

Educational Life-Forms

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Deleuzian Teaching and Learning Practice

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FOREWORD

Escaping the Program: A Foreword

When the path is clear and given, when a certain knowledge opens up the way in advance, the decision is already made, it might as well be said there is none to make: irresponsibly, and in good conscience, one simply applies or implements a program. Perhaps, and this would be the objection, one never escapes the program. In that case, one must acknowledge this and stop talking with authority about moral or political responsibility. The condition of possibility of this thing called responsibility is a certain *experience and experiment of the possibility of the impossible; the testing of the aporia* from which one may invent the only *possible invention, the impossible invention* (Jacques Derrida, 1992b, p. 41, italics in original).

The only way to discover the limits of the possible is to go beyond them into the impossible (Arthur C. Clarke, 1962, p. 21).

I used the epigraphs above to introduce another recently-completed essay (Gough, in press), but I make no apology for recycling them here because I interpret David R Cole's book as providing an imaginative and provocative alternative response to the problem I attempted to address in it. The problem – which I posed as 'can we escape the program?' – arose in the context of a national Education Research Futures Summit, a joint venture of the Australian Association for Research in Education (AARE) and the Australian Council of Deans of Education (ACDE), the purpose of which was 'to contribute to a capacity of education researchers to analyse, envisage and plan for the future, conceived in terms of not one future but a range of possible ways of thinking and conceiving the future' (Alison Lee, et al., 2010, p. 1). My contribution to the Summit brought together two lines of inquiry, each of which explores the paradoxical problematics that both Jacques Derrida and Arthur C. Clarke signal in the passages quoted above – paradoxes and problems that puzzle poststructuralist philosophers and authors of science fiction alike, and which necessarily attend the ways that we think, act, and responsibly position ourselves in relation to unpredictable, uncertain, unknowable and incalculable futures. I will describe these lines of inquiry, and the *problématique* they explore, in a little more detail, because much of my enthusiasm for the approach Cole takes in this book is due to the fresh insights he provides on a number of deeply troubling aspects of educational inquiry and practice.

One line of inquiry, which has now preoccupied me for more than three decades, explores alternative futures in education, with particular reference to the

ways in which ‘the future’ can be understood as an object of scholarly inquiry. This research has encouraged me to value alternatives to what Derrida calls ‘the program’ – the ‘clear and given’ path that ‘certain knowledge opens up... in advance’ and that draws us toward a future that we are ‘programmed’, as it were, to (re)produce. It has also led me to distrust categorical distinctions between ‘possible’ and ‘impossible’ futures and to see generative potentialities in refusing to demarcate them.

More recently I have engaged with a line of inquiry that explores how the language of *complexity* – a heterogeneous assemblage of concepts and metaphors arising from complex systems theorising in a variety of scholarly disciplines – invites us to rethink education in terms of *emergence*. As Jeffrey Goldstein (1999) writes, emergence ‘refers to the arising of novel and coherent structures, patterns, and properties during the process of self-organization in complex systems’ (p. 49). Complex self-organising systems provide conditions in which Derrida’s ‘impossible inventions’ might emerge because the radical novelty of emergents cannot be anticipated before they actually materialise – they emerge from experimentation with what, *in the present*, cannot be foreseen as a possibility (see also Jacques Derrida, 1992a, p. 16). Complexity potentially destabilises the instrumentalist rationality that ‘programs’ educational systems (and agents/agencies within them) to privilege orderly and predictable processes culminating in stable output.

Cole brings Gilles Deleuze’s philosophy to life as he pursues lines of inquiry that, to my mind at least, complement and converge with the ones I describe above. The word ‘future’ appears frequently throughout this book’s pages, as do variations on terms such as ‘complex/complexity’ and ‘emergent/emergence’. Cole demonstrates how thinking with Deleuze offers incentives and opportunities to ‘escape the program’ but, as he writes at the beginning of chapter 7, this is not achieved via ‘a confrontational approach’ that desires ‘to immediately revolutionise current practice’. Rather, Cole ‘engages with the interstices and crossing points between the known and unknown in teaching and learning to unlock a potential future of education’.

Those of us who share Cole’s passion and determination to work between the known and unknown understand the difficulties of doing so, but our efforts to materialise the various potentialities of futures-oriented thinking, complexity, emergence, and Deleuzian thought are also constantly undermined by a politics of *complexity reduction* that pervades public life in many nations (see Gough, 2010). Among the most pernicious and destructive examples of this politics is the idea that education should be reduced to an ‘evidence-based’ practice by seeking causal links between measured educational ‘inputs’ and the measurement of outcomes. This ‘what works’ program is now an uncritically taken-for-granted assumption in many countries. Advocates of evidence-based education, such as David Hargreaves’ (1996) and Robert Slavin (2002), argue that educational inquiry should be modelled on scientific research procedures in fields such as medicine, including large-scale experimental randomised controlled field trials.

