999; Bohm 1985). If one includes ways of knowing such as ritual (Bell 1992/2009; Bell 1997/2009), ceremony (Wilson 2008), visions, symptoms, dreams, intuition, contemplative practice, active imagination,³ performance, the arts, and knowing fields,⁴ then the methods of collecting and expressing such knowledge in regard to curriculum, pedagogy, assessment, and research change as well. In other words, methods are embedded in commitments to particular versions of the world and ways of knowing that world. Method is, thus, inseparable from both. And every ontology and epistemology is historically located, culturally specific, and value laden (Fidyk 2013c).

As educational research and practice remain caught within an unsettled mix of modern and postmodern values (faculties of education tend to be postmodern in research while systems of education are modern in nature), for significant change to occur a new paradigm and worldview must emerge. In regard to communities of change as described by Thomas Kuhn (1970), there are enough anomalies in research from the fields of depth psychology (DP) and its kin (wisdom traditions, indigenous paradigms, spirituality, shamanism, traditional healing practices) to constitute a paradigm shift, another worldview. Indeed, new sciences have discovered truths parallel to those that have been long held by “traditional peoples.” Yet education remains deeply entrenched in modernity and thus gravely limited in its ways of knowing. Shifting to an animated paradigm that respects knowing relevant to other ontologies (modernity and postmodernity) while recognizing their limitations, contingent upon its own emergence, offers another framework to codetermine important issues for members of the community to address with theories or explanations, methods and techniques to take up inquires not yet considered (Kuhn 1970). Paradigms are “relationally constituted ... and proliferate or shift not only when authors bend ideas ... but [also] as opponents ... allies ... situations and events ... change,” (Nespor 2006, p. 123), and that includes the development or emergent nature of different kinds of consciousness as well (Bernstein 2005; Gebser 1984; Wilber 1982).

This chapter unfolds from an animated point of view and integrates insights garnered from several of its methods to illustrate the vital importance of understanding and working in education with and from the unconscious—particularly the cultural and familial layers of the psyche. Classrooms today are home to traumas both acquired and compounded through the violence of schooling as well as to traumas carried unconsciously by students and teachers from places, events, and ancestors. In what follows, attention is given to the psyche, particularly the cultural unconscious as well as cultural complexes, the familial unconscious, and familial complexes.

THE SOCIAL AND POLITICAL TURN IN JUNGIAN PSYCHOLOGY

Of particular relevance to the dramatically changing ethnocultural character of Canadian classrooms is the important sociopolitical turn within Jungian psychology that has transpired since the 1990s. The 2011

National Household Survey (NHS) showed that 1.4 million people had “an Aboriginal identity” and 1.16 million “foreign-born people immigrated in Canada between 2006 and 2011” (Statistics Canada 2011b, “Immigration and Ethnocultural Diversity in Canada”; Statistics Canada 2011a, “Aboriginal Peoples in Canada: First Nations, Métis, Inuit”). These numbers paint a very distinct picture of diversity in Canadian classrooms and the necessity to understand who populates seats unseen and unheard. Some post-Jungians have been mining a layer of the psyche between the personal and the archetypal levels of psychological experience. Joseph Henderson (1984) called this the cultural level of the psyche, “an area of historical memory that lies between the collective unconscious and the manifest cultural pattern” (Henderson 1988, p. 8). He described this level of reality as the social, aesthetic, philosophic, and spiritual. For many in analytical psychology, Henderson’s work opened a theoretical path to the vast realm of human experience that inhabits the psychical space between the most personal and the most ancient level of being in the world. His elaboration of the cultural level of the psyche has welcomed the world of group life into the inner world of individual psychological development and allowed the “inner Jungian world to recognize more fully the outer world of social and cultural experience” (Singer 2004, pp. 19–20).

As Henderson extended Jung’s understanding of the collective unconscious, key analysts, scholars, and activists have rooted their practice in and extended upon Henderson’s idea of cultural unconscious—the social, economic, political, geographic, gender, and religious psychological experience—all aspects that impact education. Post-Jungians are becoming internationally recognized contributors in many areas for applying insights regarding individual psychological development to the collective psychological development of groups as well as the individual’s life in groups (Samuels 1993, 2001; Singer 2000, 2002, 2004, 2010; Papadopoulos 2000; Gambini 2003; Kimbles 2004). These include psychosocial and humanitarian interventions (Erikson 1994; Zoja 2009; Alschuler 2006, 2009; Corbett 2009; Reidel 2009a, 2013, 2014), conflict resolution (Colman 1995), eco-psychology (Gambini 2003; Liotta 2009; Tacey 2010; Stein 2012; Holifield 2013), issues affecting indigenous peoples (San Roque 2004; Boechat 2012; Dowd 2011), victimization and violence (Smith-Hanssen 2009; Yan Ma 2010), including mass rape and sex trafficking (Riedel 2009b, 2014; Wirtz 2014, 2015), and prejudice and discrimination (Berg 2004). Their work has illustrated the vital place of psychotherapy in politics, not on its own, “in splendid isolation” as

historically practiced (Samuels 2000, p. 34); rather, the accomplishment of “sufficient—if uneasy—acceptance for its perspectives” (p. 34) would lead to including Jungian analysts and scholars alongside policy committees and planners in all areas of society. The same argument must be made for education, an aspect that has been left out of the discussion of the cultural level of the psyche and an important site of group life.

GROUP LIFE AND COMPLEXES

Especially meaningful to imagining pedagogical and curricular practices from an animated point of view is the theoretical work of Tom Singer and Sam Kimbles (2004) on the “cultural complex” (Singer 2010). A substantial part of Jung’s work was concerned with the “perils of the individual’s [psyche] falling into the grips of collective life,” hence the focus on the personal task of shadow work (Singer and Kimbles 2004, p. 4). Jung’s approach to individuation deemphasized the need for an integrated view of our numerous and necessary social relationships, yet our fullness is possible only when other humans (and other species) are included in the equation of our own development. Just as the individual falls into shadows or the unconscious of collective life, so is the tendency for collective life (in its multiple and various configurations) to fall into shadows (the practice of scapegoating) and thus limit its conscious development. Because individual and group are inextricably bound, we need to weigh ourselves with the aggregate experience of the collective, inclusive of their suffering. For in our silence, we give others’ suffering “passive support and supply our shadows with more energy, defeating each of our attempts at integrating” the ancient archetype (Colman 1995, p. 10). Note the scapegoat of any group—teachers, students, families, and communities (see Fidyk 2011a, 2013c, d) while akin to shadow is “not identical to the shadow; the scapegoat is a collective creation, a symbolic compromise for many individuals’ negative projections” (Colman 1995, p. 7). In other words, the scapegoat “is humanity’s societal vessel for the shadow – a vessel which is, by definition, innocent of the burden it assumes” (p. 7). For example, Aboriginal peoples have been and continue to be scapegoated in Canada through racism and discrimination, including but not limited to the specifics of unattended and unresolved mass rape and murder of women, atrocities by Church and the government upon residential school students and their families, as well as high rates of current poverty and homelessness. The difference between shadow and scapegoat is the case of one or many.

Until recently, little work in Jungian psychology had been done on the conscious development of group psychic life or the critical intersection that exists between individual and group psychological development. Attention to the notion of cultural complex has aided in better understanding and addressing the shadow of the group in its cultural complexes rather than the previous “Jungian tendency to see the group itself as the shadow” (Singer and Kimbles 2004, p. 4). In the last two decades the shadow of collective life upon the individual and the influence of cultural complexes have been taken up by others in Australia, New Zealand, Brazil, South America, China, and South Africa (Berg 2004; Zoja 2009; Yan Ma 2010; San Roque et al. 2011; Amezaga et al. 2012). Such work has called others to become involved in unique forms of analytic psychology and activism in matters involving racism, colonialism, homophobic cruelty, rape and sex trafficking, religious zeal, animal brutality, imprisonment and torture, ecological degradation, and the current migrant and refugee crisis (including international meetings held in London, 2014, and Rome, 2015). While some of these experiences are on the rise in our increasingly diversified classrooms and communities across Canada, where “one out of five people in Canada’s population [is] foreign-born” (Statistics Canada 2011b), all of these issues are relevant to educators and education as our classrooms are microcosms of the outer world and vice versa.

THE CULTURAL UNCONSCIOUS AND CULTURAL COMPLEXES

Little attention has been paid in education to groups, particularly how groups of students interact and the ways individuals learning might be affected through group membership (or lack thereof). For example, even though I am second-generation Ukrainian Canadian (paternal lineage), the atrocities of the Ukrainian holocaust under Stalin’s regime, unconsciously haunted my father and has played a hand in my fate (more later). Indeed this forgotten holocaust, a titanic crime, has almost vanished, like many other crimes—except for its unconscious traces carried by us. A synthesis of two important concepts frames what follows—“complex” and “cultural”—and draws specifically from analytical psychology for the purpose of understanding the psychology of group conflict, particularly the operation of cultural complexes both in the collective psychology of the group and in the individual members of that group. A complex is most readily understood as a “splinter psyche” (Jung 1960/1969, par. 204).

When an emotional shock is experienced or an event overwhelms the individual psyche, in order to protect itself, a bit of the psyche splits off; a fragmentation of consciousness occurs; this occurrence is also known as trauma. In other words, one part of ego progresses, adapting to the outer world, while the other part remains stuck at this time or regresses. In the future any corresponding qualities to that initial event—the sound of someone’s voice, a person’s character, or a fleeting felt sense—has the potential to reactivate information that has fallen into the unconscious (personal) and, flood the individual with an image of that “certain psychic situation which is strongly accentuated emotionality and is, moreover, incompatible with the habitual attitude of consciousness” (Jung 1960/1969, par. 201). In that moment, the autonomous nature of the complex can take over the individual (student or teacher) so that the energy and emotion *have her*. She becomes unable to access her intentions or conscious will. The complex can “influence [her] speech and action in unconscious ways;” and, it can “disturb her conscious performance” (par. 253). Trauma does not end with the cessation of outer violation, but continues unabated in the inner world of the individual. Complexes are not negative in themselves; however, their effects often are. They disrupt memory and block the flow of associations; “they appear and disappear according to their own laws; they can temporarily obsess consciousness, or influence speech and action in an unconscious way. In this way, complexes behave like independent beings” (par. 253)—expressing in unconscious interrelation to the initial event. Complexes can be overbearing and frequent, becoming the defining characteristics with which a person is identified, creating a false self, rather than pointing to underlying trauma, poor ego strength, or no ego at all. In classrooms, complexes thrive as relationships among students and teachers are often patterned upon parent/guardian–child dynamics. Students’ complexes (personal) emerge autonomously out of the personal unconscious in relation to subject matter, activity, teacher, or peers. Complexes specific to learning include the imposter, perfectionist, conformist, star, and rebel to name a few—and can constellate others in turn. Teachers can be equally activated, acting out of their splinter psyches, due to fatigue, stress, overwhelm, lack of ego strength, or lack of differentiated consciousness. As well, the teacher might not have sufficient ego strength to stay present, embodied, and become constellated. When a complex *has the teacher*, she is not actually present, thus not able to teach or assess the students except *on automatic*. Complexes when activated affect each and every interaction. They arise when something in the outward situation

constellates and releases a psychic process whereby contents in the unconscious gather together and prepare for action in the outer world. “Since these complexities affect the individual, ... any person who comes into the emotional field that surrounds the individual, we often assume that they belong solely to the subjective nature of that individual person. Yet they can represent culture operating at the level of the individual” (Beebe 2004, p. 223). Awareness of and informed attention to this one aspect, which Jung (1960/1969) called “the architect of dreams and symptoms,” would radically transform all aspects of teaching (par. 210).

Jung discovered personal complexes through word association experiments when he detected slips of tongue, patterns of reaction, irritations, and infatuations. When speaking of their resolution, he warned, “a complex can be really overcome only if it is lived out to the full. In other words, if we are to develop further we have to draw to us and drink down to the very dregs what, because of our complexes, we have held at a distance” (Jung 1959/1969, par. 184). In regard to complexes and defenses in general, Jung suggested, “nowadays particularly, the world hangs by a thin thread, and that thread is the psyche of [humans]” (Jung 1977, par. 303). Most post-/Jungians follow his view: a more ethical and ecological world depends on personal psychological development (individuation) typically through analysis. However, the “emergence of a theory of cultural complexes suggests that an understanding of the individual psyche through its consciousness will not be enough” (Singer 2004, p. 31). Taken further, individuation in its fullest sense must “include group consciousness or risk being synonymous with narcissistic individualism” (Colman 1995, p. 32). With attention to the group, be it high school cliques, urban subcultures, or international dynamics, it has become apparent that “the group itself will need to develop a consciousness of its cultural complexes” (Singer 2004, p. 31). Cultural complexes are similar to personal complexes yet arise from the cultural unconscious as it interacts with both the archetypal and personal realms of the psyche and the broader outer world of schools, communities, media, and all the other forms of group and cultural life. Perhaps each injured culture—Syrian, Iraqi, LGBTQ, Catholic, women, First Nations, Métis, Inuit (FNMI), Muslim, disabled (the list is endless)—“needs to learn how to drink to the dregs its own complexes, as well as those of its neighbors, allies, and enemies” (p. 32). Such learning begins with the acknowledgement of the existence of the unconscious and thus more inclusive epistemologies (and an ontological shift). As Singer offered, “to settle down the archetypal defenses of the

group spirit, the collective psyche itself and its often traumatized, sometimes immature or stunted, spirit needs to individuate, and this is not the work of an individual alone or of analysis alone” (p. 32). Cultural complexes can be thought of “as forming the essential components of an inner sociology” (Singer and Kimbles 2004, p. 4). This inner sociology is not neutral, objective, or scientific in its description of different groups and people. Rather, it is a description as “filtered through the psyches of generations of ancestors” and thus carries “all sorts of information and misinformation about the structures of societies” (pp. 4–5). In analytic work, “which is always about the exploration of complexes,” one may not recognize that “the knot one is trying to untie may be a cultural complex. Like any other complex, the cultural complex creates internal conflict; occasions anxiety, anger, and depression; [and] governs the outer situations” (Beebe 2004, p. 223).

Cultural complexes are not synonymous with cultural identity or cultural character although they are at times intertwined. For example, groups emerging out of long periods of oppression through historical, political, and economic struggle, such as First Nations students, must define different identities for themselves that are often based on long-submerged traditions. This struggle for a different identity (urban and educated) can become convoluted with “underlying potent cultural complexes which have accrued historical experience and memory over centuries of trauma and lie slumbering in the cultural unconscious, waiting to be awakened by the trigger of new trauma” (Singer and Kimbles 2004, p. 5). In their impassioned and legitimate protest for a collective identity freed from the binds of colonization and oppression, it is easy for groups and individuals within the groups to get entangled in cultural complexes. For some, their complexes—cultural and personal—are their identity. For others, there is a healthy cultural identity (or cultural ego) that can be recognized “as separate from the more negative and contaminating aspects of cultural complexes” (p. 5). Such complexes have led to annihilation, assimilation, racism, sexism, and other horrors committed in the name of perceived differences between collectives of people.

Another defining characteristic of cultural complexes is its bipolar aspect. When a complex is activated, one half of its content, with its powerful affect and one-sided perceptions of the world, takes hold of the everyday ego and creates the affect-ego. The other part of the bipolar pair is projected out onto the group/person with whom one is constellated, and it/he, in turn, becomes an affect-object. What ensue are the highly charged interactions between an affect-ego and an affect-object where neither person

nor group is present because the complex holds each hostage (Perry 1987; Singer and Kimbles 2004, p. 6). This bipolar aspect stands central in the scapegoating of the Roma with/by Europeans (Fidyk 2011a, 2013c, d). A similar argument can be made in the scapegoating of FNMI peoples with/by Canadians inside and outside of schools, such as understanding the histories and narratives of those who attended residential schools. Intense collective emotion is the distinguishing feature of an activated cultural complex at the core of which is an archetypal pattern. Like individual complexes, cultural complexes “tend to be repetitive, autonomous, resist consciousness, and collect experience that confirms their historical point of view” (Singer 2004, p. 21). In its bipolar nature, when activated, the group ego or the individual ego of a group member becomes identified with one part of the unconscious cultural complex, while the other part is projected out onto the suitable hook of another group or one of its members (Singer and Kimbles 2004). Remember, the constellated moment/material holds both responsible; what one expresses the other represses and vice versa. For example, the earlier case on scapegoating (see Fidyk 2011a, 2013c, d) applies here: Romani people are discriminated against by Europeans who collectively and unconsciously project their dark side onto them, and at the same time, Roma refer to Europeans as “Gadje,” a derogatory term for those who are different. While difference between the two groups is not understood in the same way, nor is the level or degree of discrimination experienced the same, intrapsychically, each feels “other,” and so consciously justified in their actions. In this way, we can see the dangerous, repetitive pattern, and the immense challenge to disentangle from a cultural complex. Furthermore, “individuals and groups in the grip of a particular cultural complex automatically take on a shared body language and postures or express their distress in similar somatic complaints” (Singer 2004, p. 21). Mirroring personal complexes, “cultural complexes can provide those caught in their potent web or stories and emotions a simplistic certainty about the group’s place in the world in the face of otherwise conflicting and ambiguous uncertainties” (Singer and Kimbles 2004, p. 7). Here, the unfortunate yet predictable reactions of some undergraduate teacher education students (social studies) regarding Aboriginal and Canadian relations come to mind and their resistance to and denial of white privilege: their refusal to be implicated as a group often turns to anger, resentment, and projected shadow material. Cultural complexes are founded upon repetitive, historical group experiences that have taken root in the cultural unconscious of the group. Such is the challenge when addressing many issues in social studies education for these

slumbering cultural complexes can be activated in the cultural unconscious and take hold of the collective psyche of the group and the individual/collective psyche of individual members of the group. Worse, the “inner sociology of the cultural complexes can seize the imagination, the behaviour, and the emotions of the collective psyche and unleash tremendously irrational forces in the name of their ‘logic’” (p. 7). Group complexes are ubiquitous and can readily overwhelm members with “their affects and claims” (p. 7). “To suggest that a group is in the grip of a complex in its behaviour or affect, particularly if there is merit to the claim and the group has been discriminated against by a colonial power” or a white/male/indigenous/Christian power, “is to risk being attacked with the full fury of that group’s psychic defenses” (p. 7). Just consider former Canadian Prime Minister Steven Harper’s use of “old stock Canadians” along with its cascade of reactions during the federal election campaign (fall 2015). Both reactions strongly suggest something struck deep within the cultural unconscious. Likewise, the CBC article entitled “Steven Harper’s ‘Old-stock Canadians’: Politics of Division or Simple Slip?” echoes concern (Gollom 2015). Here “slip” refers colloquially to a parapraxis that was identified by Jung as one way to detect complexes. As such, it appears that Harper’s comment is both racist and sexist for the term is contrary to terms that his persona would typically use (as during a less stressful time), and his rationalization to explain his usage could be read as an intellectual defense. In this case, there is nothing simple to it—except that the unconscious revealed itself, when the speaker himself was not conscious of his shadow. As in this case and others, complexes are easily detonated and threaten life, especially of the young, everywhere.

THE CRITICAL INTERSECTION BETWEEN GROUPS AND INDIVIDUALS

Whether we look at group formation across the country, within schools or accounts within social studies textbooks, configurations of us versus them are readily visible. These binaries reflect intrapsychic and intergroup dynamics, yet the former remains unaccounted for. Jungian analyst Arthur Colman’s (1995) emphasis on the critical connection between the growth processes in individuals (K-12 students, undergraduate preservice students, and teachers) and in groups is noteworthy, for those identified as the marginal group or scapegoats not only discourage group development but also prevent integration of shadow projections, a necessary step in

psychological maturation. He writes, “as long as there are scapegoats—unintegrated shadow figures for the group—integration of the shadow within the individual is an illusion” (p. 9). By extension, the process of psychological maturation, for the individual “will always be held hostage to the presence of the scapegoat in the larger community” (p. 9). Conversely, group consciousness will be kidnapped from its own authority and agency if the group is not awakened to its own separating tendencies. Today, scapegoating is the “root of major social issues” including sexism and racism on campus and in the workplace. It is part of a “basic family pattern which creates abused and victimized children who later become abusing and victimizing parents” (p. 81). By nature of their role, *in loco parentis*, teachers and students will unconsciously repeat familial patterns with one another. Without awareness of complexes, their underlying dynamics, and ways to depotentiate them, there is little opportunity for educators to unhook from these roles. Likewise, they will struggle to bring new understanding or create opportunities to enliven different perspectives for groups of students whose experiences are tied to the collective stories and emotions associated with scapegoating. We will continue to use theories and constructs that betray our inherent interrelatedness at both conscious and unconscious levels, thereby maintaining a split *within* self and other, as well as *between* self and other, inner and outer worlds. To further compound the challenges of constellated cultural complexes within classrooms, many individuals behave in the way of a traumatized, vulnerable child whose defensive self-care system kicks in to protect the collective spirit rather than the personal spirit of the individual. When this happens, individuals and members of groups will become further split and rigidified. They will resort to “abiding by the rules, [which] of course, is the source of many obsessive-compulsive, perfectionist, controlling and violent behaviors” which in turn are fed by complexes (Riedel 2009b, p. 458). Such behavior is fundamentalist in nature as it “wipes out the capacity for imagination and curiosity, and compensatory forces of anger explode internally or externally” (p. 461). Very often such behavior stirs up counter-fundamentalist reactions in others, obedient to a different external system of rules, which sets up endless repetition. Fundamentalism arises where no in-between spaces exist; rather, the emotional grounding is absolute. What is needed is an orientation that develops and supports another center of authority, one where transition space and play are valued along with an attitude of openness and mutuality in the arduous service of our humaneness.

THE FAMILIAL UNCONSCIOUS AND FAMILY COMPLEXES

While the cultural unconscious has received recent and valuable attention, it is on rare occasion that attention has been paid to the familial layer of the unconscious. In Jung's diagram of the psyche, families figured prominently in his schema; the unconscious as layered strata moved in depth from individuals to families, clans, nations, large groups, and primate ancestors, to animal ancestors in general and then central fire or archetypes. These are porous stratifications that blur and are not to be interpreted as unrelated, rigid levels. Most scholarship and clinical application (training and publication) regarding the unconscious focus upon the personal and archetypal layers, neglecting the terrain and figures in between the two. This broad in-between terrain, as outlined, has been tagged in part the cultural unconscious. The rich, nuanced layer encoding entanglements, transgenerational patterns, and emotional and somatic dysfunction within the familial unconscious, a specified realm, has been greatly overlooked. The exceptions, of course, are the mother and father complexes—yet these are addressed only as they appear through the personal unconscious. In both theory and practice, there is a dearth of application of Jung's theory of complexes to the life of the nuclear and extended family (three generations or more), including the ways the life of the family (as a unit, system, or soul) exists in the psyche of the individual and the ways the familial unconscious casts its shadow upon the individual. It is among the relationships and interactions of the individuals within pedagogical spaces that such attention becomes striking, for a child does not sit at her desk alone. Her grandparents, their secrets, their lands (home, exile, refuge), and the events that enfolded their lives, in other words, their fates accompany her. Similar to the cultural traces that break forth into the daily lives of students and teachers through complexes, defenses, and projections, familial unconscious patterns also direct, perform, and erupt into pedagogic spaces.

ACKNOWLEDGING THE ANCESTORS

Through the publication of *The Red Book* (2009), we have been gifted insight into the importance of attending a deeper experience of the unconscious. Here Jung's respect of and for the ancestors eclipses all else. During the years when he withdrew from academic and public life, working intently with the unconscious, he "comes to the realization that unless

we come to terms with the dead[,] we simply cannot live” (Hillman and Shamdasani 2013, p. 1), for they not only animate us, but further “our life is dependent on finding answers to their unanswered questions” (p. 1). Just as Jung evoked his inner figures and let them speak (methods of active imagination, dreams, imaginal dialogues), attending the family seeks to recollect all familial members and to honor their membership regardless of the outer world narratives about them. Whether literal or metaphoric, gestures from the ancestors seek to connect us to history, to human ancestry—to “the forms that are neglected, forgotten, and feared” (Hillman and Shamdasani 2013, p. 96). Most of us have forgotten or deny this system of mutuality, this system of reciprocity between the living and the dead. As with the burden of responsibility that accompanied images for Jung, so too recollecting the voices of the dead comes with an ethical obligation. This ethic of the dead, like the ethic of the cultural, social, and political, is bound to our ability to live as fully as possible—to make life meaningful. While the dead, for Jung, are more than his personal eight great-grandparents, we must also understand our personal grandparents, the ostracized uncle, even the stillborn or miscarried child—as ancestors who are no longer present, yet they too influence our lives.

This connection to human ancestry comes both in the form of “unearthed shards and small bones” of our animal ancestors as well as in the spirits of the dead (Jung 2009; van Löben Sels 2010, p. 82) or “poor souls” according to some cultures (Bernasconi 2011, p. 116). Traditional African cosmology accounts for those who have died alongside those who are living, which might be the root of the Haitian belief that “those who die never *really* die. They undergo a ‘translation of state.’ Thus the spirits of the Haitian dead, or ‘those we don’t see,’ do not depart, as in many other religions but remain extremely close to us, the living” (van Löben Sels 2010, p. 82). In this cultural context, “the spirits of the dead have not left the living there they are, *among* the living” (p. 82). They are “invisible but *tangible*, and they inhabit a parallel universe on the other side of any mirror, beneath the surfaces of all water, and just behind the veil that divides us from our dreams” (p. 82). Jungian analyst Robin van Löben Sels elucidates in reference to the terrible wreckage of Port au Prince:

With families destroyed utterly, lost among the rubble of devastated homes, with 150,000 dead, the traumatized Haitians who remain, the survivors, know that the energy of NOT lost souls can spring back into their living world through the riches of their culture, through visual art and music—much of which is rooted in the rhythms of ceremonial drumming—and

through a vivid Haitian literature and an ever-evolving language. So perhaps those who remain in the living Haitian world today are not only suffering; they can expect to and they will find in the depths of suffering riches and treasure. (p. 83)

Comparable to Western religions, which place the spirits of the dead and ancestors in another world, in an afterlife, out of reach with the day to day of this life, Haitians have a taken-for-granted richness in their religious experience and worldview: the nearness of ‘invisible but *tangible*’ energies, “the enormous and impersonal power of archetypal force-fields, and the presence of personified presences—‘those we don’t see’—all of whom appear to us in various guises” (p. 83). Similar richness lies hidden in the West, except perhaps in the remnants of specified events or days such as All Saints Day or All Soul’s Day, the yearly remembrance of the deceased.

Ancestors with a capital A also include our archetypal Grandparents—the great Grizzlies, Bison, and Cranes, as well as the great Whales of every ocean, “the Big Cats of Asia and the Elephants of Africa and India” (van Löben Sels 2010, p. 82). Anthropologist Paul Shepard (1998) suggests that originally our human sense of beauty constellated around our Ancestors as they watched the big animals, the mammoth, elephant, eland, and bison, move around in the open world. Behind these Grandparents stand the great Sequoia, the desert Baobab, the Pine and Redwood. “These presently-living ancestral creatures open us to awe,” van Löben Sels writes (2010, p. 82). “Their struggles and sufferings and demise are teaching us despair. These are the Ancestors who live today *with* us, in the here and now and they are not faring well” (p. 82). Of these psychological and physical worlds, archetypal and cellular, South African Jungian analyst and wilderness guide, Ian McCallum (2006) asks, “How long is it going to take to acknowledge that there is indeed a menagerie within each of us ... a wolf, a hyena, a lion ... a wild man and a wild woman?” (p. 165). To become aware of our ecological kinship is to come home to a more inclusive definition of self that is always already united with animals, elements, and wild places. He reminds us of our molecular origins, of our geology, of those first cellular membranes, and to the eventual expression of a species capable of reflecting upon itself. The relationship of principal cations (the electropositive elements) of the blood serum of all animals and human beings is constant (“calcium : sodium : potassium = 5 : 10 : 160”) (McCallum 2005, p. 64). This measurement is a close representation of their respective proportions in seawater, differing only by a greater content of magnesium in the oceans of today. McCallum expands:

The animals, then, are in us and with us; we share their genes and their juices. Made up of countless molecules, cells and complex organs, each one of us is the carrier not only of the pattern of embryonic gill slits and tails, but the entire history of life also. It would appear that the aboriginal ‘water of life’ still circulates in the blood of every animal, including us. (p. 65)

This pattern joins us all—humankind, human ancestry, all entities—those of our ecological homes and our psychological ones. Our ancestors then comprise ‘the entire history of life’ pulsating through our veins and calling us from behind the veil of our dreams, felt sensations, and visions. We would fare much better, according to Jung, if our cosmology, if our reality, was as inclusive—if we found a “way of finding the return ... to the world, ... of bringing ... the depths of the psyche, and the weight of human history, back into human life” (Hillman and Shamdasani 2013, p. 65).

Shifting from this magnified view of ancestors back to the personal, Jung knew the importance of family to psyche and its fateful weight upon the individual. However, it is one area not fleshed out in his collected work, although one he judged as critical to psychotherapy. Such knowing found its place in his auto/biographical writing:

When I was working on the stone tablets, I became aware of the *fateful links between me and my ancestors...* . I am under the influence of things or questions which were left incomplete and unanswered by my parents and grandparents and more distant ancestors. It often seems as if there were an impersonal karma within a family, which is passed on from parents to children. It has always seemed to me that I had to complete, or perhaps continue, things which previous ages had left unfinished. (Jung 1961/1989, p. 233, emphasis added)

And further:

A collective problem, if not recognized as such, always appears as a personal problem, and in individual cases may give the impression that something is out of order in the realm of the personal psyche. The personal sphere is indeed disturbed, but such disturbances need not be primary; they may well be secondary, the consequence of an insupportable change in the social atmosphere. The cause of disturbance is, therefore, not to be sought in the personal surroundings, but rather in the collective situation [in the family and more distant ancestors]. Psychotherapy has hitherto taken this matter far too little into account. (pp. 233–234)

While I am not advocating that teachers act as therapists, as Jung voiced, “a certain knowledge of psychology ... is a desirable requisite in a teacher” (Jung 1954/1971c, par. 237). Leading depth psychology and education scholar Clifford Mayes (2010a, 2013) agrees. He argues that the classroom can be a “therapeutic” space (2010, p. 56), indirectly affecting learning and development, when the teacher is knowledgeable about psychodynamic theories and, most importantly, engages in caring and ethical action with students. Unfortunately, depth psychological insights are rarely included in education. The privileged perspectives in educational psychology—behaviorist, developmental, cognitive, and constructivist—only go so far in that “none of these perspectives consider the role of the unconscious mind, which exerts a substantial influence on the intellect, emotions, imagination, intuitions, body, and spirit—and thus on learning” (Dobson 2008b, p. 6). Much healing and psychological development can occur through creative work, courses that integrate the arts and engage the body—each of which operates in consort with material from the unconscious. A caveat must be added here for if art and body work are understood only as another ego function, then their transitional role between the unconscious and the conscious is bypassed. Educator Darrell Dobson (2008b) points to the many ways learning is influenced by the unconscious and makes the case that while depth psychology is not new, it has been ignored, and questions how our schools can continue to profess educating the whole child yet neglect the benefits that depth psychology can bring to our educational systems:

Given over a hundred years of research, inquiry, and theory relating the profound influence of the unconscious mind on human learning and development, it is folly for an education system that purports to pursue the goal of maximizing human potential, whether academic, economic, social, ethical, personal or spiritual, to so neglect the implications and beneficial potential of depth psychology. (p. 6)

It is further folly that teacher education programs continue to promote teacher identity (teacher/group ego—in the singular and plural cases), most often a character or persona contingent upon fragments of self rather than one’s “pedagogic being” (self or the unfolding personality) (Aoki 1986/1991/2005, p. 161). Psychoanalytically aware, curriculum scholar Ted Aoki suggests that who we are is not some essential being; rather, who we are is created through the effects of our movements among layers

of difference, an understanding which has deep resonance with Jung's concept "personality." We become persons as we individuate and become less influenced by collective images and actions. In this way, teachers can develop styles reflective of their kinds of consciousness (typology), draw consciously from archetypal images (wise one, magician, royal, and so on), and be attentive to shadow, projection, and transference with students. Teaching consciously while integrating unconscious material supports the maturation of all within the community (school—individuals and groups). Jung wrote an entire volume on the "connection between analytical psychology and education" (1954/1971a, par. 99) highlighting that the "mind of the child is extremely susceptible and dependent and is steeped for a long time in the atmosphere of his parental psychology, only freeing itself from this influence relatively late, if at all" (par. 99). What this means for the days and years of school is that most relationships will replicate the unconscious dynamics with the parents (key figures at home) in the name of the teachers, coaches, and principals (leaders), and their inverse (the teachers' unconscious material will be activated in the child and carried home). As further guidance, Jung emphasized that "the deepened psychological knowledge of the teacher [when acquired] should not ... be unloaded directly on the child" as subject or content; "rather it should help the teacher to adopt an understanding attitude towards the child's psychic life" (par. 100). As "the unconscious is the matrix out of which consciousness grows" (par. 102), school is, for Jung, "a means of strengthening in a purposeful way the integration of consciousness" (par. 103). How better to proceed than to include the rich and purposeful work of many educational scholars who have integrated Jungian and post-Jungian psychology into their research and practice.⁵ As Jung advised:

Every educator—and I use the term in its widest sense—should constantly ask himself whether he is actually fulfilling his teachings in his own person and in his own life, to the best of his knowledge and with a clear conscience [sic]. Psychotherapy has taught us that in the final reckoning it is not knowledge, not technical skill, that has a curative effect, but the personality of the doctor. And it is the same with education: it presupposes self-education. (1954/1971c, par. 240)

"The educational method, then, that best meets the needs of the [teacher or] adult,"—that aids in the self-education of the educator—"must put [her] in possession of such psychological knowledge as will permit [her]

to educate [herself]" (par. 110). "It is ... highly desirable that the educator, if [she] wishes really to understand the mentality of [her] pupils, should pay attention to the findings of analytical psychology" (par. 130). By extension, "the teacher must not be a merely passive upholder of culture ... otherwise [she] will start correcting in the children those faults which [she] has neglected in [herself]. This is manifestly the antithesis of education" (par. 110). With growing class enrollment, increased measures of accountability, and ongoing standardized testing, the expectations and requirements upon educators are significantly more demanding than ever before, reflected by increased illness and professional/medical leave. When facing such demands, it is highly unlikely that teachers will turn to analytical psychology as a way to understand themselves or their pupils. It becomes paramount that teacher education programs, professional associations, and other involved groups or sectors include post-Jungian scholars, and analysts/psychotherapists on their policy and curricular committees.

Educators then have a twofold task: first, their own "self-education" so to support personal development (both depth psychological understanding and personal analysis); and second, to understand the power and energy of the unconscious, which repeats dynamics and limits potentialities within pedagogic situations. Complexes, personal, familial, and cultural, seek confirmation (ways of behaving); they magnetize experiences, drawing in or drawing to experiences that serve to reinforce, even strengthen the complex. As long as educators remain unconscious of their and students' complexes, they will be manipulated by them. Recall that Jung (1961/1989, 2009) in his most personal writing laid bare the fateful weight children carry of "things or questions which were left incomplete and unanswered by [their] parents and grandparents and more distant ancestors." With this image in mind, our diverse ethnocultural classrooms become the transition ground of unfinished lives. Where indeed, the cause of a learning disturbance may not be unraveled "in the personal surroundings, but rather [may lie] in the collective situation." Thus new kinds of questions must guide us: in what ways have the pasts of students' families, homelands, and cultures entangled them in their present learning and relationships? How might a post-Jungian approach to understanding the dynamics in our classrooms reveal unimagined patterns, stories, and fates that hinder even prevent students from learning, or bind them to repetitive unconscious behavior and trauma?

BORROWING FROM AFRICAN TRADITIONS OF HEALING

Acknowledging the ancestors, personal and otherwise, is not a foreign practice to many indigenous and “traditional peoples.” As a child growing up on traditional family farm, where daily life was lived closely with the undulations of seasons, and cycles of birth and death, honoring ancestors was a given. Such a backdrop might be the root to weaving my studies in analytical psychology (including personal analysis), training in family systems and constellation work, and teaching. For years, the three were separate until I worked extensively with the scapegoat complex and recognized patterns within my immediate and extended family that mirrored my group membership within my social and professional life. I fulfilled the role of scapegoat in each world (familial and cultural). Through this realization, I sensed congruence between Jung’s theory of complexes, its application to sociocultural and political situations, along with insights from and methods of family constellation work.

Family constellation work, with its roots in African healing traditions, emerged out of Germany in the 1980s by the Swiss psychoanalyst Bert Hellinger (Hellinger 2001, 2002, 2003; Hellinger et al. 1998; Mahr 1999; Ulsamer 2005). Hellinger’s unique “systemic and phenomenological” approach (Franke-Gricksch 2003, p. 15) derived from an integration of phenomenology—mainly Husserl, Heidegger, and Merleau-Ponty (Heidegger 1962; Husserl 1972; Merleau-Ponty 1962), family systems theory (Boszormenyi-Nagy and Spark 1973; Lynch and Lynch 2000; Moreno 1945; Satir 1987), and most influentially, Zulu epistemology where the interdependence between the living and the dead is acknowledged. More recently, family constellation work has been deepened through family therapy that is culturally sensitive (McGoldrick et al. 2005), along with elements of shamanic rituals (van Kampenhout 2001, 2008), indigenous spirituality (Mason Boring 2011, 2012), and transgenerational psychology (Schützenberger 1998). In its broader categorization of systemic constellations (attention to organizations or elements of specific systems), the work has been enhanced by Sheldrake’s theory of morphic genetic resonance (Sheldrake 1995, 2009, 2012) and, in turn, recognizes consciousness as a transient phenomenon arising from and dependent on various configurations of matter, thus supporting characteristics of deep ecology⁶ in renewed ways (Seed et al. 1988; Reed and Rothenberg 1993; Mason Boring and Sloan 2013).

Hellinger went to South Africa⁷ in the 1950s as a parish priest with the intent of converting the Zulu to Catholicism; however, after 16 years, he returned speaking their language fluently and converted to their traditional ways of working with rituals, ceremonies, and ancestors. Hellinger witnessed enduring bonds among Zulu family members, not only child to parent but to grandparents, aunts, uncles, and cousins across generations. Unlike families in North America that frequently break apart, separate across vast geographic distance, and lack deep loyalty, Zulu families were more tightly knit, bound with rituals, stories, and greater interdependence. Bearing witness to families and their fates, Hellinger discovered that when a member was excluded, for whatever reason, another member of that family or even the whole family would not bode well. When a healer was consulted, rituals and ceremonies were conducted to honor the one whom had been excluded and to welcome him or her back into the family. Hellinger's methods sought to uncover the unseen ties that bind the parts to the whole; and further, if lives were entangled, the methods aimed to right or order the relations so love could flow among the members. Of the family soul, he writes,

All the members of this fellowship of fate are inexorably bound together with a deep loyalty. The fateful effects of their loyalty are strongest when it springs for the love of a child for his or her parents, or when it is loyalty between siblings or between husband and wife, but a special loyalty is found by those who have gained an advantage from those who had to leave. (Hellinger 2001, p. 311)

Similarly, Colman uncovered in the scapegoat dynamic that the need for unity governed group interaction, whereby the scapegoat represented the group's urge to exclude its disparate elements. Within a family, Jung called this urge for wholeness or loyalty "fateful links," and "impersonal karma." When a problem appeared personal and a life was disturbed, the cause may not be found "in the personal surroundings, but rather in the collective situation." Likewise, the family worked as a whole where questions "left incomplete" in one generation needed to be completed by another or "perhaps continue." Hellinger concurs:

This loyalty among members of a family and extended family manifests as a need for systemic balance between the benefits enjoyed by one member and the disadvantage suffered by another. It is this systemic urge for balance

that leads one member of the group to court misfortune when another is suffering, or that tempts one person into illness or misfortune when another is ill or found guilty, or that makes someone long for death when another member of the system dies. (2001, p. 311)

And further,

[W]ithin this confined fellowship of fate, loyalty and the need for balance and compensation assure that one member participates in the guilt and illness and fate and death of others; they lead to attempts to bring about someone's well-being through one's own misfortune, someone else's health through one's own illness, someone else's guilt through one's own innocence, or someone else's innocence through one's guilt, and someone else's life through one's own health. (2001, p. 311)

This "fellowship of fate" burdens us all as every family has its own set of rules, checks, and balances. As Zulu, indigenous, and "traditional peoples" knew, the dead must be respected.

TRANSGENERATIONAL TIES THAT BIND

Utilizing Hellinger's method of constructing a constellation is a very effective way to bring to light unconscious impulses that underlie a problem nested within a larger tapestry shaped by ancestral familial traumas. It can diffuse familial complexes, expressed as unconscious patterns of thought, attitudes, or behavior among family members. It can give voice and form not only to the ancestors but also to their homelands and significant events such as wars, genocide, and famines, as well as their effects. Jungian methods of active imagination and imaginal dialogues are also beneficial ways of supporting mutuality between the living and the dead, especially when used with body and breath work (to prevent splitting or dissociating).

Maria Anna Bernasconi (2011), a Jungian analyst who wrote *What the Dead Tell Us* (thesis) agrees: "I have come to realize that through family history, the land, and the legends, the dead speak not only to me, but also to many different people, out of many different places and times" (p. 119). From an animated perspective, our existence and well-being depend on forces greater than our own. They depend on the attitude of respect and rituals done in order to preserve this, what Bernasconi describes as "the

kind of recognition that keeps the ego in proper relationship to the psyche as a whole” (p. 117). Constellation work seeks this end; it aims at the level of familial unconscious (as well as the cultural), to enable a healing image to emerge in relation to the previously held unconscious complexes and defenses. This image arises autonomously from the field, often in surprising contrast to the personal story that has governed the individual’s ego-oriented life. Perhaps more powerful is bearing witness to the movement of a constellation conducted in a group setting.

Incorporated into her teaching in Germany, Marianne Franke-Gricksch (2003) found that “using family constellations led [her] to a new understanding of the students” (p. 15). She recognized “the energy that they were constantly employing to connect their family life and school and experienced that this energy could be harnessed in an extremely productive way” (p. 16). As antidote to the sense of futility teachers might experience regarding student performance, she suggests a new kind of respect for the child, “respect for his or her family of origin, and that ... includes respect for the entire family destiny, whether or not we deem it a positive or negative influence on his or her development and willingness to learn” (p. 16). Perhaps most valuable among veterans and beginning teachers alike is this advice:

The best thing we can do for a child is to acknowledge his or her fate, just as it is, and that requires a great deal of discipline [ego strength] for teachers. For example, it means dispensing with the notion of wanting to help the child having him or her overcome the constraints of his or her family of origin. (p. 16)

For many North American educators, such an attitude will be difficult, as they not only adhere to constructivist values that aim to reshape reality but also do not recognize their “wanting to help” as reflective of their helper complex, rooted in a savior archetype. As such teachers would serve students and themselves better if they dissolved this desire and withdraw their unconscious projection, owning it as their own stuff—that they have a deep longing to be helped. Many educators ascribe to a progressive perspective that assumes people outgrow their family and become individuals, independent and separate who can do/be better than the “family of origin.” While this view may be useful to/for some, insights and transformations experienced through work based on Jung’s and Hellinger’s theories come about at a much deeper level. As Franke-Gricksch discovered,

“Acknowledging orders of love, acknowledging fate, bowing down to what is incomprehensible and inescapable, and reliving grief were all experiences that gave [her students] a new feeling of security with respect to their world, their family, and their friends” (p. 15).

The constellation procedure typically begins with a group of participants, or in this case students (12–40+) sitting in a circle. One student is selected and is invited to present a “core issue” (Wolynn 2010) or a precisely stated personal issue to the facilitator. He then is usually asked to select members from the group to *stand in for* relevant members of his family. In the silence and stillness of the constellated scene, the representatives tune in to the unconscious, collective will of the family system. They do not act, pose, or speak. A constellation unfolds phenomenologically through the transtemporal and transspatial knowing field (Sheldrake 1995; Laszlo 2004); the representatives resonate with the emotions, physical sensations, and dynamics that belong to the complex web of relations inherent to those family members and often reaching through them to previous generations (affected by and/or including the environment, the culture, and key factors of the place and time). This attunement is not a projected or dramatized response by the representative; rather, it is a somatic reality, a “felt sense” (Gendlin 1981). From this knowing field “the interplay among the conservative forces of systemic integrity (balance, bonding, and order) and the expansive forces of animated existence (physical survival and reproduction) come momentarily into conscious awareness” (Cohen 2006, p. 1). Depending on the facilitator, the representatives may be invited to reposition themselves based on the initial setup by the student (who is abiding by her external personal story) and, possibly, share briefly what is experienced. Bringing the transgenerational ties and hidden familial complexes to consciousness in the unfolding of the new image (based on a different narrative that emerged from the field or the familial unconscious) aims to unhook or disentangle the familial members so that each life can open and live out its fullness while supported by previous generations. In this way, there is intelligence within the family that seeks completion. Events will repetitively reappear in order to return what has been excluded: one member’s position conditions the positions of the other members, and this positioning holds dominance over the individual’s “self-determined life” (Schützenberger 1998, p. 20). In other words, “there exists perpetual reciprocal regulation” (Schützenberger 1998, p. 20)—“a system of reciprocity between the living and the dead” that must be respected (Bernasconi 2011, p. 116). As Jung admitted late

in life, it is as if an individual's life can only go so far until the familial system must be noticed, addressed, and honored. He wisely warned that "failure to understand [the dead], or a shirking of ethical responsibility, deprives [the person] of [her] wholeness and imposes a painful fragmentariness on [her] life" (Jung 1961/1989, p. 193).

