

Meaning, Education, & Sustainability: Building connectivity through dissociation

Peter Graham

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By: Peter Graham

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Signed by the final examining committee:

Professor R. McGray Chair

Professor A. Cleghorn Examiner

Professor A. Arshad-Ayaz Examiner

Professor A. Naseem Supervisor

Approved by _____
Chair of Department or Graduate Program Director

Dean of Faculty

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Abstract

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This thesis addresses current unsustainability and role the education system plays in propagating and perpetuating a collectively acquired and transmitted habitus and praxis of unsustainability. The origins of the contemporary unsustainability are theorized as continually recurring collective traumas having a negative impact on cultural tools at the level of both individual and social mind. These cultural tools in their totality constitute a system of meaning that works to normalize unsustainability as the “right” way of being in the world. This ongoing process works to remove connectivity from the shared meaning system. Remediation is theorized as involving first, recognition that the cultural tools are more the result of historical accident than genetic inheritance and second, a process of dissociation between the self and the dysfunctional cultural tools. It is argued that there are many examples that would suggest this process of dissociation is already underway, such as educational programs intended to overcome mind-body dualities for example. It is suggested that the metric of connectivity can serve as a proxy for the healthiness of the social mind and that unsustainability might productively be conceptualized as a mental illness of the social mind.

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Table of Contents

| | |
|--|----|
| Chapter 1 – Introduction | 1 |
| Chapter 2 – Meaning and the context of education | 7 |
| The question of meaning | 8 |
| Historical foundations | 22 |
| The work of changing social minds | 29 |
| Meaning and reflexivity | 31 |
| Transmitting meaning | 33 |
| Conclusion | 38 |
| Chapter 3 – Education reconfigured | 40 |
| Progress & objectivity | 44 |
| Freedom & atomism | 50 |
| Prognosis | 54 |
| Dissociative healing | 55 |
| Potential Traps | 60 |
| Chapter 4 – Synthesis & conclusion | 63 |
| References | 67 |

Introduction

“With our thoughts, we make our world. Our mind is central and precedes our deeds. Speak or act with a pure mind and happiness will follow you like a shadow that never leaves.”
Dalai Lama, quoted in Halper

Judging from the current state of the world, “pure minds” are in short supply. A recent study conducted by NASA and reported in The Independent Newspaper warns that “Modern civilization is heading for collapse within a matter of decades because of growing economic instability and pressure on the planet’s resources” (Withnall, 2014). This thesis is about that shortage of pure minds and in it I offer my assessment and suggestions for how best to address the shortage of pure minds. In this brief introductory chapter I will begin by laying the groundwork for a discussion on the role of meaning and meaning systems in the work towards the achievement of sustainability. This will involve a very brief review of some key concepts or tools we will need to be able to work with before moving forward to theorize problems with the supply side of pure minds. In the next chapter I bring the concept of meaning into the discussion, its distinction from knowledge, and its importance in theorizing sustainable development. In chapter three I bring the focus back more centrally to the role of education in the production of pure minds and offer some observations on the relationship between education and sustainable development. In chapter four I put forward a synthesis and conclusion as well as some directions I think this research should move toward in future.

We might begin this journey by simply pointing out that maximizing social capital is not always a good thing in terms of sustainability. Until recently social capital was viewed almost as a panacea for sustainability. Dale & Onyx, (2005)

define social capital as “...the set of norms, networks, and organizations through which people gain access to power and resources, and through which decision making and policy formation occur (p. 15).” Social capital, defined as such, may well be a necessary but insufficient prerequisite for sustainability. Social capital is about connectivity, the strength and reach of social connections, but the concept of social capital says nothing really about the pureness of the minds being connected. A community connected through a shared religious zeal to domesticate and bring under human control the landscape provides one example of a case where rising social capital means decreasing sustainability, (without naming any names of course...). The same point can be made when we discuss literacy. There are clearly good or pure literacies and bad or impure literacies. We could, for example, speak of consumerist literacies or econometric literacy or pest control literacies, each of which could be expected to create simultaneous illiteracy with respect to sustainability (see also Malewski & Jaramillo, 2011).

The term “pure mind” is an apt description of the essence of the problem with social capital or literacies. There may be physiologically damaged minds or minds that for one reason or another just do not work the way they should. There may also be problems with the way a society conceptualizes a “good” mind or a properly working mind. I am not directly concerned with those cases here. I want to look specifically at the case of minds that have been contaminated in some sense; they have been made *impure*. This of course raises the spectre of good knowledge and bad knowledge, as knowledge is generally what we think of as putting into the mind to make it work, for better or worse. Now if we are going to get into a

discussion of good versus bad knowledge I should first point out that the question of goodness is something quite different from knowledge that is “correct” or “incorrect” which would generally refer to the degree of correspondence between a representation of some sort (the knowledge) and some observable phenomena, e.g. two apples added to two apples makes four apples. Notice that even in this simple example, there is an element of what we might term tacit, implicit, unconscious, or embodied knowledge. These types of knowledge have to do with questions such as “what is an apple?” or “what is counting apples?” According to Dienes & Berry, (1997), p.3, “There appear to be many examples of our learning to respond in some rule-like way without being able to state the rules that govern our behavior.” I am going to argue that it is these internalized rules, rules we are often not even aware of, that contaminate not only individual minds but also social minds. The term social mind refers to the apparent and obvious ways in which groups of people coordinate their behaviours without the need for any overt communication (Clark, 2002). Fashion is an easy example of the social mind in action. Behaviour is directed, not by one identifiable control centre, but by the implicit and embodied rules of social organization. The concept of the social mind explains how we know it is fine to eat sardines but not to eat goldfish and so on (Zerubavel, 1997).

Another example of these implicit rules governing the nature of knowledge (and more specifically the systematic process of their contamination) have been described by Plumwood (2002), as follows:

The dominance of the economic sphere over other spheres means that scientific research and warning systems that have a potentially corrective role in the ecological crisis have themselves been largely compromised, both by this kind of crudely

instrumental research direction and more directly by fear of offending privatised funding sources. (p. 40)

In this quote from Plumwood, we see direct evidence of what the Dalai Lama was warning the U.S. Congress about: the collapse of biological diversity in the landscape is mirrored by a collapse of diversity of knowledges within the human mind (see also Graham, 2010). The Cartesian epistemology is competitive by its very nature, allowing for the existence of only one true reality. This does not result in purity but rather in poverty of thought. It is somewhat akin to applying pesticide to an ecosystem; the resulting death does not represent purification but rather contamination. So there is a distinction to be made between knowledge and the rules of knowledge. I want to suggest that instead of thinking about good or bad knowledges, literacies, social capitals, and so on, we can more productively locate the source of error in the rules, the system of *meaning*.

Compare for example the Cartesian way of knowing with the “complex understanding” sought through indigenous scholarship as described by Newhouse (2004),

Complex understanding occurs when we begin to see a phenomenon from various perspectives, as well as the relation-ships among these perspectives. Complex understanding does not seek to replace one view with another but to find a means of ensuring that all views are given due consideration. It does not work in an either-or fashion. A phenomenon is not one thing or another, but all things at one time. Complex understanding allows for our understanding to change, depending upon where we stand to see or upon the time that we look or who is doing the looking. Complex understanding is grounded in a view of a constantly changing reality that is capable of transformation at any time. (p. 143)

This perspective of complex understanding will generally be difficult to accept by those whose minds have been contaminated with Cartesian rules based on dualisms

and blind faith in an objectively accessible unitary reality. Imagine, for example, standing at a public municipal consultation on the fate of a vacant lot to speak on behalf of the stones and rocks who would be impacted by a proposed development project. The Cartesian perspective can only allow that stones and rocks are devoid of spirit, inert, and of only utilitarian value. According to Cartesian dualism something is either mind or matter, never both. Either of these two knowledges may prove to have some value, but the Cartesian rules insist we close our minds to the more complex and connected ways of knowing.

This brings me to the final concept I want to outline in these introductory remarks before moving on to a necessarily more fulsome discussion on meaning. That concept has been called “radical hope” by Lear, in his book of the same title. Lear (2006) p. 103 states, “Radical hope anticipates a hope for which those who have the hope as yet lack the appropriate concepts with which to understand it.” In other words minds will not be empty. They will be filled with what is pure or they will be filled with what is filth or with something in between these two extremes. To purify a mind however, involves a sort of leap of faith, a journey to a place that cannot even be imagined, only believed in. This point is actually consistent with Barry’s seemingly contradictory argument to forget about sustainability and focus on our “actually existing unsustainability” (Barry, 2012). Radical hope involves embarking on a journey with, like the focus on unsustainability, no image and no map of the destination we hope for: sustainability. It involves, as the Dalai Lama explained to the U.S. Congress, a strong faith that “with our thoughts, we make our

world” so that if our minds are pure, we will eventually arrive at the destination we should all be hoping for.

Yet, if our minds are not pure, how could we even recognize our destination of sustainability? Barry’s solution, one shared in this thesis, involves recognizing unhealthy aspects of the dominant meaning system, aspects closely associated with unsustainability and focusing remedial efforts there. In the chapter titled “Vulnerability”, Barry (2012) states,

Dependency is intimately and constitutively related to vulnerability. On the one hand dependency exacerbates vulnerability. This dependency and vulnerability can be found in pre-modern and agricultural world views with their careful and often fearful appropriation rites and ceremonies orientated towards ensuring a capricious nature or God/s would ensure a bountiful harvest or protect them from harm. While these clearly represent non-scientific and sometimes arational attitudes and practices (which I hasten to add does not necessarily mean they are either ‘wrong’ or ‘inferior’ as guides to action), they do illustrate the limits that operated on keeping any impulse to ‘dominate nature’ in check...

On the other hand, one can find this vulnerability-dependency relationship revealed in the cultural and psychological aftermath of people who have experienced some calamitous natural disaster. The impact is much greater for those whose dominant culture, institutional arrangements as associated psychological disposition have eroded, hidden, or ‘sequestered’, to use Giddens’ term their own and their societies’ acknowledged dependency upon, and therefore vulnerability to, the natural world. (p. 37)

These inherited rules for constructed meanings are generally swallowed *holus bolus* and we could not expect it to be otherwise. Human beings are generally eager and uniquely suited to be acquired by a system of meaning, no matter how pure or contaminated. The real question that needs addressing in the context of the current ecological crisis is: what if anything education can do about it?