My converging/emerging positions on futures and complexity lead me not only to accept that there are limits to predictability and control but also that we *should* understand that educational processes *ought to be* characterised by gaps between ‘inputs’ (policy, curriculum, pedagogy) and ‘outputs’ (learning). In Gert Biesta’s (2004) terms, these are not gaps to be ‘filled’ but *sites of emergence*. In other words, what we have previously imagined to be ‘outcomes’ or ‘products’ – knowledge, understandings, individual subjectivities, etc. – emerge in and through educational processes in unique and unpredictable ways. However, we must also bear in mind the possibility that attributions of emergence reflect our ignorance of non-emergent explanations (see Mark Bedau, 2008), which is precisely why we should entertain, to repeat Derrida’s (1992b) words, ‘*the possibility of the impossible*’ and strive to invent ‘*the impossible invention*’ (p. 41). As Derrida (1989) insists, such an invention is incalculable before it actually appears and must ‘declare itself to be the invention of that which did not appear to be possible; otherwise it only makes explicit a program of possibilities within the economy of the same’ (p. 60). Although Cole mentions Derrida only once in passing (which is not, I hasten to say, a criticism), I am convinced that this book can be read as a powerful enactment of Derrida’s notion of ‘*testing of the aporia*’ and brings us closer to materialising ‘*the impossible invention*’.

Deborah Osberg and Gert Biesta (2007) argue that an ‘emergentist’ understanding of knowledge production converges with Derrida’s account of deconstruction, neither of which challenge existing knowledge by overturning it:

Rather, they ask us to imagine a future which is *incalculable* from the perspective (or logic) of existing knowledge. They do this through affirming existing knowledge *without allowing it to overrule what is to come*. By acknowledging but not *following* existing knowledge, both deconstruction and strong emergence seek to negotiate a passage between the knowledge that has been and that which is still to come (p. 45, italics in original).

Osberg (2010) refines this argument by focussing more explicitly on how the respective ‘logics’ of emergence and deconstruction might help us ‘to act responsibly towards an incalculable future – to care enough to do justice to the future’ (p. 162). She argues that although the future is ‘incalculable’, this ‘does *not* mean that we should no longer try to influence the future by making decisions about it’ or ‘that we should passively accept whatever comes our way’ (p. 162, italics in original). Rather, we can adopt ‘an emergentist understanding of process, which is *not* orientated towards control and closure (choosing what to do) but towards the invention of the new (putting things together differently)’, which allows us ‘the possibility to think about the future in non-teleological terms’ (p. 163, italics in original).

Cole refers to evidence of several kinds and forms, including empirical studies of children reading in and out of schools, and recent brain research that shows learning to be mostly a function of novelty, but he does so in the spirit of Osberg and Biesta’s sense of ‘acknowledging but not *following* existing knowledge’. Unlike far too many education researchers in recent years, Cole neither claims that

he has better evidence than someone else nor assumes that the mere use of the word ‘evidence’ is enough to clinch an argument. But more importantly than this, Cole writes in the spirit of Deleuze’s (1995) encouragement for ‘writing to bring something to life, to free life from where it’s trapped, to trace lines of flight’ (pp. 140-1). This is particularly evident in Cole’s deployment of the Deleuze-inspired figuration of ‘educational life-forms’ in contrast to the more conventional academic tactic of arguing through metaphor. To illustrate this point, I will compare Cole’s approach with Thomas Ricks’ (2010) argument that a recent ‘bacteriology paradigm revolution’ can function as a metaphor for (re)interpreting Chinese excellence in mathematics education.

Ricks begins by pointing out that Chinese nations – including the mainland, Taiwan, Hong Kong, and Singapore (77% ethnic Chinese) – lead the world in mathematics education as measured by performance on international comparative tests. He then uses recent developments in bacteriology as a metaphor for understanding China’s education successes by challenging common conceptions that Chinese education is ‘traditional’ due to their large class sizes, lecture-based/teacher-centred pedagogy, exam-driven curriculum, technology-barren classrooms, and student recitations. Until recently, bacteriology was dominated by a laboratory model of culturing bacteria in nutrient-saturated media, which defined bacteria as primitive eating and reproducing machines, and limited bacteriologists’ understanding of the development of new potent bacterial strains resistant to the most powerful antibiotics. Bacteriologists assumed that ‘superbugs’ arose through inherited immunity, that is, antibiotics culled colonies, leaving only the most resistant cells to reproduce into drug-proof strains. Medical research thus concentrated on developing more powerful antibiotics to battle this increased resistance.