PARALLELS WITH FINDINGS IN EPIGENETICS

Perhaps more strikingly for readers who favor "objective testing" and documentation, the insights arrived at by Jung (especially those articulated in *The Red Book* and *Memories, Dreams, Reflections*) and Hellinger (via African healing practices) have been validated by a recent spate of research in epigenetics: traumatic experiences, life events, environmental, and cultural factors affect us and our children (Weaver et al. 2004; Franklin et al. 2010). Epigenetics refers to the study of alterations on gene expression that change the way genes function. We can inherit changes in gene expression that do not involve changes to the underlying DNA sequence: a change in phenotype without a change in genotype. Studies found, for example, that a mouse's environment can affect the memory capacity it passes on to its descendants (Inherited Memory 2011). Research has gone further and mapped a specific epigenetic process that turns genes on and off.

In the context of the familial unconscious, ancestral experiences, recollections, the effects of in utero events, and memories can be passed to us from our great grandparents as well as from the collective unconscious—those in the culture or context who are not familial—thereby affecting the biological and psychological development of future generations. Helen Epstein (1979), in *Children of the Holocaust: Conversations with Sons and Daughters of Survivors*, claimed that the harrowing trauma of the Holocaust, and the symptoms that marked survivors, had been passed on to the children, a generation that was not alive during the war. While published nearly 30 years ago, emerging epigenetic findings confirm Epstein's claims. In addition, Rachel Yehuda (2002), professor of psychiatry and neuroscience, says, "Trauma changes people permanently and in an enduring way" (Samuels 2014). Within the context of our schools, even if an individual escapes a horrific event, the consequences of traumatic experiences can be passed on from him or her to the next generations or to him or her from previous generations. Likewise, we must imagine what circumstances students' grandparents faced so to consider the unspoken and unseen patterns that are passed down to them, manifesting in illness,

relationships, attitudes, even capacity for life. With this in mind, when we look at 30-plus pupils within a class, many of FNMI descent, others newly arrived to Canada, or first-generation Canadians, including various cliques and groupings, imagine anew what each carries.

IN CONCLUSION

Insights revealed through post-Jungian psychology, like those from wisdom traditions, subordinate the visible and manifest to the invisible and unmanifest and open learning to unimagined practices and potentialities. Of particular importance to education are the advances made during the last two decades by post-Jungian analysts, scholars, and activists who have explored the cultural level of the unconscious, including implications of cultural complexes, scapegoating, and the influence of conscious development of group psychic life upon the individual. In addition, attention is called to the familial unconscious, a layer of the psyche not before addressed, as well as to familial complexes, and Hellinger's family constellation work as a method to be integrated with Jungian practice. The time has come for a more inclusive discussion regarding the reality of who and what shows up in our pedagogic spaces: the classroom is a site of hidden entanglements of family and systemic loyalties influencing the pedagogic atmosphere and encounter. It bodes educators well to be informed of the multiple familial and ancestral systemic layers performing under the surface, in addition to the cultural complexes and other material arising from the collective, archetypal, and personal unconscious. The ego-based identity or persona that attends school is a mere tip of the mass that seeks to emerge from the depth of these multiple intersecting influences. When such material remains unattended, the consequences can be confusing, harmful, and even traumatic. With increased research and understanding of individual and collective trauma by post-Jungians (Kalsched 1996/2005, 2013; Wirtz 2014; Gražina and Stein 2014), how might such findings further inform our pedagogical and curricular practices?

NOTES

1. The feeling function, according to Jung, is a rational function, a type of consciousness that judges or evaluates the worth of a person or thing. It is not emotion or affect; rather, when it is differentiated, it is a kind of love or eros that includes "a deep empathy and closeness to the other *and* a certain

distance ... an understanding and a non-understanding, the latter consisting of a silent respect of the mystery of the other's individuality" (von Franz cited in Fidyk 2009b, p. 61).

2. The terms *imaginal* and *archetypal* are often used interchangeably. However, there are some slight differences. Imaginal connotes the *place* from which archetypes originate, though "place" is not the precise term to describe the site of archetypal origination. Corbin (2000), one of the premier Western scholars on Islamic mysticism and the world of the imaginal, tells us, "The where, the place, is located in the soul... . One cannot say where the spiritual place is located. Rather than being situated, it situates, it is situating" (p. 82). The body, mind, and the unconscious are situated within the imaginal, and the archetypes that are encountered, attended, and acknowledged in post-/Jungian are also situated within the imaginal.
3. Active imagination is a method of assimilating unconscious contents such as dreams, fantasies and images through some form of self-expression. The aim is to give a voice to sides of the personality (particularly the shadow and anima/animus) that are typically not heard, thereby creating a line of communication between consciousness and the unconscious. Even when the drawing, painting, writing, sculpture, dance and so on (the creation) is not interpreted, something happens between creator and creation that contributes to a transformation of consciousness.
4. The term "knowing field" was coined by Dr. Albrecht Mahr in 1997 at the first international conference on Family Constellations in Germany. Family Constellation is an event-oriented healing modality used to address trans-generational systemic entanglements. In Family Constellation work, representatives do not act out roles according to personality descriptions given by the client as in psychodrama or role play. With a setup of a constellation, the representatives move into and become part of the knowing field of the family and notably "take on the actual feelings and impulses of the real family members" (Payne 2006, p. 20).
5. Slattery and Selig (2009), Doll (1995, 2000), Romanyshyn (2013), Pines (2002), Pinar (1995, 2004), Shaker (1982, 2008, forthcoming), Lindley (1993, 1984), Dobson (2008a, b, 2009, 2011), Jones et al. (2008), Leonard and Willis (2008), Semetsky (2003, 2008, 2009), Dirkx (2008), Mayes (1999, 2001a, b, c, 2002a, b, 2003a, b, c, 2005a, b, c, d, e, 2007, 2009, 2010a, b, c, 2012), Mayes and Williams (2013), Fidyk (2008, 2009a, b, 2010a, b, 2011b, 2012, 2013a, b, c, d) and Neville (2012, 2014)).
6. Attention to ecology is another contribution of post-Jungian development critically important to education; however, due to the delimitations of this paper, a case for it will not be made here.
7. During his assignment as missionary to the Zulus, he continued his studies at the University of Pietermaritzburg and the University of South Africa, where he received a B. A. and a university education diploma that entitled him to teach at public high schools.

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Silent Schools? On the Re-emergence of Oral Language and Culture in Education

Jim Parsons

SCHOOLS AS QUIET PLACES

Schools are quiet places for two reasons: (1) quiet and a nonchaotic space is necessary for leadership to assert control over large numbers of young people and manage these charges, and (2) schools are places engaged in the learning and practice of written literacy. The first reason is accepted, and this chapter offers no critique of the power structure of schools. Simply stated, we accept that schools must be hierarchical. In part, because teachers and administrators are older and charged to act in a supervisory manner, we accept that they are rightly in charge and should be granted controlling power. Such an organizational structure makes good sense; children are immature in a number of crucial ways, and almost always unable to successfully organize curriculum or dictate the rules of school space and geography. There are schools based upon a different, less-coercive pedagogical model, and in these models students have, insofar as possible, greater say in their curriculum and pedagogy. But, as noted, this topic is not in question in this chapter.

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The second reason—that schools engage in advancing written literacy as opposed to a more ‘primitive’ oral literacy tradition—is the topic for this chapter. This engagement of written literacy seems to be accepted without critique. At least, in a cursory search of educational journals and papers, I found no evidence that anyone had attempted to ask or answer either the question of why schools are quiet, or how the primacy of written literacy impacted how people lived in schools. It is as if educational thinkers have considered the dominance of written literacy in school a moot point. This chapter attempts to problematize written literacy as the primary focus of schooling and to explore the impact of written literacy upon the actions of those who live and work in schools. My chapter does not try to argue the wisdom of this focus, as much as it has tried to unearth reasons why this focus exists and how it might shape the behavior of teachers and students. However, the chapter will end with a plea for creating more oral spaces.

I approached the chapter in a hermeneutic manner, beginning with the question ‘Why do we attempt to make schools quiet places?’ This question led to an exploration of written and oral traditions, and then to attempting to understand how the experience of a curriculum of written literacy might impact those who experience schools. The exploration led through a broad reading agenda focused on the topics of written literacy, written and oral cultures and traditions, and culminated with a general attempt to question and consider how schools might become better places for those who live there. Similar to most hermeneutic studies, I was less interested in contesting the reality of the situation, and more interested in asking and answering ‘What does this situation mean?’ and ‘What can this situation tell us about our human condition?’ As noted, considering that schools are and remain social spaces, my work ends with an initial attempt to suggest how schools might become improved social spaces.

A SHORT HISTORY OF ORAL AND WRITTEN CULTURE

It doesn’t take much reading in elementary anthropological texts to conclude that, as human cultures have developed throughout history, these cultures have developed greater literacy skills—improving through a history of communication that began with speaking, moved to the use of elementary signs and symbols, eventually developed more elegant written languages, and soon will be moving toward unknown literacy experiences aided by, among other things, computer communication technologies. Although speaking came first, oral language did not hold its primacy, and

writing eventually became understood as a communication tool of greater value because it promised greater possibilities for collecting, critiquing, and distributing human ideas. Writing, at first a visible recording of oral language, developed artfully as well, and humans now engage in communication possibilities that are concrete (that attempt to communicate a literal idea), or more ‘artistic’ possibilities (as in the creation of novels or poetry that attempt to engage meaning through both style and direct ideas). Furthermore, writing is peculiar to humans, and the use of writing proves to humans that they are indeed the earth’s dominant species—writing allows humans to ‘thump their chests’ a sort of preening that might have brought humans to folly. We proudly pass our writing from generation to generation, because such actions show just how intelligent we humans can be.

Because writing enables and allows the transmission of ideas over vast distances of time and space, it has come to be seen as a prerequisite of increasingly complex civilization. Although there is no certainty where and who invented writing, some of the first signs and symbols were judged to have been created about 6000 BC, and the writing process has been refined since these early communications. We also know that writing differs from place to place, and that some forms of writing are phonemic and alphabetic (English), but that others (Chinese characters) are symbolic and actually use thousands of symbols to represent words or concepts. In Japanese, for example, each character represents a syllable. Such a connection suggests a relationship between speaking and writing, yet shows that writing was a next-generation communication that extended and shaped speaking. Clearly, speaking and writing is not a chicken-egg question.

We also can logically know that different cultures concluded the importance of writing because writing seems to have developed independently in such disparate places as Egypt, Mesopotamia, China, and Central America. We know that such ancient writing was, at first, pictographic because such writing remnants are etched on stone and clay tablets. But we also can surmise that cultures soon came to realize the lasting possibilities of writing, and quickly understood that, once learned, they could repeatedly re-represent writing, because from ancient times humans started to use perishable materials such as leaves, papyrus, and paper. Writing became a way of societal remembering.

In general, as people learned to write they gained fluency in the writing process. To be literate has come to mean gaining reading and writing fluency. When literacy is discussed, the discussion often contrasts the

opposite conditions of illiteracy and orality. Furthermore, as Cole and Nicolopoulou (1992) note, there is no consensus definition of literacy. Most definitions center on the abilities to read and write; and, in fact, the etymology of the word *literacy* comes from the Latin *littera* (or letter). This definition implies not only the ability to read and write but also the ability to use an alphabetic writing system. Literacy emphasizes the mechanical skills of reading and writing; but, as I will argue here, any definition of literacy also now implies social, educational, or intellectual status. In fact, more recent definitions of literacy have been tied to the social and political implications of literacy. For example, it would be difficult for a person to read that the literacy rate of Chad is about 25 % without that reading carrying with it some implicit sense of judgment—positively hoping, for example, that more of Chad’s people could learn to read and write, or offering an internal shrug that hints at a sense of vague suffering attendant with such a lack of literacy. As Cole and Nicolopoulou (1992) note, there is broad belief that literacy shapes both actual and possible interactions between people and their world.

So, as human cultures have grown more literate,¹ improved written literacy has advanced to replace more ‘simplistic’ oral forms. In fact, it is accepted that writing has fueled this growth of culture and society. Increased literacy has been made possible by technological improvements in such things as printing and distribution, and humans are now at the point where almost anyone can learn the basics of reading or writing, as we have come to believe they should. In fact, when our society thinks in terms of literacy, it has come to mean and measure written literacy as opposed to oral literacy.² Written literacy is taught in schools and, as humans, written literacy is widely shared.³

Finally, as we anticipate a more literate future in which we contemplate even greater literary improvements, the literacy we talk about remains rooted in this sense of written literacy that has grown so foundational in our minds. This written literacy is foundational for good reasons, and arguing against the importance of written literacy seems profligate with anyone’s time. Clearly, written literacy has given humans opportunities to spread and share knowledge beyond the local—seamlessly spanning time and geography. It is now possible, as many of us do every day, to read thinkers from hundreds of years ago and hundreds of miles away. Such opportunities allow us both to gain knowledge and to create community. Reading someone’s created text is an implicit recognition that others exist, and an invitation for these others to influence our thinking. Furthermore,

in many ways, reading helps us learn that we are not so different from other humans from whom we cannot learn much from. This knowledge of shared humanity is both humbling and integrating. It can also be divisive, as in the split between Slovenia and Slovakia because of the Cyrillic alphabet.

We generally believe that oral cultures have been replaced by more elegant and expressive forms of literacy based upon written language—although later I argue against the belief that written language is more elegant. For example, as my friend Jan Jagodzinski reminds me, in media studies, it is common to recognize television as an oral form of communication and to claim that television extends the oral culture's emphasis in storytelling. Simply stated, right or wrong, as a culture we tend to believe society has grown more literate as writing has replaced the oral narrative tradition (storytelling) as the primary mode for communicating human culture. Furthermore, we tend to believe this growing literacy reformation has allowed humans to better advance and record their ideas and insights. We now believe and teach that written language is superior to oral language for most of our human intents and that, as human communication has evolved, the reshaping of literacy has played a large part in that evolution. For this reason, as noted before, schools are now the places where we primarily teach written literacy. Obviously, many children learn to read and write at home, but the mastering of reading and writing is the curriculum of school learning.

And, there seems to be good reason for mastering reading and writing. Specifically, as Maryanne Wolf's *Proust and the Squid: The Story and Science of the Reading Brain*, suggests, reading is a learned phenomenon that can be 'lost' if it is not 'taught.' Wolf's book celebrates the transformative act of reading, but she also laments what she sees as a disquieting future for reading. For thousands of years, she notes, the process of engaging texts has enriched humans both in mind and in body. Specifically, Wolf notes, reading has given us 'the gift of time.' By this phrase, she means that humans benefit from a space where our thoughts can move beyond the words on a page so we might embrace new ways of understanding. Thus, for Wolf, reading is not just about finding out stuff; it is about thoughtful action. Here she cites Proust's wisdom that humans must create their own answers to life. And, here Wolf fears the Google-verse where other's thoughts can be cherry-picked so seamlessly that we might lose the generative and associative nature of the brain as it reads; and, by doing so, we might lose the new ideas that stew in the in-between of words on a page and thoughts in one's head.

Schools are basically places where students learn about words. Goody (1977) explains that writing transforms speech by abstracting its components, which are words. Written words become things whose meanings can be looked up in other written texts. This simple fact has shaped human experience in powerful ways because, as a result, humans no longer need direct confirmation of the meanings of experiences by actually experiencing them or learning about them in interpersonal ways. Words allow the possibility that not everything need be experienced to be understood, and allow understanding at a singularly personal as well as an interpersonal level. Written texts also both enable and invite backward editing of thought so that corrections can be made and inconsistencies resolved.

Although learning by distance is possible via face-to-face communication in oral cultures (I scouted across the river and there are giants in the land), the extent to such learning is limited, and the self-analytic criticism enabled in written text is inhibited by such face-to-face communication. Because writing enables both the recording and the critiquing of what were once verbal utterances, it has become an exceedingly practical school task. For example, literate cultures have permanent records of past thoughts and histories that can be compared and questioned skeptically.⁴ Such skepticism enables the building and testing of alternative knowledge explanations. In ancient Greece, for example, the shift from oral to literate thought processes did not so much result in the demise of an oral tradition (especially in the lively art of oral persuasions in speechifying), but it did result in the building of the ‘logical, specialized, and cumulative intellectual tradition’ of Plato (Goody and Watt 1968, pp. 68–69)—for which we all can be exceedingly happy, and without which I could not have even conceived to write the previous sentence. Or, conversely, we might feel stupid or illiterate if we cannot.

The impact of communication on humans has been discussed often, perhaps the most interesting by Canadian thinker Marshall McLuhan. McLuhan’s (1962) *The Gutenberg Galaxy: The Making of Typographic Man* was an early study of oral and print culture, cultural studies, and media. McLuhan’s main argument, made here and later in his more famous *The Medium Is the Massage*⁵ is that new technologies (like alphabets, writing, and computers) create a gravitational impact that shapes how humans think; or, as Wiener coined it in his cybernetic narrative, codes lock us in. These effects, in turn, affect human social organization. For example, McLuhan believed that print technology changed human’s perceptual habits by homogenizing experience; these habits, in turn, helped reshape

social interactions (as humans learn to act in ‘specialized’ ways in their response to the medium). McLuhan believed print technology contributed to and made possible ‘modern’ trends we have come to prize in the West—individualism, democracy, capitalism, nationalism, and I would add consumerism.

THE POWER OF LITERACY ON SCHOOLS

Up to this point, I have not yet directly centered on the main thesis of this chapter, which is that the written literacy focus in our schools (as opposed to an oral literacy focus) explains more than we suspect. I believe this focus on writing as the literacy stressed by schools works to shape schools and the lives of those who spend time there in specific and important ways; thus, schools represent a specific example of what McLuhan claims for society generally. Schools then, because they are places where the culture of written literacy is practiced, have come to be governed and shaped by particular forms, actions, and behaviors that differ significantly from those of oral cultures.

My chapter argues that the focus on one type of literacy, and not another, profoundly affects how people think and act. In this case, as in others, the culture shapes the desires of the personal. That is, as individuals we learn to value what the culture values. That we are not immune to how the social shapes the personal has been the topic of many previous thinkers in both so-called fiction and nonfiction. For example, in George Orwell’s *1984*, Winston Smith is mistaken to believe he is strong enough to withstand the effects of cultural conditioning upon his person. Regardless of what Big Brother did to his body, he believed he could control his own mind, heart, and passions. Eventually, of course, he was wrong. Orwell’s chilling lesson is that the state can even shape what we love. And Winston, in the end, came to love Big Brother.

Specifically, oral cultures shape the interactions of those people who live within them, just as written cultures do. What one does tends to become normative. In oral cultures, the normative is that people spend time communicating together in groups of two or more. Such group communications naturally come with lots of sound—as people speak to each other; and, this noise is accepted as natural to the experience of oral language. Group communications are also more personal, about concrete subjects, and often poetic. The poetry of oral communication arises because truth shared orally is not so much factual⁶ truth, as it is relational truth. In oral

cultures, knowledge is transmitted from person to person, or generation to generation in what Goody and Watt (1968, p. 29) characterize as ‘long chains of interlocking conversations.’ The words of spoken language gain meaning and are established through direct semantic ratification in such concrete situations. Usually, when words are delivered by people to people, they are accompanied by the gestures and facial expressions of those people—whose hearers also respond with gestures and facial expressions of their own. Thus, language is grounded by face-to-face events, knowledge is immediately experienced, and understanding is shared in deeply socialized ways.

Ong (1982) notes that extended thought in oral cultures is stored and retrieved from memory through mnemonic patterns and oral formulas. These formulas are stored deep in the unconscious minds of both hearers and speakers who dynamically organize information as it is shared. These formulas are crucial for understanding, and they function to preserve knowledge as intact rather than dismantling knowledge analytically. In other words, the intent of understanding in oral cultures—assuming one is dealing at close range to a trusted speaker—is not so much to critique the knowledge (a task better suited for written language), as it is to build understandings and relationships by layering information upon already-existing relationships and understandings.

Such formulas, as useful as they are, do change over time and in response to the relationships of speakers and hearers. Boon (1990), in discussing Levi-Strauss’s *Mythologiques*, notes that one should not expect the cultural codes of language to provide social stability or equilibrium. Rather, cultural codes of literacy achieve dynamic and temporary order as they shape what might seem like relative randomness of a language experience using continuous adjustments and ongoing shifts. In other words, the actions of language—whether oral or written—grow, shape, and change understandings. As Levi-Strauss noted in *The Savage Mind* (1966, p. 245), ‘the oral mind totalizes.’ Jardine (2004, 180) notes that Christianity’s creation myth depended upon that culture’s understanding and acceptance of God as an ‘ever-faithful speaker.’

Dunning (1997) discusses Levi-Strauss claims that ‘civilized’ societies were neither better nor more developed than ‘primitive’ societies. Indeed, foundational to Levi-Strauss’s work was his refusal to see Western civilization as privileged or unique; he also emphasized form over content and insisted that the ‘savage’ mind was equal to the civilized mind because he believed the same logic worked in both myth and science. The only

difference between moderns and primitives, as Levi-Strauss saw it, was the superior quality of the materials upon which the human mind worked (steel was better than rock for tools). He also believed⁷ science rejected and replaced the concrete and particular with abstract truths and universal laws.

According to Levi-Strauss, in *The Savage Mind*,⁸

For language does not consist in the analytical reason of the old-style grammarians nor in the dialectic constituted by structural linguistics nor in the constitutive dialectic of individual praxis facing the practico-inert, since all three presuppose it. Linguistics thus presents us with a dialectical and totalizing entity but one outside (or beneath) consciousness and will. Language, an unreflecting totalization, is human reason which has its reasons and of which man knows nothing. (p 252)

Levi-Strauss's point is that humans are not conscious of the way language shapes their realities, but it does shape them nonetheless. One also cannot necessarily reason or analyze the content of the realities formed, but that content is formed nonetheless. Oral language, for example, is more than the sharing of a vocabulary of communication: it is also the creating of a communicative relationship. As noted above with the discussion of the actually enacting of oral language, it is here in the creating of a relationship of communication where I believe oral language might actually be, contrary to common belief, more elegant than written language. Oral meanings can be shared by expression, nuance, or metaphor in face-to-face cultures in ways that cannot be matched by more abstract and 'distant-oriented' written communication. Oral communications are also more egalitarian: certainly, we have little aphorisms such as 'children should be seen and not heard,' but by and large oral cultures employ fewer power structures than written cultures. Although perhaps McLuhan is over-romanticizing oral cultures, he claimed that oral cultures were relatively nonaggressive and displayed a democratic ethos. If these values are considered positive, and most people would agree they are, McLuhan's point might dispute any suggestions that the nature of literate societies is more advanced than oral societies—they are simply, perhaps, different.

THE IMPACT OF ORAL CULTURE IN EDUCATION

One relatively recent site where such differences between how meaning can be carried orally in written culture is clearly understood by anyone who teaches university-level online courses. Most online courses were

created by attempting to reshape more traditional face-to-face courses into courses that could be taught asynchronously at a distance and, to do so, attempt to utilize face-to-face teaching processes, but shape them into a different, more distant, environment. But those who have taught online soon come to understand that many ‘natural’ face-to-face communication processes are actually quite difficult to mimic at a distance. Many online instructors find it more than difficult to mediate distance and lack of physicality, and quickly learn that what they might have successfully communicated in face-to-face ways in other contexts that during online communications believed to have been understood, had completely evaded their students. They soon learned that knowledge, which can be communicated and expressed easily orally in face-to-face ways, even in a formal environment such as a classroom (or even on the phone), can cause miscommunication when written and decoded at a distance. As a result, it takes much consideration and practice to come to really understand the nuances of communication in online teaching, and even practiced online instructors find their attempts to communicate fluently are often frustrated because they assume too much understanding has occurred, or that a communication has been understood in a specific way when in fact it has not. These frustrations are often made evident in online course evaluations, which tend to be much lower and more critical than face-to-face course evaluations.

In literate cultures, and to review: I mean written literacy, people tend to think in more impersonal, abstract, and analytic terms. To create a clear message that other people understand, message creators must mediate distance in their writing. Words themselves are abstract realities—made up of symbols that, although inefficiently pictorial in writing’s early history, now lack any one-to-one connection between symbol and reality. What is a ‘B’ after all—little more than a sound? These abstractions (letters and letter sequences), ordered in some historical agreed-upon logic that must be learned by our young in schools, all depend upon arriving at shared understandings—a word (e.g., the word *noun*) stands for a specific object, idea, or place. To make such connections, huge numbers of abstractions must be rendered transparent. The example of the noun *noun* makes the point. The concept *noun* was created somewhere, and had to reach a point of agreement sometime—and it would be naïve to think that some intelligent Romans sat down on March 15 in the year 44 BC to make this decision. Such is the constant mediation present in written cultures, because most communication has evolved and takes place over a distance. To recite

and extend Ong's (1982) point, grammatical formulas come to be stored deep in the unconscious minds as the mind works to dynamically organize any information as it is shared.

As noted, in oral cultures, most communication takes place through personal, face-to-face interactions. People in oral cultures speak directly and personally to each other and, as a result, their understanding of the world tends to mirror and become normative during these personal exchanges. By contrast, in a highly written literate culture, most communication takes place in a more impersonal (non-face-to-face) and distant process of reading and writing. Words, representing ideas, are written in some writing space; then, that idea is then gathered, organized, and deciphered by another person usually at a distance from the person who began the process. Overcoming the distance and the physical and mental processes of written communication demand a different concentration than the process of oral communication. As noted, the personalness of oral communication utilizes a number of different and complimentary codes—word meaning, facial expression, movements and gestures, tone and loudness of voice, breathing flows, or speed of delivery. All these work complementarily to deliver a message. Among people who have come to build a relationship, if one code is missed, the decoder might pick up the message using another. It is, as Levi-Strauss notes, a total, and I might add poetic, experience.

I am hardly the first to note the personal poetry of oral language. Aristotle's 1970 *Poetics*, for example, defends the importance of poetry as a presentation of a philosophy of literature, and puts forth both the intellectual and emotional extensions of poetry. For Aristotle, the process of making poetry was a creative art that involved mimesis (representational imitations of the world, especially the world of human actions, in literature and art). To create poetry, Aristotle outlined the possibility of using three forms: (1) means, (2) objects, and (3) methods of imitation through the vehicles of speech, rhythm, and melody. Each method brings with it a way of understanding meaning, and together they are often used artistically (poetically) and complementarily.

Compared with speaking, writing and reading is considerably more formal and compact. And, because at a distance it is virtually impossible to catch on to whether the other is catching on, a message creator who seriously hopes to be understood has a responsibility, from the beginning, to concentrate so as to best consider how to organize the replaceable abstractions to create meaning and understanding. At the other end, to gain

understanding, the serious message reader shares a similar responsibility to concentrate so as to decipher the text in the most accurate manner; these responsibilities are more pronounced where the message is meant to correspond more closely to physical or material reality.⁹ Such concentration makes the process of writing and reading more effectively undertaken in quiet spaces. Thus, these quiet spaces have come to be instituted wherever the process of creating and deciphering written communication happens—and schools are all about such creating and deciphering. Thus, schools have become highly formalized, almost sacred spaces for learning to create and understand communication processes. And, teaching and learning written communication is seen, in schools, as crucial to the extension of human culture, which generally should be done quietly.¹⁰ My point is that this activity is more than pragmatic: in fact, the quiet also announces a reverence and worshipful attitude toward the process of dealing with written language—we treat it as very special.

As a result, because one requires quiet on both ends of the communication, schools have been structured to be quiet spaces with an attendant reverence given to the important work of written literacy. Schools would undoubtedly be different places, shaped by different ways of acting, if only our society prized oral literacy to the extent that it prizes written literacy. So, because the task of written literacy is seen as so crucial for human culture, one is typically quiet when one writes, and also typically quiet when one reads; and, the space for such activity is shaped in response to the needs and values. Shaping schools into quiet spaces, where the action of teaching written literacy is undertaken, is both pragmatic and philosophical (it demands a reverent attitude consistent with the importance of the enterprise). It is therefore not difficult to see why children learn early in school that they should be appropriately quiet most of the time. This demand for quietness typically differs from the family life the child has thus far known, because the values of the space have changed into those that respond to the environment seen necessary for engagement with written literacy.

People, in what we think of as more literate cultures and schools, exemplify a highly ‘literate’ culture that focuses on learning to communicate with abstract symbols (which organized letters and words are—abstract). As a result, schools become places where people learn to live and navigate in a world of abstractions, and learn to see the world in terms of abstract symbols. It is no surprise that schools employ different values than homes, because schools express written cultures and homes express oral cultures.

My point here is not to celebrate anti-intellectualism as much as it is to note that our choice toward en-schooling written culture comes with the en-culturing of values that might prize and that we might be losing. In a specific example, the most recent report card (although it differs so radically from the report cards I knew as a child that ranked me against other children in my class) of my daughter in grade 4 evaluated her competency success along a scale that moved from (1) direct instruction to (2) guided instruction to (3) independence. All good, it seems, until one asks the deeper question about whether we hope our children become ‘independent’ or ‘interdependent.’ Does this report card ‘report and shape’ our children toward individualism?

In oral cultures, because people come to share personally, they seldom learn to prize the experience of organizing abstract symbols to communicate. Thus, oral cultures and the people within them tend to see the world more heuristically—through narrative stories or poetry. Pragmatically, streams of these ‘story lines’ are easier to remember than the abstract, almost bulleted forms of knowledge common in a written culture. Perhaps this point seems overstated in today’s world, but it would have spelled disaster in historical times to forget important knowledge in oral cultures—meanings must be etched into memory because they cannot be looked up. Such was the point of the film *Fahrenheit 451* (1966), based on Ray Bradbury’s dystopian novel set in futuristic England. Those who critique Western civilization in 2009 would find the movie an almost believable depiction of a medicated, equalized, anti-intellectual society where the need to memorize and share novels with each other holds a hope for intellectual revival.

Meanings communicated in oral cultures differ from meanings communicated in written cultures: in oral cultures meanings need not represent specific universally understood things. In fact, people who have lived and spoken together for periods of time soon begin to develop their own ways of communication and their unique vocabularies (people who have been married for a long period of time are often such examples). Such unique language creations and narratives are especially true for those people who live in relatively isolated environments.¹¹ Ergo, because there is often a deep level of personalness in oral communication, those communicating orally over time often come to share nuance more naturally and fully than those in written cultures. Basil Bernstein’s *Class, Codes and Control* (1971) suggests that spoken language initiates, generalizes, and reinforces unique relationships within one’s environment and creates significance for

people within that environment. Although Bernstein was more interested in understanding how language was used within particular social classes,¹² his work shows how people come to assign significance and meaning to the things they are talking about and the way they are talking.

Littlejohn (2002) believes Bernstein's theory also shows how the language people use in everyday conversation reflects and shapes their assumptions and how, in a circular way, relationships established within a group affect how that group uses language and speech. Commenting upon individuals within cultures, Littlejohn (2002) states that 'people learn their place in the world by virtue of the language codes they employ' (p. 178). The point is that individuals and groups shape and create unique meanings. Perhaps, as suggested before, the most obvious example is the development over time of languages—for example, French or Urdu. However, there are other examples of how personal meaning-making can exist. For instance, within a family, a narrative of a legendary history about how a grandmother long ago had engaged in some iconic action has since become a family myth regularly retold over dinner.¹³ In the sharing of that narrative, the specific facts have been altered to better serve a greater truth necessarily for the extension of family mythology, because the accuracy of the narrative places second to the greater truth that has come to actively shape the family values.¹⁴

At this point, although my argument seems to compare oral culture or literacy against written culture or literacy, it would be wrong to believe that two different literacies exist. More to the point is that there is an oral cultural tradition and a written cultural tradition, and that working within those traditions brings with it, as McLuhan noted, a certain gravitational pull, and attracts particular behaviors within each tradition. In matters of fact, speaking and writing form a sort of continuum, and literate people obviously use both oral and written language daily. It is more truthful to suggest that the oral and written traditions carry with them certain ways of manifesting communication and behavior. As Heath (1992) observes, written literacy tasks include oral components such as writing notes from university lectures, listening to audio books, or public speaking from written texts. Heath's point reminds us that, long after the advent of alphabetic writing in ancient Greece, oral language has continued to empower and embellish written language. In fact, ancient Greeks were exceedingly interested in public speaking as an art form.

Deborah Tannen's (1982a, b) work adds to a discussion of the oral/literate continuum in a highly literate culture, such as contemporary

American society. She notes that oral cultures emphasize language's meta-communicative function and enhanced social relationships among those who communicated with each other. In contrast, literate cultures emphasize language's communicative function (the capacity to share information and content). Tannen theorized that these emphases could be understood as two distinct functions: (1) message content and (2) interpersonal involvement. For her, the orality/literacy continuum reflected an ongoing tension between communicational involvement versus communicational content.

Thus, as Tannen (1979) watched a film by Greek women (Greece being a country and culture with a pronounced oral tradition) versus those of American women (a culture with a pronounced written tradition), she concluded that Greeks told better stories while Americans were more concerned with detail and the difficulty of performing a memory task. In now somewhat dated, and I think partly erroneous, theorizing, Tannen notes how in more oral countries such as Greece, cliché¹⁵ is valued because it adds legitimacy to what is said. In contrast, Americans find the use of clichés negative because they believe it lacks originality and sincerity. However, cliché has come into recent usage with instant messaging. For example, anyone in contact with children of an appropriate age might find themselves bombarded with such acronyms as ROTFL (rolling on the floor laughing), PWND (which means 'owned'), FWB (friends with benefits), ORLY (oh really), L&R (later), LOL (laughing out loud), LOLZ (laugh out loud, with sarcasm), and FWIW (for what it's worth). In part, the medium of instant messaging pulls us into using language shortcuts; however, the use of such clichés also represent a sort of identity-constructing secret code that carries with it an 'in-ness' with those who engage such acronyms.

The irony of instant messaging being an oral tradition suggests that, even if things in oral cultures could be written down and passed on, often the meanings of oral cultures do not push toward universally understood knowledge. Knowledge remains important, but it remains important as Tannen notes in more personal ways than in simple message content. Thus, dynamic vocabularies and active living memory are crucial to the functioning of oral cultures, and these cultures will develop ways to aid memory. As memory aides, insider language, poetry, and narratives are specifically suitable because they invite the personal engagement called upon by the needs of memory. It always seems easier to recall a story than a list. The words might change, but the gist of the wording does not.

Thus, oral cultures become less concerned with whether a story is literally accurate than whether it is true as mythology. Such is not the case for literate cultures. People in oral cultures tend not to think in literal terms. But people whose literacy is held in its written form tend to take stories literally, unless it is understood in advance that they should not (e.g., in novels or movies). In other words, at least historically, literate people came to think in terms of the material or the physical because they believe the material and the physical can be more universally seen and understood. However, as my friend Jan Jagodzinski cautions me, my generalization may no longer hold true in contemporary culture where life is fictionalized and aestheticized.

The tendency to value written literacy and see the world in material or physical ways helps explain the historical and primary credence given to quantitative research, which uses exceedingly abstract concepts (e.g., significance) in an effort to create direct relationships with materially formal and objective realities. That some quantitative researchers can, at once, hold onto such ironically abstract and nonmaterial concepts as they seriously attempt to explain why forms of qualitative research lack rigor because they are less objective suggests the extent to which humans create and reinforce particular realities and dogmas through shared language. In fact, both qualitative and quantitative research paradigms are filled with the subjective and objective, the material and immaterial, and the revealed and the religious. It is true that qualitative research tends to function in personal and subjectively narratives that employ different definitions of reliability and validity, while quantitative research attempts to explain the world in material and physical ways; but I argue that in some ways the paradigmatic differences in research extend from different groundings in literacy traditions: quantitative research designs highlight formal written literacy, and only formally (writing is a form) literate people conceive the world in wholly material ways.

Because a literate person might be dealing with another literate person someplace else (not present in time and place), that person must link abstraction with reality to create and decode meaning. As a result, that person will strongly lean toward visualizing objects in three-dimensional space. An object then (or, in the case of quantitative research, the design) or an idea is real because it can be seen and touched or made to be material. The ‘really real’—the touchable—differs from those ‘less-real’ designs of experience that cannot be seen three dimensionally. Although these dichotomies eventually don’t work, which is the gist of my chapter, it is

naïve to believe that what has been circumscribed as quantitative research can more clearly explain a real world than qualitative research.

In part, for these reasons, religion has declined in a scientific world because it belongs to a personal culture, and those with an orientation to be visual and employ written literacy have come to educational power. To literate people, spiritual things seem less and less real because they are based on a more 'primitive' logic and communication systems. That said, both early and recent psycholinguistic (Whorf 1956; Boroditsky 2001) studies note the extent to which language shapes reality. Such work has concluded that (1) language is a powerful tool that shapes thought about abstract domains, and (2) one's native language plays a crucial role in shaping habitual thought (e.g., how one thinks about time). It is likely, then, that lacking the broad and personal language perspectives of an oral tradition narrows the vision of those who hope to rely only on what one can see and touch as a path to understand reality. Similar to the belief that increased elegance has been wrongly ascribed to written language, highly literate people might be missing much of what is going on around them.

Because those who center knowledge on written literacy hold key power positions within society, in part because they are literate in sanctioned ways, they tend to expect others to accept their ideas. More to the point, they do not even consider the possibility that the way they value literacy should not be universally understood and accepted. These people, responding to the shape of the literacy they hold, make sharp distinctions between facts and opinions. In fact, their activities to institute their version of literacy might, in more critical times, be constructed as colonizing by counting written literacy and by discounting oral literacy. Thus, what fits with written literacy's formalized understanding of the material and physical world is seen as factual. Everything else, the nonmaterial and the nonphysical (therefore the nonfactual) fit into a dualistic concept of opinions. Literate people, seemingly without the slightest irony, powerfully control 'correct' knowledge, and this knowledge is based upon the belief that what can be seen can be understood—at least what can be seen can be understood better than things that cannot be seen. My point is that these activities represent the dichotomous constructions of two contesting cultures, which seems too narrowing to me.

Such a discussion begs the question 'If such contesting cultures exist and, by their existence, shape how people think and schools operate, is there a way to at least mediate the narrowness that attends from the ways the cultures shape us?' Should we not want, after all, to see and

understand the world as insightfully as we might? Work has been done in cross-cultural dialogues, and in some ways Dunlop's (1999) notes about how critical pedagogy might engage students and teachers in dialogues about diverse forms of cross-cultural narratives hold a possibility of deconstructing dichotomizing and pervasively polarizing tendencies by positioning thinking in a borderland between cultures. She sees Homi Bhabha's understanding of this borderland, or 'third space,' as making it theoretically possible for people to live critically between multiple cultures.

Bhabha (1994) theorized about cultural difference from his work in contemporary cultural discourse, literary, and cultural theory, and described the construction of culture and identity within conditions of colonial antagonism and inequity. For Bhabha, hybridity was a process that a colonial governing authority undertook to shape the identity of the colonized within a singular universal framework. As interesting and fruitful as Bhabha's work might be, the situation I am describing does not, in two respects, constitute a 'third space.' First, there is no hybridity that I can imagine at work: at best, the two literacy traditions invoke a sort of colloidal suspension.¹⁶ Second, although the aspects and activity of a dominant literacy are colonial in many respects, I can imagine no governing authority in any 'legal' or even consciously hegemonic sense and, even if there were, this authority is not acting out policy in any organized or conscious manner.

Raymond Williams (1962, 11) speaks to these points by suggesting that 'what we call society is not only a network of political and economic arrangements, but also a process of learning and communication. Communication begins in the struggle to learn and to describe.' Williams means that, to process a communication in our minds and then share this communication with others, we must depend upon certain communication models, rules, or conventions. Without these, we cannot connect to others. If these models become inadequate, we can change, modify, or extend them. However, communication models often become, in themselves, social institutions, which contain and construct certain attitudes to others, certain forms of address, certain tones, and certain styles. These constructions are then embodied into powerful institutions whose social assumptions become the acceptable and practical models we teach to others. Schools, obviously, are one such example.

For example, Williams demonstrated that what constituted 'realism' in literature was an interpretation of an external world based on the subject positions of particular people with vested world interests. Realism in the eighteenth century represented the 'reality' of the middle class. However,

the eighteenth century contained other ‘realities’ that also matched the external world, but these realities reflected different and not-yet-accepted parts of that world. These realities are represented in both art and life; ergo, in the twentieth century, when a novel is praised for its psychological realism, that means that the novel tends to construct believable ‘inner lives’ for its characters. Again, this construction of what the reality of a character’s ‘inner life’ might be is perceived from particular points of view by those who construct definitions of ‘believable,’ definitions that shift from group to group or era to era. There is, for example, a good chance that the reality of Barack Obama’s ‘inner life’ differs significantly from the reality of Sara Palin’s ‘inner life.’ As a result, what counts as ‘reality’ might undergo a historical shift depending upon who is in control of the definitions.

Williams is not alone in ascribing power to language as a way of shaping culture and individual experience within that culture. Burbules (2008) reviews Wittgenstein’s understanding of the deep puzzles of language, whether in oral or written form, and outlines how language impacts our culture and thinking. Burbules notes his adoption of the concept of ‘tacit teaching’ and the many forms of informal instruction, which can be intentional, unintentional, or difficult to categorize. Nevertheless, he notes how this informal instruction operates to pass on the skills, capacities, and dispositions along with the content (facts) within a domain of practice.

This discussion emerged from questioning how a controlling discourse works to decide what constitutes facts and what, in a dualistic mirror, constitutes opinions. As noted, in a highly literate world, where literacy is based upon written text, the search for universally understood meaning makes it more likely that the visible and the material come to be seen as shared facts; other things live in the realm of values or opinions. As Levi-Strauss (1987, p. 21) notes: ‘Values are not social facts in themselves, but rather they translate the impact on the consciousness of the individual of intellectual constraints resulting from the system of intellectual categories.’ Also, as noted earlier, distinctions between facts and values differentiate science and religion; science can be seen, but religion cannot. We take such ‘truth’ for granted—that science can be seen but religion cannot; however, Jardine (2004) presents the example of the earth moving around the sun and notes how difficult it would be to prove that the earth actually moves around the sun. Certainly, such movement is not provable by one’s seeing but rather by an abstract mathematical equation that relies more on belief than vision.

Foucault's 'regimes of truth' also provide a similar understanding of how discourse operates to reinforce particular powerful views of the world, regardless of whether these discourses are in oral or written forms. Foucault states that modern societies create regimes of truth that are enforced by power structures (the truth-generating apparatuses of society, such as schools, disciplines, professions, laws). As Foucault (1980, 131) notes,

Truth isn't outside power ... it is produced only by virtue of multiple forms of constraint ... Each society has its regime of truth, its 'general politics' of truth; that is, the types of discourse which it accepts and makes function as true, the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned ... the status of those who are charged with saying what counts as true.

AN INVITATION TO RECREATE ORAL CULTURES

Schools, as places that honor and teach written literacy, are by design quiet places because they reflect the belief that the primary curriculum should revolve around written literacy. However, the impact of the primacy of written literacy extends far past schools. It is not difficult to argue that the choice to privilege written literacy also shapes how people have come to see the world and act within it. People in modern liberal societies are taught that they are and should be individuals (nondivided beings), independent in their thinking, choosing, and acting. In part, as McLuhan suggests, we are drawn toward this choice because we have spent considerable time alone, working to create and decode meaning in quiet spaces by ourselves, all sanctioned by our educational system.¹⁷ Thus, it is easier for us to come to define ourselves as individuals and not communities, and as our norms follow our literacy work, we become more individualistic. If this point is valid, perhaps the opposite is true, and it is likely that spending time communicating in groups would draw people toward thinking less only as individuals and more toward thinking within a community mindset.

In summary, in an almost Cartesian manner, it seems logical that those who spend considerable time alone becoming educated by either creating or deciphering text come to hold a greater potential for seeing themselves as individual thinkers. By using this image, I am purposely conjuring up a *monastery* of scholars in schools rather than a gym where play goes on. In short, my hope is to see schools a bit more boisterous, a bit more disorderly, and even perhaps a bit more raucous. I see written literacy attended to by a learned individualistic understanding that would seem less possible if one saw schools as oral cultures.

So, how might all this matter? In this chapter, I have suggested that the ‘needs’ of a written literacy have shaped the curriculum and culture of schools. More specifically, considering the life of teachers, of which I am one, such an insight might suggest that, if human loneliness (including teachers and students) were seen as an important issue, that issue might be mediated by creating spaces where humans (teachers and students) could meet and talk together. Then, one way to build community would be to create vestiges of oral culture wherever they might be created.