Chapter 2 – Meaning & the context of education

Simply put, our sense of self and our sense of the world are profoundly affected by having to grow up in school. (Britzman, 28)

What we can feel, know, or say about education is directed and limited in part by a collectively inherited and individually internalized recursive system of *meaning*. Could Adam Smith have penned his *Inquiry into the Nature and Causes of the Wealth of Nations* or could Richard Wagner have composed his *Tristan* if they had been born on their same respective birthdays but in Japan, Russia, Ethiopia, or Bolivia? Only, I believe, if they had been surrounded by the same ideas, the same cultural tools, of Scottish Enlightenment in the case of Smith or by fascist backlash against those same ideas in the case of Wagner. As these ideas and cultural tools would have been inaccessible in Japan or Bolivia during this time period neither of these men would have been capable of producing the works they have in actuality become famous for. The ideas and creative expressions of Smith or Wagner, or anybody else for that matter, do not spring forth fully formed like Athena from the head of Zeus. Ideas and artistic expressions, as well as the most scientific exercises of knowledge production, always *reflect* a specific context. It is only too easy with the tools that make up our own cultural inheritance to commit the error of assuming that these reflective tools are based on a cumulative accumulation of some mythical unitary body of Knowledge so that the utility and efficiency of cultural tools is only improving and in consequence our welfare can also only get better. The idea that science can ever completely dispel and replace mythology is sadly mistaken. Educators and educational researchers would do well to bear this mind as they

engage in futile rituals intended to eradicate ambiguity and establish certainty with their own brands of magic tricks such as competency based education, or “no child left behind” policies. In this chapter we will propose a reason why such policies seem to resonate so well in the current era and why they should be resisted.

This chapter consists of a discussion of reflexive and recursive relationships between landscapes (containing cultural tools and educational systems) and identities (both individual and collective) that are mediated through systems of meaning. I will begin by attempting to establish a few principles and definitions related to the concept of meaning before turning to flesh out some of the historical foundations and conceptual boundaries of the dominant contemporary meaning system, then moving on to address some issues of meaning and educational practice, and finally discussing the reflexive implications such theoretical reform would in turn necessarily entail in practice for the broader dominant systems of meaning: epistemologies (Bateson, 2000), conventional wisdoms (Galbraith, 1998), ecologies of affect (Davidson, Park & Shields, 2011), ideologies and paradigms (Popkewitz, 1984), and the meanings residing exclusively within the subconscious (Britzman, 2009). First of all however, we need to begin by attempting to answer the question: what exactly is a meaning system?

The question of meaning

The ways in which we perceive – the world, one another, the situations we encounter – are not straightforward or simple. Our realities could be understood as the filters through which we see and perceive, and that are reciprocally constructed through our perceptions. (Vasudevan, 2011, p. 1159)

Meaning emerges and is internalized both negatively, as an overriding fear and instinctive avoidance of being cut off and isolated from the many others who offer the only possibility of self-definition, and positively, as an eagerness, an instinctive drive to connect with these others who can not only define but also give purpose to the self.

Connection to shared meaning would seem, from the available evidence at least, to be one of the necessities of life. This conclusion can be drawn from the experiments of Frederick II who wanted to discover what language had been spoken in the Garden of Eden by devising an experiment that deprived infants of meaningful interaction with caregivers, and more recently in Romanian orphanages. That the children atrophied both physically and cognitively/psychologically strongly suggests that meaning is a basic requirement of human existence. Children afflicted with autism, it might be argued, are confronted with an overabundance of meaning and must therefore put up dense perceptual filters to protect themselves from a sort of over-connectivity. In all cases meaning involves a two-way interaction between the internal and external worlds. This is to claim neither a *tabula rasa* nor an environmental determinism. Disentanglement of inner and outer worlds is strictly limited to the doodle maps of purely fantasy worlds of the imagination. Reality is never so simple and boring (see also Wertsch, 1998 on how to “learn to live in middle”, pp. 3-72).

Meaning is deciphered, formulated, and systematized from all that is perceived, with or without conscious awareness. Brains and other parts of neurological systems always play a filtering role, deciding what perceptual information is important, what can be accommodated, and what can or must be ignored. Meaning systems play an

important role in setting the parameters for such neural filtering. Brains, through a process like apprenticeship Rogoff, (1990), are “wired” to be in general agreement with what is perceived, including especially the way others seem to perceive.

Meaning first comes from the outside world to be internalized into the inside world. Optical illusions such as the Mueller-Lyer Illusion appear as illusions to those whose cognitive development takes place in a landscape of buildings with straight, square corners. People who develop in other types of landscapes will not perceive the illusion (Hundert, 2001). This perception of illusion constitutes part of a meaning system because it results in a slightly different epistemological stance, a marginally different way of being in the world. The particularities of landscapes matter at a neurological level and such configurations form the core foundations of meaning systems.

The particularities of meaning systems generally originate in shared historically prescriptive meaning systems themselves: 17th century French formal gardens (Weiss, 1995), suburban mowed lawns (Robbins, 2007), and Bureau of Indian Affairs day schools (Swentzell, 1997) provide three good examples of this. As Weiss states:

The French formal garden of the seventeenth century was constructed a fortiori contra nature; furthermore, the use of the garden as social, political, and theatrical setting only exacerbated the anti-naturalist sentiments in this regard. Nature was transformed into sign, symbol, and stage. (Weiss, 1995, p. 29).

While the formal garden landscape provides the illusion of having been conquered, the minds of peoples also suffer their fair share of the consequences. The “unnaturalness” of such landscapes already conveys relational perceptions such as

the absence of diversity, fractals, or micro-ecologies that would otherwise occur in less manicured settings. The normalized symbolic role of the human as conqueror in the landscape is already implied from such perceptions alone, prior to any cognitive machinations. Furthermore, we must also recognize the role that the properties of nature, the laws of physics, ecological succession, and so on must always play in the establishment and maintenance of such meanings. Robbins, for example, points out that:

This suggests something more general about the problem of modernity, city and suburban living, nature, and culture. That is the enforcement of this specific kind of political-economic subject – a concerned, active, communitarian, as well as anxious, landscape producer and consumer – would be impossible without the lawn itself to enforce the daily practice, feeling, and experience of obligation and participation. The lawn interpellates the ‘subject’. (Robbins, p. 134).

Landscapes, altered by human habitation, provide the perceptual raw material for meaning systems. Meaning responds to and is initially formed by, albeit in an unlimited number of potential ways, materiality.

That perception is moulded through human development in relation to the particularities of specific landscapes is especially apparent when comparing the perceptions of one culture in a corresponding landscape as opposed to another. Swentzell is worth quoting at length to illustrate this point. Her essay discusses the childhood experience of having a western day school built on traditional Pueblo territory.

The creation of artificial play areas on the school grounds within the pueblo context and community was ironic. The total environment (natural as well as human-created) was included in the pueblo world of play. Play and work were barely distinguishable. Every activity was something to be done and done as well as possible; the relaxation and joy that gives was to be found in submerging oneself in the activity at hand.

Play and work were distinguishable from one another in the BIA (Bureau of Indian Affairs) school, and specific time was assigned for both. There were recesses from work, yet play was constantly supervised so that the children could not discover the world for themselves. Every possible danger was guarded against. Lack of trust was evident in the playground as opposed to the pueblo setting, where we roamed the fields and hills.

It was apparent that the Anglo teachers preferred indoor and human-made spaces over the outdoors, and they tried to instill (sic.) this preference in us. In the pueblo, the outdoors was unquestionably preferred.

The saddest aspect of the entire school complex was the ground. There was no centering, no thought, no respect given to the ground. The native plants and rocks had been disturbed a long time ago and the land had lost all the variety one finds in small places created by bushes, rocks or rises, and falls of the ground. The ground had been scraped and levelled, and metal play equipment was set upon it. It was also a grey colour, which was puzzling because the ground in the pueblo plaza, only a quarter of a mile away, was a warm brown. (Swentzell, 1997, p. 64).

These examples underscore the futility of drawing distinctions between nature and culture at least at this stage in human history. Meaning systems begin with perceptions of something that is both nature and culture thoroughly entangled through and through. This is true even when our system of meaning makes it difficult to see the nature in the culture and vice versa. These pre-cognitive foundations of meaning systems, I would argue, are under-theorized in sustainable development literature generally and Education for Sustainable Development (ESD) literature more specifically.

Meaning is not entirely restricted to what can be expressed in language. In a given culture we will inevitably learn a narrative version of what the birth or death of a loved one, for example, means but we also learn how to call forth the appropriate emotions, the proper affect corresponding to such an event. A given context that might elicit rage in one culture may elicit pity in another. The internalization of rules for reproducing and experiencing such emotions is not

entirely enacted through language but rather through direct apprenticeship with others. People who fail to control their emotions and keep them within the boundaries of social-cultural norms may well get themselves into trouble (Hochschild, 1983; Zerubavel, 1997). Normal human development involves an observation and monitoring of those around us, and an internalization of meanings based on those observations (Nelson, 2007). From the mother-infant dyad onwards, human life is social life and as such is about dramatic performance, especially so in the various classes and genres of activity we call education. The same type of disciplined relationship is of course also generally maintained between the cognitive and intellectual functions and the meaning system (AbdelRahim, 2013; Kuhn, 1996). It is important however not to lose sight of that part of ones' meaning system that has nothing to do with language. Certainly the origins of meaning do not depend on language.

Standard discourse analysis in other words leaves something out of the picture. This is not to disparage the technique of discourse analysis, only to point out that it does not provide, as any other essentially reductionist method fails to provide on its own, a more *complex understanding* that would perhaps constitute a more responsible and ethical way of being in the world (Newhouse, 2004). A picture that begins to become an adequate representation of reality will generally require many more than just one perspective. The obsessive insistence on the primacy of one and only one *true* knowledge, framing, or perspective, as prevalently practiced and systematized in contemporary Canadian schools, in other words, is potentially quite damaging.

Meaning emerges and evolves reflexively to form an important component of habitus. An internalized meaning system forms an important part of an individual's continuously acquired and actively practiced identity. The outer world structures the inner world and structures it in a way that beckons particular forms of interaction with the outer world. Language provides one example (Bateson, M. in Rieber, 2010). The language or languages that make themselves available to young minds will in turn play a role in the structure of thinking in that mind. Cognitive tools, including language, influence the way the outer world gets cognitively carved into categories, relationships, metaphors, and so on providing a particular stance from which to know the outer world.

We could also consider diet and the ritualistic relationship that becomes established between peoples and their foods. As with other aspects of daily life, food impacts physiological, endocrine system, cognitive, psychological, moral, and spiritual development of peoples. In many cultures the acquisition, preparation, and ingestion of food requires prescribed amounts of physical activity as well as forming an interface between inner and outer worlds. The way people come to think about food will have important implications for the way the self/not-self boundary is conceptualized and the characteristics of the self/not-self relationship. That our culture even first imagined and then put into practice agricultural pesticides points to a social-epistemological neurosis anchored in a deep misunderstanding of the nature of that self/not-self relationship. Another line of such evidence can be found in an often happy enough willingness of western countries to engage in warfare without the slightest consideration of how such a practice will necessarily involve a

self-inflicted insanity of a sort that is quite similar to the insanity described by Bateson resulting from putting pollution into the landscape (Bateson, 2000, p. 492). The consequences of waging warfare, whether against a pestiferous species or a hated rival, are never contained within the object of the warrior's treachery. The act of waging war creates the subjective identity, the habitus, of the warrior, with all of the psychological pathology that such a process necessarily entails. Education can at times function as a less extreme, but more ubiquitous, form of the same self-inflicted damage to teachers. When society's understanding of the role of "teacher" becomes strictly instrumental and primarily economic in focus, psychological trauma may be the incidental but inevitable consequence.

