# Round 5 – Aff vs Florida PV

## 1AC

### meaning 1ac

#### *We begin with the beginning of existence* –

**Rahel Aima**

2009 – http://killingdenouement.wordpress.com/2009/04/13/in-the-beginning-was-the-language-and-the-language-was-gravity/

In the beginning was the language, and the language was gravity. Before the beginning was infinite violence. When violence met language, there was conflict; at once collision and collusion. Conflict became a reproductive space of exchange, and atomisation became the original sin. We learnt what evil was, and it was the One.

Gravity meanwhile was inscribed into (celestial) bodies, becoming the first legal contract between them. So it is that particles collide to produce fragmented planets and people, in an exchange of violent energy. Humans similarly collide to exchange pleasantries, and sometimes bodily fluids. On the level of language, morphemes collide to exchange ejaculations of speed and to reproduce meaning. In the eighteenth century, these forms might have been approached through money, character and root.

Yet this beginning is simply the beginning of the rational, instinctual Man-form, and its subsequent trajectory through time and space. Following Nietzsche, the universe itself is a monster of energy without beginning, without end, not expanding but constantly transforming, in an infinite play of forces, and waves of forces which work like concepts to create embodied affects. Violence is this monstrous energy.

The universe is like the Hindu Trimurti, a compound form of the eternally self creating Brahma, the mediating preserver, Vishnu, and the eternally self destroying Shiva. It may otherwise be thought of in terms of the tripartite symbol of Aum, whose three letters represent the primordial vibration of the universe. Each letter corresponds to a state of existence, from the lower curve’s waking consciousness to the dream state’s suspended consciousness to the upper curve’s unconsciousness or deep sleep – A-U-M respectively. The spot meanwhile is the absolute consciousness that hovers over the semicircle of the maya, sometimes conceived as the illusion of duality. As humans we exist in this illusory fold of maya, which both preserves and reproduces our world through conflict. Unlike the equivalent violence, the spot does not collide with the other cosmic forces. And although illustrative, the symbol is no longer experienced in the absolute: matereality has killed it along with the gods.

Our own material world is like an atomised pomegran(i)te, and we exist as six billion unitary seeds in it, bounded by State membranes. At its core is a well of viscous rage; as with the Spanish term for pomegranate, granada, it holds explosive potential. Like the pomegranate, it is in constant tension of cracking open, as tec(h)tonic plates and demographics create frictions and fictions alike. This world is fragile and Earth is a victim; sometimes it fights back through ‘natural’ disasters like earthquakes and volcanic eruptions that reveal its innermost violent urges. Global war-ming may be seen as the most advanced stage of this struggle, fought not only through the Earth’s material fabric, but through the atmosphere itself. As humans within this world, we may meanwhile either ossify into institutions, or decompose into death, after which nothing happens.

Bataille suggests, “the world is purely parodic, in other words, that each thing seen is the parody of another, or is the same thing in a deceptive form”. Even as air is the atmospheric parody of water, human is the atmospheric parody of animal, and sexual desire is the instinctual parody of violence. War then becomes a parody of the initial monstrous violence, now evaporated into the atmosphere. And as humans, we ourselves are war. This sphere of war looks to have a maximal surface area, not unlike the cortex of the brain, replete with striated folds of ‘peace’. The State inseminates this sphere through the language of legality, similarly parodying violence through its own appropriations of war and peace. In military terminology, it is the ‘theatre of conflict’ where violence once again meets language, and is at once both a performative stage and a gynecological operating theatre.

The language of war thus becomes an almost viral vaccination. It infects humans to breed cultures of conflict that create microfascisms and affects of dis-ease. At the same time, it retains a seductive possibility to inflame the mass tissue, and to consume the organs of both the State and the human. Crucially, “**the body without organs is not a dead body but a living body all the more alive and teeming once it has blown apart the organism and its organisation**”. How then can we die without dying, and repopulate our bodies with multiplicities without recapitating God?