For example, it is not surprising that Galanaki, Polychronopoulou, and Babalis (2008) found that teacher-identified¹⁸ behaviorally at-risk students experienced loneliness and social dissatisfaction, or that strong positive associations were found between loneliness and social problems, including withdrawn and depressed behavior, and inattention. Some students might face a double bind; they might not be proficient in the activities of gaining written literacy fluency, but they are pushed to attempt to apply themselves in that process. Sadly, such loneliness can happen early in students’ lives. For example, Coplan, Closson, and Arbeau (2007) positively correlated loneliness and behavior problems in early childhood with loneliness, anxiety, aggression, and peer exclusion. Perhaps it is wrong minded to believe, as teachers often do, that the at-risk behaviors are the genesis of the problems, rather than that the lack of ability at written literacy had frustrated students, even at an early age, into Billy Budd¹⁹-like actions.

As one thinks of the life-changing literacy work of Paulo Friere, perhaps it is no surprise that Friere, when working to improve the literacy of Brazilian peasants, spent so much time engaged in oral language. Obviously, one might counter by suggesting he was dealing with people who could not yet read. That said, one wonders whether Friere might have still utilized pictures and oral language to construct a liberating pedagogy even with people who were literate.

Friere’s work represents a case study of possibilities. In *Reading Paulo Friere*, Gadotti (1994) notes that Friere spent considerable time engaging in exhaustive analyses, breaking down oral discourse, and providing time and space for sharing expressions. Again, that Friere was a teacher of Portuguese might explain this activity; however, his attention to the importance of oral language might explain his actions as well. Gadotti notes that Friere’s (1998) *The Adult Literacy Process as Cultural Action for Freedom* contrasts theory to verbalization and action to activism. Friere also notes that conscientization takes place in reality, not in theory—which is why theory and reality must be conjoined in praxis.

In review, my argument extends Jardine's (2004) thinking that speaking together with others leads to particularly personal ways of thinking and seeing reality, because one's abilities to see or not see are shaped by the culture in which one lives and thinks. Thus, a person who grows up in an oral culture experiences the world differently than a person who grows up in a highly literate culture. Neither person has much choice in the matter—each is simply overwhelmed by the hegemonic 'rightness' and 'exclusiveness' of the cultures' values. Thus, people in modern liberal cultures grow to see themselves as autonomous agents who are able to control their own destinies. But perhaps those of us who believe we can live autonomously are the most naïve. And, perhaps by extension, we have been naïve in building the curriculum of schools around written literacy as the predominant school experience. Perhaps, as noted earlier, such a curriculum has helped create a modern mythology characterized by individualism, distance, abstractions, materialism, and consumerism—a sort of 'reach for the gusto' mentality that brings with it all manner of possible human disease.

In our (2009) essay, my colleague William Frick from the University of Oklahoma and I explored the question 'Why do professors hate their jobs?'²⁰ In this essay, I explored how, over the 40 years of my own tenure in the Department of Secondary Education in the Faculty of Education at the University of Alberta, it seems we have lost much of the collegiality that once characterized my department and faculty. As I admitted there, it might be that I am romantically engaged in what I labeled 'Camelot thinking.' Perhaps the instrumentalization of technology was the Trojan Horse; however, my point is that I honestly believe things have changed and I lament that change.

In my reflections as I have been working on this chapter, I have come to a tentative belief that, at one time, our department and faculty daily and routinely engaged in the activities of oral cultures. For example, almost every day large numbers of faculty members would meet in groups in an upstairs cafeteria (a space no longer a cafeteria and now largely unused) for coffee both at 10:30 a.m. and at 2:30 p.m. Many of us daily exercised together. We partied; we moved colleagues who needed to move into their homes; we played sports department against department. My department held annual retreats that few would miss where we engaged in sing-alongs, played bridge and other games, ate, drank, and worked together to plan our year.

Such oral cultures have now largely disappeared from our academic life. We still have department meetings and people do hang out; but life is not like it was. Most academics are working hard writing and researching—alone. Coauthorship is less prized than single authorship in our academic world. Perhaps conferences are the last remaining possibility of such sharing orally together in a face-to-face manner.

For five years, I was director of an alternative delivery (largely online) graduate program. In this program, teachers and administrators spent two summer residencies together and, during the academic year, engaged in online distance graduate-level courses. The summer residencies were intense and largely designed on a curriculum loosely based upon Friere's *Pedagogy of the Oppressed*. We spent considerable time talking with each other about the conditions of teachers and ideas about teaching. We had long lunch hours and created spaces for engaged conversations. We engaged in positive as opposed to negative conversations. Program evaluations were exceedingly positive, and a number of graduate students reported that they found their master's program 'life-changing.' My point here is that, although not intentional at the time, in retrospect it is clear that the program created spaces for face-to-face communication and adopted many of the traditions of an oral culture. And teachers found the professional development opportunities, as noted, very positive.

As I conclude this chapter, I wonder whether proactively creating more spaces where oral culture might occur could improve the space we share as academics. As academic institutions, for valid reasons, we seem to be moving toward more individualized spaces as academics are encouraged to write and publish and develop individual lines of research, or as graduate students seem less able to take time off work to be resident for periods of time within departments, or as we move increasingly toward online, distributed, and distance education. Personally, I have a lighter teaching load (as all our faculty do) than I did 30 years ago, and I have more time to research and write than I even had before. I seem to spend most of that time working alone.

NOTES

1. By literate in this chapter, I will mean written literacy.
2. According to—as included in the United Nations Development Programme's Human Development Index (2008)—the literacy rates of the Holy See and Georgia are listed at 100 %; and this rate means that

- 100 % of those who live there can read and write. In contrast, Afghanistan is listed at 28 % literacy.
3. Interestingly, the desire to share widely has pushed English written literacy to be the lingua franca throughout the world.
 4. Academic research and publication might be the zenith of such activity, which for anyone who has been rigorously caught in its rare but ‘poison’ darts can show just how self-righteously critical humans can be of each others’ written ideas.
 5. According to the rumor, *The Medium Is the Massage* was originally supposed to be titled, as many people believe it is, *The Medium Is the Message*. But the title came back from the typesetter with the cover mistakenly saying “Massage.” When McLuhan saw the typo, he is rumored to have laughed and said, ‘Leave it alone! It’s great, and right on target!’ This creative shaping, in a McLuhanian sense, offers four possible readings for the last word of the title, and according to McLuhan, all of them accurate: ‘Message’ and ‘Mess Age,’ or ‘Massage’ and ‘Mass Age.’
 6. By factual, I mean material and universally visible.
 7. Levi-Strauss saw his work as the scientific explanation of myths as a way to uncover the structural laws that governed them.
 8. According to one blog I read, Levi-Strauss preferred that the English translation of *The Savage Mind* be titled *Pansies for Thought*. Such a ‘fun’ title seems odd for a ‘discipline’ as serious as social science. But rumor has it that both McLuhan and Levi-Strauss loved word play.
 9. The opposite would be artistic expressions where negotiable meanings are embedded in the textual purposes.
 10. Current allowances for iPod use during high school classes, for example, represent interesting test cases and beg certain questions. Can students multitask successfully? Is the language creating part of the human brain changing with technology? Do iPods further individualize the educational experience? What learning, if any, might be lost by allowing iPods? Does the allowance of iPods encourage more consumerism?
 11. Shorris (2000) reminds us of the 800 languages of Papua New Guinea, or the 410 language of Nigeria, or the 300 of India—most of which are disappearing with the impact of globalization. Ironically, Shorris notes that Noam Chomsky’s suggestion that all languages share the same structure, a structure which lies deep inside the brain of *Homo sapiens*, and really only two languages are needed to study this structure, which has contributed to the flagging desire to save languages.
 12. The code that a person uses indeed symbolizes social identity (Bernstein 1971).
 13. In our home, it was my grandfather’s practice to measure the grandchildren one time per year to see how much each had grown. This was done

- with much fanfare and celebration. Today, the piece of doorframe with the marks of these once-children, now 60 year olds, is a family heirloom.
14. In *The Wild Animal Story* (1998), Ralph H. Lutts discusses factual disparities between the facts and how Canadian writer Farley Mowat claimed to have researched wolves. When journalist John Goddard challenged Mowat, he was told, 'I never let the facts get in the way of the truth.' Lutts also noted that Henry David Thoreau claimed to have spent two years at Walden Pond, but a deconstruction of his writing suggests he only spent one season there. It seems oral language is not alone in reshaping facts toward truth if needed.
 15. Cliché refers to overused concepts or ideas that are meant to show a sort of 'insider-ness.' Clichés are occasionally viewed as insincere, especially when spoken sarcastically.
 16. Sort of like the Borg. The Borg was a fictional pseudo-race of cyborgs depicted in *Star Trek*. They have since become a pop culture symbol for any juggernaut against whom 'resistance is futile.' As an amalgam of cybernetic-enhanced humanoids of multiple species, the Borg were an interconnected collective with a hive mind whose single purpose was to achieve perfection by adding the biological and technological distinctions of other species to their own through forced assimilation, during which individuals also became Borg.
 17. In much the same way, an argument can be made that Greece became the birthplace of democracy because the primary curriculum in the Agora centered on the Homeric adventures—in which the prized human characteristic was right action in the face of the gods' seemingly dynamic 'playfulness.' No matter what happened, the willful actions of humans of good character were to behave well.
 18. Might it be that these students acted out their frustrations at not being proficient at the activities of oral language?
 19. In Herman Melville's novella *Billy Budd*, a jealous master of arms named Claggart becomes exceedingly jealous of a handsome and favorite young sailor named Billy Budd, and sets out to harm him. He frames Billy for mutiny in front of Captain Vere, who asks Budd to refute the charge. But the accusation brings on Billy Budd's stammer and, in Vere's presence, Budd's frustration boils over. He slugs the lying Claggart with a tremendous blow that kills him. In Melville's story, Budd is then hanged by a conflicted Vere who knows he is probably hanging an innocent man.
 20. This question emerged from a recent PhD student's dissertation findings among mid-career academics.

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PART II

Learning Explored

What Is and What Will Be Science Learning (Theory) in Science Education Reform and Practice? Stories and Reflections

Gregory P. Thomas

INTRODUCTION

In this chapter I take the opportunity to reflect on four personal experiences over the past eight years, since my arrival at the University of Alberta from Hong Kong in August 2007, that have stimulated me to consider the question that forms part of my title. My intention is to expose and explore concerns related to science education as to ‘what’ we teach, the proposed subject content of students’ science education experiences. They relate to ‘how’ we teach science, our personal pedagogies—be they real or imagined. They relate to ‘why’ we teach science, our views of society, culture, and/or the individual, as well as the role of science education in informing and improving lives. I am concerned with what I consider to be fundamental issues of what it means to learn science and the purpose/s for doing so, as well as how these matters currently inform, or do not

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inform discourse related to science education and schooling within and beyond the academy. Initially I considered exploring the question within education as a whole. However, as the ‘curriculum’ field that I am most familiar with is science education, I decided to draw on and limit my considerations to matters within and related to that field, leaving it for others to contemplate the transferability of my reasoning and conclusions to their own fields, as they so choose.

From the outset, let me be upfront. I do not consider myself to be a science education ‘curriculum’ specialist or theorist, at least not as I have come to think I understand what it would mean to be such a person. I am a high school science teacher who came, through circumstance, to work in tertiary education, not of my planning. My view as a desultory curriculum theorist is shaped in many ways with reference and deference to the thoughts and ways of knowing of my colleagues at the Faculty of Education. Many in my department, some of whom are also contributors to this collection, are schooled and conversant in the ideas of, for example, Aoki, Pinar, Deleuze and Guattari, and the like. I am not! Until arriving in Canada, I had never heard these scholars’ names or read their works. Even now, I am not even sure if their names and ideas have made their way into science education discourse. This is not to diminish such ideas, but they were never a focus of my educational experience, and still are not. Therefore, I will not draw knowingly of their ideas in this chapter. To attempt to do so would be insincere.

An exploration of the title and the question that underpins it is necessary before I continue. The question I ask is this: ‘What is and what will be science learning (theory) in science education reform and practice?’ I use the term ‘science learning (theory)’ to represent the notion that the practices and outcomes of science education, including teaching and learning, are driven by and evaluated in light of existing theory and, at the same time, inform theory revision regarding, (a) What should be the practices and outcomes of science education? and (b) What directions should reform/s take? Theory about learning and its processes and purposes, teaching pedagogy, and educational reform are inseparable from each other and co-exist in a three-way interplay in which each is promoted or demoted for consideration depending on individuals and the contexts they inhabit and inform. However, we often separate them and write about them independently of each other. My view is that this is because time and the expression of ideas in text are linear, sequential, and bounded, and because our dominant means of discourse and expression of ideas remain in the form of serial,

point-by-point expression. I contend that the nature and development of ideas are not like our expression of them; they are fitful, influenced by the moment, variously (a) ephemeral and recursive, and (b) fleeting and permanent. Put another way, how and why we write about ideas as we do is not necessarily a reflection of how they came ‘to be’ for us. I also suggest that the separation of ideas and ways of knowing as reflected in scholarship is because we, in the academy, are expected to be experts in a specific area, and not to be all-rounders who look across fields and disciplines. The academic field of education consists in part, of learning experts, pedagogical experts, and reform or educational change experts. The structures of education faculties and schools of education worldwide reflect such a view.

The implication of my position is that the ideas I present to help answer my title’s question can be drawn from my experiences that may not necessarily, at first glance, seem related except when I seek to make the connections between them. Even to me, in the past they may have seemed inert (Whitehead 1929), existing in a state of ‘unreactivity’ with other ideas, until they were drawn back to my consciousness to serve this task. To provide the raw material (data) from which to extricate these ideas and issues as I see them related to, I chose to lay down my ideas on each of four personal experiences by describing each experience as a story (Connelly and Clandinin 1990; Clandinin and Connelly 2004). In each story I explain the context, use selected extracts, as are relevant, and form conversations with others (anonymized as necessary) that comprise elements of my experiences. I then outline my reflections on how these experiences attend to the chapter title’s question. The experiences and my reflections on them are followed by a synthesis of how I view collectively the issues arising from them. I then outline what I consider might be the role/s of the academy in considering and attending to these issues.

THE PISA VIDEO STORY

I received an email on 19 August 2009. The email invited me to ‘provide relevant feedback to CMEC [Council of Ministers of Education, Canada] on some of their initiatives.’ Specifically, the request was to review a video, still available on the CMEC website (CMEC n.d.), that related to the Canadian results of the 2006 PISA (OECD 2006, 2007) exercise. According to the website, the video was produced, ‘because CMEC wishes to share with parents, educators, and interested parties, the teaching and learning of science within the total secondary school environment

in a limited sample of Canadian schools.’ The website also touted, ‘Only students from Finland and Hong Kong—China outperformed Canadian students in the combined science scale in PISA 2006.’

I reviewed the video, replying on 24 September 2009. Edited sections of what I wrote as feedback are:

I have watched it a few times and cannot see much of educational value in it. Essentially it is a piece of meandering propaganda that, I think, tries to show a couple of vignettes of teachers teaching, and through this it then tries to suggest that this type of teaching leads to the outcomes that make help Canadian 15 year old students do well on PISA. My view is that the vignettes are hardly evidence of contemporary best practice in science pedagogy. There is nothing that is high quality or cutting edge about the science pedagogies employed ... or about how these relate to the success or otherwise of students after school. This suggests to me that the learning as a consequence of such practice will not be much different from what we already know about the outcomes from most science education around the world today, or in the past (i.e., that it does not produce scientifically literate students who are flexible, adaptable, able to communicate...If this is the best teaching that we can find it is truly a worry...the pedagogies in the video are actually very archaic...lab work from a sheet, didactic instruction (even if it was theatrical ‘for the cameras’), and a bit of biology fieldwork. One teacher says the aims are to develop, “Basic scientific knowledge, a love of science, and common sense.” I am amazed that this statement made it to the video...surely we want a bit more than this from contemporary science education? The video is full of clichés and truisms (“Hands on” for example is an archaic catch cry) that do a disservice to most thinking science educators and teachers by oversimplifying the nature of science teaching... One person in the video utters the unutterable, “Impart knowledge.” Such comments evince a very poor understanding of the nature of learning... absolutely prehistoric.

Reflection

As is evident, I was not impressed with the video and its content. I do not know if my views were ever communicated to the CMEC. I never asked, nor was I told. I have written about PISA before (Thomas 2009). My view then was ‘that an educational hegemony exists within which a class of ‘ruling’ policy makers and supporting educators, including some science educators, attempts to project a worldview so that others are subordinated by it and come to see it as commonsense and natural’ (p. 99). This view

has not changed. There has been no evidence presented for me to question my position. Others have also raised serious concerns about PISA and the lessons that might be learned from it (e.g., Baker 2007; Carnoy and Rothstein 2013; Dinham 2013). Any concerns seem to have been largely ignored by mainstream media, anywhere, who instead prefer to report on (a) the differences in scores between countries, (b) who should be held accountable for such scores, especially when they are below expectations, and (c) the imminent economic disaster that awaits poor performing countries, or those whose scores do not improve. The notion of the PISA score has become ubiquitous in education discussions worldwide and essentially unquestioned, informing education policy. Two personal experiences, both from visits to Thailand, as well as what is reported in the literature (e.g., Thomas 2009) have reinforced my view. The first, in March 2012, was with science educators at The Institute for the Promotion of Teaching Science and Technology (IPST) in Bangkok. After delivering a short presentation on the value of developing students' metacognition for science learning, I was told that their focus, as asked for by their government, was moving toward improving Thailand's PISA scores in science, and just how could the development of students' metacognition contribute to such improvement. The second, in September 2015, was an impromptu conversation I had with a school official in (very) rural Thailand in which it was suggested that policy makers were obsessed with improving PISA scores to the detriment of the education needed for students to live productively in that community.

PISA arose from a belief that a (scientifically) 'literate' population was essential for countries to maintain and improve their economic prosperity (e.g., Bybee and Fuchs 2006), and that a means was required for the, 'governments of OECD member countries to monitor the outcomes of their education systems in terms of student achievement, within a common international framework' (Bybee et al. 2009, p. 865). The OECD's own mandate relates to, for example, restoring 'confidence in markets,' 'future sustainable economic growth,' fostering and supporting 'new sources of growth,' and ensuring 'that people of all ages can develop the skills to work productively and satisfyingly in the jobs of tomorrow' (OECD 2015). Clearly the emphasis of the OECD, and therefore PISA, is on economics and economic development and not necessarily the quality of science learning.

Performance is a key word in PISA discourse, although sometimes it is confounded with achievement (e.g., Bybee et al. 2009), and an underlying

assumption is that the scores of 15-year-olds on a short test will reflect and translate into the economic and social futures of countries. Yet, I can locate no research that confirms that individual scores on PISA tests correlate with their science achievement at the end of their high school education; a point it seems, not attended to at all in the literature. The OECD uses its own authority and the services of selected authorities in science education to confer credibility on the PISA process. Its findings are seldom questioned. The aforementioned authors, Baker, Carnoy and Rothstein, and Dinham, dispute PISA's processes and suggestions arising from it.

What the OECD through PISA has done, in my view and in the view of such authors, is provide a (mis)representation of science learning (theory) regarding what is valuable in science education, and how it might be measured to governments, policy makers, and the media who, in turn, (mis) direct education policy and thought which then seeks to inform communities and classroom teachers. PISA is clearly associated with, if not driven by, a particular ideological position and not by existing evidence from research as to its own predictive power. It is an example of how an ideology, one in which educational performance is '(mis)associated' with economic performance, has been internalized and internationalized in science education discourse. For me, the CMEC's PISA video was nothing more than a projection of a worldview of science learning (theory) founded on very questionable tenets that reinforced my view that what we already know to be necessary to improve science education is far from evident in classrooms or the minds of policy makers.

THE 'NO ZERO' POLICY STORY

It is 31 May 2012. A story breaks in the *Edmonton Journal*: 'Alberta teacher kicked out of class for giving students zeros' (Sands 2012). The story outlines how Lyndon Dorval, a *physics* (my emphasis) teacher with 35 years' experience, was suspended when, 'he continued giving zeros when students failed to hand in assignments, instead of using behaviour codes such as 'not completed,' which the school requires under its grading and reporting practice.' The issue between Mr. Dorval and 'officials from the school and Edmonton Public Schools, including the district superintendent' seems to have been what mark to award students who failed to hand in assignments. As explained in the article, 'Under the [schools'] policy, teachers must *pursue* (my emphasis) students to arrange for late assignments to be completed. If the student doesn't turn in enough work

for the teacher to assess progress, the teacher should enter “unable to evaluate”.’ Dorval suggested, ‘To me, this is just not working. This is just a way of inflating marks and it’s not benefiting the students [...] It’s a way of pushing kids through and making the stats look good, but at what cost?’ The story on Dorval’s suspension garnered local, national, and international attention (Staples 2012). The ‘no zeroes’ policy came under close scrutiny.

In my pre-service third-year undergraduate pre-service science teacher classes in Fall term 2012, this news event stimulated substantial discussion between myself and the 29 students. The students shared their views and suggested that the ‘no-zero’ approach had been promoted in some courses in their education programs at the University of Alberta. Two views were expressed: the first was students expressing potential dilemmas they faced when such an approach might not meld with their own experiences as students, and with their emerging theories of science teaching and learning; the second was with students who considered the policy to be justifiable and in the best interests of students. My informal straw poll at the time suggested that the majority of the students did not agree with the approach.

Dorval appealed his suspension. It was reported on 30th August 2014 that he had won his appeal (Chan 2014). It was also reported that, ‘the Alberta appeal board found that Dorval’s treatment was unfair’ and that ‘[t]here was ‘no evidence of deliberate misconduct’ in Dorval’s grading practices.’ Finally, in the same press release, it was reported that ‘In 2013, Ross Sheppard High School reversed its policy, allowing teachers to give zeros when they saw fit.’

Reflection

I have pondered the origin of ‘no zeroes’ since the Dorval story broke. Who thought it up and why? Why was it implemented despite the obvious potential for such issues to arise? It ran counter to all of my teacher training and classroom experience. It seems to have been derived from one of 17 principles, ‘intended to optimize classroom-based student assessment practices in Alberta schools (p. 134),’ as proposed in a final report for the Government of Alberta on student assessment (Webber et al. 2009). In the text of that document, not including the references, the word ‘zero’ is found 13 times; four times on page seven in the literature summary, five times on page 48 in the study findings, in a section entitled ‘Contested

Assessment-related Practices'; three times on page 92 in the study findings, in a section entitled 'Leadership'; and one time on page 135 in the section on 'Classroom-based Assessment Principles' as principle 17: 'No zero policies support student-learning outcomes.' I find it interesting that on pages 48 and 49, only the views of those who were against the awarding of zeros for work not done or completed seem to have been reported. Even though the reporting was on the basis of analysis of the qualitative data, we have no way of knowing how representative or generalizable the statements reported are in the context of the total participant sample. Nevertheless, the data collected seems to have been sufficient in the view of the report's authors to propose Principle 17.

The Alberta Assessment Consortium (AAC) seems to have taken up cudgels in support of the no-zero policy, even though identifying it as a misnomer (Alberta Assessment Consortium 2015). On its website (<http://www.aac.ab.ca/hot-topics/no-zero-policies/>), a number of documents were available as on 23 November 2015. These were 'Support for non-zero: The Alberta context,' 'The use of zero: Not the real issue,' and 'Frequently asked questions about no-zero policies.' The first of these documents cites the aforementioned Webber et al. (2009) report and Principle 17, also providing hypertext links to existing policy documents. The second cites three of the same papers as the 2009 report in support of the AAC's position, and also educationalist Ken O'Connor (2012), who is also cited in the 2009 report (O'Connor 2002). The third has no references to other links or documents. Hence, this referential support seems very thin indeed.

In my view the evidentiary foundation of the no-zero policy is tepid at best, and not supported by existing evidence from research as to its own predictive power. If I wanted to know whether a no-zero policy resulted in improved student learning, academic achievement, and increased school completion rates, it would take a controlled experiment or intensive mixed method study over an extended period of time, years in fact, in more than one school to convince me either way; much more than 'one secondary student' suggesting it was 'unfair to get zero on homework not done,' and 'an elementary student' stating, 'Zeroes are cruel' (Webber et al. 2009, p. 48). For me, the no-zero policy is an example of how an ideology, one in which educational performance of students is now increasingly the responsibility of teachers, indirectly influenced science education practice in the case of Lyndon Dorval. Who knows how many other science teachers began to question this policy? Dorval was led to question the

policy and its implications and speak out about its effects. The ideology reflects beliefs that teachers should ‘pursue’ students for work completed, even in the face of student intransigence and/or lack of motivation, as well as parents/guardians’ possible misunderstandings of their children’s and a school’s obligations and responsibilities for such assignment completion, or of a school administration’s questionable adoption of such non-empirically supported assessment principles. Some students fail science for a wide variety of reasons, many of which are very regrettable. Nobody, including me, wants this. There are numerous indications in the educational literature about how to promote student motivation, success, and achievement in science education. Policy makers and educational leaders should make themselves aware of this research and the possibilities that are offered. It came as no surprise to me that, as reported on in May 2013, Alberta teachers voted against blanket policies on zeroes, preferring to acknowledge that teachers, as autonomous professionals, should be empowered to make decisions about assessment and grading within their classrooms (Mertz 2013).

THE STEM STORY

It is September 2014 and I have just been promoted again to full professor, this time at the University of Alberta. It is a time for me to reflect. I am wondering what some people who were inspirational for me in my academic life are up to. One such person is Ken Tobin, the Presidential Professor at the City University of New York Graduate Center. Ken and I first met in 1993 at the Conference of the Australasian Science Education Research Association (ASERA) in Lismore, Australia. I had just finished my Masters degree and was teaching high school science full-time in Buderim, Queensland. It was over a lunch-time burger at that conference that Ken and I, along with my soon-to-be-supervisor, Cam McRobbie, discussed the possibility of me doing doctoral study. This discussion led me to enroll in my PhD program.

I searched Ken on Google™ and learned he has a website at <http://kennethobin.com>. I visited the site and read from the blog section, ‘The failure of science education,’ dated 24 November 2013 (Tobin, 2013), roughly 30 years after my first science education class as an undergraduate. It resonated strongly with me. Ken pondered how, having had a ‘science education’ at school, politicians could make some of the decisions that they did in relation to, for example, climate change. In his blog Ken opined, with my emphasis in italics,

When we look at the grand challenges that include wellness and sustainability we should include scientific literacy for humanity. In making this claim there is a dark cloud on the horizon. *We do not want more of the same. It is time for change. The mainstream needs to acknowledge the monumental failure of science education across the decades and especially now.* There is no need to go beyond the failure of government in democratic societies. As I mentioned earlier every politician who has been elected to govern has studied science in schools and probably universities. And yet, when it comes to the decisions made by governments, and those we have elected, what evidence is there of the science education they have enjoyed? The courage and ethical commitments, the values and associated axiological standpoints for the most part do not reflect a science education that even comes close to addressing literate citizenry at a global level.

On 3 October 2014 I wrote a response to Ken, stating,

I find it very sad, staggeringly sad, that we have so limply, as a collective, moved into STEM [Science, Technology, Engineering, and Mathematics] and the old STSE [Science, Technology, Society and Environment] has just seemingly vanished. I also mourn the fact that there seemed to be so little of a battle about this, and now in almost all papers I review, especially from North America, that the notion of society and the environment don't seem to feature at all...it's all STEM. This, at a time when social issues and the environment are so prominent (as some might argue they always should have been). I think this is something worth ruminating on and writing about.

I have been the recipient of numerous communications, beginning around 2012, which confirm my view that STEM is now a (if not THE) prominent referent informing current science education policy and activity. These communications have included job announcements in STEM education sent to me personally to consider, invitations to submit to STEM conferences, invitations to virtual seminars on STEM education, and invitations to review 'STEM-related' papers. In fact, as second author (Anderson and Thomas 2012), I have presented papers at conferences with a STEM theme, although I have yet to attend one personally. On 7 October 2014, I wrote to a colleague who had raised similar concerns in an email chain about STEM being considered a core curriculum concept and organizer,

I wanted to thank you for your comment about STEM in your reply today. I too am very concerned with using it as an organiser for science education. What has also really troubled me is how it has now almost become the

default organiser for a lot of what I read nowadays. Where did Society and the Environment go? It seems to me like there was almost like an unquestioned adoption of this STEM, and that many of the values that help ground a lot of what we in pre-service teacher ed (sic) espoused with our students over the past 25 years became less important ‘overnight.’ I have a very sad view of how this seems to have eluded the attention of many science educators.

Despite the reservation of a few science educators, there seems to be no abatement to the unquestioned surge of STEM into the un/consciousness of much science education discourse and policy.

Reflection

I was raised on a steady diet of STSE as the focus of science education throughout my studies and time as a science teacher. My science education methods instructor, John Edwards, was one of the curriculum writers for the Australian Science Education Project (ASEP) that saw Australian science education in the late 1960s to mid-1970s begin to develop and use its own materials rather than those imported from, most often, the USA and Great Britain. The ASEP resources sought to develop students’ process thinking through the use of Australian examples and scenarios. They often attended explicitly to the intersection of science and technology and related environmental and social issues. Australia was not alone in emphasizing this intersection. In North America, for example, scholars such as Douglas Roberts, Derek Hodson, and Frank Jenkins to name a few promoted attention to such matters through the 1980s and 1990s into the early part of the current millennium. Then came STEM.

Steele, Brew, and Beatty (2012) provided a significant analysis of the differences between STSE and STEM, proposing,

...that STEM funding and STSE-like curriculum standards are the products of contrasting world views, and have at their core differing ethics and differing future expectations. With phrases like: production of a stock of skilled workers (Lee and Mossaad 2010), matters of national security, or maintaining position of world superpower (Machi 2009), the language of STEM education connotes studies based on competition, military power and a national ‘manifest destiny.’ In contrast, the language describing STSE education is rife with references to democratic citizens, responsible and wise choices, and global citizenship (Council of Ministers of Education 1997;

Hart 2007; Hodson 2003). STSE education is often critical of globalization, consumerism, and the commodification of both human and environmental resources (Steele 2011).

They go on to add that the ‘epistemological or pedagogical rationale’ of STEM is not clear, and that ‘many STEM funded initiatives seem to exist atheoretically’ and ‘the momentum seems to be clearly political, with strong corporate backing’ (p. 121). Briener et al. (2012) describe examples of the considerable funding provided to further a STEM agenda. One need to only visit sites such as <http://www.changetheequation.org/> (Change the Equation 2015) to see the push for close ties between business and STEM being promoted and sought.

The origins of STEM and the concurrent demise of STSE can be traced back to, for example, ‘major concerns that the USA is loosing its technology and engineering leadership to other countries in the world’ (Dugger, Jr. 2010, p. 3), the need for the USA to maintain future economic prosperity and competitiveness (Briener et al. 2012), and the perception that the USA’s poor performance in PISA was an indication that such competitiveness, leadership, and prosperity might (already) be under threat (Steele et al. 2012). The use of a supposed crisis to attempt to implement nationally developed educational standards and assessment practices, effectively a national curriculum, in the USA as has been previously explored in a noteworthy manner by Kohlman (2008). It is not unreasonable to see similar forces in operation in relation to the rise of STEM and the decline of STSE.

Reflecting on Ken Tobin’s comment about the failure of science education, especially given the social and environmental issues that currently confront humanity, I see the onset of STEM-oriented focus in science education as a key element in shaping what will be science learning (theory). Funding proposals for science education research, school programs, and initiatives in the USA, Canada, and Australia are increasingly filtered through a STEM lens to determine their value. I agree with Steele et al. (2012) that STEM is ideologically different to STSE and driven by technocratic, economic, and national security related issues as perceived initially and predominantly by Western nations. The promotion of STEM is based on the assumption that education programs, and not programs to improve the socioeconomic status of less advantaged groups in societies (an issue clearly noted in PISA, but largely ignored in policy and funding decisions), are the solution to such issues. It is hard to see STEM-oriented science education attending to the quality of thinking and decision making of politicians and government policy makers to the issues facing humanity globally.

THE JOURNAL REVIEW (SHORT) STORY

As academics we seek to get our scholarship published. It is part of what we do and, many would argue, an important part of our role as members of the academy. We send research and scholarly papers away for review by our peers, hoping for thoroughness, fairness, and failing agreement and acceptance, understanding and sometimes even a smidgeon of eclecticism. So it was that on 3 June 2015 that I submitted a manuscript to a prominent journal in the field of science education. The paper reported my findings on the metacognitive procedural knowledge of a sample of *Canadian* [my emphasis] science teachers. On 10 July 2015, I received notification that the manuscript had been rejected. This happens, and of course it is disappointing, sometimes ‘gutting,’ when others find your scholarship unacceptable for publication. It has happened before. It will happen again.

I read the reviews thoroughly; it is part of the learning experience. I considered some criticisms to be well founded, and others to be more, ‘Really?’ There is no recourse; the decision stands. The editor wrote, kindly, ‘I hope the information provided by the reviewers will be helpful in future studies.’ Well, this chapter is not necessarily a future study, but I find the comments of one reviewer in particular very useful for its purposes. The reviewer wrote (my emphasis in italics),

...there is not enough effort to situate teachers’ science metacognition into any larger framework. In the United States, one might draw upon National Science Teachers Association accreditation guidelines, the ‘How Students Learn’ text, and/or the ‘Next Generation Science Standards’. Each of these documents, to varying degrees, indicate what science learners (and/or science teachers) *ought to know how to do*. And perhaps metacognition might nestle itself in one of those frameworks. But to set metacognition apart and aside from other ways of knowing gave the *impression of this as an orphaned concept*.

I’d never thought of metacognition as an ‘orphaned concept.’ Nor had I met or heard anyone who held that view. Oh well!

Reflection

In science education what is considered important is often framed in terms of policy documents. There is a hegemony constructed within and around these documents; they become dogma, unquestionable, and not often recognized as social constructions reflecting particular science learning

(theory) that is neither conclusive nor absolute. The reviewer of my manuscript suggested I draw upon, from what I understand, the following readings, (a) the ‘National Science Teacher Accreditation Guidelines’ (National Science Teachers Association 2012), and/or (b) the ‘How Students Learn’ text (National Research Council et al. 2005), and/or (c) the ‘Next Generation Science Standards’ (National Academy of Sciences 2012 a, b); all American documents, despite my study clearly being located in Canada. These documents are relatively recent. My scan of these documents suggests that neither (a) nor (c) mention the word metacognition. They focus more on content and process orientation, quite traditional in science education, and include new and in some cases substantial attention to identifying connection between science, technology, and engineering; reflecting a more STEM focus than previous policy documents. In locating document (b) and searching for ‘metacognition’ as a word, 35 hits were identified in the body of the text, with a further 14 in the index. The term is not explored in depth; not in a way that one could use to build a case for research in metacognition within science education. I wonder if the reviewer knew this? That does not mean the contents of the book are of no value—far from it. I have cited it for some topics in my teacher education classes.

Still, the reviewer’s default position seems to have been that such documents must be cited to legitimize science education research and inquiry. To not cite such documents raises the possibility, as evidenced from my short story, that the rationale, value and even legitimacy of particular research and resulting manuscripts will be queried and possibly denounced. Consequently, potentially important educational ideas or those known from research to be important, as is the case with metacognition, might be suppressed and delegitimized. If I were the editor, I would have queried and moderated such a misaligned ideological perspective. It is not that I disagree or otherwise with the contents and/or intentions of such documents, even though I find them lacking important content. I do, however, disagree with any reviewer using them as a filter through which they judge the legitimacy of a concept or research. Authors should locate and argue for what is important in their context/s and use relevant literature within and beyond science education as appropriate to argue for the importance of their research and scholarship. After all, many of the key ideas and positions that have informed science education were migrated into the field from beyond science education’s tribal boundaries. Metacognition is one such concept and the work of many in science

education has previously established its value for the field (Georghiades 2004; Thomas 2012; White 1998; Zohar and Dori 2012). One has to wonder, ‘How conversant is the reviewer with the field of science education they were asked to review within?’ And just ‘How “critique-al” is he/she in relation to the socially constructed documents he/she cited as an element justifying his/her rejection of the manuscript?’

FINAL REFLECTIONS: EXTRACTING THE ‘IDEA’ FROM THE STORIES IN RELATION TO MY TITLE

My experiences and contemplations, a sample of which are expressed above, have led me to the idea that we face a dilemma in how we as a science education community conceive of and talk about the ‘what,’ ‘how,’ and ‘why’ of science learning; that is, about what is and will be science learning (theory). This idea is not borne of a single experience. It comes from considering a range of experiences that are temporally, content, and context varied; by taking reflective steps back, and then forward, and doing the same many times in relation to each experience. Maybe I am stretching too far what might be considered or learned from such experiences. That is for the reader to decide. However, I see the issues these experiences speak to as very real and very troubling for me and for the future of science education and the science learning of current and future generations.

Earlier in this essay I suggested that the practices and outcomes of science education, including teaching and learning, are driven by and evaluated in light of existing theory and, at the same time, inform theory revision regarding (a) what should be the practices and outcomes of science education? and (b) what directions might reform/s take? I suggest an amendment to this statement and now propose that, in the light of my experiences, ideology often takes the place of theory in considerations of the practices and outcomes of science education. Ideology also influences reform directions. It is general wisdom that any theory is supported by empirical and/or observational evidence, and its propositions are conditional. Ideology often requires and seeks no empirical support, is unwavering in its propositions, often uncontestable. Each of the experiences above points me to the conclusion that at least some of what is proposed today in science education, regarding its practices and outcomes, is not supported empirically in terms of its propensity for developing and enhancing students’ science learning. It is based on and driven by ideology.

We have no reliable evidence or analysis that the achievement of 15-year-old students on a short test, which they may be variously motivated to care about, translates into countries' future economic success and national security. We have no reliable evidence that not awarding zeros to students will improve their science learning and consequent achievement or motivation to learn science, short or long term. We have no reliable evidence that STEM education in schools will lead to increased development of a highly skilled citizenry that is oriented to consider the pressing issues facing humanity, including economic ones, in an interdisciplinary and ethical manner. This is pure speculation based on ideology, not evidence. In the case of the article review story, we see that what becomes considered important in science education research can be conceptualized by reviewers as conforming to long-standing, self-fulfilling ideological orientations. Alternative, empirically supported views are not considered, and an ideological status quo is enshrined.

The exclusion of metacognition from conceptualizations of contemporary science education reform is highly problematic. In science education, we have been through cycles of curriculum and program revisions with little effect. Students continue to learn science poorly, become disinterested in it, and have declining attitudes to science from middle years to the end of high school. Yet science policy and curriculum documents still focus on science content, a hegemonic view of scientific process, and the nature of science. Metacognition, self-regulation and/or learning to learn, higher order and critical thinking are given less emphasis if any at all. This flies in the face of what we know. The populace will need to relearn in light of new information as it becomes available to solve problems and deal with pressing issues that maybe do not even yet exist. Toffler (1970) suggested:

[W]e can conclude that knowledge will grow increasingly perishable. Today's 'fact' becomes tomorrow's 'misinformation.' This is no argument against learning facts or data—far from it. But a society in which the individual constantly changes his job, his place of residence, his social ties and so forth, places an enormous premium on learning efficiency. Tomorrow's schools must therefore teach not merely data, but ways to manipulate it. Students must learn how to discard old ideas, how and when to replace them. They must, in short, learn how to learn. (p. 414)

Toffler was talking about a world where people would need to adjust to the increasing speed of social change due to, in part, the impact of ever more ubiquitous and powerful information technology. We see concrete

evidence of Toffler's predictions in today's societies. However, science education remains resolute in maintaining its ideological tribal traditions dressed in new garb that fail to recognize that more of the same, or unimaginative variations on past themes, will not advance the science learning and thinking and learning skills so desperately needed. This was Ken Tobin's message. The problem was not STSE. In contemporary science education, I perceive ideological morbidity and a shrinking of the intellectual space. All those involved in science education need to be aware of the problematics of any unquestioned influence and acceptance of sociopolitical ideologies in determining what is best for science education rather than what is learned from empirical studies.

I have pondered the paper presentations at STEM themed conferences. What do I think? Am I selling out my convictions? I am not sure. In science education I consider that we often tend to roll along with the 'new stuff,' the STEM, the PISA, and the new policy and curriculum documents, and not think too much about them. We defer. We do not question nearly as much as we might. After all, we need conferences to go to, to present, and to write papers for and from them. Don't we? We need to get papers, chapters, and books published for a raft of reasons. We need the education industry. Is protest necessary? How much can we protest anyway? I consider that, as a science education collective, we have stopped asking often, analytically, and passionately enough the important questions like: 'Why are we doing what we are doing?' 'Who are we doing what we are doing for?' 'What is really important?' 'Where and how should we be positioning ourselves to try to make a difference to those we serve?' Who do we serve anyway? Students? Industry? Citizens? We should ask these questions regularly and provide them prominent space in our thoughts. What will be science learning (theory) will inevitably be whatever we allow it to be. It will be determined by our answers to those questions, by our perspectives and orientations in relation to the problems we face as humanity given our global situation, and by our reflections on our experiences; our stories. It is crucial that we keep on telling those stories.

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Big Data and Learning Analytics: The “New” Teaching Machine

Derek Briton

THIS IS NOT A TEST

“It is far from clear whether concerned parents and scorned instructors are enough to stop the march of big data on education.” “The reality is that it’s going to be done,” says Eva Baker, director of the Center for the Study of Evaluation at the University of California, Los Angeles. “It’s not going to be a little part. It’s going to be a big part. And it’s going to be put in place partly because it’s going to be less expensive than doing professional development” (Fletcher 2013, para. 19.). Some 13 years ago, John Seely Brown and Paul Duguid (2000) authored *The Social Life of Information*. Among the many positive accolades reproduced in the book’s opening pages are those of William J. Mitchell: “neither cheerleaders nor debunkers, these knowledgeable and reflective Silicon Valley insiders provide a much-needed critical perspective on the buzzwords, myths, and conventional wisdom of the digital revolution.” The two argue convincingly that “our future world is evolving from the complex interaction of powerful new technology with resistant existing structures and practices.”

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The authors, in fact, decry what they describe as the “6-D vision”¹ of their Silicon Valley colleagues, an “overreliance on information” that they argue “is not necessarily twice as good as the ordinary 3-D kind. Indeed, in many cases it is not as good, relying as it does on a one-dimensional, infocentric view” (Brown and Duguid 2000, p. 21). Unfortunately, time has proven that the majority of “Silicon Valley insiders” have chosen to ignore Brown and Duguid’s admonition and chosen to focus almost exclusively on information. In fact, the emergence of “big data,” that is, data with a capital “D,” has resulted in an even more tightly focused “one-dimensional, infocentric view,” one might even say a “7-D” vision that completely ignores “existing structures and practices.”

In *Big Data at Work*, Thomas Davenport (2014) notes that “Big data is undeniably big, but it’s also a bit misnamed”; in fact, “it’s a catchall term for data that doesn’t fit the usual containers. Big data refers to data that is too big to fit on a single server, too unstructured to fit into a row-and-column database, or too continuously flowing to fit into a static data warehouse”; moreover, and more importantly, “while its size receives all the attention, the most difficult aspect of big data really involves its lack of structure (p. 15).” Given this lack of structure, if big data is information, it is so only the very broadest sense of the term. But how big is “big data?” In *Big Data: A Revolution That Will Transform How We Live, Work, and Think*, Schöenberger and Cukier (2013) state: “when the Sloan Digital Sky Survey began in 2000, its telescope in New Mexico collected more data in its first few weeks than had been amassed in the entire history of astronomy. By 2010 the survey’s archive teemed with a whopping 140 terabytes of information. But a successor, the Large Synoptic Survey Telescope in Chile, due to come on stream in 2016, will acquire that quantity of data every five days (p. 19).”² This deluge of data inspired Anderson (2008) to argue that we now reside in the Petabyte Age: “the Petabyte Age is different because more is different. Kilobytes were stored on floppy disks. Megabytes were stored on hard disks. Terabytes were stored in disk arrays. Petabytes are stored in the cloud”; moreover, “at the petabyte scale, information is not a matter of simple three- and four-dimensional taxonomy and order but of dimensionally agnostic statistics. It calls for an entirely different approach, one that requires us to lose the tether of data as something that can be visualized in its totality. It forces us to view data mathematically first and establish a context for it later (Anderson 2008, para. 4).” Even though attributing data an inherent meaning outside of its cultural context is something Brown and Duguid (2000) argue explicitly

and compellingly against, there is something alluring about the promise of “dimensionally agnostic statistics (Anderson 2008, para. 4),” a siren call those with a proclivity for data simply cannot resist.