Meaning is maintained in communities of practice. Meaning is communicative and as such always requires a referent (Ruesch & Bateson, 1968). An amputee will acquire a meaning or a way of understanding a bodily absence. This understanding may be impossible to completely convey to others who have not experienced the loss of a limb, yet the improvised understandings of those in the community will also have a profound effect on the meanings that eventually settle into a daily practice between the amputee and the absence. Even the fictional character, Robinson Crusoe, was only able to maintain and keep vibrant his system of meaning through continual reference to a remembered community of practice. Crusoe relied on remembered assurances from his peers in order to assume what he considered to be an appropriate epistemological stance with respect to his circumstances, the landscape, and the various other exotic others, to which he would be called upon to assign meanings and establish rules of engagement. That meanings reside in these

communities of practice must be recognized as an essentially conservative force, acting against dynamism and change. It also provides at least a partial explanation for the seeming failure of much so called environmental education to effect lasting behavioural change.

Meaning evolves and changes in relation to its own rules, conventions, codes, etiquettes, epistemologies, consciences, ethics, and cognitive, perceptual, aesthetic, and psychological stances. Any deliberate or deliberative transformative change to a meaning system begins and must occur from an existing system of meaning using those already existing cultural tools (Malewski & Jaramillo, 2011; Popkewitz, 1984; Somekh & Schwandt, 2007). This point brings us to the problems of cross paradigm communication described by Kuhn (Kuhn, 1996) but also problems of cross cultural communication (Dryzek, 2000). Children who believe in Santa Claus will often at least temporarily find it quite impossible to believe otherwise. They do not have the interlocking cognitive tools to operate in a universe without a Santa Claus and dissociate themselves from contradictory evidence. The current dominant systems of magic, economism and scientism, can be equally fantastic. Those who do not believe in these types of magic are often wasting their time trying to discredit the magician whose trick of cost-benefit analysis for example has “proven” the legitimacy of one destructive practice or another. The primacy of bottom lines and laws of supply and demand have become fossilized in the dominant systems of meaning and can probably only be dislodged using the already existing and available cultural/cognitive tools. The elimination of the institution of slavery in the

United States, for example, relied on already existing aspects of American identity such as “freedom and liberty for all”.

Collectively experienced psychological trauma can impact meaning in unexpected ways, requiring special attention. Psychological trauma at the level of the individual and/or society in certain contexts can be caused by real events such as plagues, inquisitions, or school shootings and be debilitating and have long lasting, recursive impacts. Generally speaking, at the psychological level what does not kill you does not make you stronger. On the contrary, psychological trauma more often leaves you less resilient and more susceptible to debilitation in the event of future traumas. There is no reason to suspect that the same would not be true at the level of the social mind (Clark, 2002; Zerubavel, 1997) and the shared meaning system. Here the psychological effects work their way into a meaning system in ways that can best be understood with the benefit of hindsight. The residential school experience in North America provides one extreme example of collectively experienced trauma that altered collectively shared meanings, triggering the emergence of radically different cultural/cognitive tools to be internalized in turn by future generations. This point is especially pertinent at the cusp of an era of increasing ecological catastrophe and collapse and will be further explored below. Here we merely suggest that educational practitioners must begin to consider how to provide students with a sort of “radical hope” to face the future (Lear, 2006). Radical hope allows a people to continue through the collapse and reconstruction of no longer relevant meaning systems, as ours is proving to be in increasingly obvious ways (Withnall, 2014).

The origin and evolution of meaning is generally not entirely decipherable to the human mind but remains active at the level of the subconscious. If education has come to be considered as an instrumental means to an end (full employment or economic growth, for example) then there may be historical reasons or explanations for the development of such ideas or conventional wisdoms. These reasons may not however have been directly caused by actual events in the real world alone. They may on the contrary be the indirect consequences of such events as they pass through the interpreting machinations of a maladaptive meaning system. We must at least consider the possibility that these causes occurred at a level of collective subconscious or at the social psychological level. Demausse, (2008), for example, suggests that the origins of World War II and the holocaust can be found in the collective childhood experiences in Germany during the Interwar period when infanticide was widely practiced. Bateson (1997, 2000), p. 482 wondered, "Was the fate of Hiroshima determined at Versailles?" I think it might be safe to say that Hiroshima involved the crossing of many Rubicons (Noble, 1999) and yet Bateson's point remains valid – Versailles was a necessary if insufficient element of the extraordinary context that enabled this great blot on the history of humanity. The establishment or identification of direct cause-effect relationship is impossible without reference to the particularities of a meaning system. Bad things do happen everywhere from time to time. Whether unfortunate events continue to persist as unfortunate and damaging practice, will depend however not so much on available knowledge, but rather on the shared meaning ascribed to events and

relationships and the way that these shared understandings persist in the form of new meanings and new ways of being in the world.

Knowledge is always constructed within the boundaries of a pre-existing meaning system using already existing cultural tools. There is an important distinction to be made between meaning and knowledge. Knowledge involves metaphor. Meaning determines which metaphor. If I say for example, “the black plague was caused by fleas infected with the *Yersinia pestis* bacteria”, I am framing reality with a lot of metaphors. At perhaps the most obvious level, our knowledge of “the black plague”, the “fleas”, and the “*Yersinia pestis* bacteria” and the ways in which these entities interact together are knowledges of things that are *like* something that is completely knowable with a human mind. We do not know the plague from experience. We cannot directly enter the microscopic world of the flea, to say nothing of the world of a bacterium. We may use a microscope to gain insights but such experience is only *like* the actual world we merely detect through the lens of the microscope. These knowledges are further narrowed down because we can only know these objects using contemporary systems of meaning as humans in western societies in the early 21st century. It is impossible for us to “know” the plague as a 15th century victim of the plague would have known it experientially. Now that the plague, or something very similar has returned, we still cannot equate the experience of a 21st century victim with that of a 15th century victim. Other meaning systems can however sometimes become available and sometimes be deliberately borrowed or invented and internalized with a view to acquiring previously inaccessible knowledges. An alternate meaning system might allow us to

gain knowledge, for example, of a dog's dreams (Kohn, 2007), a cockroach's perspective (Kafka, 1995) and so on. Consider also the difference between knowing a tree through the metaphor of "eco-system service" as opposed to the metaphor "sister". Any knowledge involves a paradigm, an organizing system that puts the world into categories of things, actions, and especially relationships.

New meanings and new ways of being in the world must come from outside established systems of meaning. As Bateson points out, "All that is not information, not redundancy, not form and not restraints – is noise, the only possible source of new patterns." (Bateson, 1972, 2000, p. 416) In other words, although we can only use an existing meaning system to interpret events, it takes something that is normally unintelligible to bring change to the meaning system itself. European migration to Turtle Island (the Americas) provides one good example of such endogenous shock to a meaning system. During such events it may be of critical importance that the meaning system involved have inherent qualities of flexibility and good connectivity between its various domains. Yet, here I must also point out that like social capital, in the case of the European invasion, such flexibility proved disastrous as classes of relationship and otherness spread like a cancerous disease throughout the entire system of meaning. We will return to this point below where we address more specifically the problem of changing meaning systems.

Educational systems emerge from within meaning systems and then change, and are changed by, the continuously evolving corresponding meaning system.

Keeping in mind that knowledge is always metaphorical, let us ask the question: what does education mean? As explained by Swentzell above, the material

structures of education are pregnant with meaning. Much of this meaning is taken for granted and never rises to the level of conscious awareness. Yet as Britzman states in the opening quote of this chapter, education does seep into “our sense of self and our sense of the world” (Britzman, 28). These seepages becomes evident in our underlying assumptions about education, that also form the foundational assumptions about all human action and the nature of the world in which that action takes place: “These modern assumptions include viewing change as progressive in nature, intelligence and creativity as attributes of the autonomous individual, science and technology as the source of empowerment, and the commodification of all areas of community life as the highest expression of human development.” (Bowers in Smith & Williams, 1999, p. 162). We could no doubt add others focusing in at varying levels of abstraction.

We should note however that the idea that an educational system forms a separate and instrumentally adjustable unit is at least partially illusory. Systems of education reflect, comply with, and reinforce more general systems of meaning. To the extent the teacher or the school building or the curriculum is informed by these underlying assumptions, the system of education will defy such instrumental tinkering. Show and tell is an exercise that teaches children the “correct” way to relate to objects, i.e. from a disinterested epistemological stance focusing on the characteristics of the object in isolation rather than the characteristics of the student’s or society’s proper way of relating to the object (Wertsch, 1991). The knowledge and/or ignorance produced and reproduced within that complex system of education can only be fundamentally altered through change in the organizing

patterns of meaning. Is the world filled merely with commodities and potential commodities? What is a child? Is a child a future commodity in a labour market where her “value” will be determined? What is knowledge? Is knowledge merely a marketable commodity, as strict rules against plagiarism would imply? How are the physical structures of the classroom informed by these shared meanings and how do those structures reinforce those meanings? These are just some of the questions we will need to consider if education is to play a more positive role in the achievement of sustainability.

Historical foundations

What follows here must by the nature of the inquiry remain fairly ambiguous and speculative. Part of this problem of abstraction and ambiguity is inherent to any historical inquiry and results from the dynamic character of meaning systems (see Bowler, 1992, pp. 1-31). As our way of being in the world evolves, former ways of beings fade and become less accessible, not necessarily for lack of historical evidence but because of the differences in internalized tools of interpretation that are accessible in one particular time and place as opposed to another time and place. People ate potatoes in Montreal in the nineteenth century and people eat potatoes in Montreal today, for example. Yet eating a potato in Montreal today is quite different in many respects from eating a potato two hundred years ago. Not only are the available potatoes different today, being generally more uniform in size and variety or containing more anthropogenic industrial and agricultural toxins for example, the meaning of the potato has also and especially changed. Crop failures in Ireland during the eighteenth and nineteenth centuries would have profound effects on

peoples' understandings of "potato" in Montreal during this time period, especially as so many immigrants came to Montreal seeking escape from starvation. This change is not unique to potatoes. The meanings of salmon, cod, oysters and other now depleted species has also changed drastically, albeit for other reasons. The context in which one would eat a potato has also changed, the amount and type of labour embodied in a potato has changed, conceptualization of self in relation to food, and so on. Here we want to merely suggest some ideas about how meanings change over time. We want to consider why education? Why education at a particular historical juncture? Why does education take particular forms and practices?

These are obviously very big and complex questions, but we can begin with the realization of a distinction between knowledge and meaning. In western meaning systems we often confuse knowledge with objective knowledge, we tend to think of ourselves as stepping into the moccasins of God; we forget that our knowledge has the characteristic of the metaphor. The emergence of this way of thinking about knowledge, the shared meaning of knowledge, is integral to the emergence of the modern educational system. Nevertheless, current thought is beginning to accept that human access to the world is always mediated through the filtering and reconfiguring machinations of contemporary meaning systems and the cultural/cognitive/affective tools that compose those meanings. This argument is similar to and consistent with Goffman's discussion of framing (Goffman, 1974) as an example. If we accept this premise then we can begin to find in the particularities of educational practices, artefacts, and purposes, the historical responses to

historical collective aspirations, shared traumas, and cultural narratives. This is not to claim that meaning is the sole determinant of human thought, feeling or action any more than the tonal limits of a piano determines all of the characteristics of music (Burke, 1969; Morgan, 1997; Wertsch, 1998). But we can recognize that with different instruments available, the characteristics of music might well be expected to be dramatically different.