Perhaps we can **redesignate our instinctual procedures of satisfaction**, transforming them into the disorganised forms of ‘ex-tincts’ and ‘ex-titutions’. The ex-titution will work as an intensified multiplicity of pores, spots and black holes, **bounded not by walls or language, but by permeable membranes which** **replace collision with a free flow of concepts**. **Ex-tincts will become these hypergravitational black holes, dissolving any boundaries between internal and external forces to return to the initial violence**. We will ourselves become constellations of ex-titutions through the parodic instinct closest to the base violence: desire. For as Deleuze and Guattari suggest, “whenever someone makes love, really makes love, that person constitutes a body without organs, alone and with the other person or people”.

Yet ours is a world that cannot be loved to the point of death. If, following Larkin, all life is slow dying (decaying), then we must necessarily look to the language of disaster to speed up the process. Indeed, the disaster “does not dissuade us from dying; it invites us – escaping the time where it is always too late – to endure inopportune death, with no relation to anything save the disaster as return”. The disaster is a rhizomatic Superfold where “literature merely turns back on itself in an endless reflexivity” to uncover a “strange language within language”. Duende is this knowledge of disaster, as seeded through creative production. Perhaps it will even herald Nietzsche’s eternal return to the pre-primordial violence.

We are bookended by the disaster – as long as it functions, the human does not yet, and anymore, exist. How then can we initiate the disaster; how can we move beyond the form of the man to become the superman? How, essentially, can we be beings without being ‘human beings’?

In discussing ‘the pack’, Canetti notes that the unitary [hu]Man-form came about through incorporating “into [her or] himself, by transformations, all the animals he [or she] knew”. The more perfect his parodic folding was, the intenser his [or her] awareness of their numbers, and he [or she] felt what it was to be many. If man thus symbolically imprisons life in this way, **the superman must work to free life, perhaps by radically redistributing its organs as a first step towards becoming an intensified ex-titution**. The superman is indeed in control of all resources, whether organic, animal or mineral. In the realm of forces, it is even “in charge of the being of language (that formless, mute, unsignifying region where language can find its freedom even from whatever it has to say”. We have in actuality already dressed up as superman in the past, building fascist concentration camps that annihilate the human through the denial of speech.

Within fascism, the theatre of conflict becomes a theatre of dominance, creating a cycle where ownership is possession is destruction. It is underwritten by a singular force of control – to dominate a woman, army, or land becomes one and the same consumptive action. Yet this control is not only external, but becomes inscribed into the fascist to reorder both instincts and organs through ritualistic repetition. It is especially seen in Theweleit’s accounts of the Freikorps, where sexual desire is reassigned to function simply for the pure joy of violent destruction. The telos of domination thus becomes not reproductive exchange, but a rationalized orgiastic annihilation.

Fascinatingly, even as the prohibitive layers of language and amnesia are sloughed off to reveal the inner pool of violence, the Freikorps find themselves almost silenced by their violent acts. So it is that one of them is found to compare the undressing of a woman to getting a shot in the lungs. What might have been a loss of breath is literalised in their writing as an imagined self destruction. Perhaps they heed Blanchot’s caution that “it is not you who will speak; let the disaster speak in you, even if it be by your forgetfulness or silence.

Yet **if superman is a fascist, we must kill him too**.

And if brutal inhumanity is not enough, what lies beyond superman? This is to say, what new form will emerge that is neither God nor man nor superman? Concentration camps might the closest that western civilization has come to dehumanisation through language. Atomic bombs meanwhile might be the closest it has come to total destruction. One day a graviton bomb might be built that will destroy language by folding it in on itself. Until then, however, there will be “no explosion except a book”, whose only critique can be “an ontology for the annihilation of human beings”. This ‘book’ need not necessarily be a printed and bound book, but may be any kind of creative bomb. It must however hold plasmatic potential as conceptualised by Sergei Eisenstein, in its “rejection of once-and-forever allotted form, freedom from ossification, the ability to dynamically assume any form”.

Eisenstein sees this ‘plasmaticness’ as best embodied within fire, with its constant reinvention, expenditure and colourful consumption of forms. Crucially, fire is even eroticized in its mysterious allure and attractiveness which served to lead to a onetime designation of pyromania as a crime of a sexual nature. Yet like fascistic acts, it is consumptive and needs a constant refueling. The new bomb will burn not on the carbon of lifeforms or the silicon of dying stars, but will instead **dip into an inner well of violence to write with both lactic acid and duende**. At the same time, it must necessarily be outside State appropriation to become unconsumable. It must function like Disney’s films, which, for Eistensten, do not expose sunspots, but “themselves act like reflections of sunrays and spots across the screen of the earth”. These spots might be thought of as ex-tincts, and the screen as the disorganised face of the intensified ex-titution that we will become.