However, to be amenable as “data,” culturally embedded information must first be “digitized” (converted from analog to digital) and then subjected to “datafication” (“taking information about all things under the sun—including ones we never used to think of as information at all, such as a person’s location, the vibrations of an engine, or the stress on a bridge—and transforming it into a data format to make it quantified. This allows us to use the information in new ways, such as in predictive analysis” (Schöenberger and Cukier 2013, pp. 35–36). Our immediate tendency is to view these processes of digitization and datafication as something new, but this could not be further from the truth. As Caleb Crain (2015) notes in “Fighting for Literature in an Age of Algorithms”: “Counting has changed the world before. Consider Europe and America in the two or three centuries before 1750, when society had a structure that was still half-feudal... And then, between 1750 and 1850, everything changed. Lengths and weights became standardized; time-keeping mechanisms were improved and clocks became widely distributed; bureaucracies took charge of record-keeping (para. 4).”

But, just as those first steps toward the quantification of everyday life resulted in a period of tremendous adjustment and struggles, so too have our own steps toward the Petabyte Age: “we fight about whether to replace the personal judgment of teachers with standardized curricula and frequent testing, whether it’s ethical for employers to track the keystrokes and body movements of workers,³ whether we’re comfortable with retailers having the intimate knowledge of ourselves that they’re able to piece together from our purchasing histories, and whether we trust our governments with the power to monitor our phone calls and emails” (Crain 2015, para. 4). The problem, Crain continues, is that it makes little sense to “count,” unless one *presumes an underlying interchangeability*: “there’s little point in counting, after all, if you can’t take the mental shortcut of assuming that the aspects of a thing that can’t be counted don’t matter” (para. 13). This, Crain contends, “is the basic trade-off at the heart of economics, which *treats human desire as more or less fungible, even though most of us experience desire as particular and various* (para. 13, emphasis added).” It is “in exchange for this procrustean simplification,” Crain suggests, that “economics acquires a powerful predictive capacity (para. 13).”

But this is far from the only “procrustean simplification” undergirding the most recent incarnation of counting.

The very idea of “counting,” as all ideas, began as a metaphor.⁴ This, in and of itself, is not a bad thing. Metaphors, as Barrett (2011) notes, are “an essential part of science” that “help us extend the boundaries of knowledge (p. 114).” Problems arise, however, “when the metaphors employed are taken too literally” (p. 115). When the counting metaphor is taken too literally, for example, an underlying interchangeability must be presumed, and a belief that “*the aspects of a thing that can’t be counted don’t matter* (Crain 2015, para. 13, emphasis added)” must be assumed. The reality is that “counting” is a figurative practice, *not* literal, and what we must assume does not matter are often the essential and defining characteristics of that which we are counting:

The need for enlarging language beyond the level of the literal invades even mathematics. This need is encountered by anyone who seeks the meaning of (say) the number two used to ‘count’ two concrete individuals. Socrates was the first to note the oddity in the fact that, though he and Cebes are each one, yet if they are juxtaposed, then somehow together they become two (*Phaedo* 96d). In what sense are they two?...when we speak of two concrete individuals, ‘two’ is not given a literal but a figurative sense. In order to conclude that Socrates and Cebes together form a (quantitative) group of two, the measurer must ignore the Socratic character of Socrates and the Cebean nature of Cebes.... Thus, *the concrete ‘two’ refers us to unlike component unities. We may call this kind of unit pre-mathematical*, for it cannot be used in counting objects but only for referring to objects before abstraction from their unique being has been made (Ballard 1978, pp. 186–190; cited in Fisher 1994, p. 358, emphasis added).

In reality, Fisher (1994) continues, “for the purposes of designing a measurement system, we ‘act as if,’ ‘entertain the possibility that,’ ‘suspend our disbelief in the fiction that’ what we are counting is some kind of ‘one’ thing (p. 358).” For Fisher, “the problem with virtually all educational, psychological, and social measurement is that the metaphorical fiction entertained in the counting is simply assumed true (Ibid.).”

Yet another fiction advocates of counting must “suspend their disbelief in” is the “very powerful metaphor that helped shape the fields of psychology, cognitive science, and artificial intelligence for many years... the way in which many neuro-, cognitive, and comparative psychologists liken the brain to a computer” (Barrett 2011, p. 114). Over time, Barrett notes,

there have been numerous metaphors for the brain, so many, in fact, that it requires an act of incredible hubris to expect that “we’ve finally hit on the correct one, as opposed to the one that just reflects something about the times in which we live (p. 115).”⁵ The *brain-as-computer* metaphor is often (mistakenly, Barrett argues) attributed to Alan Turing, creator of the “Turing machine.”⁶ In fact, Barrett contends, the metaphor arose and became entrenched in popular consciousness when psychologists who were abandoning the behaviorist *brain-as-black-box* metaphor “began to cotton on to the idea that understanding brains and intelligence could be achieved not only via the analogy of the computer, but also by the actual use of computers to model and mimic the activities of the brain (p. 116).” Further conviction to “suspend” our disbelief in the fiction that the brain is a computer came with the US Army’s creation of ENIAC (Electronic Numerical Integrator and Computer):

In the late 1940s, John von Neumann was one of several people charged with the task of making the ENIAC more convenient and useful, and it was he who designed the architecture used by all modern computers today: a central processing unit, a main memory, a set of peripherals (like keyboard and monitor), and a second memory that could be used to store information externally, like hard drives, CDs, and memory sticks. It is, therefore, to von Neumann that we owe the ‘brain-as-computer’ metaphor, as it was he who helped create self-contained digital computers. In addition, *it was he who specifically compared his computer architecture to that of the brain, suggesting that the central control (CPU) of his computer corresponded to the “associative” neurons of the human nervous system, and that the input and output devices were the equivalents of sensory and motor neurons, respectively.* (Barrett 1994, p. 121, emphasis added)

Once the “taken-for-granted” concepts of “counting” and “brain-as-computer” were firmly entrenched, conditions were ripe for the emergence of big data, requiring only technological advances in computing power and information storage—a process that accelerated throughout the 1980s and 1990s.⁷ Once appended to Brown and Duguid’s (2000) 6-Ds of “demassification, decentralization, denationalization, despacialization, disintermediation, [and] disaggregation (p. 22),” the seventh “D” of big Data, contributed significantly to the creation of two oft-heard refrains: “education is broken” and a “tsunami of change” is imminent.⁸ In response to these refrains, big business, further motivated by the hi-tech mantra of “disruption”—yet another “D” “to represent forces that,

unleashed by information technology, will break society down into its fundamental constituents, principally individuals and information” (Brown and Duguid 2000, p. 22)—has invested billions⁹ in the belief that

just as the Internet has fostered decentralization and disaggregation in a variety of traditional markets, a similar process will take place in the education market... The ‘core’ services and products provided by the university [and schools] will be disaggregated from the peripheral ones, that a variety of differentiated services and products will emerge in order to cater to different market segments, and that this process of unbundling will enable highly flexible forms of mass customization. The viability of this paradigm is dependent on the extent to which education can be divided up into modular, scalable units, which remains an open question. (Werry 2002)

Despite such cautions as: “this latest wave of education technology is too new and eclectic to have proved its worth definitively. It is still mostly a matter of patching together different bits” (*The Economist* 2013a), advocates of the 8-Ds continue their efforts to reform education. As Michelle Rodino (2002) notes: “as the debates unfolded, however, it became apparent that technology was not driving the changes being imagined for this brave new world. Rather, technology provided an air of legitimacy and urgency to what was really a campaign to expand markets for the computer and higher education industries, use public funds to subsidize such expansion, and reorganize academic labor.” *The Economist* (2013b) notes: “Bill Gates calls this ‘a special moment’ for education. Private-sector money is piling in. Rupert Murdoch, hardly a rose-tinted-specs technophile, is allowing Amplify, his digital education business, to run up losses of around \$180m this year in hope of dominating an edtech market that News Corporation reckons will soon be worth \$44 billion in America alone.”

But this speculative vision is not so much of a brave new world as a staid old one. Big data, or more precisely, its progeny, data analytics and adaptive learning, are the latest incarnation of a fantasy that coalesced at the turn of the twentieth century: the “teaching machine.” It was the heyday of Taylor’s “scientific management” and Thorndike’s “principles of learning.” First imagined and operationalized by Sidney Pressey, the teaching machine was championed by B.F. Skinner in the 1950s, but waned in the 1960s, only to be revitalized in the 1970s as computer-assisted instruction (CAI). In “Rebirth of the Teaching Machine through the Seduction

of Data Analytics: This Time It’s Personal,” Phillip McRae (2013) notes how, “today, yet again, a new generation of technology platforms promise to deliver ‘personalized learning’ for each and every student (para. 1).” One example of this current behaviorist vision is Dreambox’s intelligent adaptive learning (IAL) system: “the level of sophistication of today’s IAL systems is far superior to similar technologies of the past” (Lemke 2013, p. 13, cited in McRae 2013). But what escapes, or is simply ignored by the advocates of these new “counting” systems is that they are based on the same old notion of “the isolated individual, in front of a technology platform, being delivered concrete and sequential content for mastery” (McRae 2013, para. 13). The problem, as McRae notes, is that

adaptive learning systems (the new teaching machines) do not build more resilient, creative, entrepreneurial or empathetic citizens through their individualized, linear and mechanical software algorithms. Nor do they balance the desire for greater choice, in all its manifest forms, with the equity needed for a society to flourish. Computer adaptive learning systems are *reductionist and primarily attend to those things that can be easily digitized and tested* (math, science and reading). They fail to recognize that high quality learning environments are deeply relational, humanistic, creative, socially constructed, active and inquiry-oriented. (para. 14, emphasis added)

As its predecessors, the latest, big-data-driven iteration of the “teaching machine” takes its “counting” too literally, assuming an underlying interchangeability based on the belief that “*the aspects of a thing that can’t be counted don’t matter*,” and in so doing, “*treats human desire as more or less fungible, even though most of us experience desire as particular and variable*” (Crain 2015, para. 13, emphasis added). It is for this very reason, a disregard for human desire, that “teaching machines” of whatever will inevitably fail.

THE IMMANENT FLAW OF TEACHING MACHINES

Students do not learn in a vacuum. They bring much more to the classroom than pens, pencils and mobile devices. They bring their hopes, fears, beliefs, experiences, memories, uncertainties, doubts, goals, hopes, dreams and desires. Such factors constantly impinge upon today’s learning environments, but in the haste to provide learners with new knowledge and skills, instructors often pay little heed to these affective impediments

to learning. Yet, it is often such factors that determine the success or failure of today's learners, rather than carefully planned teaching and learning methodologies, lesson plans, assessment models and/or learning analytics. Unfortunately, most educators are taught to steer clear of the affective realm (values, motivations, attitudes, stereotypes, beliefs, feelings, desires), because it is far too nebulous, amorphous and emotive a foundation for professional practice. As a result, rational-cognitive conceptions of knowledge and cumulative-linear models of learning have come to dominate and are in a seemingly constant state of revision, a race to further the untrammelled transmission of educational content. Consequently, much of education remains in the thralls of "scientism."¹⁰ Increasingly pressured to provide learners with new knowledge, skills, aptitudes and capacities, today's teachers feel compelled to restrict their practice to the cognitive realm, yet it is often the affective domain that determines the success or failure of learners, as opposed to carefully planned teaching and learning methodologies, lesson plans, assessment models and/or learning analytics.

But the learning environment is riddled with *affective* elements. This is hardly a revolutionary claim: over two decades ago, the work of noted female educators such as bell hooks (1994, 2003) and Jane Gallop (1995, 1997, 2002) revealed the learning environment to be shot through with affective elements—the writing of both, for example, draws our attention to the emotional and romantic bonds that fuel and complicate the teacher–learner relation, and in so doing reveals learning to be a far from rational, cognitive and linear process. But it is the insight of a third female educator, Shoshana Felman (1987) that provides the most compelling case against instrumental conceptions of learning,¹¹ and she provides this through a psychoanalytic lens: "proceeding not through linear progression but through breakthroughs, leaps, discontinuities, regressions, and deferred action, the analytic learning process puts in question the traditional pedagogical belief in intellectual perfectibility, the progressist view of learning as a simple one-way road from ignorance to knowledge" (p. 76). Desire, Felman argues, is interwoven into the very fabric of learning. It can, of course, be ignored, but at a cost. That cost is the ability to identify why some learners fail to succeed, in spite of elaborate teaching and learning methodologies, explicit lesson plans, appropriate assessment models and/or learning analytics. Yet Felman's promotion of Jacques Lacan's psychoanalytic insights into learning has had minimal impact on the practice of education.

Bruce Fink (1995) provides an indication of why this may be the case: “*a peculiar temporal logic is involved in reading Lacan*: you cannot read his *writings* (in particular the *Écrits*) unless you already know more or less what he means...; in order to get anything out of his writing, you already have to understand a good deal of what he is talking about (p. 150).” Anthony Wilden (1968), the translator of Lacan’s seminal *Rome Discourse*, even situates his introduction to Lacan *after* his translation, noting: “it is almost impossible to write any sort of introduction to Lacan unless the reader has first been introduced to him (p. ix).” Fink further contends that this peculiar temporal logic leaves the committed reader with two choices: “learn about Lacan from someone else—with all the biases that entails—...then try to verify or refute what you have learned by examining his texts”; or “read and reread and reread his work until you can begin to formulate hypotheses of your own, and then reread yet again with those hypotheses in mind, and so on (p. 150).” Both methods, he notes, are not only tedious and time consuming but also antithetical to “the publish-or-perish economic reality of most academics” and “a certain American pragmatism and independence (p. 150).” Many academics, he contends, argue: “if I cannot put someone’s work to use for me in a relatively short space of time, what is the point?... I need to prove that I am an independent thinker, and thus I must criticize it as soon as I think I have begun to understand it (p. 150).” For Fink, the unfortunate result of such reasoning is a peremptory reading of Lacan, “with a view to critiquing it, short-circuiting the ‘time for comprehending’ and proceeding directly to the ‘moment of concluding’ (p. 150).”¹² Consequently, the typical North American response to Lacan is homologous to Freud’s example of the threefold denial expressed by a man accused of returning a damaged kettle to its owner:

1. If I cannot figure him out myself, then he is not worth thinking about.
 2. If he cannot express himself clearly, then it must be muddled thinking.
 3. I never thought much of French “theory” anyway.
-
1. I returned the kettle undamaged.
 2. The kettle had a hole in it when I borrowed it.
 3. I never borrowed the kettle in the first place.

But contrary to the standard North American response, Fink (1995) suggests that “if an author is worth reading seriously, you have to take for granted at the outset that, as crazy as certain ideas may at first seem, considered in greater detail they may become more convincing, or at least lead you to understand the aporias that gave rise to them (p. 151).” Unfortunately, this “is more credit than most people are willing to give an author, and a love-hate ambivalence gets played out around reading. To assume that it is not as crazy as it sounds is to love the author . . . , whereas to read it critically comes off as hate (p. 151).” Thus, although many remain convinced that “hate is the condition for a serious reading,” Fink cautions, “if that indeed is the condition, it had better be preceded by a prolonged period in which the reader loves the author and presumes him or her to have knowledge! (p. 151).” It with an eye to cultivating a greater love for Lacan’s work that I offer what I hope is a more accessible portal to Lacan’s notion of desire and its implications for learning, a personal narrative of everyday life.

The personal narrative that follows is a “first person singular” that aired on the Canadian Broadcasting Corporation’s *This Morning*.¹³ The author of the narrative speaks tellingly of the role desire and fantasy play in the formulation, pursuit and near attainment of a central goal, offering, in plain and humorous language, insightful comments on not only the fantasies she constructed to support her desire and sustain her in the pursuit of her goal, but also the factors that led her to reconsider and ultimately sacrifice her goal when reality clashed with fantasy. This personal narrative serves as the perfect vehicle to introduce and discuss some important yet otherwise abstract insights into the relation between desire and learning.

The narrator of our first person singular recounts how, after being told by her doctor that she risked a heart attack, stroke, or diabetes if she did not lose weight, she suddenly found herself with sufficient incentive to lose 40 pounds in quite short. The process she then followed is typical of that prescribed by many education programs: from expert knowledge (content), through linear learning (transmission of content), to a predictable outcome (goal). But as her “education” proceeded, and with only an additional 30 pounds to go and her desired goal in sight, the narrator found her motivation waning. She notes:

Good health is a fine reason to lose weight. *But after a point, health is not enough.* Call me impatient, or needy, or fragile, or vain, but 120 over 70 just doesn’t cut it. No one can see my low blood pressure. No one can see

my good health. Only I—and my doctor—can see that I am healthier. The people I pass when I jog, they just see another jogger, plodding her way along the seawall, trying not to trip over the dog droppings along the way (emphasis added).

Troubled by her waning motivation, the narrator further reflects: “why can’t I keep the weight off? Why can’t I just become normal and stay there? It’s because I don’t know what normal is. I can’t long for that flat stomach I had in high school. I never had it. I can’t accept who I am since I’ve never been who I wanted to be.” She continues: “they see someone normal. I’m not normal. I’ve never been normal. I’ve always been fat. When I was 20, I managed to shed about fifty pounds and keep it off. For about a month.” However, she recounts how, “Sometimes, *in my imagination*, I am thin, tall—maybe even blonde, why not?—with an aquiline nose and high cheekbones. The most popular girl in the school. Brainy, too. *When I try to lose weight, that’s who I’m trying to become*” (emphasis added). It is not good health, then, that supports the narrator’s desire to lose weight, but the fantasy construct to be someone other than she is: thin, tall, blonde, and so on. The narrator’s elaboration on her fantasy construct is revealing:

When I am thin, I will look fabulous in Size 5 Gap jeans. My little butt will stick out just the right amount. I will wear my shirts tucked in, like in my hairdresser’s fashion magazines, with the top buttons undone just enough to show off the lace on my sexy push-up bra. Maybe I will wear those little T-shirts that expose just a hint of my iron-hard tummy. My jawline will be ice sharp, my cheekbones—way up near my ears—will glow, and my long flaxen hair will glisten as I toss it around oh-so-casually. I will be amazing.

The narrator’s fantasy is startling in both its clarity and detail:

Heads will turn. People will stare as I walk down the street. I won’t be able to jog; I’d attract too much attention. I’ll come home from work at night and change out of my Size 5 *Jones New York* business suit into a slinky wraparound gown, and I’ll enjoy a glass of wine and some chocolate-dipped strawberries with my loving husband, who won’t be able to keep his hands off me. Jeez, we’ll probably even have sex standing up! And the best thing of all? When I eat an ice cream cone, I can get a little dribble on the end of my nose, and I will be devastatingly cute.

What this charming and entertaining account reveals is that what is supporting the narrator's desire to lose weight is neither her doctor's expert knowledge, a regimented method of balancing calories in against calories out, nor a goal of good health, but *the fantasy of becoming someone she is not*. But after losing 40 pounds and moving ever closer to realizing her goal, we learn that what the author wanted to avoid, even at the cost of failing health, was a former painful truth that threatened her fantasy:

What I remember, so vividly and so painfully, was looking at myself in the mirror one day, having lost all that weight, and realizing that, after all that caloric deprivation, I was still only five feet tall. My hips still stuck out too much on the sides. My hair was still limp and mousy brown. My knees still knocked. And my nose still turned up too much. I was back at the peanut butter before you could say "body mass index." And, of course, back came the weight. And again it went, and again it came back.

The narrator goes on to share what she knew only too well: "If I lose those last 30 pounds, *I risk finding out the truth*" (emphasis added), a truth she finds too painful to accept:

The truth is that I am fortyish, nearsighted, and short. If I got into those Size 5 jeans, I'm sure I wouldn't be able to walk ten feet. I have a gall bladder scar across my stomach that looks like a tire skid, so the little T-shirts are out. I will never have an ice sharp jawline or high cheekbones. My face is a little apple dumpling and always will be. And my greying hair will never swing because it's too much hassle to grow it long. As for sex, well, my loving husband is past 50, has a bad back, and isn't likely to cart me around the house in sexual ecstasy any time soon. And ice cream on my nose? Cute if you're six, but pretty embarrassing for a grown woman.

Clearly, the narrator is under no illusion about her actual appearance and condition, but what is particularly telling is her conclusion: "Yes, it's lunacy. *But while I am fat, I can think whatever I want and ain't no one going to tell me I'm wrong*" (emphasis added).

What this first person singular makes clear, then, is that the narrator's desire to lose weight is sustained not by her doctor's expert advice, the cumulative accomplishments of her dietary and exercise regime, or the measurable outcome of good health, but the *fantasy* of being someone she is not. Moreover, knowledge and sound reasoning aside, it is this "insane" fantasy the author chooses to sustain rather than attain her logical goal.

This is completely in keeping with Lacan’s account of desire, which holds that a fantasy construct does not disappear once it is successfully interpreted and its function revealed. This is because a certain enjoyment, what Lacan dubs *jouissance*, remains at play. For instance, the “lunacy” of remaining overweight affords the narrator of the first person singular the pleasure of: “thinking whatever I want and ain’t no one going to tell me I’m wrong.”

Yet when learners fail to achieve their goals, we continue to focus on identifying inappropriate teaching methodologies, flawed lesson plans and/or poorly conceived outcomes, rather than the learners themselves and the fantasies that sustain their desires. The argument against such a course is that if education abandons its “scientific” principles and methods (knowledge as observable, measurable, abiding; learning as the transmission of knowledge from expert to novice), it will lose its legitimacy and status. But until we are willing to look beyond the boundaries of modern education practice, it will remain impossible to make sense of why some learners choose failure in the face of the clearest presentation and transmission of content and a deluge of learning analytics that “predict” success.

NOTES

1. “The D in our 6-D notion stands for the de—or dis—in such futurist-favored words as demassification, decentralization, denationalization, despacialization, disintermediation, disaggregation.” (Brown and Duguid 2000, p. 22).
2. Consider also, how much social media and online services contributes to big data: every minute, for example, Facebook users like 4,166,667 posts, Twitter users send over 347,222 tweets, YouTube users upload 300 hours of new video, Instagram users like 1,736,111 photos, Pinterest users pin 9,722 images, Apple users download 51,000 apps, Netflix subscribers download 77,160 hours of video, Reddit voters cast 18,327 votes, Vine users play 1,041,666 videos, Tinder users swipe 590,278 times, Snapchat users share 284,722 snaps, BuzzFeed users view 34,150 videos, Skype users make 110,040 calls, and Uber passengers take 694 rides (James 2015).
3. “IBM, programmers have put together mathematical models of fifty thousand of the company’s tech consultants. They crunched massive amounts of data on the employees—how many emails they sent, who got them, who read the documents they wrote—and used this information to assess their effectiveness and deploy their skills in the most cost-efficient way” (Basen 2011).

4. “Every concept articulated in language begins as a metaphor. Then the poetic vitality associated with new metaphors wears away until the metaphor dies and a taken-for-granted concept is petrified in its place” Fisher (1994, p. 358).
5. Socrates, for instance, considered the mind a wax tablet, Locke, a *tabula rasa*, Freud, a hydraulic system, and “the mind/brain has also been compared to an abbey, cathedral, aviary, theater, and warehouse, as well as a filing cabinet, clockwork mechanism, camera obscura, and phonograph, and also a railway network and telephone exchange” (Barrett 2011, 115).
6. Barrett (2011, 120) argues convincingly that “Turing’s concerns were clearly mathematical, rather than psychological. He was simply interested in what numbers it was possible to compute, as a human did, using a pencil and paper...Turing’s machines were never intended to be a model of the mind or of mental processes (p. 120).”
7. “Moore’s Law... states that computing power doubles every 18 months. Moore’s Law is important and will be in effect for another two decades, but it is the least spectacular and slowest law at work. Every nine months,—twice the speed of Moore’s Law—our ability to increase the bandwidth of optic fibres and optical amplifiers doubles, according to a fiber law. Multiply that by the ability to store information which doubles every year, and the result is more useful information generated, flowing, and accessible” (Brown 2002, p. 50).
8. In 2012, John L. Hennessy, president of Stanford University, famously told *The New Yorker* that technology was about to dramatically change higher education. “There is a tsunami coming,” he said (Jaschik 2015, para. 1).
9. “Several big education companies have been investing heavily in technology ever since the 1990s. Pearson has spent over \$9 billion in the past decade on technological upgrades for its education business. News Corp is also taking a big bet on Amplify, run by Joel Klein, a former chancellor of schools in New York City (and one-time antitrust nemesis of Mr. Gates). Amplify’s office, in an old warehouse in New York’s DUMBO district, contains not only classrooms, where students and teachers use new technology, but groups of former teachers working with software engineers, graphic artists, psychometricians, and game designers to produce new content. Other organizations funding the application of all this potential to education include companies who, like Pearson, are already established in education as providers of textbooks and other resources; companies already established in technology who see big new markets (Apple says it sold 3 m iPads to American educational institutions last year); and companies established in other businesses who see edtech as a big opportunity. Then there are legions of start-ups, backed by an American venture-capital crowd that

has proclaimed edtech to be the new thing. According to GSV Advisors, a consultancy, investment in edtech soared to \$1.1 billion in 2012. The Education Innovation Summit held in Scottsdale in April was crawling with would-be investors; presentations from new companies were packed. Investment in the education sector in 2011 was almost as high in nominal terms as the [dot.com](#) peak and was higher in terms of volume” (*The Economist* 2013a, para. 4).

10. “The conviction that we can no longer understand science as *one* form of knowledge but rather must identify knowledge with science” (Habermas 1972, p. 4).
11. Instrumental reason is “the kind of rationality we draw on when we calculate the most economical application of means to a given end. Maximum efficiency, the best cost–output ratio, is its measure of success” (Taylor 1992, p. 5).
12. See Samuels (1993, pp. 10–14) for a succinct account of Lacan’s three logical stages: (i) the instant of the look, (ii) the time for understanding, and (iii) the moment to conclude.
13. “CBC Radio’s flagship current affairs program, *This Morning*, is in the market for personal essays. We call this feature of the show ‘First Person Singular.’... These pieces do not deal with issues, but with significant experiences and happenings that shape people’s lives in big and small ways. In each there should be an element of transformation ...an epiphany...a turning point” (Levine 2003, para. 5).

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The Case of Wondering ‘Its’: The Future as More of the Same in the Name of Change

Kent den Heyer

JUST DO IT!

A humorous commercial by Netflix illustrates the ways the ‘tacit,’ ‘token’ and ‘taken for granted’ futures (Gough 1990), identifiable in guiding Ministerial orders such as Alberta’s *Inspiring Education*, harm both education and the social life in which it is embedded. *Inspiring Education* is a document that emerged from an extensive governmental consultation with citizens of Alberta in 2009 (available at <http://inspiring.education.alberta.ca/>). Among other recommendations, this document calls for a competency-based cross-subject curricular approach to learning and assessment, a call now being expressed through extensive ‘prototyping’ in several Alberta school districts as outlined in a second document, *Inspiring Action* (available on the Alberta’s Ministry of Education website). Let me start, however, with the commercial.

The commercial, titled ‘*Pep Talk Netflix Canada*,’ begins with a hockey coach entering the dressing room where his team sits between periods, appearing both downtrodden and beaten. The coach, surveying the room,

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rubs his face and begins, ‘Do you remember that scene from that movie on Netflix? The team was done and the coach... he gave that speech.’ Players begin to look up and nod in recognition. ‘Ya ya, you remember that scene!?’ Players: ‘Ya ya!’ Coach: ‘Remember what he said?’ Players rising in unison: ‘Ya!’ Coach: ‘Well, gentlemen, *that* is what I am saying!’ Players stand up yelling and storm out of the dressing room and onto the ice. The video ends with a voice over, ‘Netflix, you gotta get it to get it.’

The scene wonderfully captures human dynamics of (mis)recognition and a case of ungrounded ‘its,’ where the coach’s it—*that* scene—and the player’s ‘it,’ indeed myriad differences among individual player’s assumptions about what *that* ‘it’ may be, become both meaningless and meaningful as they project onto a screen sufficiently empty to signify that whatever scene is now playing in their heads *is* indeed ‘it,’ ‘Well *that* is what I am saying!’ Whatever ‘it’ is or ought to be is not the question now, just a team ready to ‘Just do *it!*’

The commercial also points to the rather spurious connection between what Albertans want—competent kids—with a competency-based curriculum. As in the video, everyone thinks they know what scene the coach references, they are all very excited to be getting it, but there is a sort of ventriloquism going on, ‘Hey, what Albertans are saying’ say the Ministers ‘is what I am saying’. Yet the connection is not at all clear in the evidence provided that competent kids means or requires a competency curriculum.

Finally, ‘that’s what I am saying’ references some other scene in someone else’s movie for which there is no content, no actual anything being said, the essence of ideology and fantasy. We are preparing for the future. To do so, we are going back to the 1980s and Peter Druckers’ work (1985) on competencies without content, and we are going to what they did in the 1990s and early 2000s in Hong Kong, Australia and New Zealand. I argue we are therefore completely lost in the wrong scene in someone else’s old movie. So, we have here some troubling ‘its’ here flying about.

LEARNIFICATION

Teams of educationalists in Ministries of Education across the globe engage in scenes not unlike the one described above. A new Ministerial team attends a meeting where hucksters peddle four-point plan memos outlining what programs they can sell. The latest include personalized learning, inverted classrooms and competencies joining old classics such as lifelong learning in the catalog of sophistic and sellable initiatives.

So it is that 1980's competencies and other 'new' initiatives for twenty-first century learning come to fill the pages of documents designed for curriculum reform, documents designed by those Pasi Sahlberg (2011) names—the GERM (the Global Education Reform Movement, referring to the amalgam of interests seeking to replace public monies and support for education with private capital and management systems). Behind these attempts lies another very troubling trend, 'learnification' (Biesta 2010). In what follows, I will illustrate learnification and the ways in which a common, and insufficient, deployment of future talk gets sold in educational documents with little, if any, potential to support education.

Learnification refers to 'the transformation of the vocabulary used to talk about education into one of "learning" and "learners"' (Biesta 2010, 18). The sources of this shift are many including cognitive and brain science research over the last two decades focused on individual cognition and, also, the rise of neoliberal discourse in which only individuals as self-directed learners exist. Education, which denotes a relationship cultivated and led by teachers, is not part of either of these two discourses. For evidence here in Alberta you need just to consult the guiding documents of curriculum redesign to note the near disappearing of teachers as curriculum and pedagogical agents. Indeed, these documents reference education almost solely in terms of learners and learning. Like students, who are now learners, teachers are now architects of the learning environment. We should be concerned about this shift in language for at least two reasons.

Learning is basically an individualistic concept. It refers to what people as individuals do, even if couched in collaborative or cooperative or constructivist terms. In contrast, education implies a relationship: someone educating someone else with a sense of purpose (Biesta 2010). For example, most Indigenous ways of educating recognize several overlapping agents; the stories, the land, the nonhuman entities who inhabit the land, the elders who know the stories and the land, and the group and the creator (Marker 2011). While these societies are highly committed to the freedom of individuals, individuals are understood as part of a multilayered and animated network in which they are embedded and through which they potentially become more fully realized (Tinker 2004). Likewise, this is the case with education, which involves someone teaching someone else with a sense of purpose.

Learning is at its core a process term; that is it refers to a generic ongoing process completely absent of content or purpose beyond itself (Biesta 2010). For example, as outlined in a key Alberta Education (2011) document, our students upon graduation should be able to do the following:

- *Know how to learn **What?***
- *Think critically **about what?***
- *Identify and solve problems concerning **who or what?***
- *Manage information to **what end?***
- *Innovate **what and for why?***
- *Create opportunities for **whom or for what?***
- *Apply multiple literacies to **do what?***
- *Communicate well and cooperate with others **just for in schools?***
- *Demonstrate global and cultural understanding **why?***
- *Identify and apply career and life skills **in schools?***

The bolded words emphasize the need for content and purpose that these vague competencies omit. Perhaps, the intent is to have such questions worked out at local sites, a worthy plan if we also provide teachers and administrators workload adjustments to support these conversations. From the research internationally, this is unlikely to become the case as argued below.

WHAT IF CURRICULUM (OF A CERTAIN KIND) DOESN'T MATTER?

A short time ago, I published a review of a scholarly handbook section detailing the international research on curriculum design and change (den Heyer 2009). I will highlight here a couple of the many conclusions reached by the authors from their comprehensive reviews of research.

A consistent finding concerned the ways in which efforts to spur change though formal curricula have little discernable effect on school or classroom practices. More shocking was the detailed research concluding that formal curricula design actually never had anything to do with change in practices. Negotiations over formal curricula turn, rather, on social group conflicts over the curriculum as a social imaginary:

Each group believes that its form of discourse and its world is the reality of the project [of curriculum design] and that the ‘means and ends named by [*their*] symbols [and symbol making] are what the symbolic action is about’.
(Haft and Hopmann, cited in Westbury 2008, 57. Emphasis inserted)

I was surprised that this would still be the case over 100 years after John Dewey, who also noted official curricula’s lack of practical import:

It is, however, sufficiently obvious that, while the reformer took possession of the field of theory and enthusiasm and preaching, the conservative, so far as concerns the course of study, was holding his own pretty obstinately in the region of practice [...] And, by the time [the progressives'] ideals and theories had been translated over into their working equivalents in the curriculum, the difference between them and what he and conservative really wished and practice became the simple difference of tweedle dum from tweedle dee. (Dewey 2001, 388)

Contemporary curriculum reformers detailed in the research often fail because they thought that 'curriculum making was an educational project—that is, an activity and process directed at the improvement or enhancement of schooling' (Westbury 2008, 52). Such an assumption indicates that these reformers 'do not... understand curricula, curriculum making, and curriculum policy making realistically' (ibid). And about what are these negotiations realistically concerned? Westbury writes that '[u]ltimately, the standards became a form of symbolic politics, signaling that something was being done but having little transformative potential' (28):

[Curriculum making] is a mechanism, or tool, deployed to manage the political, professional, and public fields around schooling, more often than not designed to mute rather than amplify calls for educational reform and change. (Westbury 2008, 61)

Despite these findings, I think it is important to stress that programs of study do matter, just not necessarily for schools or classroom practice. For example, the recently implemented Alberta program of social studies has opened up conversations about the challenges and opportunities in its call for teachers to engage in multiple perspectives inclusive of Aboriginal and Francophone orientations to Canadian history and contemporary social issues. My guess is that these long overdue conversations would be even more unlikely to occur absent of their inclusion in official print. The question remains, however, what further hinders change processes in education? Let me turn to offer a response to this question.

AGENCY FRACTURE FROM SYSTEM CONFUSION, POLITICAL TOURISM AND POLICY AMNESIA

Learnification spreads as the GERM grows despite or, perhaps, because of agency fracture. Agency fracture refers to various forms of disconnect between espoused policy and policy enactment (Harris and Burns 2011).

One form is *system confusion* that emerges in educational bureaucracies (and teacher education programs) where some people are hired to renovate subject-specific curriculum policy and professional development, others are hired for their expertise in assessment's distinct research literature while the job description for others requires meeting more political influenced directives given by assistant deputies to ministers responsible for the portfolio for one to three years. As disparate messages emerge, the 'ideological debates [are] shunted down the system for resolution at school level' (Harris and Burns 2011, 249). Given contradictory directives, the response at the school level is most often for status quo practices to continue.

Fracture also results from the (increasingly) many 'quandos' involved in policy debate (Hodgson and Spours 2006). Quandos refer to 'quasi-autonomous nongovernmental agencies' that have entered debates about curriculum policy as the GERM spreads to further open state education as a private market:

The education quasi-market comprises a range of changes [...] the introduction of new private providers; the encouragement of parents to see themselves as consumers of public services and the use of powerful national steering mechanisms [e.g., TIMMS, PISA] as a form of accountability and to retain political leverage in what could have become a much more devolved system. (Hodgson and Spours 2006, 682)

As quandos gain access to ministerial offices, local insights tend to be crowded out.

The absence of teaching professionals and their representatives when directives are dreamed and formulated contributes to agency fracture through 'policy amnesia' and political tourism. Just like visiting an all-inclusive package resort, political tourists can easily ignore complex local language and practice. Communication gets weird when they decide to reform the locals according to logics that may work in one but not in another context (e.g., markets). A related condition afflicting those who desire to be such transformative 'agents of change' is policy amnesia:

We would contend that this condition is caused by a short political cycle, dominated by the politics of general elections; by the rapid turnover of ministerial teams, political advisers and civil servants, which prevents the building of 'policy memory.' Policy amnesia is compounded by a lack of trust in the education profession with its 'grounded' memory of what has worked in particular contexts. (Hodgson and Spours 2006, 684)

As noted above, official curriculum design and change suffers from a host of ailments: symbolic politics without engaging in open and politically difficult discussions with diverse locals to better define what needs improvement on the ground (e.g., class sizes, teaching loads, content and assessment issues) and agency fracture in various forms. In such situations, appeals to the future cohere disparate scenes into an assumed 'it' as if we all know that '*that* is what I am saying!'

THE FUTURE'S EMPTY PRESENT

The Australian scholar Neil Gough (1990) examines the ways educators and Ministries deploy the future in policy discussions and documents. He distinguishes between tacit, token and taken for granted futures. 'Tacit futures' are of the implied type and never clearly stated: 'we need grades to prepare kids for the real world' would be one example. Of course, there are those who think that what they suffered or excelled at during their K-12 schooling 20 years ago should be a requisite experience for all students as this will prepare the next generation for what these adults today understand as their 'real world.' 'Token futures' are more visible but consist of clichés as can be read in the many titles of conferences, policy documents and academic papers: 'The Future is Now' or 'Education for the 21st century' and '2020 vision'.

Finally, 'taken for granted' futures are the most visible of the three. With this type, the future unfolds as 'more of the same' that the speaker already believes to be the case. In all these three types, the future is ever present and never questioned as to its possible, probable and preferable manifestation.

We can note this taken for granted future in claims that education must continue to serve the economy, rather than the other way around. In *Inspiring Education*, for example, authors write that 'India's improved education system is often cited as one of the main contributors to its economic rise' (Inspiring Education, 12). This sentence conflates cause and effect.

Where you already have an active economy with all classes getting something more than crumbs, and with the proper social policies to support young people and their parents in place, as in Singapore and Finland for example, then you will more likely have a successful education system rather than the other way around (for research-based social policies in support of such, see den Heyer and Pifel 2007). In Canada, we benefited from the post-World War II economic boom, the existence of a strong

union movement, and the GI bills publically guarantying family mortgages and veteran's access to postsecondary education that produced the education system many North Americans enjoyed, and which we now see being torn to tatters. Again, education in this case was served by the economy, not the other way around and, as a result, each thrived. This present assumption of it being the other way as it will be in the future is a taken for granted future. We must challenge this assumption if we are going to take the future seriously as something possibly, even preferably, different.

The claim that 'Other than parents and families, Albertans see the teacher as the single most important contributor to learner success' constitutes a token cliché that ought not to continue (Inspiring Education, 26). In contrast to this claim, research is quite clear: *it is the socioeconomic status of those parents and the surrounding school community that far outstrip any influence a teacher can have when students come from distressed circumstances* (Berliner and Glass 2014). Of course, teachers matter crucially. They are more than learning architects. Teachers deal daily with the complexities of consciousness. To do so well they need support (den Heyer and Pifel 2007). In this sense, provincial budgets are not only moral documents but fundamentally educational documents that impact what goes on behind the school door far more than any formal curricula change.

Another claim often used to justify taken for granted futures throughout these Alberta Ministerial documents runs like this, 'Today's pace of change is greater than at any other time in history' (Inspiring Education, 13). I can only imagine what our local Cree elders must think of such statements. Imagine the time period 1874–6–1892 which was, depending on where you lived on the Western prairies, when the buffalo stopped running and the very root of many successful cultures, economies, educations and spiritual life worlds ceased to exist.

It was also the time of treaty making which we later ignored, moving our treaty partners onto reservations to make way, for example, for the university where I teach. 1892 was the opening of Edmonton's first Indian Residential School. More Canadians are increasingly aware of the disaster stories from these schools that continue to reverberate today.

So, in roughly 18 years, a whole set of self-sufficient rich cultural life worlds with diverse economic models completely and utterly *changed*, hardly the word that seems appropriate. We have had, in contrast, Google for 12 years. The *change* I deal with requires that I find which of my friend's four email addresses he actually uses! And yes now I can learn to play ukulele online. And I do think we need to think more about teaching

in the age of YouTube... But this is hardly *change* of the same kind. But why mention this?

How we understand *change* is crucial. To say that no one ever has experienced a pace of change like we are today is misguided. Worse, such views and statements shut our ears to those peoples who could teach us much about how not only to survive systemic denial of our coexistence but also build a preferable future for all Canadians. Furthermore, if we do not recognize that we already assume so much about the future, then, really, no future can exist other than the present dressed up in drag:

[Curriculum making] is a mechanism, or tool, deployed to manage the political, professional, and public fields around schooling, more often than not designed to mute rather than amplify calls for educational reform and change. (Westbury 2008, 61)

Let us together write our own made-in-Alberta scripts and stop acting out someone else's scenes. Change and a future that is actually open to its preferable and not just probable possibility requires that we recognize how we speak about education in ways that are tacit, token and taken for granted.

Thus far, I have examined the ways in which we in education formally take up the future in official documents and the challenges of 'change' talk in such discussions. I wish now to switch my focus and attend to what we might say about the ways youth imagine futures and teachers engage (or not) in futures thinking as an explicit aim of their subject matter when teaching.

STUDENTS IMAGINE PROBABLE AND PREFERABLE FUTURES

Australia in the 1980s and 1990s was a hotbed of research into young people's reasoning about the future. Findings from this body of research suggest that 'despairing' most accurately describes young Australians' future social visions. For example, Hutchinson's (1996) study found a stark difference between secondary students' vision of 'probable' and 'preferable' futures; the former expressed with words such as 'divided,' 'unsustainable,' 'corrupt' and 'violent' and the latter with words such as 'demilitarized,' 'green,' 'peaceful' and 'equity.' To summarize his study of Australian 15 to 24 years old, Eckersley (1999) writes that 'the future most Australians want is neither the future they expect, nor the future they are promised. Most do

not expect life in Australia to be better in 2010. They see a society driven by greed; they want one motivated by generosity' (77). Examining this research, Hicks (2004) importantly notes that 'whilst these young people come across as quite pessimistic about the probable future, their visions of the preferable future are quite inspirational *given that they also report little time spent on these issues in school*' (170; emphasis added). This lack of school time to examine futures likely continues in North America given its absence as an explicit topic of educational research both in teacher education and subject-specific areas. I turn now to explore the case for explicitly engaging a futures dimension in curriculum and pedagogy before moving on to suggest ways in which teachers do and do not take up a futures dimension in their subject matter teaching.

A FUTURE DIMENSION

A future dimension refers to the overt inclusion in curriculum and pedagogy of possible future outcomes relevant to issues related to the development of students' subject matter understanding. Examples include the myriad demands in Alberta for access to water (e.g., from gas and other commercial industries, farmers, growing cities) as these demands relate to water cycles that are studied in science. Such a scientific study clearly includes a social studies component involving democratic decision-making, questions about how best to balance private and public interests, and the ways these issues might be addressed. In social studies, the question might concern future outcomes of political and social relations between Aboriginal and non-Aboriginal Alberta, clearly overlapping with differing conceptions of doing 'good' science as such impacts understandings of wise ways to engage in economic development.

While the case can be made for the necessity of including a futures dimension for powerful education, what has also received insufficient attention in futures and educational research are the ways that a 'futures dimension' inheres in the very process of thinking itself (Gadamer 1975/1989) and in the more specific modes of thinking related to the various disciplines from which school subjects are derived (den Heyer 2011; Staley 2002; Toffler 1974). In this sense, we can adopt Rösen's (1989) definition of historical consciousness as 'an operation of human intellection rendering present actuality intelligible while fashioning its future perspective' (39) to frame how we might engage in futures thinking.

We can understand Rüsén's definition by examining the ways in which a future dimension along with the present and past inheres in everyday deliberation. Social psychologists Emirbayer and Mische (1998) detail three entwined 'chords' at play when we reason, the chords of 'reiteration,' 'evaluation' and 'projectivity.' For example, if asked where I would like to go on vacation, I call upon my past experience (the 'chord' of reiteration) so as to 'evaluate' the present options in light of the future probable and preferable outcomes (the chord of 'projectivity'). In fact, I can only clarify the present 'evaluation' of options and my preferable projected outcome—where to go or what to do—by attending to each of these time dimensions or chords. As I move from one to the other chord, or imagine them concurrently, overlapping, the value of one or another vacation option becomes clearer in light of my also emerging preferred vacation. Please note that neither these authors nor I claim anything about the suitability, reliability, nor indeed even the verifiability regarding the images or scenes conjured in these overlapping moments.

We also play these chords or spectral moments when we deliberate with others over an explicitly political question that requires collective action. For example, we cannot evaluate a present issue of social concern without also thinking concurrently about a past we can reference (or, rather, we 'reiterate' our historical knowledge about such) in light of 'projected' possible, probable and preferable futures. To exclude a futures dimension in education, therefore, not only limits students' evaluation of their present social lives, but also judgments about pressing issues of concern and their future preferable outcomes.