“Yali’s question” in Diamond’s *Guns, Germs & Steel* concerns the historically divergent fates of white and non-white peoples (Diamond, 1999). Diamond’s answer to Yali’s question focuses on environmental differences and largely ignores the role of meaning in the fates of societies. This billiard ball perspective can lead to quite misleading understandings of events. If we introduce meaning into the equation, agriculture would have meant the introduction of hierarchical interpersonal relations and at least at times increased insecurity with respect to the landscape as food sources were consolidated and thus became vulnerable to occasional collapse. Hunter-gatherer societies did not keep all their eggs in one basket so to speak (Sahlins, 1976). Hunter-gatherer modes of food production may have been less efficient but were considerably more flexible and less vulnerable to collapse. Concentrated crops tend to attract and induce the evolution of increasing sophistication, specialization, and ecological success of various pest species, as Winston, (1997), explains:

Beginning around 10,000 years ago, with the advent of agriculture and denser human settlements, our relationship to pests began to change. Increasing urban populations, compact crop plantings in fields and orchards, herds of domesticated animals, and stores of grains, vegetables, cloth fibres, furs, and dried meats all provided concentrated food sources for organisms that previously foraged widely for sparse

food sources. In addition, we began to disrupt entire ecosystems and their inhabitants, transforming diverse natural habitats into cultivated, single cropped fields and dense sprawling cities. These changes induced the populations of a small number of species to explode into pest status. Trade added to this potent brew by transporting plants and animals far out of their natural ranges, to new habitats with exciting food sources and few predators, parasites, or diseases to keep them in check. (p. 3-4)

These changed contexts clearly had consequences for shared meanings, shared understandings of purpose, identities, relationships, and perhaps especially the incidence of collective psychological trauma. The understandings and meanings emerging from the western experience of agriculture probably formed the initial foundation of fear of nature that is now deeply rooted in the western way of being in the world today. As Diamond also rightly pointed out, western civilization was based on the domestication of several animal species, but this domestication also induced the emergence of other disease species. Periodic food insecurity and outbreaks of contagion would have wreaked havoc on the western meaning system, eventually resulting in a neurotic need for the illusion of objectivity and western science based on the hyper-masculine research techniques of the Inquisition, as prescribed by Isaac Newton, Rene Descartes and many others of the time.

Christianity and the organizing metaphors of that religion have played an important role in the evolutionary history of meaning in western civilization. Today, as Merchant explains, "The modern version of the Garden of Eden is the enclosed shopping mall. Surrounded by a desert of parking lots, malls comprise gardens of shops covered by glass domes, accessed by spiral staircases and escalators reaching upward toward heaven." (Merchant, 2003, p. 167) While religion provided the metaphors for the purpose or goal of life (the recovery of Eden) it also provided the

organizing cognitive tools for the dominant method: “The Scientific Revolution’s success in formulating a mechanistic approach to science allowed humanity to predict and therefore to control, manage, and dominate nature. Mechanistic science coupled with technology and capitalism set up the possibility of reinventing Eden on earth.” (Ibid, p. 205) It is no coincidence that these organizing patterns of understanding and behaviour form the foundations of contemporary unsustainability.

That our current cultural, cognitive tools and consequent ways of being in the world are inherited without our conscious awareness is not always problematic. There are many contextual conditions under which this form of genetic and cultural evolution would tend to favour the human species (Ornstein & Ehrlich, 2000). The current ecological context is not one of those periods of time. The cheetah’s speed works well on an open savannah but as the climate changes, as it always eventually does, the savannah is replaced with woodlands, and the cheetah will be relegated to the annals of the geological record, unless of course the cheetah can rapidly adapt behaviourally and genetically. This radical self-reinvention seems to be more the exception than the rule when we examine the available evidence. Humans are now in a similar position as the cheetah but with respect to conscious purpose instead of speed. Our big question is whether we can learn to align shared meanings with our common physiological, psychological, and spiritual characteristics within an increasingly uncompromising ecological reality. Let us take just one example: research is beginning to accumulate that demonstrates a positive correlation between access to un-manicured landscapes and improved health (Beatley, 2004;

Louv, 2012) yet economic conventional wisdom systematically destroys such landscape features as high market values result in what could effectively be described as Self-cannibalization. Yet the dogma of mainstream economics remains essentially beyond questioning in the social mind (Galbraith, 1976; Rist, 2012).

Education, it must be noted, emerged from the same genesis as the historical origins of these social-psychological transferences and infections of the meaning system with the contemporary neuroses in question. The implicit purposes of education are complicit in this spiralling war, not in fact against Nature despite what we ritualistically pretend, but actually against the Self in a sort of ascetic quest for transcendence. The underlying logic, the *raison d'être*, of education has become essentially Cartesian/economic within the dominant shared system of meaning. It is based on the myth of objectivism/materialism and any workings that improve aspects of the system of shared meanings generally occur only incidentally. The dominant determining forces of meaning and ecological reality push continually towards increasing insanity. There is currently no mass movement, even among critical theorists, to put society metaphorically on the couch. To do so would violate foundational tenets of the conventional wisdom concerning questions such as “What is knowledge?” or “What is education?” In the mechanistic, material world of Newton and Descartes, there is no need for social psychiatry, only increasing bits of Knowledge to ensure Progress.

Education, I am claiming, is perhaps best understood through the concept of *transference*. Socio-cultural transference can be defined as: the systematically inappropriate mediation of actions in the present being influenced by past events of

which neither society collectively, nor the individuals in that society, is consciously aware. One obvious example of such a past event would be the black plague that occurred in Europe prior to the emergence of the Inquisition and modern techniques of knowledge production, including the scientific method. The collective trauma experienced during the plague woven into shared meanings is essentially not within the conscious awareness of the genetics professor of today, yet the very real influence of this shared history is unmistakable. That influence is not restricted to official curriculums or even “hidden” curriculums, but rather it overflows into the various artefacts of education and the various emotional and psychological experiences associated with educational activities. It is tempting to treat these accidental historical specificities as simply given and therefore ignorable in constructing educational theoretical models.

At this moment in history however, it does seem as though the possibility of “radical hope” may be opening up at last (Lear, 2006). Lines of evidence supporting the above scenario as a potentially resonant narrative truth come simultaneously from several directions. There are researches indicating correlations between years of study in orthodox economics and various social-psychological neuroses (Frank, Gilovich & Regan, 1993 & 1996; Iida & Sobei, 2011). There are researches indicating the positive health effects of having regular access to natural green spaces (Beatley, 2004; Louv, 2012). There are lines of research following and building on the general frameworks of Bateson, Burke, Vygotsky, and Wertsch. Each of these lines in the story of humanity creates a contradiction and ongoing tension within the contemporary meaning system. The dominant Cartesian narrative reads

increasingly as the fairy tale that it is as these contradictions are introduced with increasing frequency into the plot. Lear's account of the Blood tribe's experience of the collapse of the old meaning system and reconstruction of a new one also frames the problem of sustainability along lines that are quite similar to what is expressed in this thesis. These movements would seem to indicate an increasing readiness to explore new possibilities and new approaches to the quest for sustainability.

The work of changing social minds

The problem we are now faced with can be formulated roughly as follows: education, the entire system of education, can be fairly accurately considered as one historical consequence of a more or less continuous pattern of events originating in prior events involving social psychological trauma, followed by consequent neurosis in the social mind and its meaning system, followed by another round of consequent social psychological trauma caused by the normal operation of natural systems in reaction to the neurotic behaviour driven by that meaning system, and so on and so on, deeper and deeper into increasingly Self-destructive behaviours. The human social organism is never quite consciously aware of this pattern of double bind or his or her role in its perpetuation. The problem now manifests itself in the agreeable smell of a new car or a mowed lawn, the proud and accomplished self-image that comes with a PhD in economics, the casual disregard we show for the homeless that is enabled by an educated understanding of the way the world works, and so on.

The first step out of this conundrum will be quite similar to the alcoholic's first step out of addiction: allowing the possibility of a troubled mind and then actually admitting that there is a problem with one's habitual behaviour. Many trees

have been sacrificed on discussions and arguments over the phenomenon of denial and I will not replicate them here. (Bazerman, 2006 or Norgaard, 2011 are representative of this literature). A more pertinent question to consider might be to ask what such an admission of a problem would look like in practice. The particulars of what cannot be accepted, what simply becomes too much to deal with, are not necessarily important. What is important is the acceptance of the appropriateness of a stance of humility, the acceptance of fallibility, ambiguity, and the contingency inherent in any specific knowledge. It is important to recognize a distinction between our cultural/cognitive tools and our authentic self. I think here there is some legitimate cause for guarded optimism if this conceptual distinction can be brought into the conventional wisdom. There is growing evidence that a host of health problems, from autism, to cancers, to allergies and many others, are at least exacerbated by anthropogenic toxins in the landscape. Anthropogenic climate change, although probably still nearly impossible for the majority to accept as part of the larger narrative truth outlined here, is beginning to at least cause widespread cognitive and psychological discomfort. Many retreat into the blinding familiarity of dogma, but questioning, trouble, and possibilities do open up if often only momentarily. Recent comments by high level American politician John Kerry are frighteningly formulaic and consistent with historical patterns and contemporary meanings, likening the climate crisis to a “war”. It is obvious that admission of a problem with self as opposed to anthropomorphized hostile nature must eventually penetrate the ranks of the epistemology police (politicians, journalists, and

educators) before the social mind can be prepared for the next step: dissociation of internalized meanings.

Yet despite enormous efforts and resources being devoted to maintaining the major tenets of a self-destructive conventional wisdom, rumblings persist. There is, I think, reason to suppose that if just the epistemology police operating within the educational system alone could accept the above prognosis (i.e. that more widespread recognition that the problem lies within the inner world, internalized as Trojan-horse-style cultural tools) then possibilities of sustainability would begin to open up. The problem of recognizing the distinction between authentic self and internalized cultural/cognitive tools becomes, from this perspective, a problem of not discarding the baby with the bath water. Admitting a problem from within the educational system simultaneously opens new worlds of possibilities that are entirely consistent with the explicit and more implicitly accepted goals of education: individual, societal, and civilizational flourishing.

Meaning and reflexivity

Modern management science and especially econometric and risk management techniques has become a talisman to contemporary society. Economic and management knowledges currently constitute forms of magic: they present as mysterious powers beyond questioning. Blind faith in these knowledges is reflected in individual and collective subjectivities as well as in various elements and forms created and maintained in the landscape such as classrooms with immovable desks and chairs, mowed lawns or nature parks. Design involves the conceptualization of space as a blank canvas, removing all voice and all recognition of agency on the part

any *other*. Praxis and habitus both work to reflect the religious character of economism both inside and outside of the educational system (Boli, 1993). These patterns of structure and process mesh together, working as interlocking cognitive and affective directorates, and also working mightily against reformation and change (Plumwood, 2001). Yet although meaning is secured in the material structures of landscapes, including artefacts as abstract as theoretical models, they are not determinant.