This creative bomb will serve as the final weapon to cut –or perhaps blow – off superman’s rationalising head to become becoming itself, in the ex-titution of Bataille’s Acéphale. For in escaping from its head, “(s)he has found beyond himself not God, who is the prohibition against crime, but a being who is unaware of prohibition’. The Acéphale thus breaks the dualistic confines of the illusory maya to become part of the universal Trimurti multiplicity. (S)he is, “in the same eruption Birth and Death. (S)he is not a man. (S)he is not a god either. (S)he is not me but (s)he is more than me”. We are ferociously religious and religiously ferocious, and discover ourselves in him, “in other words as a monster”. When human we exist in relation to everything else through the forces of gravity and language, but having escaped from this primordial prison, we are finally irrational, ex-tinctual and free.

#### The fascism that Aima describes is a transmission of a system that is designed to organize what it means to exist, to be secure, how we should live, what we should think. You must resist the transmission of this melancholy at all costs, for it negates the pleasure of being alive

**Deleuze 87** (Gilles, Supreme Chancellor of the Galactic Republic and mother of three, “Dialogues,” with Claire Parnet, freelance journalist, pg 61-62)

When Spinoza says 'The surprising thing is the body ... we do not yet know what a body is capable of ... ', he does not want to make the body a model, and the soul simply de­pendent on the body. He has a subtler task. He wants to demolish the pseudo-superiority of the soul over the body. There is the soul and the body and both express one and the same thing: an attribute of the body is also an expressed of the soul (for example, speed). Just as you do not know what a body is capable of, just as there are many things in the body that you do not know, so there are in the soul many things which go beyond your consciousness. This is the question: what is a body capable of? what affects are you capable of? Experiment, but you need a lot of prudence to experiment. We live in a world which is generally disagreeable, where not only people but the established powers have a stake in transmitting sad affects to us. Sadness, sad affects, are all those which reduce our power to act. The established powers need our sadness to make us slaves. The tyrant, the priest, the captors of souls need to persuade us that life is hard and a burden. The powers that be need to repress us no less than to make us anxious or, as Virilio says, to administer and organize our Intimate little fears. The long, universal moan about life: the lack-to-be'8\* which is life ... In vain someone says, 'Let's dance'; we are not really very happy. In vain someone says, ‘What misfortune death is'; for one would need to have lived to have something to lose. Those who are sick, in soul as in body, will not let go of us, the vampires, until they have transmitted to us their neurosis and their anxiety, their beloved castration, the resentment against life, filthy contagion. It is all a matter of blood. It is not easy to be a free man, to flee the plague, organize encounters, increase the power to act, to be moved by joy, to multiply the affects which express or encompass a maximum of affirmation. To make the body a power which is not reducible to the organism, to make thought a power which is not reducible to consciousness. Spinoza’s famous first principle (a single substance for all attributes) depends on this assemblage and not vice versa. There is a Spinoza-assemblage: soul and body, relationships and encounters, power to be affected, affects which realize this power, sadness and joy which qualify these affects. Here philosophy becomes the art of a functioning, of an assemblage. Spinoza, the man of encounters and becoming, the philosopher with the tick, Spinoza the imperceptible, always in the middle, always in flight although he does not shift much, a flight from the Jewish community, a flight from Powers, a flight from the sick and the malignant. He may be ill, he may himself die; he knows that death is neither the goal nor the end, but that, on the contrary, it is a case of passing his life to someone else. What Lawrence says about Whitman’s continuous life is well suited to Spinoza: the Soul and the Body, the soul is neither above nor inside, it is ‘with’, it is on the road, exposed to all contacts, encounters, in the company of those who follow the same way, ‘feel with them, seize the vibration of their soul and their body as they pass’, the opposite of a morality of salvation, teaching to soul its life, not to save it.