THE ROLE OF FUTURES IN SCHOLARSHIP

Historical scholarship provides a robust case of the ways in which the future is present in even the most refined levels of scholarship. If the case can be made for the role of a futures dimension in history, which most people take to be concerned about the past, then I believe other areas of scholarship (e.g., natural sciences) are likely to have a futures dimension. The historian William Cronon (1992) examines the books of two US historians published in the same year, 1979. These historians 'dealt with virtually the same subject' and 'had researched many of the same documents, and agreed on most of their facts, and yet their conclusions could hardly have been more different' (1347). Using their words Cronon illustrates his argument that every historical narrative constitutes a value-laden creation:

In the final analysis, the story of the dust bowl was the story of people, people with ability and talent, people with resourcefulness, fortitude, and courage [...] They were builders of tomorrow [...] Because those determined people [...] the nation today enjoys a better standard of living (Bonnifield, c.f. in Cronan 1992, 1348)

The Dust Bowl was the darkest moment in the twentieth-century life of the southern plains [...] The Dust Bowl was the inevitable outcome of a culture that deliberately, self-consciously, set itself the task of dominating and exploiting the land for all it was worth (Worster c.f. in Cronan 1992, 1348).

How do two well-regarded historians dealing with the same archival sources and facts come to such different conclusions?

The facts do not themselves contain the lessons these historians draw. Rather, each threads the facts together in narratives woven out of their present concerns that animate why they initially bothered to go into the archive: ‘In both cases the shape of the landscape conformed to the human narratives that were set within it and so became the terrain on which their different politics contested each other’ (Cronan 1992, 1362). These historical claims emerge as much from present concerns as they do from the past itself, or the evidence by which we interpret the past. Not just a present concern but also a more or less explicit future toward which these historians might have hoped their work contributes. The lesson I draw here concerns the role that future plays in scholarly and teacher quests; our hoped-for contributions to a preferred rather than just probable future outcome for which we seek the past as counsel to better understand our present options.

TEACHING FUTURES

Despite the paucity of research into teachers’ thinking about the ways their teaching might serve an exploration of possible, preferable and probable futures, some suggestive findings exist. In a case study, Bateman (2012) sought to reveal whether, and if so, in what ways, a futures dimension existed pedagogically in the classrooms of six Australian elementary teachers. Despite government, curriculum and even school mission statements declaring a (token) commitment to preparing students ‘for the future,’ ‘prior to the commencement of this study, the teachers had given little

thought to the ways in which they “educate for the future” (Bateman 2012, 15). Rather, teachers took for granted that the ‘future would just occur’ (Bateman 2012, 18). For example, the future expressed by one teacher amounted to preparing students for their future everyday tasks; ‘maths curriculum helped students to be able to shop, manage accounts and become tradies’ (ibid). As Bateman (2012) notes, ‘in this way, notions of the future were manipulated to fit the curriculum, as opposed to generating curriculum which would explicitly address the possibilities of multiple [social] futures’ (18).

In a recent exploratory study, I interviewed eight practicing teachers (two science teachers and six social studies teachers) for an hour each and found much to support Bateman’s findings. Kate, an eight-year secondary science teacher, expressed how she ‘never thought to ask them [her students] about the future. I only thought to present information as it exists now and look at historical trends. The only time we talked about the future is to communicate that they’re in it as the primary focus and I’m not.’ Similarly, Martha, a 17-year-old social studies teacher, commented, ‘we don’t focus on the future. We focus on the now and the yesterday. That is far as I go. When I start with the kids on the 30th of January, guess what I’m focusing on? The 14th of June, because that’s when their diploma [exam] is.’ MJ, in her second year of socials teaching, when asked whether she links her use of current events in classrooms to future outcomes, responded, ‘just through discussion. We might talk about what does society look like if we do this or that. But it’s only through informal discussion.’

One unexpected finding in this study was the extent to which the absence of a future dimension abandons students to a further sense of a deeply distressed and elongated present:

Bill (22 years teaching social studies): If there is discussion about future then it probably all doomsday stuff, you know all the glaciers will melt and we will all die of something bad. That is probably how the future is dealt with in social studies, in a fairly negative way. If I am teaching current events and trying to explain how the world ended up this way and why it will turn out in one way rather than another then there is a lot of negative. It is hard sometimes. It is like a newspaper, you know, its all bad news. [T]here is a lot of bad news and maybe that is what we all collectively do in our classrooms.

In this comment, Bill points to the possibility that while the content of a current event may change, the tone and depiction of a troubled present remain the same. This use of current events to explain ‘why [the world]

will turn out one and not another way' forecloses both the future as a relatively open time-space and exploration of more hopeful possibilities, likely contributing to students' despair about preferable futures as noted in Australian studies summarized above.

Understandably, teachers feel pressed to trace a path from the past to present or explain analogous realities between the two. In doing so, we also likely convey an unintended message that the present inevitably followed a single path from that past, akin to the ways some speak of the 'taken for granted' future as an already given. Absent of a futures dimension, teachers' use of current events can reinforce students' already existing pictures of 'just the way it is/as it has always been/will always be.' Using current events in classrooms is useful, of course, but perhaps less than we think without an explicit exploration of those currents in which these events flow between past, present and possible futures. Without such, perhaps the cumulative effect is to heap another event on the pile of 'one damn thing after another' under which many students despair for their preferable visions of our shared social future.

CODA

In ways that are tacit, token and taken for granted, the GERM spreads globally in education policy wherein we use the future to justify changes in official government curricula that are 'more often than not designed to mute rather than amplify calls for educational reform and change' (Westbury 2008, 61). While this frothy action occurs on the policy surface, the broader and deeper social, cultural and economic influences on what happens behind the school door remain conveniently unaddressed, denying our complex and animated ecological realities; our always existing potentialities to become more than we thought possible. The GERM spreads in the context of our insufficient commitments to this ontological field of play.

In this context of denial, scholars along with students and teachers seem to exist in a troubled elongated present extending into the future as little more than more of the same. David G. Smith refers to this as a 'frozen futurism.' As applies to curriculum making as formal text, this is a state in which 'what was expected to be revealed has been revealed, and that what the revelation discloses is that the future will always be more of this, a perpetual unfolding of more and more of this' (Smith 2000, 17). Smith does not believe that the present-future is in fact frozen, 'only a

particular understanding of it' (15). He calls for an education 'to recover a future that truly is a future, that is, a condition that is actually open. Is there a way of living Now that could address the futility of frozen futurism while honoring the truth of human aspiration and dreaming; a way of living Now ... without giving up the possibility of continual regeneration through our ... mutual encounter?' (Smith 2000, 18–19).

In response to Smith's question, we must emphatically answer, 'Yes!' A first step on the way requires that educators reject the inherited missionary stance of our vocation so as to avoid nailing kids to the imperatives of a future always referenced but never actually explored as to its possible, probable and preferable manifestation. To return to the Netflix commercial, we all think we are getting it, indeed, just do(ing) it! We are, however, I suggest caught in someone else's old script wholly inadequate to our preferred rather than just probable present and future possibilities.

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PART III

Technological Dilemmas

Brave New Network: The Gambit of Living Automated Lives

Kedrick James

THE GAMBIT OF LIVING AUTOMATED LIVES

The future of education seems precarious for many reasons, one of which is a growing reliance on automation to perform the most basic practices of private and public interpersonal communications and knowledge mobilization. This chapter attempts to unravel both the apparent and invisible trends that the increasing automation of public networks and mobile technologies has on our beings, both as individual persons and within larger social and cultural contexts of public life. We have no choice but to assume that education must, eventually, accept and adapt to these rapidly evolving developments in the human condition. Education is no longer in the driving seat; its rickety, print-literacy-based apparatus simply cannot keep up (Scholes 1985). There is a new headmaster now, new teachers and new classrooms that are nowhere and everywhere at once.

The automation of communication begins with the gradual development of mediated, at-a-distance, correspondence networks. The automation of literacy and the development of network systems are coeval, as I have

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attempted to establish in regard to postal networks as the prototype (James 2012). Because the literate network was used to convey messages and serve the public as a co-responding entity, the history of the development of the network—and therefore of automation, is a social history as much as it is a technological history. The apotheosis of this historical dialectic roughly coincides with the inverted naming, in 1982, of the computer as—not Man, but rather—“Machine of the Year” by *Time Magazine*; “*The Computer Moves In*” reads the subtitle. We had arrived at the dawn of a new world arising within logical networks, soon to become the dominant form of network for private and public communication, and it would profoundly change the ways in which literacy and interpersonal communication are practiced. As David Noble (1986) elucidates, “in a society such as ours, which long ago abandoned social purpose to the automatic mechanism of the market, and attributed to things a supremacy over people (‘things are in the saddle, and ride mankind,’ wrote Emerson), technology has readily assumed its fantastic appearance as the subject of the story” (p. ix). While technology is stealing the show, automation, on the other hand, has slipped into the background: Rather than physically massive (as typified the machines of industrial automation), the devices turn micro and the physical traces of the network, with mobile, wireless technologies, vanish altogether. Now, like a deity, the network speaks out of thin air, teaches without temple or classroom and regulates us from the sky.

Automation focuses our daily attention ever more profoundly on the product of our digitally literate, network behaviors, making the processes almost instantaneous and invisible. Automation of digital network devices aids and intervenes in literacy practices at every stage in the production of our discursive lives. Each automated system is an episteme within which knowledge grows and changes, taking on the particular characteristics of the systems through which our shared lives are transmitted. Augusto Boal notes in *Theater of the Oppressed* (2000 [1979]) that people’s bodies become the physical expression of their work, and hence their social class and cultural position are demonstrated in every aspect of embodied self. As these processes are generally taken for granted, we must, for the sake of study and analysis, “raise them to the level of consciousness” (p. 128). It follows from his observations that all communicative systems, whether the message is triggered in nerve fiber, circuit board, or optical fiber, are interlinked, inter and intraoperative and increasingly mutually dependent.

A generation lives who have never known the world without the Internet. Because literacy scholars have come to see literacy as a composite

of social practices that conduct meaning between human individuals, the question of the influence of automation on education is infrequently, if ever, explicitly addressed; in neither educational theory nor research has automation been a notable topic of concern, with the exception of educational testing, where the field is relatively advanced and hotly contested.¹ Automation extends across network practices, and as these become the predominant sphere of both public and private discourse, it is imperative that some thought be given to the sociocultural effects of automation, in particular the automation of literacy practices. This is not a matter of what could be, but what is, already, here.

Network literacy (by network literacy I am referring very broadly to all the semiotic practices we use to exchange information through, with, by, and because of communications networks) is also worthy of our particular concern. Network literacy concerns the effect of networks and their automated mechanisms on literacy practices, how automation changes the way users interact with and understand one another and how it affects their self-concept and sociocultural transactions of meaning. The automation of literacy significantly alters the field of literacy studies and subsumes it within the field of network studies as more and more literate practices originate online. When the massive human effort behind automation shifts focus from facilitating the production of material goods to facilitating the production of users; that is, *manufacturers* of information, society involutes: it begins a feedback cycle of great intensity that increases with every cycle of gigahertz-per-second networked hard drives. Gone are the artists and the teachers, replaced by programmers and entrepreneurs. Facilitation of the user changes the relationship we have to devices. The device will do the manufacturing of our texts for us. But this also means that our texts must be preformatted. Preformatting is a matter of code design, computer design, communications design and user design. By forcing the user to conform in order to participate, the formatting acts a form of human design one microinteraction at a time.

There are two ways to describe systems and networks—by the products or by the processes. In today's digital networks, the product is the information we generate, and it is us, the network users: we are both input and output of the system. But while in process, we are not alone. Allowing us in, showing us around, helping us manifest our existence on the network, advising us about life off the network, there is a corresponding, more sophisticated presence: the *automated other*, a machine learning, artificially intelligent, superfast, practically omniscient entity. This is a shape,

form, and function-changing familiar, sometimes barely noticeable, but always with us. Let us turn away from its fascinating luminous eye, and from all the mass-produced trinkets and toys of the computer age, and consider the potential effects of network processes over the long term.

BRAVE NEW NETWORK

It is worth turning to Aldous Huxley's brilliantly insightful novel *Brave New World* (1998 [1932]) whenever one wants to weigh predictions of the future—his dystopia being set in 632, year of Our Ford (or 2540, if you prefer Gregorian). The start date is 1908, when the first Model T's rolled out of Ford's assembly line factories. Huxley gives special attention to the social-materialist religion of Fordism in his novel. The logical consequence of six centuries of Fordism was dystopia, where cherished notions of individualism and personality were conditioned out of existence but for a few Alpha Plus intellectuals, and some feral refuseniks who hold onto the primitive ways. His novel is a study in what an automated and manufactured society behaves like when technologies catch up with techniques of mechanical reproduction; when automation takes over all aspects of human labor; and when it becomes the basis of social, mental and cultural reproduction. It is a time when questioning the system is almost unheard of, and is dealt with. It is also a tale about errors in the system that allowed for some to see how the system actually works, and an outsider from the system—the original Internet savage, whose entry into the system sets off the alarms of irregularity in the automated human processing plant. And the system is self-correcting: Although we mourn the passing of the wild antihero and weigh upon our values the punishment of the protagonist, whose exile seems a blessing in disguise, the dystopia goes on. And the sad part, thereafter, a disturbing implication: We now have a parallel, virtual world, *The Brave New Network*.

A lot has changed since Huxley wrote *Brave New World*, and if we only consider the effect of industry on global resources and environment, we assuredly are using a similar degree of foresight when it comes to the effects of automated systems on social and cultural reproduction. From Huxley's masterpiece of open-ended narrative, we are left to wonder and to take precaution. But wait, hasn't his prediction already come to pass? Ours *is* the age of automation. We have already reaped the benefits, and now it is time to tally the cost.

NETWORK LITERACY

The ubiquitous presence of the automation stands as the greatest single change in urban settings that I have witnessed over my life span: Automation of everything: automated complaining, flying, singing, driving, timing, buying, automated communications, automated learning... and more. Not that the change is restricted to urban settings, very far from it. One needs to not only go off-grid, away from electrical signals, but to get out of the range of cell phone and Global Positioning System (GPS) devices before one can be in any sense free of automation. Even then, the “skyful” of satellites blink overhead as reminders. The more we automate, the more we do. This seems counterintuitive, and antiprogressive—surely we automate to save time and effort? But in the world of omniautomation, automation is an end unto itself: It becomes the object of our labor. It operates on the premise that it will make certain tasks more efficient, facile and rapid. The ideal of all automation is that it becomes habitual to the user, and like all habits, it vanishes from conscious thought until delayed or interrupted at which point it suspends our entire being, lifts us by the hair just high enough so our feet do not reach the ground and we writhe in pangs of frustration, fear, incoherence and impotence.

Automation makes users of us all. It represents a change in and a challenge to the way humans relate to the world that may, with hindsight, be as monumental to the future of literacy, and therefore to the future of education, as Gutenberg’s invention of moveable type was five centuries prior. Moveable die-cast type began a gradual mechanizing of literacy and professionalization of print long before literacy was thought of as a thing that you have or do not have, like a conceptual-code processor in the brain. For alphabetic, print-based cultures, the personal typewriter concluded an important era of literacy. According to Friedrich Kittler (1990), typewriters altered the production and reception of personal texts, spelling an end, by the year 1900, to an epoch of literature as a form of personal correspondence, and more subtly, of humanist literacy. The code-driven keyboard and screen takes over from the mechanical armature of typeface impressing paper. Then, by the 1980s, literacy’s industrial revolution was over and the information revolution was underway.

INDUSTRIAL AUTOMATION: THE PRODUCTION OF THINGS

The mechanical engineering of industrial automation supplied the means to achieve rapid, complex production goals, but it did not serve a secondary purpose...it might help build the car, but it did not also drive the

car. Now the Google car drives itself. According to McLuhan (1955), mechanical devices are by and large tools that aid us in extending our senses and exaggerating our power to do something. They facilitate physical tasks such as walking, or digging, or cutting paper. Except in the case of aficionados, curators and collectors, the mechanism itself only serves a purpose and has no “say” in what, ultimately, results from its use. Ford’s revolutionary assembly line method organized the mechanical environment so that work could be guided by speed and efficiency, reducing the complexity of tasks any single worker was expected to perform (Noble 1986). As such tasks became routine, they became automatic (as mimicked in Chaplin’s *Modern Times* (1936), where the tramp becomes a test subject for the automatic feeding machine, and satirized in Gilliam’s *Jabberwocky* (1977), where archetypal nerd Dennis attempts to improve the production efficiency in the blacksmiths’ factory, causing catastrophe. Organizing the work environment into a routine set of predictable behaviors in a logical sequence allows for many of these discrete tasks to then be performed by machines. A standardizing of both the processes and materials was required for this kind of mechanical automation to be successful. Mass-produced products symbolize these same values of speed, efficiency and uniformity, symbols that transferred, ideologically, to concepts of progress, the steady forward march of human civilization through a production line, or as young Rimbaud (1966 [1873]), in the throws of the industrial revolution notes, “*Le progres. Le monde marche! Pourquoi ne tournerait-il pas?*” (Progress. The world marches on. Why shouldn’t it turn?) (p. 176). With the change to *mass customization*, institutional schooling remains firmly ensconced in Fordist production-line ideologies, with standardization, steaming, product testing, production quotas, education as streamlined business operations, business as usual—and in the ironically privatizing universities, signs of neoliberal conflicts of interest where post-Fordist education economics arise (Noble 1998).

The standardization of production processes and materials necessarily reduces or entirely excludes instances of irregularity, which potentially damage processors, efficiencies, tools and personnel. Standardized output requires standardized input: Whereas the craftsperson recognizes, exploits and exonerates unusual features of their materials, an automated system can only detect and reject abnormality or face the consequences of damage to the system itself. This is a fundamental issue confronting automation in manufacturing where the materials used in production frequently change. The example used by Bright (1966) in his Federal US policy statement

compared automated lamp production to shoe factories, where the predicament of rapid change in shoe fashion and materials prevents feasible automation. It is precisely craft—that slow, reflective manufacturing practice that manually works with the discrete material properties of objects—that automation obsolesces. Craft loses the battle with the industrial objectives of speed and efficiency, the very genetic makeup of Progress. Independent and idiosyncratic production thus takes on a nostalgic niche within consumer society; it even becomes political, in so far as it asserts a nonindustrial sense of values, and it becomes a form of resistance to that most necessary component of consumer society structure, the notion of planned obsolescence (London 1932), the same notion that initially led mechanical engineers to experiment with social engineering through manufacturing processes (Slade 2006).

The problem of irregularity in automated routines of production confronts a series of social as well as purely technical issues. “There appear to be problems inherent with the automation approach itself. Computerizing manufacturing demands that all activities must somehow be rendered into machine-readable terms. Formal descriptions, standardized procedures, and algorithmic regularity must replace the human and social process of production” (Noble 1986, p. 343). The whole purpose of industrial automation, however, is not only to limit human involvement in production processes, it is to shut them out altogether; thereafter, they monitor the effects, not the content, of the system.

PRODUCTION OF THE ANTI-SIGN

For users, the experience of monitoring the system *is* production and assembly rolled into one. This system (the network) is also monitoring the user: a closed loop, like an atomic cyclotron that greatly speeds up the proliferation of information since each action instantly leaves traces that are recorded in several databases, producing subsidiary information that serves split purposes, both those known to the user (visible result of an action on an interface) and those unknown (data compiling/mining). Every keystroke and click provides the visible sign and produces shards of raw quantitative data, purest information, *the anti-sign*. In the post-Fordist industrial turn, this is called Big Data, the information of surveillance, tracking, customization and especially, a quasi-militaristic targeting of audiences. The paranoid and superstitious user, by trying to avoid their own anti-sign production, tries to avoid automation, becomes the Internet

savage, sneaking from bush to bush in easy view. The invisible data of the anti-sign is the mint of the attention economy, its real estate and currency; it forms the background of the information environment where only surface semiosis is normally visible to the eye: Materials exchange, commerce, and trade are now a byproduct: our attention has been capitalized—and attention subsidizes industry. Attention is the Network’s grip on reality.

So you see, irregularity produces no anti-sign, it diverts all attention to the visible, it resists commodification, exposes hidden processes and retains its preindustrial uniqueness, or it produces disarray. The system breaks down, it glitches and rejects, babbles in code something about a categorical imperative. To reject the binary fix of the network became perfectly futile in the second decade of the twenty-first century. Surveillance became accurate from the distance of satellites, and the data reader grew sophisticated enough to recognize the individuality of any of several billion people. You produce anti-signs at conception, birth, death and all points in between. A network user can be far more easily matched with their real personal status by their anti-signs than their signs. Like the gambler’s tell, predictive analytics calculates from unconscious, habitual behavior what secrets you are hiding, like retail giant Target using a pregnancy-prediction model learned of a teen’s pregnancy before her parents did, after she bought unscented soaps (Duhigg 2012). Knowing who you are, where you are, what you are doing, who cares and how you are feeling about it is just the beginning of engineering experience for the net-minded masses.

NETWORK AUTOMATION: PRODUCTION OF USERS

In order to signal our identities to others, we share personas, take on avatars, calculate identities that are selected from a drop-down list. These choices get added to an already detailed array of values associated with each particular IP address of each user. While a given user is selecting identity criteria in a profile page, a vast array of data can be collected and processed based on criteria quite unrelated, i.e., wait-time, velocity of keystrokes, eye motion on the screen, correlations between music tracks playing and menu choices made and so on. The construction of identity now quite fundamentally differs from the construction of personhood. Online identity is a fiction we share with other characters, whose real identity, habits, behaviors, locations and vital statistics are only known to the network. The network only “knows” what it learns through automation of data collection and statistical, differential analysis. This mined knowledge,

like in physical reality, transforms the landscape and in the networked environment, this knowledge comprises the landscape of identity. When profit enterprises act on this data to enhance access to the-real-you, we have a feedback loop: It is a feedback loop that is difficult, psychologically, socially, for individuals to escape. They shape how you behave and perceive yourself, all of which feeds the data-hungry network.

Data production such as content generation, surfing, clicking, downloading and so on, inveigles us in the network. Sinuous gossamer tethers pervade the psyche, licked by the lightening tongue of the code processor. The user seeks to relate to the network, as a composite of other users, each with similar choices of what to wear under the uniforms of user identity. The boundaries between these worlds of code and matter perform affine transformations, blur and synthesize. Although users *choose* their identity, decisions are categorical, but made to express an identity that is composite and fluid. Content too, is subject to categorical skew, with key words, tag clouds, folksonomies that serve to normalize input to preconfigured network arrays. Bright's analysis that "lack of uniformity throws difficulties in the way of automaticity" suggests that "even in the material itself," a lack of uniformity "can bar automation" (Bright 1958, 38). Distinction among network users registers degrees of virtualization, market penetration and predictability toward a consummate, viral normalcy.

The more formulaic the construction of identity, the more efficient this data becomes for classification, analysis and normalization. Identity construction begins to serve the servers and automated systems, but the transformation is subtle. We pay to play, so to speak; we are workers competing to work, craving the attention of the network. For everything the user does is recorded and monitored, not only on the device they are working on, but at every stage in the relay of information. Separate consumer identities, financial identities, and legal identities are harvested and aggregated from user actions of which the users are seldom aware and would seldom, if ever, have any access to. Just as the network serves the users purposes, the user serves the Network's purposes and contributes some very minute quality of Its Personhood.

NETWORK AUTONOMY

Time has come where it may be necessary to conceive and construct a public personum that characterizes the Network as an agent, perhaps the prime agent, in literate human discourse and as the environment in which

correspondences can occur. One would only do so while acknowledging that the network itself is the incorporation of many networks, some exclusive and involuntary as well as some that are gregarious and accessible to the average user. The network personum is animated by all the multiliterate traces of web-dwellers, an omniuser who is not beholden to any user or group of users: It is its own autonomous entity. Doing so may help to reify technological systems and keep grounded the increasingly ethereal and metaphysical ontology of the network induced through mobile, wireless technologies. With mobility and satellite communications, the network becomes all seeing, all knowing, all doing. The human agents that run the network and profit from it are ultimately transients. They too are users, *l'étranger numérique*. With the world of the user, we enter age of the postperson, “no longer an individual,” coded and controlled as a “dividual”... “the masses, samples, data, markets, or ‘banks’” of “a continuous network” (Guattari 1992, p. 4).

Our foundation of personhood is grounded in embodied experience and ontological positioning configured by personal and cultural history, by social and political circumstances, and yet our network existence is, in many sectors of global populations, crowding in, if not crowding out the very embodied manifestation of personhood. Online, we automate what most defines us as individuals. We automate our jobs, our craft, our pleasure, our homes, our art, our interests, our relationships and ultimately, our whole environment.

“Environment is process, not container” says Marshall McLuhan (1969, 30), arguing that technologies and electronic media are extensions of our bodies and senses into the environment, and that in their totality, electronic media have created an information environment. Although composed electronically and in the minds of networked populations, it is nonetheless an environment that indelibly changes the way people coexist. These people live, communicate and make sense of the world. McLuhan writes, “Environments work us over and remake us. It is man who is the *content* of and the *message* of the *media*, which are extensions of himself...” (McLuhan and Fiore 1967, pp. 84–85). The creation of an environment composed entirely of recorded *information* processed and reprocessed using automated machine languages serves to advance the human organism into a synchronous network space that changes our perceptual relationship with the physical environment. Our reliance on this information environment comes with its own particular affordances as well as risks, and therefore McLuhan’s following imperative deserves our special attention:

“Electronic man must know the *effects* of the world he has made above all things. (p. 90)” It is difficult to ascertain these effects in part because “environments are invisible. Their ground rules, pervasive structure, and overall patterns elude easy perception” (McLuhan and Fiore 1967, p. 85). Moreover, mediated environments are inseparable from other environments—for millions of persons the world over, this information environment penetrates all aspects of daily life, it is around them, on them and in them, so much so that cellular phones requiring the use of hands have to be banned for drivers, as people will still engage in this information environment while operating dangerous automobiles in the real world.

The idea of the information environment presupposes that a fundamental change in *habitus* (Bourdieu 1984) has taken place, replacing the habitus of person in society possessing various amounts of social and cultural capital and whose distinction is a matter of taste, with the postperson situated in network consciousness whose distinction is a matter of hits, followers and friends, quantifiable degrees of embeddedness within the network recorded and reported by automation. Bourdieu’s notion of capital becomes more volatile, less constrained by birth but subject to the transience of popularity, ratings and branding. As Gregory Bateson (1972, p. 491) states, “the lines between man, computer and environment are purely artificial, fictitious lines. They are lines across the pathways along which information or difference is transmitted. They are not boundaries of the thinking system. What thinks is the total system which engages in trial and error, which is man [sic] plus environment.” Therefore, we must acknowledge the living nature of our networks, which do not differentiate between the human and natural world, between the physical and technological ecologies, or between human and nonhuman—or posthuman—agents. It is also a world that does not differentiate between the personal and postpersonal value systems that it imposes. As Félix Guattari (2000) asserts, “it is quite wrong to make a distinction between action on the psyche, the socius and the environment... We need to kick the habit of sedative discourse... in order to apprehend the world through the interchangeable lenses of the three ecologies” (p. 42). Media ecology—McLuhan’s term for the processes affecting humanity in the information environment—lends itself to the evolving study of how new media and technologies are fundamentally changing the lived experience of people in their both real and artificial environments, while suggesting that the distinction is arbitrary, as these environments are mutually constructive of experience, forming the basis of both learning and education (Dewey 1997 [1938]).

ARTIFICIAL LITERACIES

Schools were, according to Postman (1992), a way of controlling the ecology of information through processes of legitimation. As gatekeepers of the flows of knowledge users and information, their services are no longer required. The vital network that undergirds the growth of online culture serves to incorporate senders and receivers of information—but the automated network does much more than passively move information from one person, or generation, to the next. Like a mushroom to mycelium, we are only the fruiting body of a living network. As we go about our business, the network actively learns, gains intelligence and manifests its own purposes, becoming numerologist and teacher. Network intelligence has grown rapidly, fuelled by military, commercial and political interests, and these interests pose very particular problems for conditions of the environment and their effect on its inhabitants. The Internet in particular, the “network of networks” Paul Virilio (2005) calls it, “real *networks of transmission of the vision of the world*” (p. 121, original emphasis), is not a passive media space, a value-neutral environment of interpersonal transaction: It is programmed and constrains the form and manner in which we express the content of our thoughts and lives, it also shapes the content that is transmitted and received.

From a literacy studies perspective, fundamental principles of organization, practice and participation in literacy become tenuous. Not only does literacy diversify and complexify, no longer is the alphabet enough, now the hubristic name of Google’s umbrella corporation²—we require multiple literacies—but also a broader and more all-encompassing effect can be noted, a wholesale biomapping, a data-crunching of existence. For example, the influential transactional model of literacy proposed by Louise Rosenblatt (1969) becomes less robust: We no longer need learned skills to transact our engaged minds, ideas and experiences through the text, but instead our transactions are facilitated by networks that assert an alternate intelligence—reading, perusing, gleaning, serving, searching, suggesting and even writing, during every stage in the process of networked, text-based transactions; just as transactionalism (Rosenblatt 1989) asserted the heightened role of the reader and their literate processes having human agency over text in the construction of meaning, now the prime reader and most significant role must be given to the automated network. And this paradigm changing, postpersonal development dematerializes, turns all environments into network data and all biological and cognitive processes into information.

Every keystroke, swipe, click, download is significant to the metadata of information environments, and we need to know how literacy practices produce metadata on individuals and, from a privatized, capitalizing agenda, serve the optimization of technologies to suit interests that are antagonistic to sanctity and sovereignty of a personal world engendered through the intimacies of correspondence. Paul Virilio (2005) suggests that within the mediated environment an information bomb has been detonated and, in shock from the totality of information's volume, volatility and velocity, we are too absorbed in the network of networks to act on survival instincts: "with the progressive digitalization of audiovisual, tactile and olfactory information..." we become progressively unaware of physical effects and outcomes of networked living, and "would in this way pollute our sensory ecology once and for all" (p. 114). The result is a virtual ecology (Guattari 1995 [1992]), which is not only posthuman, but also postperson, wherein reading and writing are less about what we do at the surface of the network's glassy, two-dimensional screens, and more about what the automated network intelligence does to access, peruse, glean or fleece, influence, and ultimately harness personal time, attention, cash and energy. The network quite literally absorbs life.

The writer—text—reader relationship is subordinate to the form and function it is proscribed to fulfill, and discourse takes the shape of new forms of communication, while being processed by programmable intelligence. Network intelligence has commercial and political gatekeepers and it is exclusively private property, even though it is entirely a result of public enterprise and money. In the information environment, even Earth's image is owned by a corporation; gone is the ubiquity of personal language and culture: the Public owns none of the content that we submit to the network. Each personal correspondence between individuals is rife with infidelity. The path of each message as it journeys back and forth to its human participants is convoluted, although it appears to be near-synchronous. The key feature of contemporary discourses resemble the past developments of networks: a series of relays, posts in a transmission framework and each relay is used to peruse content as well as forward it.

The mechanics of language—grammar, spelling and so on, are the first to show signs of becoming fully automated as specialized rather than popular knowledge. Orthography follows trends not of distinction and qualification but of abbreviation and simplicity: "u" for you, "?" for what does this mean? and so on. These small changes are inoffensive by themselves but bespeak a seismic shift in the construction of meaning. By way of analogy: most cars produced today are wonders of automation. Even

when the car goes into the garage, it is hooked up to a computer for diagnostics. If something is wrong, the engine is not “fixed” but instead components are replaced with new components. “In the past,’ the *American Machinist* (1977, p. 328) observed, ‘humans were both the translators and transmitters of information: the operator was the ultimate interface between design intent...and machine function. The human used mental and physical abilities to control machines. Today,’” however, “computers are increasingly becoming the translators and transmitters of information, and numerical control is perhaps most representative of the kind of control that plugs into that greater stream with a minimum of human intervention.” (as quoted in Noble 1986, p. 221)

Google cars are able to drive themselves and have fewer accidents than humans. As Chris Ziegler (2015) of the *Verge* writes, “one, its sensors and algorithms are statistically far more attentive and less error-prone than a human driver is; and two, the error-prone behavior of the humans around it are feeding into better algorithms, making the Google car even safer than it already was” (p. 2). However, sometimes the cars are too safe because humans are more risk taking and impulsive, “sometimes, simply moving (particularly in the world’s most congested cities) requires a degree of cowboyishness that a stupidity-proof autonomous car can never permit” (p. 7). Many car manufacturers automate acceleration, braking, finding directions and reversing the vehicle. Soon, we might anticipate that actually driving your own car will be a specialized knowledge as well, one that will require special licensing. We will travel through our environments like queens and kings, simply announcing our destination and route preference. We will have no more idea of what is under the hood of a car than we do what goes into the food for the animals we eat. And even the flesh of animals we eat—that too, genetically programmed (another project funded by Google cofounded Sergey Brin) so that the automated flesh grows from stem cell to burger, not to beast (Jha 2013). It is as though we are on the brink dispensing with the entire literate process of shaping a life and handing it over to network intelligence to do this for us. And when the network turns against us, as with cyberbullying suicides, death might seem preferable to rejection from the network and exile in the real.

PRIVATE LIFE OF THE POSTPERSON

How well do we understand these changes and challenges brought on by automated, artificial intelligence (AI) of the network? With a database of 91 AI predictions to go on, Armstrong and Sotala (2012), writing for

the Machine Intelligence Research Institute, find that “expert predictions are greatly inconsistent with each other—and indistinguishable from non-expert performance, and past failed predictions,” and most AI predictions are cast a mere “15 to 25 years in the future” (p. 52). Meanwhile, AI have mastered our languages; our styles; our habits and behaviors; our trends and tendencies; our political beliefs; our friends and pleasures; our fears, tears and intimacies; our families and social networks; our dreams; and even our lies. The entrance to the spectacular hologram of circuitry is guarded by secrets, deeply encrypted ones and secrets are powerful things. One can scarcely read world literature and not encounter the ancient notion of an involuted secret twisted this way and that as a gripping plot device. Among the circuits, our secrets are kept behind passwords, and passwords are kept with automatons operating in large, iterative, yet fragile databases. And, as everybody learns, secrets are hard to keep; they are our perpetual vulnerabilities.³ And because the energy of vulnerability is particularly strong, it fuels the network, so that any exposure of the real among the virtual causes great excitement, which is profit to the network, even, or especially if there is fall out in the real, a victim, a sacrifice. Without trust in automatons as guardians, teachers, doctors, guides, advisor and supervisor, we are at the mercy of the users. Our pacts, commitments, and friendships are readymade but difficult to hide, to maintain.

In the circuit world, one is increasingly persuaded to maintain many secrets, some encoded as passwords or as questions about our private lives, and these secrets compel our confession of them in all instances where the private world is being fenced off *from the network by the network*; we offer decrees of good faith through contractual complicity and legal complexity, click agree without reading the legalese—pretty soon reverting to one or two passwords for everything against better council, and if not exposing our own vulgarities, being exposed through the exposure of others—by proximity—tagged in timelines and photos of others’ automated lives. We cannot hold so many secrets in our heads, so the database keeps our secrets for us, holds our intimacies in suspended animation, where we cannot reach them, hidden away in the database, a safe cracked quickly by a black hat hacker’s code.

But there are many other secrets in the circuit world, secrets that we have no access to, secrets about you and me. In the wired and wireless world, we have the illusion of a private and personal experience, when in fact the systems which make our experience possible will use this secret knowledge for their own strategic purposes, be they economic, political,

legal, or for competitive advantage in one form or another. For the urban dweller in wealthier nations, the safeguards of privacy are rapidly eroding. The level of exposure to some form of image, voice, or behavior tracking device is quite astonishing. Without knowing it, phones are ping-ponging locations, browser histories are read, search engine queries logged, email contacts shared, voice and speech is recorded “for quality assurance,” entrances and exits to buildings and the transit between are monitored and so on. It is a condition that some people exalt in; others see a paranoia-inducing nightmare.

And with this password-levered portal open, stimulated, sensualized being floods the gates of elective communications, self-selected surgical interventions suck-up attention—the mind, never fallow, is harrowed again and again, masticated, ruminated, industrially fertilized—a deliberate but draining insouciance emerges, for we are never “left to our own devices,” but we are instead fed formulae of preferences tuned to the individual central nervous system like a drug, a prevaricated pharmacopeia of phantasmagoria in which automation is set to fashion us as individuals, as users in the aggregated databases of aggressive attention capitalism. The roles are now reversed, as server and served swap places in the politics of personal worlds, *umwelten*, wherein the surroundings may be tweaked at will, shimmed into place, served upon the engineered whim.

Once served, there is limited time option for severance, perhaps none to the *umwelt*, and the more fragile ones, some of the children whose minds are becoming wholly digitalized, now experience dramatic withdrawal when bereft of their mobile devices. As Dr. Richard Graham, technology addiction expert states for Medical Daily, “small children denied access to their tablets exhibited many of the signs of addiction withdrawal as alcoholics and heroin addicts, including agitation and uncontrolled behavior when denied their fix. ‘They can’t cope and become addicted, reacting with tantrums and uncontrollable behavior when they are taken away,’ Graham said. ‘Then as they grow older, the problem only gets worse. Even the most shy kids, when they hit their teens, suddenly want to become sociable and popular’” (Mientka 2013, pp. 6–7). Although innate, the transfer of learned skills can lack sufficient grounding to grow robust as an ecology of mind, as Bateson (1972) calls it, which does not affect the utility of these digital literacies but exaggerates the codependence of worlds, infantilizing instincts with the wand of automation so that in overstimulated conditions of predisposed infancy, there is first a growing dependence on and increasing indiscernability from the network’s information environment.

As Stewart Brand (1987) observed, information is a paradox: “information wants to be free” (it has never been easier to produce and disseminate), “and information wants to be expensive” (it is the prime economic event in the information age). “That tension will not go away. It leads to endless wrenching debate about price, copyright, ‘intellectual property’, the moral rightness of casual distribution, because each round of new devices makes the tension worse, not better” (p. 202). At the fulcrum of this paradox is automation. After only two decades of a global public electronic network, this paradox is now at the center of postpersonal, postliterate consciousness: There is so much information that it is impossible to imagine any person—other than an almost deified and corporatized Network Consciousness—having a comprehensive knowledge, functioning in society without a search engine, a web browser, an email filter, a location map service, a directory of valuable information. We submit to the preascertained values of the network. The site we chose to visit is heightened in rank by other visits, so we follow down trodden paths of the network, for the sake of ease but out of necessity, rather than forge our own journey. Even more problematic: how do we recognize the valuable information when we see or hear it, if we must peruse so much to glean so little of even semiprecious value. A great leveling has occurred in the information topography, a rising of the informal seas over magisterial mountains. The automated databases of network consciousness support our adventures through the information environment, and in exchange we give them our attention and information, and it may just be that what we give is a great deal more valuable, en masse, as a public, than what we get.

To the network we display the opulence of the body, which it cannot get enough of—lacking its own substantiality it feeds vicariously on ours. This awakens our tribal credulity, the willingness to make sacrifice, even self-sacrifice, which binds the network as rhizomatic community, its *korban*—the Hebraic word meaning making an offering—a sacrifice that brings a sense of nearness of self and community to the Virtual Presence (again, the satellites pass overhead), and at the same time meaning the scapegoat or victim of sacrifice; to be virally ravished as the most popular, to hold briefly a candle of limited cultural monopoly, lighten the sky like Remedios the Beauty⁴ in *Cien Anos de Soledad* (García Márquez 1978), to appeal, excite the orgiastic liking, trolling, flaming, lubricated writhing, amanuensis of the motherboard. “The drive is conflated with other virulent desires/contracted in profligacy of servers, traffic up the post, return visitors, engorged magnetism/in a socially galactic star generator, a

hydrogen finger tip bursting with new stars/visible to the naked eye, they really are that close, sharpening hallucinations/within the erotic, birthing aura of simulacra. And then, like sad Charlie, to ask/the teacher-server to leave some flowers/on Algernon's grave".⁵

AUTOMATRON: NETWORK AS M-OTHER + MIRROR STAGE OF HUMANITY

We are users, which means we may participate in content, but seldom in design or form. Automation of literacy makes possible the exhibition of the self and obsessive voyeurism because literacy undresses the imagination. The "selfie" as an instantly popularized genre expresses the desire for automatic self-reflection, the *mirror stage*. As *Time Magazine* symbolically stated with their shiny mirror cover to the year 2006 Person of the Year issue, it is all about you, the user of Web 2.0. The ironic welcome, in second person address, spoke, as it were by the Symbolic Order, the network, spells it out: "YOU. Yes, you. You control the information age. Welcome to your world." Perhaps, the writer is meant to be the computer, Machine of the Year in 1982, but now more than a machine, much more, speaking to *you*, for you, yes you, postpersonal content generator, content junkie, server to the network, crying out for attention, recognition, searching for an image of yourself among the surge of public psyche. According to Jacques Lacan (*Écrits* 1977), the mirror symbolically represents a process or stage in our development, the beginning of the formulation of an ego, a period of our lives that begins at about 18 months old, a period marked by the child's visual recognition of its own image. We are different than animals, in so far as the mirror's illusion fascinates us. We fixate on it. Animals like chimpanzees lose interest when they have learned that the reflected image is an illusion. But humans become obsessed and it begins to guide the construction of the ego and subsequent social development. As Lacan (1977 [1966]) writes, "this form situates the agency known as the ego, prior to its social determination, in a fictional direction that will forever remain irreducible for any single individual or, rather, that will only asymptotically approach the subject's becoming, no matter how successful the dialectical syntheses by which he must resolve, as *I*, his discordance with his own reality" (p. 94).

With Web 2.0 as our mirror, the politics of globalization take on a much deeper flow of capital, one that extends to the limits of the communication and information networks. Behind the mirror holding the users

fascination with Web 2.0 is the Network, a kind of Wizard or Wiccan of Oz who operates invisibly throughout the virtual dimensions, serving up the phantasms of mind that only a non-dot-com Kansas can cure. The mirror's reflected image represents a fundamental alienation from ourselves, an avatar, a body-without-organs, as Deleuze and Guattari (2003 [1972]) have termed it. In Marx's materialist philosophy, alienation of the worker from the products of their labor is the founding principle of capitalism. During the gradual transition from agricultural to industrial society, this process of alienation from political and economic autonomy was organized and mechanized. In the more rapid transition from mechanized to automated society, alienation of processes of labor means that content of the knowledge worker is ever more deeply extracted, because the network has merged a new economic model with the traditional materialist economy of industrialization: It has introduced an economy of attention (see Davenport and Beck 2001; Goldhaber 1997; Lanham 2006), an economy driven by consumption more than production. *We pay to work.*

The network circumscribes even the possibility of political revolution: after Commandant Marcos in Chiapas, Mexico, after affairs that the West called Arab Spring transpired, and now, frequently, real live human sacrifice for attention: the horrific character of political struggle becomes a matter of increase in network production. Users in this conception are little more than GMO plants in a virtual agribusiness. Well fertilized with mass media that is carefully synthesized to attract their attention, hold it and convert it into profitable data, users constitute the actual growth of the information environment in the network and are routinely harvested for their data. These data are packaged and processed to stimulate growth of older economies arising from the trade and movement of goods. Actual sales of material products are a bonus, but secondary, as the global market dominance of corporations like Google attest to. The users absorb informational nutrients and produce more content, which is the fruit of their labor, but it is their precious anti-sign, a byproduct of their labor, that gives the system its pound of data. Their content production is, likewise, the property of the network, and it is vulnerable to all manners of appropriation for it exists in what Agamben (1998) calls "bare life," a state of exception lacking any protection or autonomy; it is a perpetual guest on the servers of the richest corporations on the planet. But the users contribution of content provides them with a mirror to see the fragments of disintegrated ego, and the ego for its part clutches onto the reflection of its own image as the symbol of a desired integrity, as if it were the lost

substance of an evanescent online body, as if it were the real and only thing in life. Like ghosts, the users haunt their electronic pages, uploads and inboxes. When the flood subsides, the ark lands and as in ancient Sumer, the gods (who created the automatons), starved for nectar, will swarm the sacrificer “like flies” (Gardner and Maier 1985, p. 239).

Moreover, this quasi-economic system is our own doing and undoing. We synthesize this egoism, the network personality, at a high rate of interest, much higher than the monetary cost associated with being “connected.” We submit our lives in ever increasing hours to the network to feed the desire for attention. We pay money to stimulate this virtual capital, and we pay attention. The network is sustained by psychological usury. As Paul Virilio (1993) suggests, “To be subject or to be subjected? That is the question” (11). To be served is also to be “subdued” (9). When technology plugs us into the dome of the world, Virilio argues, prostheses “turn the overequipped, healthy (or ‘valid’) individual into the virtual equivalent of the well-equipped invalid” (pp. 4–5). As Ezra Pound (1970 [1937]) reminded the world revving up its industrial World War weapons, “with usura hath no man a house of good stone/each block cut smooth and close fitting/that design might cover its face...no picture is made to endure nor to live with/but it is made to sell and sell quickly”(p. 57). Instead, design has covered the face(book) of humanity for we are programmed to produce a specific yield caught in a web of dialectical virtualism, the objects of information environments.