“Nature” does not have boundaries except those in imaginings induced by particular species of internalized cultural/cognitive tools. There is no theoretical reason why the artefacts of the classroom could not be invested with new meanings. There is no theoretical reason why ecological education necessarily needs to involve field trips to the Amazon rainforest. Reflexivity works both ways. Part of the problem is that the project of education is steeped in meanings of unsustainability. In the current context show-and-tell in kindergarten class will often involve the establishment of particular ways of relating to objects (Wertsch, 1997). It might even involve mocking the child’s account of her special relationship with the object but it could potentially involve honouring that relationship and underscoring the importance of that relationship for human health, both physical and psychological. Establishing and nurturing connectivity may go against the dictates of ones’ historical inheritance but that does not mean it cannot be recognized as essential to human flourishing. Nevertheless these issues are generally not addressed in teacher training programs or in courses on philosophy or ethics.

Furthermore different people will have varying degrees of capacity to accept that there is anything wrong with the status quo. Some will have vested interests. Others will simply be surrounded with too many tellers of fairy tales, whether they be corporate media messaging or mowed lawns. Others will simply be too well connected to family, colleagues, and community, having high social capital, making the problem one of large-scale coordination. Meanings are strongest when they are collectively practiced, reflexively enforcing collective identities.

Transmitting Meaning

Schooling means choosing and planning one's own educational life course. The educated person becomes the producer of his or her own labour situation, and in this way, of his or her social biography. As schooling increases in duration, traditional orientations, ways of thinking, and lifestyles are recast and displaced by universalistic forms of knowledge and language. Beck (1992, p. 93).

Having established a framework for thinking about meaning, we turn now to the ways in which meaning is transmitted educationally, intra-personally, interpersonally, organizationally, culturally, and inter-generationally. A good theory of meaning transmission is critical to our task of theorizing dissociative educational reform. Bateson's interdisciplinary work on epistemologies provides the perspective of action as a problem of communication (Ruesch & Bateson, 1968). What happens in the classroom from this perspective, the meanings transmitted, can be quite different from the instructor's intention and spill out far beyond the boundaries of the approved curriculum. Although any instance of difference transmits messages, not all messages are received, interpreted, or responded to according to plan. Things get messy and miscommunication happens. Humans have an extra layer of abstraction (language, symbols, and signs) to deal with and this

extra layer increases exponentially the number of possibilities for error in human action. The teacher may use a piece of chalk, for example. She may treat the chalk in a certain way. She may, for example, ignore the piece of chalk that breaks off while she is writing on the black board, keeping her attention firmly rooted on markings on the blackboard, sending the message that the knowledge being transmitted from the teacher to the students is far more important than the piece of chalk she uses merely in the service of that goal. She may become annoyed with the broken piece of chalk, sending the message that good money has been used in the procurement of defective chalk. Alternatively however, the teacher might treat the chalk with reverence, sending the message that the piece of chalk embodies countless corpses of *Coccolith biomicrites* who might be considered in some sense as our ancient cousins. Sending such a message would undoubtedly be difficult for the students to interpret unless the entire educational community also adopted such an epistemological stance of reverence for chalk. Even then, the cognitive dissonance might be overwhelming. Perhaps special prayers or special incense burners would be required for the cleaning of the erasers or some other equally reverential tools of ritual in order for the message to be able to be internalized. And yet, there is absolutely no question that from a purely scientific perspective, (assuming we adhere to the conventional wisdom of genetic similarity as the appropriate marker and measure for degree of relatedness), that the chalk is in some sense our ancient relation, albeit a very distant one. Without pronouncing on which metaphor should inform our epistemological stance, it is worth simply pointing out that students will tend to internalize whichever stance is modeled for them.

This dilemma is not entirely unnoticed, even by economists. As far back as 1958, Galbraith noted that, “The first requirement for an understanding of contemporary economic and social life is a clear view of the relation between events and the ideas which interpret them (Galbraith, 1958, 1998, p. 6).” It is fairly safe to assume, I think, that Galbraith was not familiar with the writings of Vygotsky (at least not in 1958) and yet the theoretical framework of these two men is remarkably similar, at least on this point. These interpreting ideas are quite similar functionally to the example given by Vygotsky of a knot in a handkerchief. The knot in the handkerchief conditions the employer of the cultural tool to remember to buy bread. Galbraith’s “conventional wisdom” (code for market liberal dogma) also conditions the user into becoming an altered psychological subject. Galbraith would certainly have benefited from a familiarity with the work of Vygotsky, for he states:

The fatal blow to the conventional wisdom comes when the conventional ideas fail signally to deal with some contingency to which obsolescence has made them palpably inapplicable. This, sooner or later, must be the fate of ideas which have lost their relation to the world. (Ibid. p. 11)

As already discussed, these ideas of market liberalism have quite obviously “*lost their relation to the world*”. They are based on Newtonian-Cartesian imaginings that resemble the real world less than vaguely, less than could be capable of being or becoming beneficial to humans or the landscapes that support their existence. And yet those ideas, internalized as cultural tools, have proven supremely capable of deflecting the obviousness of their true failure.

The essays in the collection *Ecologies of Effect* edited by Davidson, Park & Shields, (2011) provide a deeper level of understanding of the part of meaning

transmission that still remains consciously accessible (at least if conscious effort is devoted to the task). This book helps us to understand the emotional aspect of meaning transmission and the capacity of material objects to hold and transmit that affect. Whether or not one chooses to acknowledge this aspect of effect, it is always there. It is not something that can be suppressed with a Kantian stance of disinterestedness either. Landscapes and material objects evoke feelings. These feelings, emotions, the effect embodied in the materiality of any given situation are constitutive of meanings on their own. These aspects of all human-landscape relations are always in the mix. Classrooms are filled with effect essentially because of the things in classrooms and because things happen in classrooms. They are, in fact, veritable pressure cookers of emotional social experience. They are often consciously intended to produce particular ways of being in the world, including (incidentally perhaps) ways of feeling within particular contexts. Sometimes they escape conscious awareness, working for good or ill below the radar. As Orr (1994) has pointed out, instruction in Kantian disinterestedness, perhaps by being forced to dissect a dead, formaldehyde-marinated frog, does not wipe emotions out of the equation, but rather results in a quite dysfunctional ecology of effect, something akin, Orr argues, to the type of education that once enabled German youths to become Nazis and engage in genocide (Orr, 1994, p. 16-25). Western education systems seem designed to eliminate any sense of reverence, wonder or awe from our relations with the various elements of the landscape. The term “psychopath” comes to mind, as the various cultural tools of instruction demonstrate a cold-blooded, remorseless stance when it comes to killing. Chemistry becomes a purely

technical challenge, as pesticides and other toxins are designed to meet purely instrumental requirements. According to AbdelRahim, (2013), p. 41, “The more we are taught to know the world through perverted words and formulae, the dumber we grow, for intelligence only devolves in artificial ‘educational’ settings, where the civilized are taught to listen to the voices representing their needs and woes.” The same is true of economic analysis or the various social sciences that treat people as objects in need of remediation. This situation, the consequence of internalized instrumentalism, is not easily escaped, as even this thesis generously demonstrates.

Popkewitz (1984) underscores the contingent quality of any specific knowledge or conventional wisdom:

Ideas are a function of social conditions and play a causal role in creating and sustaining particular social structures. The dilemma is that while ideas are also to guide action, ideas are located in and a product of historical actions in which certain interests are favoured and handicapped...

To study institutions such as schools requires that we also study and maintain a scepticism towards those who do the studying. This scepticism is posed by considering educational science as an occupational community. That community involves internal debates about its nature and character. But it also involves forms of work that have relation to larger issues of social structure, cultural reproduction, and transformation. The analysis of theory, method, and techniques in social science continually points to problems of interest, control, and reification. The horizons of scientific communities and social/cultural context are important for understanding the possibilities and pathologies of disciplines work. (p. 198-9)

In a way, Popkowitz, although he travels quite a considerable distance, does not go far enough. We should recognize that the “favouring” and “handicapping” is always accomplished according to the guiding influence of the mediating cultural tools of the dominant contemporary meaning system. Our scepticism must not be limited to individuals and their identities but focus more specifically on those mediating tools.

Finally, there is also the problem of the subconscious as addressed by Britzman, (2009). To this category we might also add the various psychopathologies of the social mind Reiber & Green in Reiber (Ed.) (2010), pp. 48-89 & Burns, (2006). As Burns (Ibid.) discusses, these illnesses are often associated with a problem of “dysconnectivity” which is well illustrated by the phenomenon of economism, whereby for example, despite abundant evidence to the contrary, markets are misperceived as being as naturally occurring as gravity or sunshine. As Polanyi has rightly argued, markets are relatively recent inventions and rely for their genesis and maintenance on what he termed a “marketing mind”. In the individual, the problem of the dysconnective event may be located between the “prefrontal cortex and posterior cortices” Burns, (2006) p. 146. Voices originating inside the brain are thus misperceived as originating in the outside world. The corresponding analogy in the social mind would be the blinding effect of the various abstracting mechanisms such as ideology or paradigm that operate at a largely subconscious level. Thus the Market for example appears to originate in the outside world when in fact it comes from a malfunction of the human meaning system operating in the human mind.

Conclusion

In this chapter I have attempted to paint a picture of a delusional species greatly in need of large dose of humility and better myths, paradigms, ideologies, metaphors and other cultural tools put to use both consciously and subconsciously for conceptualizing self and landscape and the ways self and landscape relate to each other. The next chapter will bring this discussion more closely into something more easily recognizable as the proper realm of education. The important points to

take away from this chapter can be summarized as follows: Life is always a messy business, but especially so for human beings because they rely so heavily on an inherited system of meaning. If that system of meaning is badly flawed, obvious delusion can occur. Correction of a flawed meaning system, and remediation of the delusion are extremely difficult to achieve. The longer the delusion persists, the greater the likelihood that catastrophe if not extinction of the human species will follow.

Chapter 3 – Education reconfigured

What do the observations and general principles on meaning outlined in the previous chapter actually mean for the project of education in broad terms and education for sustainable development more specifically? This chapter will analyze education through the lens of meaning and build a proposal to reconfigure education into a process of healing through dissociation. I use the term healing because I think it is appropriate to begin thinking about different knowledges and different systems of meaning having different consequences especially for psychological health but also obviously for physiological health as many industrial processes emanating from the dominant western systems of knowledge and meaning are literally inducing cancers, allergies, and many other serious medical conditions. I do not want to in any way diminish the importance of the epidemiology of western meaning and knowledge systems, but the focus here must remain within the boundaries of a more traditional conceptualization of what is readily recognizable as “education”. The argument that follows here might be best described as following a Vygotskian foundation whereby the student is changed psychologically by the internalization of cultural tools. From there we simply point out that this psychological change is rarely if ever neutral in terms of psychological health.

How are we to define psychological health from the perspective of sustainability? What are the necessary parameters within not only the individual mind but also the connected social mind that would constitute good health? Aldo Leopold’s approach to ethics is not a bad starting point to begin thinking about a

meaning system in terms of health. Leopold stated that: "A thing is right only when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" Leopold in Meine, (2010), p. 501. A meaning system is a thing that has direct and inevitable consequences in and on the landscape.