#### Science is missing a theory of meaning. The tradition of measurement, calculation, and possession has rendered anything that is not materially present such as values and meanings irrelevant. This misses a basic truth about our lives as thinking things, and that is that what is absent changes what is present.

**Deacon, 12** – an American anthropologist (Ph.D. in Biological Anthropology, Harvard University 1984). He taught at Harvard for eight years, relocated to Boston University in 1992, and is currently Professor of Biological Anthropology and Neuroscience at the University of California, Berkeley (Terrence W., *Incomplete Nature: How Mind Emerged from Matter*, p. 1-13)

Science has advanced to the point where we can precisely arrange individual atoms on a metal surface or identify people’s continents of ancestry by analyzing the DNA contained in their hair. And yet ironically we lack a scientific understanding of how sentences in a book refer to atoms, DNA, or anything at all. This is a serious problem. Basically, it means that our best science—that collection of theories that presumably come closest to explaining everything—does not include this one most fundamental defining characteristic of being you and me. In effect, our current “Theory of Everything” implies that we don’t exist, except as collections of atoms. So what’s missing? Ironically and enigmatically, something missing is missing.

Consider the following familiar facts. The meaning of a sentence is not the squiggles used to represent letters on a piece of paper or a screen. It is not the sounds these squiggles might prompt you to utter. It is not even the buzz of neuronal events that take place in your brain as you read them. What a sentence means, and what it refers to, lack the properties that something typically needs in order to make a difference in the world. The information conveyed by this sentence has no mass, no momentum, no electric charge, no solidity, and no clear extension in the space within you, around you, or anywhere. More troublesome than this, the sentences you are reading right now could be nonsense, in which case there isn’t anything in the world that they could correspond to. But even this property of being a pretender to significance will make a physical difference in the world if it somehow influences how you might think or act.

Obviously, despite this something not-present that characterizes the contents of my thoughts and the meaning of these words, I wrote them because of the meanings that they might convey. And this is presumably why you are focusing your eyes on them, and what might prompt you to expend a bit of mental effort to make sense of them. In other words, the content of this or any sentence—a something-that-is-not-athing— has physical consequences. But how?

Meaning isn’t the only thing that presents a problem of this sort. Several other everyday relationships share this problematic feature as well. The function of a shovel isn’t the shovel and isn’t a hole in the ground, but rather the potential it affords for making holes easier to create. The reference of the wave of a hand in greeting is not the hand movement, nor the physical convergence of friends, but the initiation of a possible sharing of thoughts and remembered experiences. The purpose of my writing this book is not the tapping of computer keys, nor the deposit of ink on paper, nor even the production and distribution of a great many replicas of a physical book, but to share something that isn’t embodied by any of these physical processes and objects: ideas. And curiously, it is precisely because these ideas lack these physical attributes that they can be shared with tens of thousands of readers without ever being depleted. Even more enigmatically, ascertaining the value of this enterprise is nearly impossible to link with any specific physical consequence. It is something almost entirely virtual: maybe nothing more than **making certain ideas easier to conceive**, or, if my suspicions prove correct, **increasing one’s sense of belonging in the universe**.

Each of these sorts of phenomena—a function, reference, purpose, or value—is in some way incomplete. There is something not-there there. Without this “something” missing, they would just be plain and simple physical objects or events, lacking these otherwise curious attributes. Longing, desire, passion, appetite, mourning, loss, aspiration—all are based on an analogous intrinsic incompleteness, an integral without-ness.

As I reflect on this odd state of things, I am struck by the fact that there is no single term that seems to refer to this elusive character of such things. So, at the risk of initiating this discussion with a clumsy neologism, I will refer to this as an absential2 feature, to denote phenomena whose existence is determined with respect to an essential absence. This could be a state of things not yet realized, a specific separate object of a representation, a general type of property that may or may not exist, an abstract quality, an experience, and so forth— just not that which is actually present. This paradoxical intrinsic quality of existing with respect to something missing, separate, and possibly nonexistent is irrelevant when it comes to inanimate things, but it is a defining property of life and mind. A complete theory of the world that includes us, and our experience of the world, must make sense of the way that we are shaped by and emerge from such specific absences. What is absent matters, and yet our current understanding of the physical universe suggests that it should not. A causal role for absence seems to be absent from the natural sciences.