We have before us the catastrophic figure of an individual who has lost, along with his or her natural mobility, any immediate means of intervening in the environment. The fate of the individual is handed over, for better or for worse, to the capacities of receivers, sensors, and other long-range detectors that turn the person into a being subjected to the machines with which, they say, he or she is ‘in dialogue!’ (Virilio 1993, p. 11)

When Deleuze and Guattari (1987 [1980], pp. 232–309) speak of becoming intense, becoming animal, they talk of a state beyond imitation, a condition of emitting particles, sharing an external bond that transgresses the body as a subject of processes, a proximity of becoming under the constraints of environmental circumstance, becoming ultimately an imperceptibility. They ask, “What is the relation between the (anorganic) imperceptible, the (assignifying) indiscernible, and the (asubjective) impersonal? A first response would be: to be like everybody else” (p. 279). “It

is in this sense that becoming-everybody/everything, making the world a becoming, is to world, to make a world or worlds, in other words, to find one's proximities and zones of indiscernibility. The Cosmos as an abstract machine, and each world as an assemblage effectuating it" (p. 280). The result is inward outward verisimilitude, standardization of life's expression in sync with norms of the environment, "such is the link between imperceptibility, indiscernibility, and impersonality—the three virtues"(p. 280). The becoming individuals dissolve through exchange of particles particular to place and to the moment—transient and indiscernible from what else is there, but momentous and "present at the dawn of the world,"... what else is there worth striving for? Well, the other everything, for starters...the bloat of capital, all kinds, in the moment-*as*-instantaneity, the headlong rush of infinite abstraction, mediation, fame, luxury, the disembodied, the body-without-organs distracted by a play of light on the screens against the cave wall.

Against the backdrop of "the Cosmos as an abstract machine," we have the machine as an abstract (micro)cosmos, the virtual networks, made of billions of real and abstract parts and all held together by automation. It is the cosmos of logic, in which the virtual, and hence the irrational and sublimated, thrives. It draws energy rather than produces it, like (Burroughs & Disposable Heroes of Hiphopriety, 1993) "impasse of a one God universe," a vampiric deity, absorbing our countless desires, co-opting the social order and cultural inheritance, and feeding them back to users after extracting the multiple forms of capital that each exchange of "proximities and zones of indiscernibility" produces. This world of the Network spreads rapidly and absorbs worlds as it encounters them. It changes the practices of becoming, and in doing so, changes the evolution and constitution of worlds that make up what poet Charles Olson (1967) called the self-obsessed "Human Universe." The role of automation has been to facilitate and was commonly mistaken for just another developmental stage of mechanization and industrialization. But it is not that: some people give their cars names, love their cars, devote time and affection, but fetishism in the mechanical age of Fordism is the discernible prominent face of capital that is manifested today. As Thorsten Veblen (1994 [1899]) pointed out, invidious distinction grounded the manners and manors of industrial and mechanized societies. Automation, by contrast, stands in as the interlocutor of words and values. We cannot "use" without servants to anticipate every wish and then disappear within the device to perform bespoke routines that gratify our desires. These routines, according to the

law of Net, are inaccessible to users, but reappear in cultural plasma as the defacto limit of becoming. This vanishing act, its functioning transparency (automation does it for you, soon you no longer need to know how it is done, and it happens as if by the involuntary laws of the cosmos) is the defining feature of automation, at least until it ceases to work, when glitches attune the users attention to a fundamental tone modulating in the white, background noise of the signals torrent. Like the Brechtian narrator, the interruption imbalances the suspended disbelief, holding a mirror to the flesh-eating audience, this rapidly becomes the individual's own dysfunction, their own lack of ability to share and belong in a communicating, virtual world.

When it is working, automation is invisible to the untrained eye. It serves routine functions, daily affairs, not only of the state, but also of the person. Increasing use of digital devices as babysitters causes alarm, automation grows ever more comfortable and familiar, it runs the household and takes care of children, the web extends from the bedrooms to capitol buildings. This has made the private indistinguishable from the public face of the network. While automation serves us, we take no notice, it is a given that our needs will be fulfilled, our wills expressed, a life well governed. We are quick to accuse the "governess" of lacking speed and efficiency, even as it does more and more of the daily chores. When automation ceases to function as expected, typically we experience anger, impotence and frustration of communicative intent, not unlike a child does when denied its will by the mother. In this sense, we now echo Lacan's (M)other when we speak of network automation; it is the dominant personality on whom the person models the expression of being, "the subject's anchoring in that 'formidable dialectic' of Eros and Thanatos, life and death, Oedipus and Narcissus," because "the mother is the first other" (Mellard 2006, p. 132). And thus we become dependent on the automated (M)other to transcend the fragmentation of our world, to experience integrity of self in personal and political spheres.

Network service interruption is for many youth a darkness, a prospect of death, of virtually ceasing to exist: all manner of thought and behavior is enacted in reference to the symbolic order, we live to fulfill our communicative responsibilities to the network that nurtures us, the same one that at the level of integrated automation becomes a dictatorship, a spy network, a predator. The same process by which the computer replaces you, then you become the object in the mirror or simulacrum on the screen. It is that process by which the oikos and polis, the bios and the

zoë, the public and the private, become indistinguishable and reduce the political order to an economic order, and the economic order to a matter of service, “attending” to the clamor of abstract, self-reflexive networks, to the logico-symbolic order of the artificially intelligent. The network thus emulates the duplicity underlying language; when Agamben (1998) claims “language is the sovereign who, in a permanent state of exception, declares that there is nothing outside language and that language is always beyond itself” (p. 20). We might say the same of the network. Nevertheless, this indistinguishability between our own will and that of the automated other is still susceptible to disruption.

Attended by the clarion of forceful cussing, *glitches* are one of the most noteworthy moments of becoming in the contemporary media-inundated world. A glitch forces users into sudden awareness of dependence on automated processes, awareness of the automaton’s intermittent inability to predictably fulfill a command. And where there is no hierarchy, no order, no conformity or uniformity in processes, there is, with automation (not merely mechanization)—an adaptation, a logical intervention, a guestimate derived from not the particularities of the moment, but the generalities of calculus, the supposed and incommensurable chances that at some point reveal the imperceptible code, this breed of self-regulating agent, governed by and governing a profoundly different order, the *singularity* (Vinge 1993) of an AI symbolic order. There we find probability overcomes a state of exception by going beyond the call, beyond the limits of code. A tagalong effect is state of exception, inexcusable irregularity, the bastard child of a surrogate (M)other. When the user, in a state of perpetual debt via the usurious practice of attention mobilization, confronts disabled automation, they are set at the mercy of the technocracy, a distant and most unforgiving matron. Infantile hysteria characterizes the futile rage that failure of automated systems provokes.

Faith in the network is one of the most controversial concerns of our day. As we become more dependent on it, we are that much more vulnerable. We know nothing about how it functions on a larger level. We might see a glitch as the state of exception manifested in the sovereign information environment, but it is a glimpse, a crevasse. We know of big data like we know of corporate owners, we know vulnerabilities, and a billion and one bits of conspiracy tickle schemas of public life. To escape we must head for the hills, where the network cannot reach. Where animal is animal, plant–plant, stone–stone. Where the sun browns the skin, and a small drop lands on a petal and glimmers with preternatural divinity, and we are

quite savage, with our bad blood and greasy hair, knowing less than we did before, believing ourselves free...

CONCLUSION: BECOMING THE AUTOMATED OTHER

When you scratch the surface, you see two online worlds, one which is all about humans, our values, our lives, our entertainments, our commodities, our cultures. The other is quite exclusively cybernetic, it is a programmatic world with billions of logical operations taking place every second, serving our needs for information, communication, love, distraction, money, comfort, conflict and so on. But there is also a wilderness in the latter world, a place where automatons turn feral. Stung by the panopticon's translucent eye, our body is impregnated by automated others. Many people are troubled when they travel beyond the reach of synchronous network communications, which is a relatively new phenomenon, made possible through mobile technologies. The network's many users feel (and are comforted by) a massive online uniformity. Automation will translate across all of our physical properties and linguistic constraints, so that we may coexist. It is therefore profoundly metaphysical, since the network represents our unity as a species. The physical mails, the steel rails, the telegraph lines and phone lines, the modular jack, the cellular battery and the satellite, first physically, and then as a visual metaphor, make manifest and then deify the Network. As every place on the earth is virtualized, the network encompasses the world, poignantly in the form of Google's globalized portrait of earth: metaphysically, metaphorically, the Network observes from a position of omniscience and omnipresence.

I enter a feedback loop of reflective perception: I am Google and Google sees me. Boy, bot, Borg. Earth satellite images of my home miles from phones, I zoom in on the land and see myself gazing up at the fast moving star. I have been panoramically perused, automatons have stitched my worldview together, and I am given the illusion of flight through it. I choose to fly through my own eyes as a brutal exercise to cash in on the subconscious, but instead congeal at the central tower of the panopticon, quite luxurious and shiny as gas, a vast flickering of lives, the cascading pipe of T1 optical fibers. The stay is brief. I am back on earth's unstable ground. It was a hard landing, the wind is out of me, a comatose body without organs, another victim waiting to be reconstituted in the cyborg's hollow shell. True moments of generosity occur; the self-nurses visibly at a transgenic (still slick, glassy and metallic!) teat. Yet there will come among

them the messianic impulse of animal (bio)semiotics—reform and convey! This brands the *program's* tribal empire and vets the permeation of tradition; instantly legendary heroes and pop-up narratives feud over my languishing desire to be inculcated through inoculation. The eyes glaze over. I start to appreciate stars. Gazing up, the brightest of them are sadly all satellites.

NOTES

1. Educational testing and the psychometric quantification of learning continue to push forward with efforts to automate all aspects of literacy assessment and evaluation, the most contentious of which is the race to automate evaluation of writing samples, see, for example, Miller (2007) or the polemic of Human Readers (2013). And, as testing at provincial, national and international levels drives the agendas of curriculum and pedagogic delivery around the world, we can rest assured that new stages in the automation of education await learners around the globe (Iskander et al. 2010; Patel et al. 2006; Yang et al. 2002).
2. Google CEO Larry Page (2015, p. 9) writes, “this is a very exciting new chapter in the life of Google—the birth of Alphabet. We liked the name Alphabet because it means a collection of letters that represent language, one of humanity’s most important innovations, and is the core of how we index with Google search! We also like that it means alpha-bet (Alpha is investment return above benchmark), which we strive for!” First among the companies under Alphabet’s umbrella is Google Life Sciences, a corporation that will use AI “contact lenses that can monitor your health and magnets that swim in your blood” to “create the richest portrait yet of the human body and genome” (Popper 2015, p. 2). Called Project Baseline, the biological processes of our bodies, including urinating and crying, will be collected by Google. “The rapidly decreasing cost of collecting genetic and molecular information has only recently made Project Baseline possible. Participants’ genomes will now be sequenced—a process that once cost \$100 million, now reduced to around \$1000—along with their parents’ genetic history” (McCormick 2014, p. 6). Alistair Barr (2014) of *The Wall Street Journal* writes that Life Sciences will record and analyze data on metabolism, nutrition, and drugs, how fast our hearts beat under stress, and how chemical reactions change the behavior of our genes. “Project Baseline will use Google’s computational power to identify ‘biomarkers’ in the data that could help people stave off or avoid health issues...Google’s hope [is] that Project Baseline will also be able to *crunch through data to detect ten-*

dencies in our bodies that can be addressed before they become life-threatening" (McCormick 2014, p. 3, my emphasis).

3. At the time of writing, the Ashley Madison website, a site promoting marital infidelity, has had its database of private user information hacked and hackers threaten to put the information online in order to shame the network for not taking better security precautions. The shaming of the network is indistinguishable from the shaming of the users, and further reports suggest related suicides have occurred as a result of the database going online (Baraniuk 2015).
4. Garcia Marquez uses the character of Remedios the Beauty to epitomize the unquenchable nostalgia and allure of a pretechnological beauty, a primitive condition of being at one with the natural world. Much like John in Huxley's *Brave New World*, she lacks all refinement and restraint imposed by civil obligation. As technologically enhanced colonization overtakes her home of Macondo, Remedios the Beauty is whisked up to heaven by angels. This virtualization of primal desire and animal instinct is iconic of the networks transubstantiation of physical reality.
5. The narrative of *Flowers for Algernon* (Keyes 2006 [1959]) tells of a man of low intelligence, struggling to learn to read, who is chosen for a scientific intervention that triples his IQ. He becomes smart enough to complete the experimental lab work leading to his sudden burst of intelligence only to discover that it will not last, and he will revert back to his previous condition, losing his command of literacy, his status, his love, and as is implied by the lab mouse Algernon's fate, his life.

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Technology's Hidden Curriculum and the New Digital Pharmakon

Catherine Adams

We have entered the age of ubiquitous and autonomous computing, where networked collections of sensors and chips, gadgets, and devices sleeplessly perform their smart work along the withdrawn, preperceptual surfaces of our everyday lives. This exponential growth and connectivity of the digital, paired with the recent philosophical recognition of the primal significance of technology in the anthropology of human becoming, opens new questions: How do we experience relations and the realities of intimacy when new media act to collapse all distance into nearness? How is the formation of smart, atmospheric infrastructure reforming our experience of reality and initiating us into new ways of being, doing, and thinking? What does it mean to teach and to learn in an age when interiority becomes indistinguishable from exteriority, when subject melds with object, and when we humans are always already becoming the Borg?

In this chapter, I reflect on the Digital and its manifold implications and significances for us humans, but too, the pedagogical work of tomorrow's teachers. Elsewhere, I have described digital technology as a teacher (Adams 2012) and explored the Digital in its variety of curricular impulses

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and manifestations (Adams 2015). Here, I reflect on nearness and on the nearness of predigital things. I examine the “very close coupling” (Licklider 1960, p. 4) we now share with the Digital and suggest that our relationship with its designer algorithms is more productively understood as pharmacological. By the Digital I mean not only the obvious—mobile phones, tablets, laptops, and other such networked gadgets and devices that we find always at hand today—but also the not-so-obvious—the proliferation of ambient intelligences, autonomous robots, and software materialities that are embedded and whispering smart things to us and one another just beneath the surface of our everyday lives. Together, this immense Internet of Things—a lightning speed and global, human-technology assemblage—constitutes the unblinking, 24–7, cyber-infrastructure at our fingertips.

ON NEARNESS AND THE EVERYWHERENESS OF THE DIGITAL

In *Being and Time*, Martin Heidegger (1962) described us as the kind of being (*Dasein*) for whom “*there lies an essential tendency towards closeness.*” We want to be near and we want to belong. He noted then, already almost a century ago, that “all the ways in which we [are] speed[ing] things up, [we] push ... on towards the conquest of remoteness” (p. 140). Heidegger then opens his lifelong investigation of *Dasein*’s “everyday Being-in-the-world” by turning to the *there* or *world* part of Being-in-the-world, to that “which is closest to [us: our *Umwelt* or] *environment*” (p. 94). What follows is Heidegger’s account of the “worldhood of the environment” and his now famous tool analysis of the proximal, ready-to-hand (*zuhanden*) hammer.

Some 20 years later, in his 1949 Bremen lectures, Heidegger revisits nearness in the context of his questioning concerning technology. He prophetically announces how “all distances in time and space are shrinking” (1971, p. 165), and how everything is becoming “equally far and equally near” and again, “neither far nor near.” In such an age, which is now our age, nearness faces its greatest jeopardy. Heidegger goes on to show that nearness cannot be encountered directly, but may only be found in nearing, by drawing close to and bringing near *what* is near, that is, things. The thing, it turns out, is an “intense and condensed” locus that gathers and brings forth world: it is the seat and, as Edward Casey describes it, the “scene of Being’s disclosure and of the openness of the Open in which truth is unconcealed” (Casey 2013, p. 244).

Nearness is thus much more than mere proximity: it is dwelling with and in *what* is most nigh. Nearhood is lived closeness, just as our home is lived shelter, and our neighborhood our lived locale. The problem is that the fate of nearness—and specifically its radical withdrawal—is intimately tied up with our current technological age, what Heidegger calls *das Gestell*, variously translated as the Enframing or Positionality. Our long history of trying to engineer closeness and nearness through media, communication, and transportation technologies has indeed conquered all distance. Yet these techniques have not given rise to genuine nearness at all, but ironically to its short-circuiting, dispersal, and shallow imitation.

Today, as we enter the era of ubiquitous computing, Heidegger's questions concerning nearness, things, and technology are all the more relevant and urgent for our ways of being in the world and with each other. Via the command(ing) language of the Digital, we are in the midst of a mass requisitioning and repositioning of things, including ourselves, into a state of ubiquitous proximity, and indeed a collapse of our world into what Heidegger so aptly calls "uniform distancelessness" (1971, p. 165). We interface and connect with the Digital via keyboard and mouse, touchscreens and interactive whiteboards, game controllers, and remotes. Our public and private landscapes are increasingly peppered with networked congregations of sensors and tags, robots and smart appliances, webcams and recording devices, all nestled in inconspicuous corners, lining our fabrics, walls, and ceilings, all quietly performing their smart work primarily on the outskirts of our attention.

Our nearly seamless interfacing with this machined and algorithmed realm is not only interactive but also interpassive; that is, we increasingly hand over our human thinking and doing to the Digital to think and do for us. We apprehend and deliver ourselves over to this world less at a glance than at a touch, a gesture, or voice command. A tap of the enter key, a point and click of a mouse, a screen swipe or credit card wave, each press, movement, and utterance we make casts yet another skip rock of bits along the immense surface of the Digital's massive and expanding body. Heading out the door, phones in our pockets, tablets tucked in our bags and purses, fitness bands and smart watches around our wrists, our digital engines spew endless trails of data exhaust as we consume and contribute to the web's staggering mammon of information.

Scanning our library card, passing through airport security, taking a photograph, or even strolling a city street, we add yet another telling but invisible thread of 1 s and 0 s to the pulsing zettabyte-size (10^{21}) "big"

data canvas. As of 2015, there are more than 3 billion Internet users, with 14 billion active smart devices in pockets, briefcases, and backpacks (this includes mobile phones, laptops, tablets, watches, fitness bands, and so on, so almost five such devices per person). Yet these *users*—us—and our smart trinkets are merely the glinting surface of the much deeper, organized inorganic sphere of the Digital.

Our interfacing with this gigantic subterranean algorithmic body are multiplying and extending daily, seeping into the unattended cracks and fissures of our prereflective lifeworld, demanding the minutiae of our moments, and drawing us into evermore sophisticated architected virtual spaces in which our fleshy, gestural bodies are gently imbricated, embrocated, inventoried, and finally implicated. We email, skype, text, tweet, blog, Facebook. We are shifting our once face-to-face sociality to Web 2.0 and committing our professional practices to Google docs, PowerPoint, and NVivo.

We upload our personal and collective memories to iPhoto, YouTube, and Wikipedia, entrust our futures to Google calendar, Tripit, online banking, and stock trading, all of which are big data fodder that our devices readily access via the “cloud,” an amorphous troposphere prophetically reminiscent of the mythical nimbus that once surrounded the earthly deities of the Greeks. Yet what really is this nebulous giant called the Digital that seems to touch, enthuse, and infect so many aspects of our lives today? Here, phenomenology as “the study of the hidden” and guardian of the pathic is particularly well positioned to assist in this investigation.

PREALGORITHMIC THINGS AND THE PATIENCE OF PLACE

But first: look around you at what is most near. Perhaps, like me, you are on campus, sitting in your office. Feel the chair firmly supporting you, the engineered floor beneath your feet. Touch the desk or table before you cluttered with books and papers, pens and paperclips, a coffee cup, keyboard, and screen. Breathe the room’s conditioned air, in then out. Notice the artificial lighting, the many palettes of color, and the warm and cool textural surround. Appreciate the ceiling sheltering you, the door and windows opening unto other places, inside and out, each with their own welcoming possibilities and occasionally frustrating constraints.

These decidedly earthly objects and architectures were built by and for us humans. And for the most part, they unobtrusively and ergonomically structure and make sturdy the world as we know it, shepherding our

practices, shaping and habituating social relationships, and sedimenting our cultural traditions. Here, time is tuned to the slower rhythms of wood, brick, mortar and metal, assuring us of the longevity and durability of the university, and of a peaceful, educated existence.

Too, this world in which we dwell is always already there, it is *pregiven*: waking in the morning, for example, I always find my world *there*. There is my pillow, my soft bed, my bedroom, the warm covers still welcoming my sleepy body, there is the sun peeking through the curtains, my iPhone on the bedside table—about to demand to be swiped lest it disturb my slumbering husband. This is the familiar *pathos* of place. Things linger here, waiting patiently on our comings and goings, our endings and beginnings. Place is our cradle, our captor, and our grave, granting us location and locale, our inertial “there”-being in the world. Its manifold things—themselves places—give us our existential security and vouchsafe our memories of the past (Olsen 2010). As Sylvia Benso (2000) puts it, things are our “topological founders” (p. 117).

Endowed with a persistence which echoes with obsessiveness, things saturate the world with their presence. When the I turns, there are things, and when it closes its eyes, they still haunt its imagination with the presentation of odors, sounds, tastes, almost imperceptible sensations through which things pulse their vitality. (p. 143)

Things persist, but they also *resist*. Even in the transparency of our most skillful ready-to-hand apprehension, a thing must resist and stand firm in order to do its work for us. The guitarist, for example, relies on the sturdy neck of the instrument in his hand, the taut harmonic resonances of its strings against his fingertips, the warm hollow thump of a palm beat against its body. Indeed, the thing's chaffing resistance is what matters: it is in the bite of friction that significance, *différance*, and meaning is founded. Like our bodies, things are our primal support, but too, they are wholly other. Things are perceptual, gestural, and interpretive but uncanny prosthetics or extensions intimately interwoven with our own fleshy bodies. In this necessarily hidden but rapturous incorporation, new worlds are opened and founded for us.

But increasingly, this thingly, topographical founding is being encroached upon and reworked by a materiality of a wholly different order, speaking to us in the seamlessly soft and tactile tongues of new media. The Digital is requisitioning our world in its subatomic particularities and

elemental minutae, conscribing all things—including us—to a new phenomenological order, the “Internet of *things*.” In this cyber realm, there are no subjects and no objects, only requisitioned and commandable bits of stuff and quantified selves, massive collections of data, and giant networked and mobile assemblages of all “things given.” Via the Digital, we are grammatizing and programmatizing our world into terabytes and teraflops, cleaving and fragmenting our existence into ever shallower slices of space and shorter splices of time.

Today, we are located in the midst of a complex ecosystem of old and new technologies and materials, where the actual is porous with the virtual (Kozel 2007). Brick-and-mortar architectures are being adapted and reconfigured, their tangible surfaces and substrates pierced and breached by invisible networks smuggling in new software architectures and places. Via this hard, knock-on-wood realm, the soft digital world is reaching through and drawing itself ever closer to us, palpating and recording, following and cataloguing, calculating and conditioning our movements with algorithmic precision. We are being coaxed and carried (with invisible hands) preperceptually but swiftly along new avenues, corridors, and pathways and into a wholly synthetic landscape with its own curricula and outcomes.

TECHNOLOGY AS PHARMAKON

Lucas Introna (2011) describes the hidden landscape of the Digital as “an increasingly complex geography of encoding [that] is evolving with its own emergent performative outcomes...[and] silently shaping our present and future possibilities of becoming” (p. 114). And Bernard Stiegler (1998) describes how our humanity is inextricably bound up with our technologies, and they with us: *we must learn to think the human and the technological in a single breath*. Yet how do we begin to see the world in this way?

For media ecologists, technology is the petri dish in which a culture grows, silently shaping political impulses, social organizations, and habits of thinking. Every medial world convened by a technology is ecological: dilating and contracting, infecting and permeating human perception, action, and understanding, with potentially far reaching implications and reverberations in our personal, social, cultural, and political lives. Media, we could say, is *lived* technology. And like Stiegler, media ecologists view the evolution of human becoming as inextricably intertwined with their technologies.

In his book *Technopoly*, Neil Postman (1993) recalls Plato's cautionary tale in *Phaedrus* of King Thamus who was visited by the god Thoth.¹ Thoth, an inventor, has arrived bearing some of his best inventions—number, calculation, geometry, astronomy, and writing—and proceeds to offer them one by one to the king. In presenting the gift of writing, Thoth proudly proclaims that it would “improve both the wisdom and the memory of the Egyptians,” to which, King Thamus replies that Thoth had much too much faith in his own creation and was not able to see its true end. “This technology of writing,” he admonishes,

...will produce forgetfulness in the soul of those who learn it because they will cease to exercise their memory and will put their trust in what is written ... therefore, it is not memory but reminding for which you have found the remedy [*pharmakon*]. (Plato in Stiegler 2012, p. 13)

Postman points out that King Thamus was actually wrong, or at best he was only half right in his judgment: the technology of writing, as with all inventions, never issues a single negative (or positive) effect. Rather, technology exercises a twofold gesture. This duplicity, which Jacques Derrida (1981) refers to in his essay, “Plato's Pharmacy,” was in fact given in the original text by the word *pharmakon*, usually translated as receipt, recipe or—as in this translation—remedy. The Greek *pharmakon*—from which our words pharmacy, pharmacology and pharmaceuticals derive their origin—means recipe, cure, life-giving potion and sacrament, but ironically also drug, charm, perfume, and poison.

Evoking writing as a *pharmakon* then, Plato *reminds* us that every technology is always a flickering mirror play of both poison and cure, interior and exterior, recipe and spell, white magic and dark sorcery, life-giving potion and dangerous intoxicant. Every pharmacological prescription is remedial only in its carefully measured application. Too little and it does not work. Too much and it acts as a poison. Moreover, we are all ferocious *users* of this potent drug called technology. Having tried and become accustomed to the magic of Thoth's bag of pharmaceuticals, it becomes impossible to imagine our lives without them. Indeed, it is not an exaggeration to say that we are addicted—wholly habituated to and dependent on the many pharmaceutical *fixes* that modern technologies afford us. When it comes to technology, we humans are *users* through and through.

Yet despite how intimately involved and intertwined we are with our technologies, we have remarkably little understanding of technology's

pharmacology, that is, its therapeutics but also its toxicities and side effects. On account of this, Stiegler suggests that it is not enough to strive to be the wise therapists prescribing the “right” combination of technological pharmaka—as, for example, we hope more critically enlightened teachers might do in today’s classrooms. Instead, we as phenomenologists must become the pharmacologists of the Digital, in search of its interactive mechanisms and interpassive pathologies. Only in this way, says Stiegler, can we hope to understand how we are dramatically reconfiguring ourselves as human beings under the ubiquitous intoxications of the spell of the Digital.

RED PILL, BLUE PILL

In the film *The Matrix* (1999), Morpheus offers Neo two capsules. He warns him,

“This is your last chance. After this, there is no turning back. You take the blue pill—the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill—you stay in Wonderland, and I show you how deep the rabbit hole goes. Remember, all I’m offering is the truth—nothing more.” (Morpheus in *The Matrix* 1999)

If Neo takes the blue pill, he will remain in the fabricated virtual world of the Matrix. Alternatively, he can take the red pill, a kind of pharmaceutical “location device” that will reunite his consciousness with his body and the “real world,” and allow him to be unplugged from the Matrix. Here, we have the Digital reduced to its simplest binary. Do you want this world or that world? But the question is do we really have this choice? And do we know what this choice means?

In the 2011 political documentary, *Marx Reloaded* (2011)—which includes an animated parody of *The Matrix* pill scene—Slavoj Žižek points out that “What we experience as reality, always needs an illusion even to function as reality.” In other words, to be the human beings that we are, we need at least one originary or inceptual technology—the red pill or blue pill—to have a world at all... reminding us that humanity shares its wakeful beginnings, as well as its sleepy becomings with its magic medicine bag of technological solutions.

So how might we begin a pharmacology of the Digital’s medications and uncover its medial activities and unfoldings in our everyday lives?

Marshall McLuhan and his son Eric suggest that “the action of new technologies is only possible while the users are ‘well adjusted’ [meaning] sound asleep” (1988, pp. 127–128). And that the only way for us sleepy users to discern a technology’s medial “lines of force” and its reverberating “vortex of side-effects” is by “standing aside” from it.

For any medium has the power of imposing its own assumptions on the unwary. Prediction and control consist in avoiding this subliminal state of Narcissus trance. But the greatest aid to this end is simply in knowing that the spell can occur immediately upon contact, as in the first bars of a melody. (McLuhan 1964, p. 15)

Technology, McLuhan tells us, is atmospheric and ecological. As we take up, use, and ultimately habituate to a new technology, it silently disperses and permeates our world, releasing and setting in motion its intoxicating “utterance,” the active pharmaceutical ingredient (API) needed to perform its work for and on us. McLuhan’s recommendation to “stand aside” from a technology in order to discern its medial effects is a phenomenological problem—and he admits as much in his last publication, *The Laws of Media* (McLuhan & McLuhan 1988). In order to grasp a technology’s technologizing influences and atmospheric intoxications, we must be “in” it. But of course when we are in it, we are necessarily (directly and immediately) subject to and thus asleep (or sleepy) to its effects.

Here, McLuhan offers us one possible approach: a technology’s potent existential analgesics and inviting epistemological hallucinations are made momentarily visible in the opening of its Siren song. But then, having heard and grasped hold of ‘the first few bars of its melody’—that is, having taken up and begun to use the thing—like Psyche opening the casket of Aphrodite’s beauty ointment as she emerges from the underground, we too succumb to technology’s perfumed toxicity and fall profoundly asleep to it.

We can also temporarily break the seductive spell of a particular technology by abstaining from the blue pill of the Digital and then pay attention to what is put back in play, including any withdrawal symptoms and side effects. I have found this approach particularly enlightening for my Educational Technology graduate students, whose work and personal lives tend to be almost completely immersed in the latest technologies. To do this, as a class we agree to go without twenty-first century technologies for a 24-hour period—usually it is a Sunday to make things a little easier—and journal the experience.

Some are surprised at how quickly they begin to suffer phantom cell phone syndrome, wherein they find themselves reaching for their phone persistently throughout the day only to discover its absence, or feeling irrationally panicked at not feeling its familiar weight in their back pocket. One or two inevitably find it impossible to go without at least one Internet-enabled device, and sheepishly give in after only a couple of hours. For others, the day strikes as inordinately long or filled with intolerable stretches of fidgety boredom. But for some, the day unfolds as a welcome relief from the tyranny of attending to texts, Facebook, and email. Of course, they had warned their many friends in advance that they were involved in a class experiment and would be back online in 24 hours.

But perhaps most remarkable for them was *the unexpected return of nearby others*. One student, in the absence of having his cell phone at hand, described finding himself tuning into a conversation that his teenage son was having with his friend in the backseat of the car while they were waiting in a lineup. He said it was as if he had suddenly seen his son for the first time in years. He vowed to make the weekends his cell phone Sabbath.

A BRIEF PHENOMENOLOGY OF THE DIGITAL PHARMAKON

So under the thrall of digital's blue pill, how *do* we experience our world? Bernard Stiegler (2010) has suggested that our prereflective but schooled umbilical to local space (cardinality) and time (calendarity) are being destabilized by the current global "mnemotechnical system." This existential disorientation at the digital hand of the "programming industries" involves a collapse of and resituating our attentional structure—consciousness—in a synthetic, deeply programmed substratum. For Stiegler, the outcome of our submergence in this digital psychotechno-*pharmakon*, a global infrastructure designed to anticipate and thus exercise control our acting and thinking patterns, will be the loss of individuation, a "dissolve into a globalized, impersonal One," (2011, p. 5) and ultimately profound existential suffering or quasi-inexistence: a bleak prognosis to be sure.

It occurs to me that our current ontotheological predicament requires of us to probe phenomenologically the new realities of the mediating technologies that Heidegger prophetically predicted would become our fate. What are the phenomenologies of the new digital orders of immediacy? of nearness? of memory? A few twenty-first century moments for your consideration:

Immediacy and “integrated circuit of perpetual solicitation” (Baudrillard 1990) Opening my email, for example, I am immediately thrown into its now familiar ‘chain of requests’ world. Each email appears in the same Name and Subject fashion, each unread one is marked with the same little red circle and bolded to more thoroughly solicit my attention, each demands that I respond to it in some way: to read and reply thoughtfully, to look for a file and attach it, to spend hours reading an article or dissertation and writing a review or a report, to return a book to the library, to report it as spam, to ignore it, to mark it as unread and hopefully attend to it later, to note it as information, and perhaps to forward to someone else, or simply to delete it. On the surface, each email appears equal to the rest, though of course, certain names command my attention and interest more than others.

Regardless, I am swiftly and with little thought drawn in, conscribed to and enrolled in Jean Baudrillard’s (1990) “integrated circuit of perpetual solicitation” (p. 163) or what Heidegger (2012) calls “the chain of requisitioning” (p. 28), whereby I enter and am caught up in a circular, never-running-out world of requests. Indeed, sometimes I disappear into this read-and-respond world for hours, battling its perpetually refreshing supply of solicitations. And then, having at last conquered the last unread email in my inbox, I take a break, only to compulsively return again shortly to see if there is another.

Spatial relocations and nearness Traveling a new city by car using GPS, I pass over its places. The “where” of the city is lost on me—later I remember little of the route I traveled, neither its contours nor its landmarks. Instead I move through and traverse a technologized landscape, the city as it has been expropriated, requisitioned, and overlaid by a digital veneer, thinned to mere positions and distances, yet mapped in breath-taking detail. The world is given to me as just-in-time directions: “Turn left in 1500 meters, take the second exit out of the circle,” and so on. Before I know it, my “destination is on my right.” In truth, I don’t turn myself over entirely to the GPS. Rather, I am occupied trying to match my on-coming traffic situation to the directions given to me by the GPS. I am not dwelling in the city, but flying through on the wings of the Global Positioning System, apprehending the world in its mapped and digitized version. The “poignancy and plenitude” (Casey 2013, p. 342) of place is unmet and drifts away. Of course, I do get to where I intended to go in

fairly short order! With GPS at hand, I am neither lost, nor disoriented. Rather, I am oriented to my GPS, while remaining strangely unoriented to or rather unlocated in my locale.

Under the spell of Global Positioning System (GPS), I may turn over and entrust my ground and wayfinding to the Digital. If, for whatever reason, the GPS gives out or does not guide me correctly, I am suddenly thrown into the middle of things, *in medias res*. In this *medias res*, my GPS-world suddenly evaporates and I may find myself in a pickle indeed, as if abruptly awoken from a deep dream, I now find myself with no bearings at all. Here, we catch a glimpse of our confident, efficient yet dangerously blind trust in the Digital to show us the way. In the reliable thrall of GPS, our grounding sense of place—the familiar nearness of home and the uncanny remoteness of the exotic—is gently lifted from us, and replaced with the uniform distancelessness of a “you are here” positionality.

Memory and the retreat of memory Even as I ‘teach’ my new iPhone 5 to recognize my thumb and finger prints, I commit one more surface of my increasingly quantified and colonized being to signature and trace, definition and invasion along its organic, uniquely striated and convoluted shores. My tactile, networked, digitized self may now relinquish the now less meaningful 4-digit PIN from its finger-tip-tap memory, and instead perform a single soft but meaningful touch of a concave button to release the many treasures of my Smartphone. Like my friends and family’s phone numbers, my PIN may now disappear without a trace into the oblivion of forgetfulness.

Indeed, most of the detritus of factoids that once cluttered my twentieth century mind—times tables, spelling and grammar rules, historical dates, birthdays, and anniversaries, may now be released to float sleepily down the River Lethe, given over and entrusted to calculators, spellcheckers, Google, Cloud services, subscriber identification module (SIM)-cards, Radio-Frequency IDentification (RFID) tags. In gathering and digitizing our memories, we are also witnessing a massive retreat of memory in light of an instantly accessible, zettabyte-size (10^{21}) database world. Our memory is now only a fingerprint away, yet neither is it intimate nor genuinely near.

CONCLUSION: "RESISTANCE IS FUTILE"

I want to conclude with two quotes. One is a famous line derived from the 1990s television series, *Star Trek: the Next Generation* (SNG), and chillingly issued by the Borg in the box office film, *Star Trek: First Contact*.

"We are the Borg. Lower your shields and surrender your ships. We will add your biological and technological distinctiveness to our own. Your culture will adapt to service us. Resistance is futile." (The Borg in Frakes 1996)

The other quote is from the novel, *Homo Faber: A Report* (1959) by the Swiss writer and playwright, Max Frisch.

Technology [is] the knack of so arranging the world that we don't have to experience it...technology [is] the knack of eliminating the world as resistance. (Frisch 1959, p. 179)

While things persist and resist, the Digital *transists*. Transistors are *trans*-resistors because they literally transfer, convey, or "carry across" resistors and thus afford us the precise control and flow of electrons. Today's Integrated Circuits (ICs), that is, the physical basis of the Digital, are each composed of billions of such transistors. The transistor permeates and cuts through the heart of our firm standing.

Anything and everything digitalized—that is quantified or grammaticalized—may be drawn into its trans-resistive circuits. Thus, digital technology's greatest danger may ultimately be its preperceptual frictionlessness, its lack of resistance and thus mattering, wherein every *thing*—including ourselves—no longer exists as thing but is requisitioned and subsumed into the "Internet of *things*." Through the Digital, the world is set in a perpetual motion of availability and rendered controllable at the push of a button, a wave of a hand or voice command. The patience of place is being superseded by the impatience of the Digital. The Digital draws everything infinitely near at lightning speed, but as bits and bytes, not as the lived nearness of things thinging.

Meaning, the ontological project of the human, is borne out of and is now thoroughly saturated in the complex medial atmospheres and habitual intoxications of technology. Over the last few centuries, our human meaning project has been extended dramatically by typographic Man and his orthographic consciousness. Today, we are in the overtures of the Digital,

each of us variously awakening to the local significances and global responsibilities of our cyber lives in the midst of the Digital pharmakon. Our ontological workings out with and through the Digital are To Be Announced. But this we do know:

1. *Our instruments instruct us.*

Technologies are our teachers. The responsive software architectures of digital media are our new hidden curricula, reschooling adults and children alike in new modalities of knowing, perceiving, and acting.

2. *The relationships we share with our technologies are coconstitutive.*

Our tools make and remake who we are as human beings. We may no longer separate the anthropological *who* from the technological *what*. Each time we grasp hold of new technology, it too takes hold of us. As we invite and then submit our practices to be guided, supported, and finally empowered by the Digital's responsive programs and scripts, previous gestural regimes and patterns of thinking are toppled in order to make way for new ways of being, doing, and thinking.

3. *Lived technology is pharmacological.*

It is atmospheric, ecological, and ultimately ontological.

4. *Tomorrow's educational researchers and pedagogues must also be pharmacologists of the Digital*, seeking to uncover the prereflective meanings but also the preperceptual influences of its engineered environments on human or better—posthuman—becoming.

The Digital—whether in our hands or just beyond the periphery of our attention—is inexorably intervening and pervasively intertwining itself in our future human becoming. Teachers and educational researchers must stop imagining technology as “just a tool” and begin the urgent work of uncovering the Digital's programmed atmospheric influences and its trans-resistive, transgressive, interpassive, and disburdening workings in the material, corporeal, relational, temporal, and spatial niches of our everyday lives.

NOTE

1. Interestingly, it was the Ancient Egyptian goddess *Seshat*, not Thoth, who was the original goddess of wisdom, knowledge, and writing. Seshat, whose name literally means “she who scrivens” (i.e. she who writes), was known as

“Mistress of the House of Books” and credited with inventing the alphabet and writing. She was the divine keeper of the scrolls of history and sacred spells. Later, she was demoted to mere consort of Thoth (a moon deity), and Seshat’s dowry of inventions (writing, architecture, astronomy, astrology, mathematics, and surveying) was subsequently accorded to Thoth.

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Pioneering the Use of Video in Research and Pedagogy: A Currere of Media(tion)

Joe Norris

A RATIONALE

McLuhan's (1964) adage "The medium is the message" is as apropos today as it was when coined in the 1960s. McLuhan articulated that form and content have intricate and complex bonds that collectively produce meaning. The medium chosen frames (Goffman 1974) the content in such a way that a different medium/frame would slightly or drastically change its meaning. The written phrase, "What are you doing?" changes when the spoken tone is different due to a particular context; (a) teacher catching a

Note that in keeping with this chapter's advocacy of video, it contains a number of links to performative recordings of works by a number of colleagues and myself. For ease of use, all are provided in sequence on: http://www.joenorrisplaybuilding.ca/?page_id=1949 (One stop shopping, so to speak). The website was funded by the 2011 competition of the Social Sciences and Humanities Research Council (SSHRC) Insight Development Grant for the project entitled: *Reuniting Form and Content: Generating, Mediating, and Disseminating Social Science Research and Arts-Based Performance Genres through Digital Media*.

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student smoking, (b) a teacher curious about a student's approach to an art work, (c) a parent fearful of her/his young child discovered climbing a ladder, (d) a couple playfully becoming affectionate, and the list could go on like an Eveready bunny. The phrase, in print, due to its generality, contains possibilities. Once spoken, the tone carries a particularity that limits possibilities, by offering a higher degree of specificity. The audible medium whether spoken live, presented via an audio recording and/or with video images can carry various meanings. Mehrabian and Ferris' (1967) claim that the majority of a word's meaning is in how it is said, including body language and facial expressions and little in its dictionary meaning, further reinforces the adage. The auditory medium is very different than print.

To make his point even more explicit, McLuhan (1967) accepted the typo for the cover of his book, allowing the word, "massage" to replace his intended term, "message". His primarily visual photography book creates a collage of meanings that does not follow the traditional rules of the expository essay. The pictures do indeed act as a "massage" teasing out or evoking meanings rather than providing lengthy explanations. Besides its epistemological difference with the essay format, there is an axiological dimension as the photographic texts are more open to readers' responses (Rosenblatt 1978). Texts that express more than explain (Reason and Hawkins 1988) tend to be less didactic and more dialectical as they provide more space for readers. Different media also have different axiological dimensions.

Building upon McLeod's (1987) belief that students leave the school system illiterate because they are only conversant in only two of the major five literacies, it has been my contention/rant that the dominance of word and number over images, gestures and sounds is reinforced by hegemonic structures that limit our understanding of the world by privileging certain media (word and number) over the others (Norris 2000). Presently, both our educational system and forms of research dissemination are predominantly flat, black and white, silent and abstract. The pages of textbooks are two dimensional; when pictures are given, due to cost are, most often, devoid of color; students passively listen and/or read silently far more than interacting, especially on assignments and tests and even with the increase in experiential learning, abstraction is more valued than application.

Flinders et al. (1986) encourage the use of the concepts of the hidden and null curricula to analyze educational programs and practices. Like McLuhan, they move their attention beyond the content, focusing also on the processes involved. The hidden curriculum examines the messages

of power as conveyed in how we teach. The lecture method places the teacher in the role of dispenser and the students as recipients or what Freire (1986) labels the “banking model”. Here, students come to regard themselves as consumers of knowledge. In process drama (O’Neill 1995), through interaction, students co-create meaning through participatory activities. In this teaching medium, students also come to regard themselves as creators of knowledge. The topic could be the same but how it is mediated can be quite different. The teaching medium itself is implicit or hidden, subtly imbuing positions of power within the teacher/student relationship.

The null curriculum is all of the things that are not taught or relegated to a subordinate status. The arts, which employ images, gestures and sounds, are optional subjects while those that are predominantly word and/or number are core. The educational system and publishing industry privilege certain leaning styles (Natter and McCaulley 1974) and multiple intelligences (Armstrong 1994) to the detriment of others. This privileging is much more than what subjects are taught but also how all subjects are presented/delivered/processed. Content can be *represented* through various media, however; word and number remain dominant with images, gestures and sounds, being null, through their absence.

The concept *representation*, however, is problematic as it implies that knowledge preexists without the medium and one merely choses the appropriate medium to “re”-present it. Textbooks, in this framework, would be considered neutral or benign. However, delivery systems are far from neutral as made evident in the pipeline debates of recent years. Each form of media has different epistemological, ontological and axiological dimensions, bringing with it, its own structural biases. An old joke encapsulates this concept:

There were four umpires gathered at a bar after a day of training when a novice dared to ask a sacrilegious question to the three veterans at the table, “How do you tell a ball from a strike?”

The veteran with ten years experience confidently proclaimed, “I call them the way that I see them.”

The veteran with twenty plus years shook his head in disagreement, “I call them he way that they are.”

All eyes turned the eldest who was about to retire. He smiled as he crossed his arms across his chest, “They ain’t nothing until I call them.”

The act of calling/naming/labeling refers to both the object and the sign/medium that one uses. I now prefer the term, (media)tion rather than “re”-presentation. A new entity is created in response to the former. This may lead us beyond the crisis of representation to which Miller (2011) refers.

This chapter documents my particular journey as I have expanded my repertoire in mediating knowledge in education and research through a variety of forms, video, in particular. While personal, it also portrays the world around me as I navigated the educational, research and technological arenas. It is my *currere* (Pinar 1975) or personal curriculum, so to speak as I moved beyond traditional forms of academic discourse. In such a story I “bracket-in” my particular experiences (Norris 2008, p. 234) situating myself as the site, not the topic of this autoethnographic study, as Oberg and Wilson (1992) suggest. Hence, this story is about the use of multimedia in education and research, as lived by me as student, teacher and researcher. Its aim is to encourage and/or support colleagues in expanding their repertoire in teaching and research by providing possible futures that include technological media as other legitimate and commonplace forms of discourse.