Consider, for example, that it is the meaning system that induces excitement and associated changes in metabolism at the shopping mall. In this case, meaning results in increased rates of respiration, causing minute atmospheric changes. At the other end of the spectrum, it was a system of meaning that prescribed the shopping mall itself and all of the products sold there that resonate within that meaning system.

These products in turn have consequences on the landscape in terms of their production, distribution, consumption and eventual degradation and reconstitution.

Landscapes impact human psychological health directly. This process is not well understood but as illustrated in the case of the Bureau of Indian Affairs day school discussed by Swentzell (1997) in the previous chapter, it is clear that western knowledge systems systematically produce psychological distress, at least in some situations. It is true that humans derive psychological comfort and consequently health to some degree from what is familiar but familiarity should be considered as a secondary or incidental metric if only because medicine does not always taste good. Familiarity is replicable across varying contexts. Familiarity depends only on the amount of time spent being connected with a particular landscape or particular aspects of a given landscape and interacting with that landscape using a particular system of meaning. A schizophrenic may become quite familiar with imaginary voices but that does not mean that those voices are a sign of

health. A healthy meaning system then can be recognized as a meaning system that resiliently directs human behaviours in ways that weave human consciousness into agreement with the total landscape, promoting authenticity.

Healing through dissociation involves a learning process whereby one's internalized cultural tools can be conceptualized as something separate from one's true or authentic self. To do so we begin by focusing on two pairs of concepts forming cornerstone aspects of the very broadly defined dominant contemporary western meaning system as they relate specifically to the narrower system of education. These aspects are progress & objectivity, and freedom & atomism. These will be discussed as case studies, in turn providing the basis for a later discussion returning again to the potential for education to become a deliberative and transformative practice of *dissociation*, separating internalized cultural tools from a newly recognized and increasingly *authentic* self. Authenticity can be defined very roughly as the level of agreement between self and total context, what we might label as the total landscape. This definition needs some unpacking before moving on.

Agreement, as used here, means something closer perhaps to mutual enhancement. To properly conceptualize this form of relationship, we need to move beyond the delusional model of usefulness or utility. Our relations with materiality can never be in reality so one-sided. As described in the previous chapter our relations with materiality (including by the way even abstract theoretical constructions such as supply demand models, see Rist, (2012) or Boli (1995) are always *constitutive* in nature (see Smith's discussion of *constitutive value*: Smith,

2001). The idea here for meaning system remediation then can be broken down into the following points:

1. A distinction can be made between an individual self and the geographically and historically available cultural tools that the individual eventually internalizes to form a unique, if also ephemeral, identity.
2. Some cultural tools can be recognized, on an intellectual level at least, for being quite dysfunctional. Some clearly propagate problematic distortion, the idea of “witch” during the Inquisition, or “property” today might provide two good examples.
3. The transformative process of dissociation of already internalized dysfunctional cultural tools can form the foundation for the imagining, internalization, and practice of new, more authentic cultural tools.
4. As mentioned above, meaning seems to be a requirement of life and newborns instinctively reach out to the world in a morphing act of becoming. It is only through this act of connecting that the individual can acquire an identity, only through being woven into a fabric of meaning. Western knowledge systems systematically make this fabric as threadbare as possible in a dysfunctional act of asceticism that appears to seek transcendence through Self-destruction.

This way of thinking about the process of education is very similar in some ways to Mezirow's (2000) transformative learning theory, except that the curriculum in the dissociative approach is essentially self-generative and responds specifically to problems of meaning. The aspect of tearing down the old so that the new can be re-built is quite similar, and differences such as the Vygotskian twist are not really substantive enough to draw special attention to them. Education is not limited to process, however. Where this proposed project of dissociative education differs strikingly from transformative learning theory is at the level of the curriculum and the focus on meaning. Transformative learning theory starts from the assumption that content is neutral. We will argue that, having made the distinction between meaning and knowledge, we can evaluate meanings and knowledges using the concept of connectivity as a proxy measure and also with respect to the degree of tendency toward authenticity. This theoretical framework will be discussed further in this chapter leading to a prognosis based on our current context and suggestions for directions for future work in the quest to achieve not only sustainability but also human flourishing in the fullest sense.

Progress & Objectivity

When talking about difficult topics, educators described balancing personal doubts and deep feelings of powerlessness with the task of sending a hopeful message to students. All three of the educators with whom I discussed climate change raised this point. Arne, the teacher at the local agricultural school, told me, 'I am unfortunately pessimistic. I just have to say it. But I am not like that toward my students. You know, I must be optimistic when I speak with the students.

Arne's use of the phrase 'you know' highlights the sense that this reality, this need to be optimistic with students, is taken for granted, uncontestable. Norgaard (2011, p. 101)

What is behind the rose-coloured glasses version of reality teachers feel they *must* present to their students? More importantly perhaps, where do these rosy, alternate universe narratives come from? What are the tools that teachers turn to in order to spin these happy versions of reality to their students? And how does this taken-for-granted practice influence the contents of the students' personal toolboxes? These questions challenge several taken-for-granted assumptions we use to structure our worlds and direct our behaviours, including the nature of identity, knowledge, agency, or community.

The very foundations of our contemporary educational system are composed partly of this blind faith in human progress. It is no coincidence that the two emerged together. According to Pollard, (1968),

The modern mind cannot really conceive of a world in which man is not at the centre stage, and his striving after improvement not the basis of the society around him. By the same token, the Mediterranean mind of the Hellenic or Judaic world, as of other still earlier millennia, would have stood uncomprehendingly before our present worship of the idea of progress. Its victory and its dominion are modern phenomena. (p. 1)

It is important to begin this discussion from a twofold understanding. First, just like the cultural tool of the economic market, the internalized idea of progress did not irritate, mislead, and bedevil pre-modern societies either. Economic systems prior to the conventional wisdom being captured by the peculiarities of a marketing mind were essentially based on socially and culturally prescribed reciprocal relations of traditional obligation. Neither the Market nor Progress per se generally entered into the equation. Authors such as Adam Smith and later Charles Darwin obviously filled in many of the details in the narrative of Progress. More importantly

however to the achievement of the taken-for-granted status of human progress were actually the ideas of Newton and Descartes who enabled a new and different conceptualization of Knowledge. According to their view, the world was composed of discreet units of inert matter that could be coaxed or outright tortured into revealing objective and complete knowledge of each and every piece. Therefore each piece of knowledge attained represented another piece of an eternal jigsaw puzzle of total understanding. This cultural/cognitive tool (cumulative knowledge forming the basis of inevitable human progress) that has been woven into so many daily classroom practices causes enormous trouble from a sustainability perspective. I should note here that the above is not to argue that pre-industrial western meaning systems did not have their problems. Certainly they did and the fact that they spawned our current situation is proof enough of those problems. This was addressed above in the discussion of the birth of agriculture, pests and so on.

Second, it is important to understand that faith in progress is not really warranted from an honest assessment of the current human condition. As Wright pointed out a decade ago:

Experts in a range of fields have begun to see the same closing door of opportunity, begun to warn that these years may be the last when civilization still has the wealth and political cohesion to steer itself toward caution, conservation, and social justice. Twelve years ago, just before the Rio environmental summit that led to the Kyoto Accord on climate change, more than half the world's Nobel laureates warned that we might have only a decade or so left to make our system sustainable. (Wright, 2000, p. 125).

Such an assessment does not necessarily need to measure the collective material conditions of humanity, or its distribution and compare such quantitative assessments to previous eras. Our focus can actually be more productively placed on

human knowledges and meanings alone, the pureness of our minds so to speak. The pertinent question is whether or not contemporary western knowledge is superior today to other contemporary knowledges or to those of previous time periods.

There are four lines of argument I want to put forward here to make the case that western knowledge is an inferior and even an unhealthy knowledge system working in conjunction with a meaning system that can only be accurately described as psycho-pathological.

First, western knowledge does not accurately and completely correspond to a quantitatively accessible objective reality. Knowledge always contains a characteristic of metaphor so that knowledge production necessarily involves the simultaneous production of ignorance (Malewski & Jaramillo, 2011). Within western epistemologies, one specific way of knowing forecloses the possibility of other knowledges. The scientific method is competitive by nature, allowing only one winner and discrediting alternative ways of knowing. Yet as has become increasingly clear, the systematic exclusion of the naturally occurring and ubiquitous ambiguity that exists in the real world from scientific models often produces surprise and suboptimal results (Berkes, 1999; Byers, 2011). Western knowledge systems are generally oriented towards the maximization of efficiency and that orientation systematically reduces flexibility (Bateson, 1987). Norgaard (1994) and Plumwood (2001) have also argued extensively and convincingly against western knowledge and I will not replicate their very important contributions here. The point will also be taken up below in our discussion of objectivity.

Secondly, western knowledge also tends to systematically instil an unrealistic overconfidence in the knower (individually and collectively) because it systematically overstates the validity of knowledge produced (Berkes, 1999; Byers, 2011). This overconfidence drives unsustainability. From a western perspective the knower is simply a disinterested observer standing on the sidelines. Yet we know that is clearly not the case. The mere act of seeking to know in a particular fashion, lays down the parameters for a particular habitus and a particular praxis, aesthetic, conscientization, subjectivity, and so on. Yet western knowledge prescribes that this particularity be discounted if not completely ignored.

Third, as mentioned in the previous chapter, human beings instinctively seek out connectivity while western knowledge destroys that psychological, cognitive type of connectivity. In other words, western knowledge is unhealthy by its very nature. It actually precludes achievement of the ultimate goal in the western philosophical tradition of seeking the “good life” or human flourishing. To put it bluntly, the western knowledge approach to meaning eliminates any possibility of success from the outset. If connectivity is our proxy measure of psychological health in the social mind, then western knowledge is the symptom of disease.

Fourth, as the Dalai Lama alluded in the opening quote of this thesis, the world follows the mind. “With our thoughts, we make the world.” Bateson (2000) pp. 486-495 likewise was concerned with landscapes being driven insane with Cartesian thoughts and those landscapes in turn driving peoples on that land also insane in a positive feedback loop. And Wertsch (1991) provides an example of how education participates in the propagation of this genre of insanity. His example

comes from a transcribed conversation during a primary school session of show-and-tell. In the example a student brings a rock to share with classmates. The rock has a great deal of symbolic meaning within the personal context of the student's family history. Nevertheless, the teacher systematically discounts the child's way of knowing the rock and imposes a more disinterested, western scientific epistemological stance with respect to the rock. Children learn an ecologically dysfunctional way of relating to the landscape, as the teacher models an impoverished way of knowing the rock: focusing on the physical properties of the rock and later turning to an encyclopaedia for the *official* knowledge of a rock. Krapfel provides further insight into this process of impoverishment or contamination as follows:

Through our decisions of what to test for, we communicate to our students what, out of all the world, we believe is important and should be especially attended to. What we adults pay attention to is a profound form of communication to children. Students don't come to school knowing what it is they need to know. On the contrary, trying to understand what adults want is one of the most powerful communications children encounter as they organize the mélange of their experience into what they hope will be a socially responsible, productive life. Perhaps part of the disaffection students fall into by junior high is related to their sense that the only thing the adult world esteems (based on the students' experiences in school) is sitting inside and learning a series of definitions and recitations of the packaged known, disconnected from emotionally powerful experiences. (Krapfel in Smith & Williams, 1999, p. 58)

These dynamics have direct consequences for landscapes. They are co-constitutive of landscapes just as landscapes are co-constitutive of identities.