But more recent research suggests that superbug strains form not so much from inherited genetic immunity but through intercellular collaboration and purposeful problem solving at the colony level. The new bacteriology paradigm addresses intercellular relationships that consider the colony as a single – albeit loosely coupled – organism. Bacteriologists now see how hostile environments trigger individual bacteria to cooperate; when survival is threatened the entire colony forms a complex system in which individual bacteria are intertwined, interrelated, mutually-reinforcing members. The colony exhibits novel behaviours not shown by individual cells. Using various chemicals (simple molecules, polymers, peptides) and more complex molecules (proteins, bits of genetic material, plasmids, viruses), bacteria form a colony-wide genomic web through which they exchange genetic material and splice it into existing DNA to develop genetic solutions that are quickly shared with the other colony members. Specially bred, non-immune bacteria have demonstrated colony-wide resistance to low-level antibiotic exposure, with entire colonies developing genetic immunity in as little as 48 hours. Researchers now try to fight bacterial infections in part by developing drugs that interrupt bacterial communication.

Using the ‘bacteriology paradigm revolution’ as a metaphor, Ricks argues that China’s ‘traditional’ modes of instruction mask the deeper factors that make it so

successful. He argues that the Chinese use many principles that are core to initiating complex systems, such as forming local and regional collaborative groups that attempt to solve the issues facing them, as well other complex activities. For example, students in China often work in small groups after an introductory teacher lecture to solve specially-designed problems that occasion classroom-based student complex systems. Thus, although a lecture by itself may be a less effective method for mathematics instruction, the combination of a teacher lecture prior to collaborative student activity may enhance that activity by providing a framework (a type of constraint) to focus that activity. Additionally, teachers work together in research groups, school collaboratives, and city-level or regional cooperatives to further develop the national curriculum. Ricks also suggests that the more holistic Chinese approach (where students and teachers advance together in unified cohorts over multiple grades, parents are more involved in their child's education – even attending classes – and universities cooperate with schools to implement the national curriculum) helps the Chinese to develop mathematising complex systems more readily in their classrooms, schools, and communities. He argues that the 'traditional' Chinese educational methods – largely formed during the Communist era after World War 2 – are a revolution against the entrenched traditional reductionism of Western educational systems. Whereas the USA is isolationist and fractured in its mathematics education practices, the Chinese have networked communities at the class, school, and regional level that provide for much more robust complex functioning. The Chinese practice of deprivatising their work contributes to this process. They have developed structures that provide for sufficient redundancy to allow complex formations to coalesce, but with enough freedom for individual creativity, and enough expectations (constraints) to keep the system operating efficiently.

I was present when Ricks presented his argument to an audience that included more than 200 Chinese academics at a conference in Shanghai in November 2010. My immediate impression was that his choice of metaphor might be forced and even offensive, but I was also puzzled as to what a reader/listener might be able to *do* with the metaphor, with what its *function* might be. This is where the difference that some Deleuzian scholars see between metaphor and figuration comes into play. Rosi Braidotti (2000) argues that 'the notion of "figurations" – in contrast to the representational function of "metaphors" – emerges as crucial to Deleuze's notion of a conceptually charged use of the imagination' (p. 170). Similarly, Donna Haraway (1997) asserts that 'figurations are performative images that can be inhabited... condensed maps of contestable worlds... {and] bumps that make us swerve from literal-mindedness' (p. 11). The 'bacteria-hurricane machine' that Cole introduces in chapter 1 is just such a 'conceptually charged use of the imagination' – a bump that could make us swerve from the literal-minded metaphorical representation of Chinese learners as 'like' a bacterial colony. Because the bacteria-hurricane machine acts on both the micro and macro levels it encourages us to imagine the life forms of Chinese education as a conjunction of the micropolitics of classrooms and family homes and the macropolitics of the world's most populace nation.

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As Cole writes of the bacteria-hurricane machine towards the end of chapter 1:

This machine may give rise to pedagogy that explores the facts and mechanisms of bacteria and hurricanes, and a resulting wealth of mathematical and scientific ideas. On the other side of knowledge work, the bacteria-hurricane machine could be an inspiration for artistic, musical and written work. What would a bacteria-hurricane machine look like? What would it sound like? How could we describe its action? What would happen if a bacteria-hurricane machine appears in the world?

These are very generative questions that I trust readers will accept the challenge of answering, along with the many other such questions – stated or implied – to be found in this book. I am convinced that engaging with such questions and provocations is one of our brightest hopes for escaping the program.

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