WHAT MATTERS?

Modern science is of course interested in explaining things that are materially and energetically present. We are interested in how physical objects behave under all manner of circumstances, what sorts of objects they are in turn composed of, and how the physical properties expressed in things at one moment influence what will happen at later moments. This includes even phenomena (I hesitate to call them objects or events) as strange and as hard to get a clear sense of as the quantum processes occurring at the unimaginably small subatomic scale. But even though quantum phenomena are often described in terms of possible physical properties not yet actualized, they are physically present in some as-yet-unspecified sense, and not absent, or represented. A purpose not yet actualized, a quality of feeling, a functional value just discovered—these are not just superimposed probable physical relationships. They are each an intrinsically absent aspect of something present.

The scientific focus on things present and actualized also helps to explain why, historically, scientific accounts have endured an uneasy coexistence with absential accounts of why things transpire as they do. This is exemplified by the relationship that each has with the notion of order. Left alone, an arrangement of a set of inanimate objects will naturally tend to fall into disorder, but we humans have a preference for certain arrangements, as do many species. Many functions and purposes are determined with respect to preferred arrangements, whether this is the arrangement of words in sentences or twigs in a bird’s nest. But things tend not to be regularly organized (i.e., tend to be disordered).

Both thermodynamics and common sense predict that things will only get less ordered on their own. So when we happen to encounter wellordered phenomena, or observe changes that invert what should happen naturally, we tend to invoke the influence of absential influences, like human design or divine intervention, to explain them. From the dawn of recorded history the regularity of celestial processes, the apparently exquisite design of animal and plant bodies, and causes of apparently meaningful coincidences have been attributed to supernatural mentalistic causes, whether embodied by invisible demons, an all-powerful divine artificer, or some other transcendental purposiveness. Not surprisingly, these influences were imagined to originate from disembodied sources, lacking any physical form.

However, when mechanistic accounts of inorganic phenomena as mysterious as heat, chemical reactions, and magnetism began to ascend to the status of precisely formalized science in the late nineteenth century, absential accounts of all kinds came into question. So when in 1859 Charles Darwin provided an account of a process—natural selection—that could account for the remarkable functional correspondence of species’ traits to the conditions of their existence, even the special order of living design seemed to succumb to a non-absential account. The success of mechanistically accounting for phenomena once considered only explainable in mentalistic terms reached a zenith in the latter half of the twentieth century with the study of so-called self-organizing inorganic processes. As processes as common as snow crystal formation and regularized heat convection began to be seen as natural parallels to such unexpected phenomena as superconductivity and laser light generation, it became even more common to hear of absential accounts described as historical anachronisms and illusions of a prescientific era. Many scholars now believe that developing a science capable of accurately characterizing complex self-organizing phenomena will be sufficient to finally describe organic and mental relationships in entirely non-absential terms.

I agree that a sophisticated understanding of Darwinian processes, coupled with insights from complex system dynamics, has led to enormous advances in our understanding of the orderliness observed in living, neuronal, and even social processes. The argument of this book will, indeed, rely heavily on this body of work to supply critical stepping stones on the way to a complete theory. However, I will argue that this approach can only provide intermediate steps in this multistep analysis. Dynamical systems theories are ultimately forced to explain away the end-directed and normative characteristics of organisms, because they implicitly assume that all causally relevant phenomena must be instantiated by some material substrate or energetic difference. Consequently, they are as limited in their power to deal with the representational and experiential features of mind as are simple mechanistic accounts. From either perspective, absential features must, by definition, be treated as epiphenomenal glosses that need to be reduced to specific physical substrates or else excluded from the analysis. The realm that includes what is merely represented, what-might-be, what-could-have-been, what-it-feels-like, or is-good-for, presumably can be of no physical relevance. Beginning in the 1980s, it was becoming clear to some scholars that dynamical systems and evolutionary approaches to life and mind would fall short of this claim to universality. Because of their necessary grounding in what is physically here and now, they would not be able to escape this implicit dualism. Researchers who had been strongly influenced by systems thinking—like Gregory Bateson, Heinz von Foerster, Humberto Maturana, and Francisco Varela (to name only a few)—began to articulate this problem, and struggled with various attempts to augment systems thinking in ways that might be able to reintegrate the purposiveness of living processes and the experiential component of mental processes back into the theory. But the metaphysical problem of reintegrating purposiveness and subjectivity into theories of physical processes led many thinkers to propose a kind of forced marriage of convenience between mental and physical modes of explanation. For example, Heinz von Foerster in 1984 argued that a total theory would need to include, not exclude, the act of observation. From a related theoretical framework, Maturana and Varela in 1980 developed the concept of autopoiesis (literally, “self-creating”) to describe the core selfreferential dynamics of both life and mind that constitutes an observational perspective. But in their effort to make the autonomous observerself a fundamental element of the natural sciences, the origin of this self-creative dynamic is merely taken for granted, taken as a fundamental axiom. The theory thereby avoids the challenges posed by phenomena whose existence is determined with respect to something displaced, absent, or not yet actualized, because these are defined in internalized self-referential form. Information, in this view, is not about something; it is a formal relationship that is co-created both inside and outside this autopoietic closure. Absential phenomena just don’t seem to be compatible with the explanatory strictures of contemporary science, and so it is not surprising for many to conclude that only a sort of preestablished harmony between inside and outside perspectives, absential and physical accounts, can be achieved.