It is important to understand that these problems are not problems of insufficient knowledge but rather they are primarily problems of dysfunctional meanings. Teachers are generally unaware that they are even transmitting these meanings. If pointed out, the teacher would in all probability take offense and

perceive the observation as a personal attack. Such epistemological stances are obviously however not innate but rather have acquired the teachers through the innately, instinctive processes of observation, interpretation, and internalization of the cultural tools passed on from earlier generations. We turn now to our second concrete example of the workings of these dynamics:

Freedom & Atomism

Freedom, like progress, is a core, internalized, organizing concept of the dominant contemporary way of being in Canada, albeit to a somewhat lesser or more muted degree than our neighbours to the south. Freedom, like progress, also has a disturbing pedigree in the history of western ideas. It is based on solipsistic, atomistic Cartesian thought. As Banuri reveals however, the theory of freedom does not compare well with observed reality:

Modernization theories present us with a vision of the future, a 'theory of salvation' in Ashis Nandy's words, based on the presumed superiority of the impersonal world-view and the alleged untenability and undesirability of personal constraints upon action. They promised an end to oppression created by poverty, under the assumption that whatever actions were adopted in pursuit of this goal would have no deleterious effect on other aspects of human freedoms, and could in fact provide a positive stimulus to those as well. The history of the last four decades tells another story, as the levels of state-sponsored oppression as well as civic violence in most countries has increased exponentially. It is possible to argue that notwithstanding the justification of modernity as a means of enhancing human freedoms in the Third World, it has served invariably to reduce freedom and to deny sovereignty to people wherever it has been introduced, and that the target of popular protest and resistance is precisely this disenfranchisement. (Banuri in Marglin & Marglin, 1990, p. 95).

In this "vision of the future" we find again traces of transference originating in social-psychological trauma in a distant past, both real and imagined. We learn this dysfunctional ideal of Freedom as we learn to conceptualize ourselves as individuated units of social capital, investing in our selves through the acquisition of

individual units of knowledge, specializing according to Ricardo's *Theory of Comparative Advantage*. Theories of value arising from enlightenment thought based on market exchange are clearly delusional. These meanings imply that the landscape can be destroyed without any loss of value to the inhabitants. This is an extremely impoverished way of understanding value and freedom.

Freedom within the vernacular understanding of the term generally refers to freedom as a totally unencumbered, disconnected, billiard ball-like individual to act without reference to and without consequence for the broader context, even the context one absolutely depends on for ones' own identity. But despite the overwhelmingly dominant role the concept of freedom occupies in the public imagination, in practice freedom remains illusive. As Bateson (1987) states: "Freedom is always imagined to be round the next corner or over the next crest of the mental landscape (p. 168)." Like the search for the Holy Grail, it drives consumers to keep buying and it drives academics to "go on doing research and thinking about all sorts of problems, as if we could one day reach the thought that would set us free (Ibid.)."

Yet the more freedom dominates as a central organizing metaphor of the social mind, the more its corollary, responsibility, fades from conscious awareness. This diminishment of responsibility is a marker of modernity and a primary characteristic of the Cartesian epistemological turn. The Cartesian perspective removes the knower from the picture to become a disinterested manipulator, whose manipulations impact the object only. The disenchantment of the world into merely mechanical parts further diminishes notions of responsibility. Thus the mythological

significance of freedom depends on the atomization or conceptual separation of the world into disconnected bits and pieces and its main consequence the alienation of thoughts and feelings of responsibility and connectedness.

If we think of what we might consider ideal or iconic freedoms, we might think of motorized vehicles or flush toilets, for example. Both of these examples have profound influences on the possibilities for specific types and qualities of education. Both have essentially become part of the educational landscape. Children who are not proficient in toilet use will generally have rather restricted educational opportunities. Yet while the toilet at first glance would seem to be one of the most basic freedoms of modern society, there is another side that tends to remain unspoken and unexamined. The flush toilet primarily resonates within the cultural dysfunction of cognitive and social psychological dis-connectivity. The main purpose that the flush toilet responds to is symbolic and not practical. From a practical viewpoint, the flush toilet represents not only an ecological nightmare but also an actual removal of freedom. Prakash and Richardson in Smith & Williams (1999) explain as follows:

Tangled within the vast opaque and rigid chains of metallic subterranean sewage pipes and administrative bureaucracies (municipal and other), the simple act of installing a dry latrine even in our own suburban homes or apartments seems daunting, if not impossible. How would we go about gaining the permission to do so in our countries where violation tickets are issued for dandelions that grow six inches above the norm ordained for lawn grass height? Counties where it is still illegal to compost uneaten broccoli florets, carrot ends, or empty egg shells? Furthermore, from where would we obtain the dry latrine pots, so abundant in Xico-Chalco but never glimpsed in Wal-marts of the North? (p. 76)

Much the same analysis can be applied to many other technologies we consider without much thought to be the basic elements of our contemporary freedoms.

While these technologies work to undermine our sense of connectedness, they simultaneously remove future ecological and sustainability potentialities, narrowing our future options and thereby actually making us less free. Perpetuating the positive feedback loop of neurosis in the social mind that began 10,000 years ago with the advent of agriculture.

Imagine for a moment what our educational system would look like without motorized transportation. How much more might the curriculum be linked directly to the specifics of the local context? How many more community members might be actively involved in the education of children? What might the average or the optimal class size for such a context become? Imagine the consequences for social capital and even how the meaning of the terms work, knowledge or learning might be altered. Would decisions continue to be taken using abstract theories by disinterested and disconnected power brokers far from the actual consequences of those decisions? At the risk of being labelled a Luddite, I ask these questions to illustrate one point: other psychological, social, cultural, economic, and ecological configurations are possible with different ways of making meaning, different degrees of purity of mind. But this point is critical: without a change in the basic composition of the shared meaning system, amelioration might also not be forthcoming. The status quo is not bringing us any closer to sustainability. Despite small, isolated positive steps forward, overall humanity is continuing its march toward disaster. Solutions allowable under the current conventional wisdom, such as geo-engineering, hybrid cars, and recycling programs may actually take us in the

wrong direction by providing the illusion of progress and freedom, reinforcing the dysfunctional metanarrative.

Prognosis

These cultural/cognitive tools, Progress / Objectivity and Freedom / Atomism, originate in the external world of the child ready for her internalization. They do *not* originate within the child's inner world. These tools are also not limited to ideas. They include material artefacts of various species and genera, from the schoolyard mowed lawn or paved play area to the configuration of desks and chairs in the classroom. This is not a resurrected version of the *noble savage* thesis. What I am saying is not inconsistent with Frankfurt School thinkers such as Marcuse nor does it contradict the thought of Canadian philosopher George Grant, but it does go, and I think there is also a need for the conventional wisdom, to go one step further. It is important to begin to treat unsustainability as a psychological illness. This does not need to carry forward the normal stigma currently associated with mental illness precisely because it does not originate in the individual but rather in the practices and artefacts of the past.

A strategy of dissociation as discussed above will not be easy in the best of times and might prove entirely impossible in the context of runaway global climate change or catastrophic ecological collapse as might result from mass extinction of pollinator species, for example. Nevertheless it is important to begin to change the lens we use for thinking about the goal of sustainability. The parallels evident between culture-specific unsustainability and psychotic disorders (generally,

although wrongly considered to be resident in the individual) are striking.

According to Burns, (2006), for example:

The predominant notion of madness is based upon the Cartesian cogito. We have seen that over a 100 years of efforts to unravel this mysterious human malady from a Cartesian perspective have failed and we must ask ourselves why this so. I would suggest that a postmodern approach to psychosis requires us to re-evaluate the philosophical basis for our understanding and study of madness. Is the Cartesian 'project' the most appropriate heuristic for our purpose? I would suggest that it is not and the failure of modern psychiatry is the evidence. If Homo sapiens is a socially conscious animal, and if emotional and psychological well-being depends on a healthy and appropriate social relationship and connectedness, then surely we should abandon an explanatory system (Cartesianism) that represents human as isolated and solitary human beings. Instead, we should look for a new philosophical framework that reflects this interpersonal understanding of mental life. (p. 76)

The project I am proposing, in other words, may also have profound positive consequences for the incidence of mental illness generally.

Dissociative healing

What then would dissociative healing look like in practice? Dissociation as a coping strategy in the face of especially chronic illnesses or disabilities is actually fairly common. People decide that their identity will not be defined by their illness or disability. This is not generally a simple or easy task to achieve in practice and there is reason to believe that dissociation of internalized cultural tools would prove even more challenging. The self is porous and necessarily has many pathways for potential invaders to exploit, whether we are discussing viruses or cultural meanings. As discussed above meaning can easily be internalized without conscious awareness. Meanings are woven into identities, habitus and praxis, in ways that make their extraction and eradication difficult at best. Yet the promise, the radical hope, exists. It emerges perhaps primarily in narratives of new and better

understandings as they resonate within the actually existing contaminated minds of unsustainability. It is important to recognize not only the limitations but also the possibilities of these already internalized cultural tools.

Following are some concrete changes teachers could make in order to bring about dissociation and reconstitution:

Narrative: Stories are powerful conveyors of meaning (Clark, 2002; King, 2003). Teachers could be careful to challenge Cartesian narratives and offer new narratives of connectedness to their students. Narratives contain conventional wisdoms and epistemological stances with respect to iconic concepts such as Freedom or Progress. New narratives might, for example, relate these icons as golden calves that kept former generations wandering in the desert but have now been revealed for what they truly are: coping mechanisms invented to deal with the psychological trauma our forebears accidentally brought upon themselves.

Identity: Post-Cartesian identities are constituted in part by an active awareness of being interconnected to entire landscapes, all that we perceive. Western science and traditional knowledges researches are now moving toward convergence on this point. The conceptual boundaries separating self and not-self are beginning to dissolve. Feelings of care and concern expand beyond the physical boundaries of one's body and spill out into the landscape and all of the many elements of self that reside in that landscape. Kantian disinterestedness is put to rest, buried alongside the raving madness of colonialism and imperialism. Utilitarianism loses legibility, like cave paintings in Lascaux, becoming completely indecipherable from the emerging new ways of understanding and of being in the

world. Teachers and students begin to see themselves, their own identities, in courses on World Literature, the History of Civilization or courses on local geography, geology, climatology, or ecology. In short, education becomes a process of learning to come home, to become a part of instead of apart from.

Knowledge: It is critically important to begin making the distinction between knowledge and meaning. We must also abandon the idea of one unitary and universal body of knowledge. Knowledge always involves a particular epistemological stance or perspective giving a metaphorical characteristic. We must begin to appreciate the value of *complex understanding* and value of non-western ways of knowing. Perhaps most challenging within the contemporary systems of education, knowledge must cease to be a competitive sport. Connecting learning to lived experience and total context will almost surely also involve improved learning and identity outcomes.