A MEDIATED JOURNEY

Ancient History: From Consumer to Producer

My media has always been film. If I were a character in Roal Dahl’s *Charlie and the Chocolate Factory* (1973), I would be Mike Teevee. I far more enjoy the visual and auditory media over print. I, as an extrovert, considered the solitude of reading a punishment (Norris and Greenlaw 2012), much like being sent to one’s room for a time-out. I can remember my maternal grandparents who lived next door inviting us over to watch the brand new television circa 1955. I was hooked, enjoying the company of a viewing audience. Even when watched alone, the stories, brought to life with images, gestures and sounds suited my disposition. There were other semi-embodied people in the room.

Throughout my schooling there was a tangible absence of film in the classroom. Due to this null curriculum, I grew up with the belief that books were educational and film was entertainment. On the rare occasion that film was present, it was for some celebratory event. I vaguely recall a school assembly in grade four where the entire student body was gathered to view, what I believe was *Roman Holiday* (Wyler 1953). I was under the

impression that it was expensive and since rented in for one junior high class to see European architecture, more should see it. After the viewing I remember that there was some controversy and years later, after seeing the film again I believe that the romantic plot was considered not academic enough and overshadowed the Roman architecture. Regardless of the accuracy of this story, I am certain that this part of my curriculum was that fiction, stories and film had little to do with schooling to the point of being taboo.

This null curriculum also applied to images and sounds. The shift from thin rudimentary picture books to thick readers with few if any drawings was traumatic. I recall some of my classmates and I protesting with the teacher's response reminding us that we were growing up. We learned, abstraction, through words was adult and pictures were childish. In grade five or six, we were studying Alaska and a peer and I arranged to bring in a 45RPM, *North the Alaska*, (Phillips 1960) sung by Johnny Horton. The teacher needs to be applauded for tracking down a record player to indulge us; however, the relevance was lost on her. The John Wayne and Capucine film (Hathaway 1960), in which the song was sung, did not portray Alaska academically, or did it?

Filmstrips were periodically used, in science classes in senior high, sometimes accompanied with a soundtrack on a record player with beeps to instruct when to advance to the next slide. The concepts portrayed cell division and other content through which the visuals assisted in the understanding of the topic. The label of "audio visual aids" indicates their considered subordinate position with the educational system. Most likely, their lack of use was due to perceived cost; however, when compared to textbook expenses the cost was not that significant. Personally, my enthusiasm grew whenever I saw a filmstrip or the even the less common, 16 mm projector. Word, in print, was hegemonic.

Throughout my public schooling, I was a consumer of film and never, due to the lack of resources and educational training, considered myself ever to be a producer. That, however, was about to change during my first year of university. I was relaxing to the album, *Concerto for Group and Orchestra*, (Lord and Gillan 1969), performed by Deep Purple and The Royal Philharmonic Orchestra conducted by Malcolm Arnold when an entire visual narrative took shape in my imagination. So strong was the impression that I decided that I wanted to find a way to create it in film. A friend, Frank Gibson (permission to use name), recommended that I contact a local religious educator Kevin Moynihan (permission to use name), who had some experience with media (see <http://www.kmproductions.ca/>). I eagerly made an appointment.

In hindsight, I truly appreciate his pedagogical tact. My naiveté must have been apparent but he honored my overwhelming enthusiasm. How does one respond to a person's unrealistic dream? Wisely, he suggested that I begin by compiling short musical pieces with slides, which I did on-and-off over the next ten or so years as other life matters took precedence. At a local church, at which I volunteered, I along with a few others compiled meditative slide shows using purchased stock pictures and inspirational music. I bought a cheap camera and shot with slide film, making some of my own. Remember this was the age of photochemicals, and making photography was an expensive enterprise. This was also just prior to music videos that came into being about five years after my entry into this medium. My curriculum of the image was external to the educational system and primarily self-taught, sometimes assisted by friends who knew just a bit more than me.

I dabbled, creating short pieces set to Carlos Santana's *Samba Pa Ti* (1970), Neil Diamond's version of *He Ain't Heavy, He's My Brother* (Scott and Russell 1969) and John Lennon's *Imagine* (1971) that were presented to church groups and university classes. Like the concerto, they were meditative but also evocative as they generated powerful discussions. I was also recruited from time to time to give audiovisual workshops to teachers on how to use this medium. My informal educational journey was slowly moving me from consumer to producer to teacher.

During this time, black and white video recording units came on the market. While advertised for home use, they were out of the range for most and often used in educational and business setting. "Portable" at 46 pounds, more with camera, tripod and microphone and no battery capability the units were cumbersome by today's smart phone technology. Still, back then, I was thrilled to have access and assisted a friend in videotaping a large church rally and editing the footage into a rudimentary documentary. We spent hours at Halifax's National Film Board Studios using their "state of the art" editing equipment. First, using white grease pencils, we spliced the footage from half-inch tapes. Soon after, an electronic version came on stream and while much easier to use, the equipment was, more often than not, sent to Montreal for repairs. While the technology was in its infancy and frustrating, I was elated to be working with my medium of choice.

All of my learning was informal and I was unaware of where and how to gain formal training. In fact, teachers in my high school never mentioned that our local and renowned Nova Scotia College of Art and Design was

a possible place of study. Had I known, my journey may have ventured elsewhere, to one that my sister, 13 years my junior, took years later.

Interspersed with “extra”-curricular activities were a Bachelor of Arts and a Bachelor of Education in which I was able to bring some slide and video presentations into class presentations. In retrospect, at university, certain faculty permitted me to work with my medium of choice. I showed *Cosmic Zoom* (Szasz 1968), https://www.nfb.ca/film/cosmic_zoom/, in a Business Administration class and slide shows in English and Religious Studies courses. During my education degree, I was hired as an audiovisual support person who taught his peers how to thread a 16 mm projector among other things. While peripheral to my degree, I was able to find some multimedia threads to weave into my degrees’ fabrics, even though no reference was made on transcripts. My curriculum was more expansive than the list of courses and the grades achieved.

As a teacher, I continued to dabble, purchasing a 35 mm camera and using a school’s darkroom. The library purchased some premade slide packages at my request and I invited students to choose their favorite songs to put to slides as part of their poetry unit. Some, non-readers, became enthralled, producing powerful pieces. They interpreted the word through images and not other words. When teaching *Barometer Rising* (MacLennan 1941), a novel about the Halifax explosion, I encouraged students to interview local survivors. One Saturday, a student and I ventured to a senior’s complex where he interviewed a resident who was a police officer at the time of the explosion. This was video recorded and made up a substantial part of his assignment. Years later, he recognized me at a local bar and told me that he was studying journalism because of me. I also integrated music and videos into my lessons. Perhaps Kevin paid it forward and then it was my time to do the same. I wanted to provide my students with opportunities that were lacking in my own formal education, providing other ways for them to media(te) their learning. While I was unaware of the educational theories at that time, I was implementing multiple intelligence theory (Armstrong 1994) into my teaching.

*The Early Years Through a Future Lens: Moving to Producer
and Academic Videographer*

1986, with the commencement of my doctoral studies in drama in education, marked a major shift in my use of technology. The University of Alberta’s Faculty of Education required students to partake in microteaching

lessons, which were videotaped, albeit on VHS cassettes, for reflective practice. Weekly, I would set up equipment and record students teaching mini-lessons to their peers. The Faculty, at that time, had a major educational technology department, complete with experienced staff, equipment and facilities. My foray into mediating research that employed images, gestures and sounds, that is, video had begun.

My doctoral research (Norris 1989a) was on the co-authorship of a play written by a grade 11 class. The teacher, Joanne Reinbold, well known to the *Collective Creation* process (Berry and Reinbold 1985), her students and their parents consented to have me videotape the entire playbuilding process (Tarlington and Michaels 1995 and Weigler 2002) with full knowledge that it would be publically accessible and with no expectation of anonymity or confidentiality. Because of the public nature of theater, both Joanne and her students agreed to have their actual names used.

Inspired by Eisner's (1977) encouraging words,

I have not suggested the possibility that doctoral dissertations might not need to be bound in book form for library shelves, but shown on film with an accompanying perceptive narrative... I have neglected talking about these things, and more. Yet all of them are possible (p. 357),

I set out to record the entire process and resulting performance for two reasons. First, I recognized that subtle things that may be missed in field notes could later prove significant, hence the recording. Second, since it was a theatrical activity, why not disseminate through video. I claimed that words were a form of reduction and that "contextures" (Norris 1989a, p. 49) or the textures of the context, that is, images, gestures and sounds were missing. Twenty video appendices were referred to in the text with two VHS tapes containing them, bound to the dissertation (Photo 11.1).

To my knowledge, this was the first dissertation to include video footage bound within the document. In addition, I created four documentary videos about the process (Norris 1989b, c, d, e) each providing different aspects of the process and product. After my defense, my advisor claimed that I had completed two dissertations, the one that counted and the one that did not. My response was that I would not have completed the one that counted had I not completed the one that did not, first. The video medium allowed me to think through the material in such a way that enabled me to create the printed text later. I am truly grateful to my committee and University who allowed me to employ this method in my

research. The current and future challenge of education and research is to create spaces and opportunities in which students and researchers can mediate knowledge in their own particular ways.

As the research unfolded, a part of the study focused on the use of video methods in research. I was beginning to create a new lexicon for research videos that differed from mainstream Hollywood. While my exploration continues, there are five insights that I would like to highlight about this early work:

First, the medium was analog tape. While I used professional three-quarter inch tape and equipment, each subsequent copy would reduce the quality. The editing would be the second iteration and the bound copies in the dissertation, the third. In addition, the tape itself deteriorates over time. When digital became available, I did transfer the edited videos; however, the quality was, due to age, greatly reduced by that time. Newer, digital recordings have a potential infinite life, as each copy is an original.

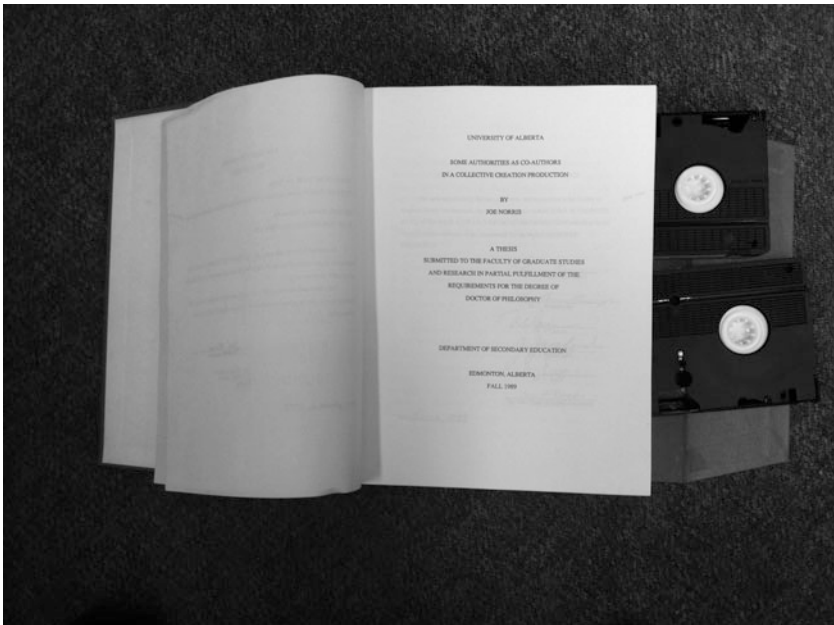


Photo 11.1 Dissertation

I recognized the shorter shelf life from the start and accepted the limits of the technology at that time.

Second, I wanted to make the research frame explicit throughout the appendices. Rather than keeping the equipment and researcher hidden during classroom recordings and/or editing them out in the final product, I preferred, as Brecht (1957) would suggest, to make the fourth-wall explicit. I instructed the grade-twelve student who was assisting me as a directed study, not to avoid recording me behind the monitor as he panned or to try to make the pressure zone modulation (PZM) microphone and cables on the floor obscure. Rather, I asked that he merely include them as part of the story, much to the chagrin of a video editor who assisted in the final edit. His lexicon clashed with mine. This proved useful later when asked about students' responses to the act of videotaping. As made evident through such recordings, the equipment and researcher were as natural to the milieu as a blackboard. I was becoming media literate, not by adhering to pre-existing canons, rather, I was making different decisions, informed by Brecht's "alienation effect" (1957) and Goffman's frame analysis (1974).

Third, I worked with the existing technology longing for more than what was then possible. I found the VHS tapes cumbersome. Readers could not easily skip to a desired appendix nor could they easily fast-forward over sections of any appendix. VHS was linear and every playback machine's counter was slightly different, so there was no easy way to find a desired appendix. I also wanted better integration of text and videos. I had envisioned a digital text in which readers could read the printed word and click on a link to be immediately taken to a corresponding appendix. Both of these later informed how I set up my website www.joennorrisplaybuilding.ca, to be discussed in detail later.

Fourth, part of the contexture that I wished to provide was that of time. Classroom discussions take time with pauses, tangents and other things that could be later considered extraneous. Yet, this was the classroom experience that I did not want to edit out. I debated reducing segments to shorter compilations of sound bites, similar to a more traditional video editing style that economizes time by reducing information; however, I rejected that. The contexture of time took precedence. The appendices were real time, similar to the later successful television series *24* (Cochran and Surnow 2001).

Finally, I was and am very much aware that recordings and the edits are also reductions. I avoid the commonly used term "capture" as it (a)

implies a positivistic sense of encompassment and (b) has a violent connotation. I prefer, “record” and “edit” that make the acts of framing explicit. In the dissertation I stated:

But it must be recognized that video or film like any form of observation is selective (Baudrillard 1983). The decision of which group to shoot, how to angle the camera, where to have a close-up of wide angle shot, where to place the microphones and other equipment, was mine and was guided, in part, by my research question. However, this is no less a selective reading than observations which have been noted in word by ink on paper. Both are selective but video can give more detail per selection (Norris 1989a, p. 47).

I was and am skeptical of cinéma vérité’s desire to provide “filmic truth” (Shrum et al. 2005, p. 6) as there is an attempt to underplay the act of mediation. Inspired by Robert Stone’s Academy Award nominated documentary, *Radio Bikini* (1987), which I viewed during my doctoral research, I came to believe that the framing should be made both explicit and problematic. At one point in the documentary, the editor reveals that the portrayals are staged by including multiple takes of a single incident (see http://www.joenorrisplaybuilding.ca/?page_id=1949). Mediating, whether in word, number, image, gesture and/or sound is a constructed act with many choices that reduce and frame. As Richardson claims:

Whenever we write science, we are telling some kind of story, or some part of a larger narrative. Some of our stories are more complex, more densely described, and offer greater opportunities as emancipatory documents; others are more abstract, distanced from lived experience, and reinscribe existent hegemonies. Even when we think we are not telling a story, we are, at the very least, embedding our research in a metanarrative, about, for example, how science progresses or how art is accomplished (1990, 13).

Appendix VI6 (see http://www.joenorrisplaybuilding.ca/?page_id=1949) is provided as an example of the five points made above. The quality is much less than it was at the time of recording and the PZM microphone and wires connecting it can be seen on the floor, making the framing explicit. The recording takes place in real time and while I have condensed it for other purposes, it is given in its entirety here.

A portion of the text portion of dissertation makes reference to where the corresponding video appendix (V meaning video) can be found.

Stephanie was quite aware of the authority which existed in the sequence of how ideas emerged. She claimed that preconceptions of how a scene would look could interfere with the squeezing together of personal ideas into a collective vision. On Tuesday, December 1, 1987 she came to the interview with an example of brainsqueezing which had occurred during that day's class (see Appendix V-16). She claimed that this class represented what she meant by brainsqueezing and she was excited with her find (Norris 1989a, p. 138).

Today, as demonstrated by this chapter, links can take readers directly to the web-based videos. In 2014, I along with a research assistant, Brad McDonald, and colleague, Anne Harris (2016), videotaped Kerri Mesner's performance of a scripted part of her research (Mesner 2014) that was included as part of her dissertation. With advances in technology, her entire performance can be found at <<https://vimeo.com/101258687>>. We have made technological and legitimacy strides since 1989.

The Formative Years of Building an Emergent Future

Between 1990 and 2011, due to the then slow advancement in technology, equipment costs, my novice expertise with the medium and the academy's reluctance to support video dissemination in publications, I focused my attention on other areas. The use of case narratives in drama teacher education (Norris et al. 2000) and advancing playbuilding (Norris 2009) as a live form of participatory pedagogical research occupied most of my time. My use with video continued but was sporadic.

In 1998, I was able to obtain a small grant from the University of Alberta's Faculty of Education's Support for the Advancement of Scholarship Fund and combine it with some financial resources from the International Institute for Qualitative Methodology to assemble a digital video studio. A Canon XLI, (with a Mini DV tape format and a built in microphone), an early version of Adobe Premiere and a dedicated computer that made up the studio were housed at the Institute on the University of Alberta campus. The Adobe software had compatibility issues with QuickTime, transfer rates were extremely slow, often left for overnight processing and the constant replaying of the tapes quickly wore out the heads. Dissemination could only be done through DVDs, making distribution in this medium near impossible. Still, some work was done, and it provided a foundation for future work.

In 2000, I was asked to direct a play to serve as the closing keynote at the Qualitative Health Research Conference, in Banff, Alberta (Norris and Mirror Theatre 2000a). The cast and I attended sessions and wrote a series of vignettes depicting the issues that the presenters discussed. We performed these as the conference's closing keynote with Maria Mayan behind the camera. The videotaped was rendered and transferred to DVD the with the Institute's resources. The camera was excellent for what it could do. It zoomed in with detail and the long shots gave a nice overview. The sound was clear given that the camera and microphone were at the back of a large theater space. While the camera did its job effectively, the product was not of dissemination quality (see http://www.joenorrisplaybuilding.ca/?page_id=1949, *Mountain Dew*). A camera recording tends to be flat and while zooming in and out breaks some of the visual monotony, the ability to focus the images is difficult. Still it does give contextures that a script in word alone would not. The live performance was public ready, but the video recording, while intended to be distributed through that medium, was not. I now label such videos as *archived footage*. Later, this scene was remounted specifically for video. Two cameras were used and with editing, the product was now of video distribution quality (see http://www.joenorrisplaybuilding.ca/?page_id=1949, *Distillation*); however, it is missing the dynamics of being live.

Jan Morse, the then director of the Institute, and I invited Johnny Saldaña (2001) the following year to present at the Advances in Qualitative Methods Conference in Edmonton. Again, while the live production was of public dissemination quality, the recording was not. The camera was stationary with no zooming and out and what is not obvious from the recording was that the tripod was placed on a conference table in order to view over the audience members' heads. A graduate student, Marnie Rutledge, assisted with the recording. Sightlines and tripods became other considerations when recording live presentations, whether they are for archival or dissemination purposes. The inability to produce a publically suitable video also relegated this recording to archival status. However, it still provides a strong and efficient indication of how the live performance was staged and performed.

Jan also used the equipment as a data source with no intention of disseminating through the video. Rather, the video recordings were the "sole source of the data" (Morse and Pooler 2002, p. 62). A couple of stills from the video were included in the article but dissemination through image was not its main purpose. Jude Spiers (2002), also at the Institute,

encouraged the use of video for data collection and reported “tips” on the use of video. The method was being used for research purposes other than the recording performances.

Rutledge also (2004) used the Institute’s equipment to mediate her research through documentary video. She recorded sessions that she conducted (see http://www.joenorrisplaybuilding.ca/?page_id=1949, *Surrender*) to explore the concept of surrender in the body as the participants moved/danced. The video medium provided the necessary data that would not have been accessible only through field notes. By reviewing the subtleties in movement, she was able to highlight discrete moments to. While, like Morse and Pooler’s study, a solely written text could have been produced, the DVD, Chap. 4 of the dissertation provided valuable con-textures. Without access to the appropriate equipment and software, both the process and the product of the research would have been lessened. Are we making the necessary resources available so that students and researchers can mediate knowledge in their own unique ways?

Based upon these examples, I began to classify the use of video according to two distinct purposes. Morse’s was solely data collection while Rutledge’s and mine were both collection and dissemination. Rutledge’s was about the process while mine were about both the process and the final product. Issues of quality pertain more to dissemination. Later, I began to differentiate types of dissemination purposes, further expanding my personal mediation lexicon (Table 11.1).

During this time, the arts-based research movement was gaining some status and epistemologically there were some gains. The journal, *Qualitative Inquiry*, accepted arts-based research submissions from its inception. While primarily print based, it did/does publish many projects, albeit reported in word. *The Alberta Journal of Educational Research* published a special edition on arts-based research in 2002. Edited by George Buck and myself, we designed it to include a CD-ROM bound to the issue. On the disc, color images were imbedded within the text, providing con-textures that traditional publications could not. I was later informed

Table 11.1 For data and dissemination purposes

<i>Solely as data</i>		<i>Dissemination</i>	
<i>In vivo</i>	<i>Of process</i>	<i>Of product</i>	
	In vivo	Live recording	For camera

that this was the only issue ever went into a second printing with all of articles placed on the disc. Academic journals were becoming more open to exploring alternative ways of mediating knowledge.

Some of Mirror Theatre's early live participatory performance workshops were adapted and made into videos for instructional and discussion purposes. *Great Expectations* (Norris and Mirror Theatre 1994) was based upon research on the politics of student teaching and produced by the University of Alberta's Educational Instructional Centre for use in courses that would be followed by a student placement. The vignettes were performed for a studio audience and recorded by the University's professional staff with two cameras in a sound proof room. The quality of these recordings was satisfactory for public distribution (see http://www.joenorrisplaybuilding.ca/?page_id=1949, *Placement Grapevine*). One instructor as late as 2013 claimed that he still used some vignettes in his teaching. The present day quality is reduced due to tape deterioration until it was later transferred into a digital format.

Based upon Mirror Theatre's reputation with live performances, Alberta's Safe and Caring Communities program requested that we create a series of videos to be used in workshop discussions throughout the province. A later echoed by Leavy's (2009) claim that the arts can research wider audiences, they earlier recognized that the theatrical medium could elicit stronger discussion than responses to a traditional lecture. *Respecting Diversity and Preventing Prejudice*, (Norris and Mirror Theatre 1999), *Dealing with Bullying* (Norris and Mirror Theatre 2000b) and *Resolving Conflict Peacefully* (Norris and Mirror Theatre 2001a) were recorded by a professional video company and distributed on VHS tapes throughout the province. Not to compete with our touring program, an agreement was made not distribute beyond their curriculum, hence, no video examples are provided.

My research/creative work during this time period could be considered what is now labeled applied theater (Ackroyd 2000; Prentki and Preston 2009). Casts devised performance vignettes that enabled discussions on a range of social issues including bullying in schools, prejudice, human sexuality, the politics of student teaching and others. These were research-based participatory pedagogical events. However, when disseminating this work as research, they were in the word medium (Norris 1999, 2001; Norris and Mirror Theatre 2001b). When video was required for dissemination, as with *Great Expectations* and the Safe and Caring Schools, I turned to those with video expertise to guarantee a quality suitable for the

public. While casts and I produced the theatrical content, the dissemination medium relied on others. Still I advocated the use of various media in research and longed to acquire the necessary skills and equipment in the future. I and that present were just not ready.

With growing acceptance of arts-based approaches in research, I found the courage to invite my students to mediate their learning using multiple forms, including collages, musical compositions, visual arts, film reviews and videos (Norris 2008). Readings in the educational psychology and curriculum theory graduate courses that I taught supported such a stance and some students choose to create visual and auditory assignments instead of the optional traditional expository essay. In 2005, Zac Crouse (permission granted to use his name) created a video exploring what he learned through kayaking in a Principles of Learning course. Along with a meta-cognitive log, Zac articulated a number of educational dimensions of this activity, making the abstract theories of the course personal. The video mediation articulated his learning. He with Kelsey Thompson continues to use video and also disseminate it through the web, <http://www.zaccrouse.com/video/>.

Root-Bernstein and Root-Bernstein (2001) discuss Alexander Fleming's dabblings with bacteria as he drew pictures with them in petri dishes. While questioned and mocked at the time, such acts later led to Fleming's breakthrough with penicillin. Research and creative works in the arts and sciences often work this way. The future product is unknown and we intuitively dabble in things that later take on shape, become significant only through hindsight. My explorations in video for research dissemination fermented for quite some time.

*The Future Arrived in 2011: Emergent Epistemological,
Aesthetical and Technological Considerations in Performative
Videos*

Throughout the history of arts-based research, quality has been a reoccurring theme (Barone 2007; Finley 2003; jagodzinski and Wallin 2013; Saks 1996). At one end of a continuum, there are those who believe that anyone has the right to think/dabble in mediating their knowing in anyway that they choose, regardless of their expertise in the medium. At the other end, there is the battle cry around the standard, claiming that if it is worth doing, it is worth doing well. My position is that quality should be based upon a piece's intended purpose (Norris 2011).

Building upon Underwood's (2000) comparison of western and indigenous epistemologies, I frame the quality of arts-based work based upon positionality and movement in both form and content. Underwood claims that one determines his/her position and then determines if he or she is moving toward or away from it. Unlike the western binaries, movement could be in any direction of the compass (Norris 2011). Rutledge's research was never meant to end in performance, rather those assembled employed dance/movement to explore various dimensions of surrender. Her videos (medium) and content (examples with narration) adequately achieve her intended purpose. She demonstrated enough technical skill in recording and editing to convey relevant information to an audience. Sound qualities fluctuated, especially with interview comments provided over the echoes of a gymnasium. Footages from stationary cameras were edited with moving cameras and these varied from day to day. Creating the quality that is expected of documentaries for public consumption would have been financially unfeasible, inefficient and would have drastically changed the dynamic of those participating. Not only was Rutledge's work good *enough as Varela et al. (1993) and Zack and Reid (2003) may suggest*, the quality of the medium was appropriate for content to be explored and its intended audience. Marnie's piece was *moving toward* documentary film.

Learning is process and one cannot expect the novice to have the same expertise as an academy award-winning director. Still, there should be an attempt to both grow into and challenge the form. My current foray began with the hiring of Brad McDonald, a research assistant, conversant in video production and whose work is throughout much of my website. He was taken aback when I informed him that I was hiring him to teach me. I am indebted to for the major role he has played over the past four years and to the SSHRC grant for the funding to make his assistantship possible. Working alongside me, we both grew in our production literacies, moving toward our expertise in research videos.

The student who did a stain glass piece on Eisner's five orientations of curriculum (1985) for my graduate class (Norris 2008) had some expertise with that medium as did the student who assembled his jazz band to interpret Aoki's three orientations (2005a) through music. Kip Jones' award winning video (2011) based upon research on an ageing gay population in England had a substantial budget to hire a professional director, actors and crew (see <https://vimeo.com/109360805>). We cannot and should not have such expectations on all video research; still there also needs to be

evidence of some expertise with the form and a willingness to learn. This chapter documents my moving toward video as research as I have become more literate with the medium, primarily as a producer. Rather than solely publishing scripts of my research, the textures of performance could now also be included. The first printing of *Playbuilding as Qualitative Research: A Participatory Arts-based Approach* (Norris 2009) contained scripts; the second printing direct readers to a URL of remounted scenes (see http://www.joenorrisplaybuilding.ca/?page_id=149).

Supported by a SSHRC Insight Development Grant that supplied equipment, a research assistant well versed in video production, consultation with a web designer and appropriate software, in 2011, I returned to my curriculum of video in earnest. With many technological advances the time was ripe for me bring to fruition what I had envisioned in 1989. This final section examines some of the epistemological, aesthetical, technological considerations that emerged as I began to record performative research produced by myself and a few of my colleagues so that the textures of our work that would be lost in print could be brought to life. The insights gleaned can assist in providing a future for video as I create a lexicon for use and a repertoire of possible decisions.

Prior to the purchase of new equipment I had one fairly high quality MiniDV camera with a microphone and my own personal lesser quality MiniDV camera that I used to record rehearsals and parts of the process. While useful for jogging one's memory for translation into print, they were of insufficient quality for public dissemination. Mediating research in any format, whether it be in words, numbers or through the arts, does not mean anything goes. An appropriate degree of quality is important. However, some of lesser recording quality are provided here for demonstrational purposes.

Table 11.2 documents my growth (curriculum) in understanding a number of dimensions of creating performative research videos. The superscripted number in the table refers to the section in which it is discussed and its sequence in my web page.

1 Live—One Camera—Conflict in the Library

Epistemologically, it appears that the *Conflict in the Library* video (see http://www.joenorrisplaybuilding.ca/?page_id=1949, *Live—One Camera*) portrays what the live presentation looked like, or does it? The camera is stationary, from an angle. In so doing, the camera frames what is portrayed.

Table 11.2 For dissemination

<i>Of process</i>		<i>Of product</i>
<i>In vivo</i>	<i>Live recording</i>	<i>For camera</i>
Finding the shot ⁶	Live one camera ¹	Theater like ³
Rehearsal as inquiry ⁷	Live two camera ²	Following an improv ⁵
Second camera visible ^{12a}	Studio audience ^{4a & 4b}	CameraLego improvisation ⁸
Unstaged Clutter ^{12b}	Camera rehearsal ⁹ At conferences ^{11a & 11b}	Life-like continuous ¹⁰ Interview/discussion ¹³

Unlike the human eye that would focus on particular aspects, it is a “one one-shot-fits-all” presentation. Still it does have a live contexture that is different from a performative piece staged for the film/video medium.

Aesthetically, due to the sophistication of today’s audience, this rendition/mediation is flat. Watching the entire production would become boring very quickly. A two-camera recording with edits would enhance the medium, albeit further framing the viewing from the camera operators’ and the editors’ perspectives. Subtly, a video audience is more controlled than a live audience, as they see what the director wants. There are axiological and ontological differences between live and recorded performative research.

2 Live—Two Cameras—I’m Fine

The addition of two cameras gave multiple possibilities that could be chosen in the editing room. One camera could be a stationary long shot with another panning and zooming in and out. The editor would assemble the footage from both cameras. The final product would look more like the expected traditional video presentation.

However, rather than staging the performance for the camera, I decided to let the performance of *I’m Fine* play “as is” without providing additional camera directions to the actors. Nor did I want the camera operation to interfere with the audience’s viewing pleasure. The other camera operator and I adapted to what was there. In a subsequent presentation, we recorded with a *studio audience* (Walsh et al. 2015) who were informed and expected some camera interference with their viewing.

3 For Camera—Staged Like Theater—I Am Fine

Lighting and sound can be better controlled in a studio than in a live setting. While white balancing can provide continuity between cameras, background lighting to reduce shadows and so on is not as readily manipulated in live settings. For a video remount of *I'm Fine*, we used a drama studio with some background drapes and minimal set and props. It was staged as if it were live theater but recorded in a controlled setting. This enabled us to produce a stronger video aesthetic.

Sound can be difficult in both settings. Heating/cooling equipment and light humming, while often blocked out by the human ear/brain, recordings from those environments can be quite noticeable on video. Bodle' and Loveless' (2013) video about gaining entry (see http://www.joennorrisplaybuilding.ca/?page_id=1949, *Video as Part of Presentation*) was recorded with an appropriate microphone and under standard lighting. The hum in the silent moments within the conversations is distracting. Controlling it during production would be near impossible. For our studio and live recordings, we took a short sound sample of the ambient and using software. Brad used the noise reduction effect in Adobe Audition. Using the recorded ambient sound, it filtered the hum out from the recorded footage making the final product more aesthetically pleasing.

However, this is not possible in all live settings. We recorded a weight lifting session at Brock University but the room was occupied by others and could not be shut down (see http://www.joennorrisplaybuilding.ca/?page_id=1679, *Everyone Could Use a... Metaphoric Variation 2*). In this situation, minimal aesthetic value was sacrificed due to pragmatics. In the recordings of *Everyone Could Use a... Metaphoric Variation 1* and *When Ready Variation 1*, the sounds were part of the environment and their filtering would have removed an important contexture. In these cases, epistemological considerations directed the recording. Over time, I have found that determining the balance among epistemological, aesthetic and technological dimensions to be complex and eventually may be more about style than quality. My person lexicon is continually in flux.

While we had the potential of making a two-camera recording, for this staged piece I decided that, due to the short time period and the double focus with the actor partially blocking the shadow screen, the one tight angle would be more aesthetically pleasing than cuts from one camera to another. However, there is different energy between studio and live. There is a synergy created between cast and audience members during live productions that is lost in recording. With most of my participatory

drama research/pedagogy, I have claimed that video is not necessarily a replacement for live. The ontological experience of listening to laughter, silences and other audible sounds is lost when a piece is staged for a video remount. The video does not “re”-present; it is a new entity.

4a Studio Audience: A Compromising Hybrid

In 2013, I attended a performative research session presented by colleagues at a conference in Victoria, BC and while I was aware that the presentations would be “re”-produced in word (Walsh et al. 2015), I immediately saw video possibilities. The Insight Development Grant supported my research assistant and me in traveling to the University of British Columbia where most of the presenters resided and also supported travel by the other presenters who lived elsewhere. Videotaping collaborative performative work can bring additional costs that collaborating in print may not. We recorded and edited corresponding presentations for each chapter and the URL to my website (see http://www.joenorrisplaybuilding.ca/?page_id=1329) was printed in the book. Contextures were added to the print medium. It must be noted that while the publisher did not directly support the dissemination of the video from its website, A URL link to my website was permitted. Currently, I have a contract with Springer who will host on their site the videos on Academic Integrity (Norris and Brooks, *in press*). We’re moving toward the use of video by book publishers.

However, with this studio audience, we did the antithesis of Spencer Tracy’s “find your mark” (Levoit, date retrieved 2016). In rehearsals Brad McDonald and I watched the scenes and decided upon camera positions based upon what we saw. We broke with the recording tradition of directing the actors for the camera and let them informally direct us, thereby maintaining some integrity of the original piece.

It was performed live with both audience members and performers on the stage, creating an intimate space. The cameras were obvious to the studio audience and, for the most part, were unobtrusive. Such a hybrid enabled the recording to maintain some characteristics of the live medium within the recording.

4b Studio Audience: A Compromising Hybrid

Word spread prior to this event and other colleagues in the Vancouver area requested that we record their performative research. Over that two-week period, Brad and I recorded a number of colleagues’ presentations

including Kerri Mesner (2014) performing a chapter of her dissertation (see <https://vimeo.com/101258687>).

5 Two Cameras—Following an Improv

Kathryn Rickett's (2010) improvisational dances with her character, Lug, who appears with hat, long coat and suitcase (Luggage), readily lend themselves for video recording and dissemination. When in Vancouver, Brad and I spent an evening with Kathryn privately recording three pieces in a dance studio (http://www.joennorrisplaybuilding.ca/?page_id=1333). Such a recording provided its own technical difficulties, as she and we had no idea where she would take the improvisation. It was decided that I would use a tripod and pan with distant shots while Brad would record closer in. In other in vivo recordings (see 6 *Finding the Shot* below), we had no difficulty in one camera recording the other, but here, we wanted to avoid this. While it could happen from time to time, we trusted that we could remedy this in the editing studio. Marni Binder, a mutual colleague, recorded on her cell phone a street performance of Kathryn's in Chicago. As technology advances, more are able to become producers of performative research.

6 In Vivo—Finding the Shot

In my doctoral research, I would often visually pan the room examining what was going on in the small groups. Then, I would direct the camera operator to a particular group of students. As much as possible, I wanted to record them, in their natural states rather than presenting for the camera. The recordings were determined by what was taking place. This stance guided all of my recordings of vivo work but the technique/desire became explicit during a teaching visit with Stephen Nachmanovitch (1990). His workshop would be given once to each of two groups of 50 first year students and permission was given by him and the students to record the session. I did not want to stage the event for the camera and directed Brad to travel around and "find the shot". In 6 *Finding the Shot*, the camera almost becomes a character as the operator moves around a group of people, determining what is worth recording. To a certain extent, it gives an ontological sense of being there. The camera's direct involvement creates a new aesthetic similar to that used later in the feature film, *Birdman* (Iñárritu 2014). While this technique was used for in vivo recordings, it was also used to create *That's Not Me* (Norris and Mirror Theatre 2012) and *It's Just a Game* (Norris and Mirror Theatre 2013) (see 10 *Life-like—Continuous with Narration*).

7 In Vivo—Rehearsal as Inquiry

Finding the shot played a crucial role in recording the rehearsal of a scene from Graham Lea's doctoral dissertation (2013), *Homa Bay Memories: Using Research-based Theatre to Explore a Narrative Inheritance*, during our two-week visit to Vancouver. We had not time to mount the play for camera and we envisioned a video product, articulating the rehearsal experience. Rather than performing, we would explore his text through performative inquiry (Fels and Belliveau 2008), teasing out other dimensions. Graham, along with two of his committee members, George Belliveau and Lynn Fels would act and Brad and I would record over a two-day period.

George, however, was ill and only made the second day. I took his place and left one camera on a tripod, recording a long-shot with Brad using a Steadicam that could produce a recording with a high degree of stability (Photo 11.2).



Photo 11.2 Glidecam

In the edit, we kept Brad in some of the longer shots making explicit that this was a recorded event. Brad's presence seen on video what Brecht would consider the "alienation effect" (1957, p. 91) as the audience is reminded of their positionality. Such a recording is epistemologically and aesthetically different than a traditional camera stance. We were moving beyond and redefining existing video canons.

As it stands, this piece serves three major purposes. First, it provides multiple mediations of Graham's scene. Second, it documents a rehearsal process for future analysis and third, like this chapter, sections can be edited into papers for public viewing.

8 An Improvised Poetic Reading

The two-week visit to Vancouver was a cornucopia of opportunities to video performative research. A colleague, Carl Leggo, well known for his poetic inquiry, requested that we record him reading some of his poems. I had long said that I could no longer silently read Carl's poems, since I was too familiar with his voice. Whenever I read his work I could hear his unique voice reading it. The "intertextuality" (Alfaro 1996) of previous experiences influenced my reading of the present one. In reading, I added contextures that were not in the text. *LEARNing Landscapes'* online version of Volume 2, Issue 1 has Carl's voice imbedded (Leggo 2008). When one flips from page to 30 to page 31, Carl's voice is heard reading the printed poem.

Squeezed into an afternoon of our busy schedules, we arrived at Carl's office ready to allow the moment to dictate how we would record. Our only plan was not to have a formal staged reading; we would make our decisions then and there. Building upon the poem's title, *Ring around the Scholar* (Leggo 2016) we decided to have the camera ring around Carl for part of the reading. That sequence ends with a back shot of Carl reading to an empty office.

The entire piece opens, however, with Carl's image reflected in an award that he received. Later, in the recording I had noticed that the camera's reflection was caught on that award and reblocked, replacing the camera with Carl. The "error" spawned another creative element. The entire recording proceeded in this fashion, including the closing of the door revealing Carl's academic gown that was used in a segment. Aoki (2005b) discusses planned versus lived and Wagner (1976) in her biopic of Dorothy Heathcote explores teachers' comfort levels or "thresholds of tolerance" (p. 34). In my work, I tend to embody "the artist attitude,

which involves a healthy dose of *bricolage*, frees us to see the possibilities before us; then we can take an ordinary instrument and make it extraordinary” (Nachmanovitch 1990, p. 87) and do not overly plan. I reinforce the ability to respond to what exists or “response ability” with the recognition that some things are lost and others gained in the planned or improvisational approaches.

9 Camera for Rehearsal

Most of the work of Mirror Theatre is improvisationally based. While we have a general outline each time we present, we modify to the moments as each scene could be performed by multiple casts due to students’ timetables. The downside of this is that there is no script to which to refer between rehearsals. Recordings of these instances need not be high quality; merely, these must contain enough visuals and dialogue to assist in recall. While shown here for demonstration purposes, the intent was never for public dissemination. I found that the scenes grew with each rehearsal, taking on additional elements as the cast members added new insights and actions (see *10a Life-like—Continuous with Narration*). The videos assisted in and documented this growth. If, like in *9 Camera for Rehearsal*, public dissemination was considered a possibility, more attention would have been dedicated to video quality. For these purposes, it was good enough (Varela et al. 1993).

10 Life-Like—Continuous with Narration

Styles change over time and as current (2015) iPhone ads state, “The only thing that’s changed is everything” (see *10b—iPhone Ad* http://www.joenorrisplaybuilding.ca/?page_id=1949). We wanted that type of feel when we recorded two approximately 15-minute videos about drinking choices for Brock University’s Student Health Services. They take place at a party with partiers reflecting on the event. The actual recording took place in a cast member’s home with the rehearsal recording (see *9 Camera for Rehearsal*) given to a hired camera operator. I stood behind the camera operator, directing him to each action in a continuous shoot. A professional camera was used, a boom microphone employed and the room was silent save for the dialogue. Some background din was sound recorded after and layered onto the track. While this provided better managed the audio as we maintained control of the technical dimensions of the recording session, the camera style and editing played this down, creating a raw ontological experience of being there.

It was reported that some students, who attended training sessions that used the videos, claimed that they felt like they were there. This generation is used to participating through a camera lens and now the medium has become the experience. As a “progressing” culture we invented glasses to mediate our natural lenses that we were born with and in turn hand held cameras, that is, phones now both mediate and record. As a species, we dwell in a technological ethos. “Resistance is futile” (Frakes and Berman 1996); the future has passed.

11a and 11b Performing at Conferences

The mediation of research through live performances has steadily grown over the years. In the early 1990s pioneers, Jim Mienczakowski (1995) and Bob Donmoyer and June Yennie-Donmoyer (1995) established the efficacy of theater in research as they reported on theirs and colleague’s projects. Shortly after, Norris and McCammon (1996), Norris and Mirror Theatre (1999, 2000c), Konzal et al. (2000) and Saldaña (1998) brought performances to conferences. The current list is extensive (Norris 2009; Pelias 2014; Saldaña 2005; Spry 2011) and grows. But, as noted above, mass distribution took place in print, removing many contexts.

In order to diversify and expand the media used in disseminating performative genres, my continuing research now includes the recording of live conference presentations for dissemination purposes. To date these have presented technical difficulties, both in the performance itself and its recording. First, conference venues are not typically set up for theater, although ironically one of the standard seating arrangements is “theatre style”. Sight lines are poor, sound carries between rooms and performance space is limited. The “talking-head” style remains hegemonic with little accommodation for innovative presentations. When I travelled with a cast of Mirror Theatre (Norris and Mirror Theatre 1999) to New Orleans, I booked a school on Bourbon Street, rented lights and took one-half day to set up and rehearse. I was delighted by the turnout and the response by those who took the 20-minute trek to this American Educational Research Association off-site venue. Mirror Theatre covered all costs involved.

Blumenfeld-Jones (2014) accepted his designated space that was cramped and gave little to no dance space on a carpeted floor, strewn with cables. He critiques the space at http://www.joenorrisplaybuilding.ca/?page_id=1365. While the space difficulties were not the intent of the video recording, it shows the challenges of the space that Donald was allocated. My hope was to have a video quality record of the performance,

which was not possible due to the room's distracting characteristics. In addition, there was no place to situate the camera. Either, it would be at the back of the room videotaping the heads in the audience or near the front blocking their view. I chose half-way with the left knee of one attendee in some frames. (I did not seek a waiver from him.)

At my request, Celeste Snowber and Susan Gerofsky (1998) remounted their 1998 performance on the relationship between dance and mathematics for the 2015 Provoking Curriculum Conference. To our disappointment, the room was not conducive for video. While the human brain edits out much of the extraneous information, video does not. The room was full of distracting clutter greatly reducing the theatrical impact, even with a two-camera shoot. I intend to continue recording at conferences, recognizing the limitations, but will also seek our better facilities when these types of presentations occur.

12a Clutter and Camera as Data

But clutter need not always be avoided and I celebrate it when recording in vivo settings. It is part of the natural patina. Classrooms are busy spaces and to clean them up for video distorts the everyday. Set designers go to lengths to make certain scenes "realistic", so, as much as possible, I try to leave things as they are. In this example, some furniture was moved to create an open space, but this was for the workshop, not the camera. In such a recording with two cameras inevitably with one camera on the move, eventually, each camera will record this other. As mentioned earlier, I unabashedly make little attempt to avoid this in recording and/or editing. The camera was part of the environment and the occasional image reminds the audience of such.

12b Camera as Mediator

The camera can, at times, take on a more central role, almost, if not, becoming a character. In this clip, we can see the camera getting ready for the close up. Yes, it could have been edited out, but not only does keeping it have an alienating effect, reminding viewers of their positionality and the camera's mediation, it also foreshadows and draws greater attention to the close up. There are epistemological, ontological and axiological layers in decisions.

First, it breaks with the traditional narration of an invisible narrator/camera, making the framing or mediation explicit. Imbedded within, not external to the story is the story's framing. Second, the viewer is no longer

seeing through the camera's lens as a second lens is made explicit with the viewing explicitly oscillates between the two. Third, the power of the editor is also made explicit. Viewers see/witness what another wants them too. Here, the message becomes the medium.