Human agency: Educators, in the social sciences to be sure, but also in the natural sciences, must rethink their explanatory models of human behaviour. We do not operate in isotropic planes and models based on such assumptions are worse than misleading; they can be quite dangerous. That danger is also not limited to the consequences of behaviours misguided by these false maps. As research has shown, the danger of working with such unrealistic, abstract models should be recognized as also reaching into the inner worlds and psychological health of those who internalize those types of models (see Frank, Gilovich & Reagan, 1993 & 1996; also Ieda & Sobei, 2011). Perhaps the tautological error of methodological individualism would not be able to get up to so much mischief if other perspectives were also

considered, but unfortunately such attempts at complex understanding are currently generally not allowed, at least not in the discipline of mainstream economics and neighbouring disciplines fallen under the tutelage of orthodox economics. Given the current state of understanding in the field of developmental social psychology, such practices in disciplines such as orthodox economics can be considered as a form of educational malpractice.

Academic disciplines: This brings us to the issue of the compartmentalization of knowledge within the boundaries of academic disciplines. Competency within a specific disciplinary field or domain of knowledge is currently closely linked with identity for the academic. Yet the result has become a sort of widespread learned disability. Transdisciplinarity should be encouraged and its practitioners should not be shunned.

Time: The compartmentalization of time can also be identified as a highly disconnective practice, consistent with the precepts of a market economy and consequent unsustainability. Introducing flexibility in this regard is obviously fraught with practical difficulties and obstacles. Nevertheless there are a number of possibilities for improvement over the status quo. The division of learning into specified units of time in class and academic credits is one potential starting point. Clearly learning takes time, but not all students will progress at the same rate. Shifting the emphasis away from forcing students into standardized academic schedules to one that allows each student to progress at her own pace might be a difficult place to begin given the political nature of education but other simpler examples might include letting the class period respond to the classroom dynamics

rather than the sounding of the bell. The way time is dealt with provides an opportunity for direct confrontation with the dominant unsustainable economic system, the work of identity formation at the core of the educational process, and the cultural meaning attaching to the education system in general.

Economy: Our education systems currently prepare students to assume transactional roles in society. Many aspects of modern education are easily recognizable as deriving from production line models. The academic transcript serves as the specification sheet, describing qualities of the “product”. Life in mainstream, 21st century Canadian society is filled with messaging to the effect that economy trumps all other concerns or facets of life. In political discourse the education system is frequently referred to as being primarily in the service of the “knowledge” economy. Such rhetorical environments can be toxic to young minds, but especially so when the implicit messaging in the classroom reinforces the notion that economy matters above all else. We must therefore ponder, as educators, why we produce the types of subjectivities in our students that we do. What does the mastery of such subjectivities prepare them for? Once they are accustomed to and have internalized such subjectivities, what other subjectivities are thereby foreclosed? .

Purpose: The purpose of education is signalled to students from a very early age as essentially instrumental and economic in nature. The accumulation of wealth symbolizing individual freedom represents the implicitly accepted meaning of life in post-industrial societies of the 21st century. It is clear that underlying the surface level particulars of mission statements and conventional wisdom, resides a deep-

seated, subconscious, social-psychological fear of nature resulting from repeated past ecological traumas. Challenging these shared understandings will not be easy. Any such challenge should begin by developing the narrative based on a collective determination to overcome these inherited neuroses or perhaps another entry point that would allow some degree of resonance within the current system of meaning and shared understandings.

Landscape: Schools exist in places. Those places have constitutive value (positive or negative). It is important for students to learn to create and maintain mutually enhancing relationships with the landscapes they exist within. The focus should be primarily on correcting the nature of the relationship between self and landscape. For example, the process of replacing a mowed lawn with a native plant garden may retain the dysfunctional relationship of applying expert knowledge to a conceptual *terra nullius*. Knowing the Latin names of each species, conceptualizing the garden as a human/cultural creation, framing the garden as existing as a sort of museum of diversity whose primary function relates to marketable knowledge will result in changing very little over the longer run. Such an approach would still be the result of the marketing mind in action. This is not to say that native plant gardens should be avoided in school yards, only that the land should be allowed some agency, the learning should not be primarily about how to gain and maintain control. Allow birds and wind to do some planting too, for example. Ultimately it gets back to the narrative.

Potential Traps

There are unfortunately risks inherent in the above proposal in the form of a potential for slipping into contradiction. For example, implementation of a program of dissociative transformational learning could easily become captured within a Cartesian perspective as an expert, technical knowledge applied instrumentally to a clearly defined, specific educational objective. This points to the inherent capacity of the human psyche to imprint on inappropriate myths, metanarratives, ideologies, paradigms, symbols, affects, metaphors, and so on. Ideally this apparent lack of flexibility would have been filtered out by evolution at an earlier stage and a smaller scale. Unfortunately the traits of loyalty and tenacity would likely have carried strong evolutionary value for our forebears and the effects of evolution tend not to be overly discriminating at least in general terms. It is imperative, I think, that educators begin to conceptualize their craft as essentially process-oriented rather than results oriented. Educators must continually self-interrogate and reflect on the nature of the cultural/cognitive tools they are putting into practice, being constantly mindful that, as the Dalai Lama reminds us, *“Speak or act with a pure mind and happiness will follow you like a shadow that never leaves.”*

Flexibility, it seems to me, is an important aspect of a pure mind. According to Wertsch (1998),

Authors who have examined issues related to mediated action can often be seen as falling into one of two basic camps, depending on whether one takes a ‘half-full’ or a ‘half-empty’ perspective. Those approaching meditational means from the half-full perspective focus on what meditational means empower us to do; those approaching meditation from the half-empty perspective focus on the constraints mediation imposes. (p. 39)

It is important to see the western meaning system in terms of the constraints that this particular collection of tools imposes and the price we pay in terms of collective and individual wellbeing. But it is also important not to allow that perspective to become overbearing. Reductionist science has clearly enabled humanity to achieve many technological wonders and produce types of experience that can clearly become addictive, making the project of dissociation a very dangerous venture with clear risk of backlash. It will be important to frame our current system of meaning as providing both affordances and constraints, but when we look clear-eyed and with open minds at the entire balance sheet, abandonment by some of the old tools and our acquisition by some of new tools become absolutely imperative. This must become civilization's overriding narrative truth in the 21st century, despite the odds and the pitfalls working against this end.

Chapter four – Synthesis and Conclusion

When and if we pass beyond the unspoken despair in which we are now living, when we feel again able to control the race to destruction, a new breed of developmental theory is likely to arise. It will be motivated by the question of how to create a new generation that can prevent the world from dissolving into chaos and destroying itself. I think that its central technical concern will be how create in the young an appreciation of the fact that many worlds are possible, that meaning and reality are created and not discovered, that negotiation is the art of creating new meanings by which individuals can regulate their relations with each other. It will not, I think, be an image of human development that locates all of the sources of change in the individual, the solo child. For if we have learned anything from the dark passage of history through which we are now moving it is that man, surely, is not 'an island, entire of itself' but a part of the culture that he inherits and then recreates. The power to recreate reality, to reinvent culture, we will come to recognize, is where a theory of development must begin its discussion of mind. Bruner (1986, p. 149).

Much of the contemporary thought and discourse connecting education and sustainable development reflects concerns similar to those broadly outlined in this thesis, especially with respect to building connectivity and particularly the connection of the characteristics of the social mind to humanity's future prospect. And yet, this literature continues overwhelmingly to begin from the epistemological stance of framing the problem of sustainability as a problem that can be solved with more knowledge, even if the knowledge is produced with the goal of enabling the scientific manipulation of a system of meaning. Unsustainability seems to present the entire project of education with an unsolvable paradox. Sustainability entails a way of being in the world that has as its foundation all that can be perceived and all that exists to the human mind. However for the past 10,000 years the dominant way of being has involved the systematic transformation of all that exists into a matrix of unsustainability, including or perhaps containing the entire project of education.

I do not believe that the quest for improvement, the purification of minds, can really be called into question. If we think of what one must surely consider among the best qualities of humans, I think such intentional reaching out, seeking ways to better connect would certainly make the short list at the very least. Clearly however there are better, purer, or more skilful approaches and then there is the sad stat of affairs we currently find ourselves struggling through. As inheritors of the modern, post-industrial way of being in the world, we have been woven into an unwinnable wager. Our development from birth puts us into battle with a mythical concept of nature as enemy. If we lose that battle, we lose our own identities, as we can only come to know our selves through this inherited way of relating. If we win that battle, then we perish as biological beings.

From this no-win scenario, the only way forward, from my perspective, is a sort of radical hope, a leap of faith. Yet here again, we are faced with a double bind: radical hope involves moving forward, not individually but rather collectively with a shared acceptance of the difficulties, costs, risks, and also the potential reconstitution of both collective and individual identity. Contemporary education systems are not oriented toward such projects. The focus is on knowledge to the exclusion of meanings, knowledge is generally conceptualized as being located in brains, quantifiable, universal, and so on. The question I am opening here, but failing to answer, is whether an education for pure minds and sustainable development would continue to be recognizable as education.

Bruner has I think made a critical point: once we are living in a different context, our theoretical models will be quite different. That may be because as the

Dalai Lama, asserted, “mind” as constituted by all of its various mediators: myths, metaphors, ideologies, paradigms, aesthetics and so on “...precedes our deeds.” We cannot help but internalize our context. The only starting point available to break the double bind is to build awareness of the nature and origins of what we internalize. This can begin with small steps, through interdisciplinary collaboration, for example. Collaboration between historians and developmental social psychologists and psychiatrists could prove to be quite helpful in the quest for sustainability, by tracing the origins of our current social psychology of unsustainability. Careful historical comparative discourse analyses prior to and following major traumatic events could greatly increase our understanding of how we get ourselves into trouble. We need also, I think, to find more ways to exorcise the contaminating effect of those past experiences from our individual practices of education and to challenge those effects within the broader discourses and conventional wisdoms on education. For example, in their essay, *Against Learning*, Contu, Grey & Örtenblad (2003), p.947 argue that, “In connecting learning and knowledge to empowerment and new, ‘necessary’ organizational structures, learning discourse promotes new locales in which individual learners can prove and improve their own potential as workers and as citizens.” This connection of educational discourse and practice with neoliberal mythology also opens new potentialities for the collective imagining of “purer” narrative truths. Indeed the possibilities to challenge individual nodes of unsustainability appear limitless, but the question remains concerning how many successful challenges and revisions will it take to dislodge the broader hegemonic structures and practices?

Although these measures of remediation and revision may not over the longer term be consistent as a way of persisting within a culturally, socially, economically, ecologically and spiritually sustainable system of meaning, they may just provide the current prerequisites for a radical hope that would move in the direction of a better world and better peoples. In the end, sustainability will need to be experienced as a class of *desire* that must *compete with* and eventually displace the forms of desire constitutive of a consumerist way of being in the world. The cultural tools already internalized are, after all, the only legible alternative. The literacies of sustainability remain theoretical at best; the language does not yet exist. Even those now beginning to speak it, may not necessarily be able to even really understand it.

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