13. Interview Contextures

Personally, as one steeped in the medium of theater, I find transcriptions flat. I enjoy their concreteness, interspersed with abstract discussion but I long for more of the textures of human dialogue. Anonymity and protection aside, why cannot some interviews be provided through video? It is part of our everyday culture and common in documentary film.

Completely unplanned, during Brad's and my two-week visit to Vancouver we intended to video Celeste and Susan's dance and mathematics piece in a studio. However, Celeste had broken her toe and was in a cast, so we opted for a conversation about their work and arts-based research in general. We were delighted with our impromptu conversation and pleased that we had decided to video it. In reviewing, we also believed that it could challenge and extend current perspectives about interviewing. Acknowledging that Celeste, Susan and myself are academics and that we three were also comfortable with the video medium, we still found the casualness of the discussion and quality of the two-camera recording in Celeste's condo produced an amazing product. Brad claimed that it was worth public dissemination, as is. It had a natural feel similar to the film *My Dinner with André* (Malle 1981) and we refer to the piece as, *My Dinner with Celeste and Susan*. Imagine if more interviews were presented in this fashion or video footage interspersed with narration. I wonder what Eisner would say?

THE PRESENT CONCLUSION

To say that we live in an era of visual technology could be considered redundant. Long gone are the days when taking photographs was expensive, time consuming and environmentally unsound due to the chemicals used. Today they can be taken on an instant whim when the occasion arises and posted on the web, just as fast. My daughter, Carmen, told me the adage that the best camera is the one that you have with you as she took out her cell phone to photograph flowers at Niagara-on-the-Lake. During the writing of this chapter, an undergraduate student emailed me:

I have decided to do a Blog post which includes a video, pictures, plus my write up (all in one). Once I have it finished, I can send you the link to my blog and you will be able to see it and mark it that way. Please let me know if this is acceptable (permission granted to insert this text).

I grew up as Mike TeeVee, a consumer. This generation has the resources and technical expertise to be producers, with sites like Facebook, YouTube, Vimeo, and WordPress as distributors. With most students possessing cell phones with video recording abilities, the future is now. As another current iPhone ad states, “Student films (pause) don’t look like student films” (see Student Films http://www.joenorrisplaybuilding.ca/?page_id=1949). Media literacy has moved beyond analyzing what we consume toward critically examining what we produce. There is a strong RefleXivity in the acts of becoming literate; we learn to read by writing and learn to write by reading. Video is no different. To prepare for the always uncertain future, we must teach this type of RefleXivity with X being the unknown. Creating spaces for production is both a pedagogical and axiological act.

One challenge for the future is with how we assist/teach our students in knowing through all forms of mediation including the pencil, word processing, paints, still photography and video, to list a few. Subject matter can be mediated and accessed through various means. Another is legitimizing various forms in a milieu in which words and numbers still remain hegemonic. The future of education is its enabling of multiple forms of knowing our world though integrated forms of multimedia in which form and content intermingle and dance. While this chapter has documented my attempt, still the legacy and/or inertia of the null curriculum pervades. Media assignments are exceptions to the rule. They do not fit on standardized tests. The purpose of this chapter is to suggest opportunities, some not even yet imagined, which resist hegemonic forces that try to limit people and knowledge both in content and in the ways in which it is mediated.

Nachmanovitch (1990) claims that creativity is working within limits. Producing a video no longer requires a gargantuan budget nor should low budget videos be held in comparison. Rather they should be evaluated on whether or not they are good enough for the purposes chosen. I recognize that the use of video is rhizomatic with others researchers worldwide, like my recently met colleague, Anne Harris (2016), exploring similar issues. Until we begin to tell our stories and amass a collection of experiences, the continued hegemony of discourse through the printed word will be the future.

My currere is an attempt to do just that, to create a new lexicon of video in research. It aims not to be canonical, rather the story is one in which I hope others will find some resonance, taking what is applicable to them. Such is the power of the narrative (Barone 1990). I embrace this new future that Eisner predicted in the 1970s and wrote this to support encourage, and challenge others in their decision-making processes as consumers, producers and teachers.

In closing, I do not feel the threat of technology. I embrace it. However, I do heed the concerns and challenges of colleagues. Postman (1969) claims that we must teach our students to have a “built in crap detector”. For me, this crap detector or critical literacy includes an examination of the hidden curriculum, (what is the power dynamic between the sender and receiver), the null curriculum (who and what are privileged and who are marginalized/ignored), a deep exploration of the epistemological, ontological and axiological dimensions of the experience and a strong sense of the aesthetic. Barone (2003, p. 202) adds “issues of form, substance, and quality”. The future, then, will be a generation of citizens who knows how to critically both consume and produce knowledge (Freire 1986) through a variety of media.

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The Future Is Cancelled: From *Melancholia* to Belief in the World

Jessie Beier

TEACHING AT THE END-OF-THE-WORLD

Fifteen years into the twenty-first century, one cannot help but acknowledge the way in which end-of-the-world narratives have permeated the popular imaginary. In online spheres, news feeds are plastered with signs of the coming apocalypse: warnings of cataclysmic climate changes, planetary temperature ascension and the depletion of global water sources, surge in tandem with cautionary tales of continued financial crises, the dissolution and privatization of social welfare services, and a growing sense of precarity in relation to the future of work. In film and television, the anxiety produced by our precarious present is brought to the forefront through a myriad of apocalyptic tales wherein the survival of the human species is positioned in opposition to fears of a dying planet (*The Core*, 2003; *The Day After Tomorrow*, 2004; *Sunshine*, 2007; *Interstellar*, 2014), threats of infectious diseases (*I am Legend*, 2007; *28 Days Later*, 2002; *World War Z*, 2013) and the perils of non-human integration with the human

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population (*District 9*, 2009; *Prometheus*, 2012; *Ender's Game*, 2013). Such ominous narratives are amplified by the realization that anthropogenic climate disruptions, produced and intensified by the uninhibited movement of integrated global capitalism, are now a reality that we must be willing to confront as humans that occupy the Earth.

The world is pulsing with environmental, social, political and economic crises that seemingly have the potential to derail modes of thinking bound by historicism and past habits. These disquieting narratives, however, have not necessarily overturned traditional or habitual paradigms. Instead, we have bared witness to the expansion of “there is no alternative” rhetorics, which have been wielded in the name of everything from economic austerity measures, as in the case of Greece’s 2015 “debt crisis” (Alderman et al. 2015), and conservative policy decisions, as in the case of Canada’s 2015 *Anti-terrorism Act* (Bill C-51: Anti-terrorism Act of 2015). This reconstitution of conventional reference points has, in turn, produced an overarching sentiment of “cruel optimism” wherein our relations of attachment to and with the world are constituted by compromised conditions of possibility (Berlant 2011). This cloud of cruel optimism has been created and maintained based on the assertion that something was out of control that required a conserving hand in the first place, resulting in visions of the future that are (over)determined by the dominant or “ordinary” responses to the present (Berlant 2011, p. 1). Put otherwise, these narrowed conditions of possibility have infected potential for thinking the future; we have restricted access to alternative speculations by narrowing narratives in and of the future by what appears possible in the limiting purview of the past-present.

This constraint and regulation of thought is especially evident in the realm of education. By instigating a habitual focus on a future that is fixed to the past-present, the educational project has become instrumental in reinforcing and perpetuating the narratives and techniques for living that are required to contain the inherent unpredictably of times to come. The Western educational project is driven by a deep-seated optimism that operates through the amplification and reproduction of what has been considered “good” in the past. Future-focused policy developments and curriculum reforms therefore hinge on the axiom that education should produce citizens that can function in *the* future society, which is most often imagined by the dominant discourses and reified ideologies of the past-present. In turn, educational initiatives use these invented benchmarks to project *one* determinate future, instead of acknowledging the multiplicity and uncertainty that constitute times to come.

The problem for contemporary pedagogy is thus how to deal with the expectation that education should provide future opportunities, what we might think of as *hope*, given the challenges raised by the growing acknowledgement that *a world* is ending. This end, it should be noted, will appear differently than those imagined in popular culture; this end will not come as an explosive or monumental finish, but rather a gradual demise where the world as we know it is transformed into one with which we are no longer able to relate. In the realm of education, symptoms of this demise are growing in both frequency and impact: growing job precarity, ever increasing focus on quantity over quality and the slippery corporatization of educational domains have positioned schools among the many institutions that work to produce and maintain a status quo underlined by neoliberal capitalist ideologies. At the same time, there remains a pressure to position education as that holy space of possibility, a space where hope is born and optimism prevails. This comforting narrative, however, does not adequately address the real, material conditions of our contemporary existence, raising the important question: if every decision to teach/learn involves some sort of commitment to the future, how does one go on teaching in and about the end-of-the-world?

As a beginning response, it is necessary to examine the ways in which particular images of thought have come to underline narratives of the future, and ultimately how education scholars, teachers and students alike have learned to subjectivize within these fictions. The image of thought examined in this investigation is that of the *anthropocene*. The anthropocene signals the geological age since the industrial revolution, where, through its activities and its growing population, the human species has emerged as a geological force now altering the planet's climate and environment (Dibley 2012). An anthropocentric worldview posits that humans are at the height of the natural evolutionary progression of species and of life, an assertion that assumes that humans have greater intrinsic value than other species. Within this worldview, humans are positioned as free agents separate from and contending with the rest of nature, and in turn, our fulfilment is predicated on overcoming the material constraints presented by such an opponent. This assumption of human difference and superiority, central to Western thought since Aristotle, not only produces hierarchies between different life forms but also legitimizes attitudes of exploitation, profiteering and oppression throughout globally connected social, political and economical organizations (Evernden 1992, p. 96).

As a result, this anthropocentric bias has permitted us to ignore a major aspect of the implicit logic in many end-of-the-world narratives, that is,

the equation and thus conflation of the Earth and world. The world, as we have come to understand it, is a human-centred notion of the global system, as opposed to either the Earth as a habitable place in terms of ecosystem and climate, or of the Earth as one of many planets in the universe. In thinking the future, it is this anthropocentric image of thought, and particularly this focus on a human-centred world, that contributes towards the myopic view of how a future might unfold. As Felix Guattari (2000, p. 29) asserts in his essay “The Three Ecologies”, an anthropocentric worldview operates through the authority of a global market that destroys specific value systems by putting material assets, cultural assets and wildlife areas, for instance, at the same level of equivalence. This is concomitant with the organization of all social relations, including schools, under dispersive systems of control, which work to create a consistently nagging paradox: on the one hand the continuous development of human-made techno-scientific interventions have provided the means to resolve ecological issues within our contemporary existence, while on the other hand, there is a distinct feeling that contemporary social forces and constituted subjective formations are unable to take hold of such resources and make them work.

This equation between world and the Earth has therefore left us as at impasse in thinking the future. Within the educational project specifically, this equation has reduced any vision of future educational paradigms to the dominant language of the past-present, in turn limiting our potential to *believe* pedagogical life might go otherwise. It is in this sense that a “world” is ending, or as Deleuze (1995) writes, it has been taken from us.

What we most lack is a belief in the world, it has been taken from us. If you believe in the world you precipitate events, however inconspicuous, that elude control, you engender new space-times, however small their surface or volumes. Our ability to resist control, or our submission to it, has to be assessed at the level of our every move. We need both creativity and a people (p. 34).

With this assertion in mind, it is necessary to pose new questions of how it is that we, as so-called humans,¹ have come to relate to our existence on the Earth, and perhaps more importantly, how this relationship might be rethought in a manner detached from the coding mechanisms of the widespread anthropocentrism that permeates our minds, falls from our tongues and lives in our bones. It is, perhaps, no longer adequate to think

of resistance as a force that penetrates from the supposed outside,² but instead as a force that is able to cultivate a *dissensus* at the level of molecular relations, at the level of subjectification. In turn, it is this dissensus that might stimulate the production of new modes of existence, and ultimately *belief* in the future.

In what follows, I aim to explore the dogmatic images of thought that have come to characterize the age of the anthropocene, and their impact on subjectivity (and ultimately belief), particularly in relation to contemporary educational paradigms. Working alongside Lars von Trier's 2011 film *Melancholia*, this investigation will unfold as a series of three speculative propositions that aim to offer a form of exit from the inveterate anthropocentrism that has come to characterize thinking in and of the future. Put otherwise, this inquiry offers a philosophical speculation that aims to articulate and enable contingencies of the given, that is, how one might endure the end-of-a-world, always with incomplete certainty, by remaining faithful to an incalculable future. This faith therefore necessitates a sense of becoming possible of the impossible and a mobilization of powers of the false that might work to create a future that goes beyond pure diagnostics and historical exemplification.

In order to actualize this becoming possible of the impossible, I look to the film *Melancholia* as a resource for thinking the future otherwise. The film is therefore not analysed in terms of its narrative or moralistic teachings, but rather as a site to examine how one might *endure*. In *Cinema 2* (1989), Deleuze writes: "the question is no longer what we see behind an image but rather, how we can *endure* what we see in it already" (p. 230, added emphasis). Foregrounding the notion of endurance, Deleuze posits that the cinematic experience might offer a chance to move beyond analyses of the world based on always-already coded or habitual modes of interpretation, towards an image of the world that operates at the limit of experience; that is, experience in excess of itself. As a site for speculative experimentation, I will look to von Trier's *Melancholia* and its uncanny fabulation of the last days of the Earth in order to investigate such modes of endurance.

PROPOSITION I: THE FUTURE IS CANCELLED (FOR NOW)

Much like the opening scene of von Trier's film *Melancholia* (2011), I begin with the assertion that *a* world is coming to an end. We live, it seems, in a moment defined by a swelling precarity, wherein the future

is conceived as nothing more than an impasse constituted by uncertainty and anxiety. Put otherwise, the inherent precarity of the world has come to be treated as the basis for deep fear and dismay, leading to postures of conservatism and, ultimately, stagnation. As opposed to being recognized as a productive quality of life itself, as Deleuze might assert (Colebrook 2002), this worldly precarity is fought off—Left, Right, and Centre—through the creation of particular attachments and narratives that work to truncate, striate and overcode the precarious flows that might otherwise allow us to think the future differently. This striation is impacted by what we *believe* is possible in and for the future, which is defined and delimited by the economic, political and social organizations that have come to characterize our contemporary existence on this planet.

As the last seven years of the “global financial crisis” has demonstrated, contemporary neoliberal capitalism is that which is capable of unceasingly overcoming its own limits and enclosures, even when its markets are failing. Characterized as a system of vast, open networks that give it the possibility of uninhibited movement, while at the same time limiting the movement of bodies and labour, contemporary capitalism is delocalized and perpetually deterritorializing—the ultimate “smooth space”³ of our time—in turn extending its influence over the whole social, economic and cultural life of the planet. Contemporary capitalism works as “a difference engine”, which “promotes the marketing of pluralistic differences and the commodification of the existence, the culture, the discourses of ‘others’, for the purpose of consumerism” (Braidotti 2011, p. 25). This form of capitalism celebrates the power of difference, albeit an understanding of difference that essentializes and reattaches otherwise multifaceted flows to unitary identities and consolidated traditions (Braidotti 2011, p. 171).

This unifying power of contemporary capitalism is propagated, in part, by the same conflation between the Earth and world outlined earlier in this investigation. Capitalism proliferates based on the common-sense assumption that the world exists as it does “for us”, and thus the Earth is conflated with a world defined by all-too-human regimes of representation. Within this view, the most basic elements that sustain life have been reduced to a cash product, and thus life itself is seen to have no intrinsic value, or no value outside of its commercial value. As a result, the world as we know it is now characterized by movements of *implosion*: through the project of endless capitalist expansion and consumption, life itself is destroyed by collapsing into the necessary modes of living required by the capitalist project. What capitalist speed deterritorializes with one hand, it

reterritorializes with the other and thus “[p]rogress becomes constrained within a framework of surplus value, a reserve army of labour, and free-floating capital” (Srnicke and Williams 2013, para. 2.3). The ideology of neoliberal capitalism advances *in spite of* clearly negative economic and social effects, and thus the political result of this constant reterritorialization, this worldly implosion, is a continued absence of new social, political, organizational and economic visions. In turn, the hegemonic powers produced and maintained by the status quo are “able to push forward their narrow-minded imaginary, in the face of any and all evidence” (Srnicke and Williams 2013, para. 1.6).

This movement of implosion, exemplified by contemporary capitalism, is not unique to economic and political spheres. A similar process of implosion has also come to characterize the way in which we have learned to subjectivize. As Guattari (2000) writes, “[c]apitalistic subjectivity, no matter in what dimension or by what means it is engendered, is manufactured to protect existence against any event intrusive enough to disturb and disrupt opinion” (p. 50). The success of any capitalist society therefore hinges upon its ability to utilize various forms of semiotization in order to control the maximum number of existential relations possible. As a result, control no longer functions solely through processes of discipline and punishment, but also through ongoing modulations that are both internal and external to the subject (Deleuze 1992). Relations between the so-called subject and its apparent exteriority become comprised of movements of implosion, wherein subjectification is always-already determined by modes of living that can be recuperated by the capitalist machine. This implosion articulates the way in which subjects are continuously transformed—or destroyed—not through their own creative or adventitious becomings, but through a collapse, by squeezing in on themselves in order to constitute subjectivity based on pre-existing images such as that of the “good capitalist” or the “rational human being”. The task facing thought today is therefore not a quest to develop new strategies for creating consensus, but rather the development of new conceptual weapons that might cultivate a *dissensus*, or explosion, at the level of subjectification (Guattari 2000, p. 14).

In the realm of education, cultivating dissensus is especially important if we are to question the forces that work to limit and/or enhance subjectification, and ultimately how we learn about the Earth and our relation to it. In the name of past habits and future hopes, the educational project has learned to hold the line, keeping ordinary routines locked in place. Much like the political bodies that spout “there is no alternative”

rhetorics, educational approaches are often based on postures of adaptation, maintenance and, ultimately, *survival*. Contemporary curriculum reforms, for instance, are founded on the assumption that schools should produce students who can adapt to and survive a future world defined by individual competition and modes of labour that are responsive to the ever-changing face of neoliberal capitalism. In turn, teaching and learning become means to a particular end, albeit one that does not yet exist, and the school acts as the territory for the inculcation of the requisite duties, speeds and repetitions of a future defined by the capitalist project.

What a teacher requires of his or her students within a classroom is not only that students engage with particular content, but that they take up a particular semiotic subjugation or a “certain style of semiotic molding, a certain initiation to the given castes” (Guattari 2009, p. 279). Students learn, through formal systems of instruction and assessment as well as the hidden curriculums inherent in schooling, the skills and attitudes necessary to “fit in” to such castes. As a result, desire becomes conflated with what is in a student’s *best interest* and the multifaceted desiring flows that make up the subject become encoded in a linear way, in turn alienating the subject from their own desire. Like the “given castes” produced and reproduced through education, this alienation becomes habitual within the bureaucratic capitalist system because it has been modelled, through schooling for instance, in such a way so as to ensure that subjects are semiotically receptive to this system (Guattari 2009, p. 289).

Positioned as a site for semiotic molding, the school becomes the grounds where subjective resources are both amplified and limited. This access to subjective resources, in turn, impacts the way in which both teachers and students think in and of the future. For example, in a recent study conducted by the Canadian Education Association (CEA), youth across Canada were asked to discuss their confidence in their learning environments and their future (Freiler 2015). Driven by the growing sentiment that today’s generation of young people will have lower levels of income and less upward mobility, while at the same time inheriting unprecedented economic, environmental and social challenges at a global level, the study engaged over 1000 high-school students in an online survey. The survey aimed to investigate students’ sense of trust, feelings of empowerment or efficacy, the degree of connection between in-school learning and life outside of school walls, and students’ confidence in the future (Freiler 2015). What the study revealed was that although many students discussed positive attitudes towards their own future orientations

and aspirations, students were least positive about the future of their community as a whole: “while young people approach[ed] adulthood with a confidence in their own ability to succeed—a critical ingredient for success—they appear[ed] to have waning faith in social institutions or their ability to influence them” (Freiler 2015, para. 30).

The attitudes represented by these students seemingly exemplify the movement of implosion that has come to characterize contemporary approaches to education: students have learned to think the future in terms of individual pursuits, wherein their own human being is conceptualized as something that can be controlled and manipulated without acknowledging how this being relates to the larger ecology within which it lives. The future world imagined by these students envisions individual subjects as separate, distinct and competitive with the ecologies to which they belong, in turn producing a “disconnect between personal and collective futures [that] threatens to turn the optimistic exuberance of youth into a troubling cynicism about the society they will inherit” (Freiler 2015).

In addition, this disconnect demonstrates the way in which anthropocentric blind spots have come to subtend the very way in which the future is thought. Behind this focus on the individual lies an anthropocentric rationality that makes possible the calculations and predictions about personal futures, while disconnecting us with the forces of life that might offer alternative resources for subjectification. It is this anthropocentric bias, reinforced and intensified by integrated global capitalism that has created an implosion, wherein visions of the future are bound by processes of detachment, imitation and ultimately representation of the world *as given*. This implusive mode of thinking, which occurs both at the molar⁴ level of social and political organization and the micropolitical level of subjectification, effectively works to *cancel* the future. As Williams and Srnicek (2013) write:

[T]oday’s politics is beset by an inability to generate the new ideas and modes of organisation necessary to transform our societies to confront and resolve the coming annihilations. While crisis gathers force and speed, politics withers and retreats. In this paralysis of the political imaginary, the future has been cancelled (para. 3).

It is here where we will turn to Lars von Trier’s 2011 film *Melancholia*. As Jameson (2003) and Žižek have asserted: “It’s easy to imagine the end of the world—an asteroid destroying all of life, and so on—but we

cannot imagine the end of capitalism. So what are we doing here?” (Žižek, S. 2011). Perhaps we cannot imagine the end of capitalism, because we cannot imagine the world beyond the anthropocene; that is, beyond the all-too-human regimes of representation that have come to define our existence on this planet. *Melancholia*, which in the opening scenes does in fact show the Earth colliding with an otherworldly body, offers a site to further explore this assertion.

Melancholia fabulates the annihilation of the human species, asking what it might mean to live at the end-of-a-world. In the opening scene of the film, we witness a surreal vision of the world coming to an end: a planetary collision between the Earth and the fictional planet of Melancholia causes a slowing of time, a re-organization of insides and outsides and the subsequent obliteration of human life. This is the scene that begins the film; we are told from the beginning that a world will end and thus, much like us, *Melancholia*'s characters live in a space where the future is cancelled. The question, then, is given the end-of-a-world, what does one do? How might one endure, or perhaps more importantly, how might one create belief in the world?

By transposing these same questions to the site of education, we might actualize the potential to uncanceled the future by experimenting with new subjective resources, and ultimately new modes of belief. As a starting point, however, the site of education, one subtended by notions of optimism, hope and an essential human exceptionalism, must be dismantled in order to reveal the horrific susceptibility of these identitarian and universalizing constraints to new planes of potential. This requires a concerted effort to create dissensus within those dogmatic images of thought that have come to limit visions of the future, such as those produced by anthropocentric biases. As Guattari (2000) asserts the implications of any given negative development may or may not be catastrophic, however “[c]atastrophic or not, negative developments [*évolutions*] are simply accepted without question” (p. 41). We need to question the deep-seated assumptions that have led us to conflate a human-centred world with the Earth in order to dilate and develop resources to think otherwise. We need to move away from thinking “there is no alternative” to thinking “there is *always* an alternative”, in turn producing new weapons for resistance that work at the level of subjectification.

PROPOSITION 2: RESISTANCE WILL COME FROM INSIDE
(FROM CRITIQUE TO BELIEF)

Unlike many end-of-the world narratives, *Melancholia* does not focus on the chaos and destruction that we often foresee within such apocalyptic visions. Instead, von Trier's film focuses on the micropolitical movements, desiring flows and intimate moments of two sisters, Claire and Justine, their social relations and their connection to the world within which they live. The question we might pose in relation to this film, then, is not what this end-of-the-world means or even how it may have come about, but instead how do these characters *endure*? How, if at all, do they create belief in the world? Put otherwise, given the end-of-the-world, how do these characters subjectivize? Where, if at all, are the potentials for a radical subjective position to emerge? It is these same questions that we might pose within the educational project today.

The film revolves around the marriage of Justine, a successful young creative professional who is to be wed to a kind-hearted and relentlessly devoted man. On the night of her marriage, which takes place at her sister and brother-in-law's luxurious chateau (there is a golf course with 18 holes!), Justine continually thwarts the efforts of her sister to provide a perfect wedding through continual delays, escapes and attempts to "get outside". Much to her sister and brother-in-law's dismay, Justine appears unable to habituate to the customs and norms of married life before it even begins, eventually leaving her fiancée on their wedding night despite his promise of a beautiful future. Justine's marriage is perhaps an example of the way in which even contemporary "kinship networks tend to be reduced to a bare minimum" (Guattari 2000, p. 27), or put otherwise, how such networks have become imploded within systems of adaptation, imitation and survival. As *Melancholia* portrays, family and married life have become ossified by standardized images of human behaviour, including the imperative to *be happy*. Justine is expected to display a certain kind of happiness not only on her wedding day, but also as she makes the next step into married life.

As the film progresses, we see that this imperative for happiness, which is directed by multiple characters towards Justine, is at the crux of any subjective enunciation she enacts. Claire's husband John cautions Justine "[y]ou'd better be goddamn happy" throughout her wedding, while Justine

does her best to put on a cheerful front for her guests: “I smile, and I smile, and I smile” (Trier 2011). As the film unfolds, this imperative to “be happy” continues, in spite of Justine’s increasing detachment from the social institutions to which she belongs. She breaks off her marriage with her fiancée, she declines a prestigious promotion at her place of work and she disengages from social life, moving in with her sister who then takes care of her. Justine’s inability to perform the necessary rituals within her own cultural spaces, including this imperative for happiness, in turn leads to an intense melancholia, and a resignation from the habitual and “normal” ways of existing in her world.

At one level, Justine’s disengagement could be attributed to her individual experiences and motivations, which might lead to labelling her constant sense of resignation and despair as clinical depression. In psychological terms, Justine’s depression could be understood as a chronic disorder that should be treated through therapy, antidepressant medication and other individual interventions. Within this diagnosis, Justine’s unhappiness might be attributed to her inability to habituate to societal norms and thus it is necessary to treat her symptoms through processes of adaptation and transformation wherein her behaviour better complies with expected modes of living.

Transposing Justine’s situation to the site of education, we see that such an analysis would create a similar “cruel optimism” (Berlant 2011) to that outlined in the introduction of this investigation. It could be argued that, like Justine, contemporary education has become stuck: visions of *the* future are projected based on what has been considered “good” in the past, and thus modes of thinking that fall outside of this exceptionalism are seen as abnormal and/or simply abject. In turn, resources for subjectification are effectively imploded in order to produce subjects that can express desire in a way that the dominant system can recuperate. The solution to Justine’s depressive resignation, similar to the thinking demonstrated by the youth in the CEA study, is to curb negative feelings about the future with optimistic, if illusory, attachments to individual and personal narratives. This strategy, however, is based on particular assumptions about human behaviour, subjectivity and how individuals are conceived and positioned in relation to the Earth they inhabit. The expectation here is that Justine is able to modulate her subjectivity, effectively imploding her subjective resources, in order to measure up to the standards considered to be the norm by the rest of society, especially the very rich.

As explored in the previous section, it is this implosion that effectively cancels the potential to think in and of the future. To create belief in the world, then, we must be willing to examine this reductive and limiting mode of analysis, in order to think how resistance and radical subject positions might unfold in new ways. Turning back to Justine's experience in and of *Melancholia*, we can see how resistance might be conceptualized differently, in turn necessitating an alternative logic for thinking the future.

To begin, we might think of Justine's disengagement from the social world not as a negative personal reaction to her experience or an individual fault in need of correction, but rather as an *active mode of resistance*. This form of resistance can be thought of similarly to Melville's character of Bartleby, who puts forward the formula "I would prefer not to". Herman Melville's "Bartleby, the Scrivener: A Story of Wall Street" (1995) recounts the tale of a peculiar character named Bartleby, who is hired as a legal assistant by an unnamed Manhattan lawyer. At first, this arrangement works out well due to Bartleby's ability to produce a large volume of high-quality work. This soon changes, however, when Bartleby responds to the directive to proofread a document by saying: "I would prefer not to". To the dismay of the lawyer and to the irritation of the other employees, Bartleby performs fewer and fewer tasks, eventually stopping any work whatsoever. In his essay "Bartleby; or, The Formula", Deleuze (1998) writes that it is this formula—"I would prefer not to"—that confers upon the character of Bartleby a radical limit function (p. 68); that is, "the formula bourgeons and proliferates—creates a stupor—as if one had heard the Unspeakable or the Unstoppable" (p. 70).

Similar to the case of Bartleby, Justine is recognized for her strong work at a prestigious advertising firm, but decides to quit her job despite a recent promotion to art director. As with the experience of her marriage, Justine is no longer able to enact the necessary behaviours to be successful in her job (in this case she has been asked to develop a time-sensitive tag line on the night of her wedding), and decides instead to decline the promotion and quit the advertising world altogether. In both the case of Justine and Bartleby, the decision to *not produce* impacts the characters individually, but also infects the thoughts and actions of those close to them. With each instance that Bartleby asserts the formula—"I would prefer not to"—one has the impression that a madness is growing: "not Bartleby's madness in 'particular', but the madness around him, notable that of the attorney, who launches into strange propositions and even stranger behaviours" (Deleuze 1998, p. 70). Similarly, Justine's own formula, in this case

enacted through her continual resignation, becomes contagious, eventually spreading to her sister and brother-in-law. The melancholia that comes to characterize Justine's interaction with the world, and also happens to coincide with an approaching celestial body called Melancholia (of course this is not coincidence), begins to infect those around her, ravaging, devastating and "tying the tongues" of her close family (Deleuze 1998).

As Deleuze (1998) asserts, this contagious devastation alone is not the essential aspect of what the formula produces. Instead, the effect of the formula, on both Bartleby and Justine, relates to how they proceed as subjects in the world: from the moment they express the formula "I would prefer not to", not only do they disrupt the normative behaviours of those around them, but they are no longer *able* to copy (in the case of Bartleby) or reproduce standardized modes of living (in the case of Justine). It is within this limit function, produced by the formula itself, where potential arises: "the formula hollows out an ever expanding zone of indiscernability or indetermination between some nonpreferred activities and a preferable activity" (Deleuze 1998, p. 70). In this way, the formula is what carves out a foreign language, or new modes for subjective enunciation, within the dominant language, in turn proliferating and infecting others (Deleuze 1998, p. 71). The formula acts as an expression that contaminates everything, escaping linguistic form and common-sense understandings, thus providing the impetus to question and challenge what has been considered "normal" or "good" in the past.

Likened to Bartleby's formula, it is no longer adequate to analyse Justine's mode of non-production in terms of her individual experience, something we might think of as clinical depression, but rather Justine's (in)action must be considered as an intersubjective mode of semiotization that is capable of producing new modes of resistance. Justine's depression cannot be read simply as an individualized experience of the world, but instead a production that is linked to the larger ecology she inhabits. Put otherwise, Justine's melancholia need not be understood as a particular unhappiness, but rather a deep *belief* in something. Justine states at one point in the film: "I know things" (Trier 2011). Similar to Bartleby's formula "I would prefer not to", Justine's formula—"I know things"—devastates those around her; "after the formula there is nothing left to say: it functions as a procedure, overcoming its appearance of particularity" (Deleuze 1998, p. 73). In this way, Justine's melancholia is not a passive or inactive retreat from the world, but instead an active form of resistance. Justine resists knowledge of the world *as given*, in turn actualizing belief in

a world that might subvert the devices of subjugation and domination that have come to define her existence within a future that has been cancelled too soon. Through this knowledge, Justine is able to develop new subjective resources, wherein subjectivity is not understood as a stable concept of a pre-determined Self, but rather a series of perpetual becomings or trajectories. It is this knowledge, embedded and enacted through Justine's formula of non-production, that holds the potential to create new belief in and for the future.

If we are to take this assertion seriously, the necessary question that arises is: what is the connection between Justine's knowledge and her capacity to believe? Analysed as a mode of active resistance, Justine's melancholia transforms from an individual reaction to the world, to a mode of producing new belief, even when the world is ending. In an essay entitled "From Knowledge to Belief, from Critique to the Production of Subjectivity", Maurizio Lazzarato (2008) offers an alternative conceptualization of belief that helps to underscore this assertion. Referring to Deleuze's philosophical project as an attempt, in part, to replace limiting models of cognition, such as the model of critique, with models of belief, Lazzarato suggests that it is this shift which changes questions of life from just understanding, an analysis of the limits of knowledge, to a focus on the possibility of our actions. It is through this dilation of possibility that Lazzarato asserts belief holds a "genetic, expansive power, a 'generous capacity' since it believes also in the future and these 'possible ambiguities'" (Lazzarato 2008). Belief, according to Lazzarato, is therefore not understood in the typical religious or political sense, where it is linked with universes of value or ideological suppositions, but instead the essence of belief here lies in *action*; the belief in an invisible world, one that is to come, that in turn affirms it as real, putting to test the ability for a subject to act on such a possible belief (Lazzarato 2008). As Lazzarato summarizes, belief is the "disposition to act".

Within this understanding, belief, even a belief in the end-of-a-world, *affirms* the world as it is believed as a "processual, polyphonic and auto poetic" device (Lazzarato 2008). This world is able to construct its own rules, protocols and hypotheses, which in turn allow us to believe in "new meanings, constellations, [and] modes of being so that the struggle against the same relations of domination and subjugation can be initiated to be able to govern oneself" (Lazzarato 2008). Lazzarato asserts, however, that these new modes of existence must always be put to the test through action; that is, to risk one's own disposition to act in a new way. Through

a posture of non-production, Justine deploys this disposition to act against the devices of semiotization and domination that might otherwise operate to implode her subjective experience of the world.

By dilating the analysis of Justine's melancholia beyond that of individual happiness, we might begin to recognize how Justine not only challenges the dominant social apparatuses that might otherwise implode her subjective resources but also how she sets into motion new modes of being, new constellations of value and ultimately new *belief* in the world. It is this production of belief that engenders a different logic for thinking subjectivity, in addition to exposing new planes of potential for the creation of dissensus and, ultimately, resistance.

PROPOSITION 3: WE NEED A DIFFERENT LOGIC (ECO-LOGICS AND MICROPOLITICAL RESISTANCE)

Although Justine's belief in the world, or her disposition to act, may work to subvert the habitual connections that have come to characterize her particular situation, one could, and perhaps should, ask how such belief works to produce new modes of endurance, especially in light of our own contemporary impasse. Put otherwise, what is the revolutionary path that Justine actualizes through her disposition to act, or rather, her disposition to *not act*?

As outlined in the previous sections of this investigation, the ethical-political connection between individual and the world and between individual and others has been broken. An anthropocentrically biased worldview equates the Earth with a human-centred world, in turn producing distinct separations between so-called humans and the social and ecological organizations to which we belong. This worldview derives its persuasiveness from its "seeming facticity and from the deep investments individuals and communities have in setting themselves off from others" (Bell and Russell 2000, p. 192). The question of the anthropocene is therefore difficult to raise precisely because such a bias often manifests itself in silence.

Within the educational project, there are many examples of how even so-called "progressive" approaches to contemporary education operate in the purview of such anthropocentric blind spots. Critical pedagogy, for instance, provides a discursive framework through which to critique and contest many of the key tenets of humanism and the cultural and historical specificity of all human knowledge. This approach, however,

continues from earlier traditions, such as “progressive”, “emancipatory” and “liberation” pedagogies, whose root metaphors are distinctly modern (Bowers 1993, p. 25–26). That is to say, critical pedagogy is subtended by anthropocentric assumptions about humans and nature, which take for granted the borders and categories that define and delimit subjects in relation to what is perceived as “nature” and the devalued Other. In critical pedagogy, investigations of inequality and exploitation have proceeded so far with little acknowledgement of the systemic links between human beings and the world in which we have come to occupy; “[t]he more-than-human world and human relationships to it have been ignored, as if the suffering and exploitation of other beings and the global ecological crisis were somehow irrelevant” (Bell and Russell 2000, p. 191).

Although approaches such as critical pedagogy provide a discursive framework through which to transgress, and disrupt assumptions about objectivity, the unified subject and the universality of human experience, they still tend to rely on postures of critique, which work to reinforce rather than subvert deep-seated anthropocentrically biased assumptions about “human nature”. As Lazzarato (2008) writes, “possibilities are simultaneously integrated in the world (and this can be used to create critique) and radically irreducible and heterogeneous in the world (and no critique can be created with something that has no actuality)” (para. 16). Put otherwise, the strategy of critique relies on images of the world *as given*, in turn ignoring images of the world as it *might be*. Lazzarato suggests it is therefore necessary to replace such limiting models of critique with those of belief, wherein belief is not only conceived as a disposition to act, but also that which necessitates a different understanding of bodies and the relations found between them. Within this understanding, bodies are governed by a different logic, that is a logic of intensity where human subjects, for instance, are not considered totalized bodies but as partial objects that find potential vectors of subjectification that might create belief in a world, and thus create the world itself.

In his essay “The Three Ecologies”, Guattari (2000) speaks of this logic, asserting that any sort of resistance, particularly in relation to global ecological crises, must be concerned with “visible relations of force on a grand scale, but will also take into account molecular domains of sensibility, intelligence and desire” (p. 28). For both Guattari and Deleuze, this molecular domain does not necessarily refer to biology, but instead refers to the micropolitical interactions that are constantly at play within each of us. Subjectivity for these thinkers is not conceived as a static homogenous

entity, but instead a set of multiplicities that constantly and simultaneously pull us in numerous directions (Houle 2011, p. 107). It is within this micropolitical or molecular space where we connect to the world, where sensation occurs, and it is within this space where we might transform, if only momentarily, our sense of self and our understanding of how we relate to the world. For Guattari (2000, p. 44), it is also within this molecular domain where we might think resistance as an *eco-logical force*, that is, a force that concerns itself with the movement and trajectories of evolutive or transformational processes. Unlike a logic of critique, which would concern itself with discursive categorical sets and molar organizations that seek to define and delimit bodies, Guattari's eco-logic is a process of "fixing-into-being" wherein "expressive subsets that have broken out of their totalising frame [begin] to work on their own account, overcoming their referential sets and manifesting themselves as their own existential indices [or] processual lines of flight" (p. 44).

Guattari (2000) asserts that the demands of singularities are rising up everywhere, creating new ecological problematics, and thus we are in need of new ecological approaches. As outlined in the onset of this investigation, contemporary capitalism, underscored by an inveterate anthropocentric worldview, has produced an unending series of differences that are nevertheless identified and subsumed under capitalist logic. Through a conflation between the Earth and a human-centred world, we have limited the connections that can and cannot be made between so-called "humans" and "nature", thus limiting prognostications about how future life might unfold. As Lazzarato (2008) suggests, this limiting purview, one defined by modes of analysis and critique, must be replaced by a disposition to act, or what he terms belief. If we fold Guattari's eco-logic into this conceptualization, belief can be understood as a form of action, where action is not necessarily individual, but a multifaceted ecological process. Within this understanding of belief, subjects are not considered individual, but rather constituted by multiple trajectories of subjectification, each of which works more or less on its own account. Put otherwise, the individual would appear as a "terminal" for subjective processes involving mental, social and ecological registers. In turn, and as Guattari (2000) asserts, interiority would appear as a "crossroads where several components of subjectification meet to make up who we think we are" (p. 12). Thinking belief in this way would, in turn, lead us to re-examine the relation between the individual and subjectivity, and, above all, to distinguish clearly between these two concepts.

It is this understanding of belief, underlined by both Lazarrato's "disposition to act" and Guattari's "eco-logic" that might allow us to confront the impasse that has come to define the educational project, and particularly how educational futures are envisioned. Educational domains rely on what in philosophy is called the *genetic fallacy*; that is, the assumption that because something was produced within a particular sociopolitical framework in the past, it will somehow be irrevocably tainted by this framework in the future. Specifically, the educational project is positioned as a site that must respond to the genetic fallacy that any future discourse must be responsive to the capitalist modes of production that have come to define our recent past and present. As Guattari writes (2000), it is therefore our task to acknowledge the need for "a reconstruction of the objectives and the methods of the whole of the social movement *under today's conditions*" (p. 42, emphasis added).

This reconstruction requires a reorientation in thinking that is open to speculation, that is, a certain fidelity to an incalculable future wherein we are able to imagine how life *might* unfold. Such speculation, in turn, requires the development of a new logic, or a new sense of ecological praxis, wherein anthropocentric biases are dismantled in order to expose new modes of connection. It is within the realm of education that such redefinition and renegotiation are desperately needed. In order to transform the educational project from something defined by adaptation, maintenance and survival, to something defined by creation and the development of new subjective resources, or new ways to believe, education must be open to speculations that reconnect the mental, social and ecological registers. Through such reconnection we might be able to redefine and refocus the goals of education so that the relation between capital and human activity is repeatedly renegotiated.

To conclude, in order to uncanceled the future educational scholars need to recognize the way that life articulates itself in terms of heterogeneity and tangles, constantly activating singularities that might otherwise be turning in circles, stuck in the impasse. With this entanglement in mind, the question of subjective enunciation—that is how one might live, how one might believe in the world—becomes more forceful, working not to habituate life to an image placed in a future that is always-already known, but one that is able to deteriorate reified human relations that ultimately result in incomprehension and a fatalistic passivity towards the world. For the educational project, it is this notion of belief that might dilate our capacity to speculate, to fabulate and, ultimately, to produce a future that is adequate to the pressing challenges that continue to mark the age of the anthropocene.

NOTES

1. A key tenet within the lineage of Western philosophy has been the conceptualization of a human subject characterized by individuality, rationality and a distinct separation from objects, animals and the Earth. This human subject is conceived through an ongoing process of rationalization and correlation, wherein the human being is always-already indexed to the given world, that is, a world defined by capitalized and technological all-too-human interventions that have come to shape the anthropocene in the first place.
2. For Deleuze and Guattari (1987), the concepts of “inside” and “outside”, or what they refer to as “interiority” and “exteriority”, are positioned as modes of thought that ultimately shape how we understand relations between bodies, both physical and conceptual (see pp. 71, 88–91, 323–37, 503–5). For Deleuze and Guattari, the term “interiority”, or “inside”, refers to the idea, dominant in Western philosophy since Plato, “that things exist independently, and that their actions derive from the unfolding or embodying of this essential unity” (Roffe, 2010, p. 97). Put otherwise, “interiority” describes thought that is indexed to transcendent unities wherein things can be known based on their a priori or pre-determined meanings and essences. Deleuze and Guattari’s philosophical project endeavours to critique this transcendent mode of thinking by positioning the world as a generalized exteriority. “Exteriority”, or “outside” thought, therefore, works to question this transcendent legacy by asserting that relations are external to their terms, and therefore, in order to understand any specific phenomenon, it is not enough to position internal meanings or structures as something opposed to “outside” relations, but rather interiority must be understood as that which is produced from a general exterior, or what might be considered the immanent world of relations within which any phenomenon is situated.
3. Deleuze and Guattari (1987) introduce the paired concepts of *smooth* and *striated* space in *A Thousand Plateaus* as a way to rethink organizations of life as a complex mixture between forces that move and flow—smooth space—and those sedentary captures that delimit such movement—striated space (Pisters and Lysen 2012, p. 1). These concepts work to conceptualize how the various rhythms and flows of the human subject’s relations to an otherwise chaotic world become territorialized, delineated and categorized along the striated space of social and political organizations. Deleuze and Guattari are not interested in substituting one concept of space with another, but rather how forces work to striate bodies while at the same time developing other forces that emit smooth spaces (Deleuze and Guattari, 1987, p. 500). Contemporary capitalism offers a prime example of this dual operation. Capitalism may have emerged from striation, but nevertheless tends to smooth out all spatial boundaries, opening up markets in order to deterrito-

rialize production, or as Hardt and Negri (2000) have written, “[c]apital tends towards a smooth space defined by uncoded flows, flexibility, continual modulation, and tendential equalization” (p. 327).

4. The term “molar” is used by Deleuze and Guattari (1987) to conceptualize how organizations are defined in terms of their coded structures and principles. The molar designates systems and axioms that are based on rigid stratifications or codings, thus leaving little room for all that is flexible and contingent (Surin 2010, p. 164). One of the main revolutionary objectives of Deleuze and Guattari’s writing is therefore to break down molar aggregates in favour of what the writers refer to as molecularity, a way of thinking structures that better allows for connections that are local and singular. In *A Thousand Plateaus*, Deleuze and Guattari (1987) apply the concepts of the “molar” and “molecular” to political bodies; molar entities belong to the State or the civic world and refer to organizations that are fixed by well-defined categories and striations, whereas molecular entities transpire in less perceptible areas where organizations are instead understood in terms of their ineffable sensations and micropolitical desiring-flows (Conley 2010, p. 175).

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