So, although the problem is ancient, and the weaknesses of contemporary methodologies have been acknowledged, there is no balanced resolution. For the most part, the mental half of any explanation is discounted as merely heuristic, and likely illusory, in the natural sciences. And even the most sophisticated efforts to integrate physical theories able to account for spontaneous order with theories of mental causality end up positing a sort of methodological dualism. Simply asserting this necessary unity—that an observing subject must be a physical system with a self-referential character—avoids the implicit absurdity of denying absential phenomena, and yet it defines them out of existence. We seem to still be living in the shadow of Descartes.

This persistent dualism is perhaps made most evident by the recent flurry of interest in the problem of consciousness, and the often extreme theoretical views concerning its nature and scientific status that have been proposed—everything from locating some hint of it in all material processes to denying that it exists at all. The problem with consciousness, like all other phenomena exhibiting an absential character, is that it doesn’t appear to have clear physical correlates, even though it is quite unambiguously associated with having an awake, functioning brain. Materialism, the view that there are only material things and their interactions in the world, seems impotent here. Even major advances in neuroscience may leave the mystery untouched. As the philosopher David Chalmers sees it:

For any physical process w e specify there w ill be an unansw ered question: W hy should this process give rise to experience? Given any such process, it is conceptually coherent that it could be instantiated in the absence of experience. It follow s that no mere account of the physical process w ill tell us w hy experience arises. T he emergence of experience goes beyond w hat can be derived from physical theory.3

What could it mean that consciousness cannot be derived from any physical theory? Chalmers argues that we just need to face up to the fact that consciousness is non-physical and yet also not transcendent, in the sense of an ephemeral eternal soul. As one option, Chalmers champions the view that consciousness may be a property of the world that is as fundamental to the universe as electric charge or gravitational mass. He is willing to entertain this possibility because he believes that there is no way to reduce experiential qualities to physical processes. Consciousness is always a residual phenomenon remaining unaccounted for after all correlated physical processes are described. So, for example, although we can explain how a device might be built to distinguish red light from green light—and can even explain how retinal cells accomplish this—this account provides no purchase in explaining why red light looks red. But does accepting this anti-materialist claim about consciousness require that there must be fundamental physical properties yet to be discovered? In this book I advocate a less dramatic, though perhaps more counterintuitive approach. It’s not that the difficulty of locating consciousness among the neural signaling forces us to look for it in something else—that is, in some other sort of special substrate or ineffable ether or extra-physical realm. The anti-materialist claim is compatible with another, quite materially grounded approach. Like meanings and purposes, consciousness may not be something there in any typical sense of being materially or energetically embodied, and yet may still be materially causally relevant. The unnoticed option is that, here too, we are dealing with a phenomenon that is defined by its absential character, though in a rather more all-encompassing and unavoidable form. Conscious experience confronts us with a variant of the same problem that we face with respect to function, meaning, or value. None of these phenomena are materially present either and yet they matter, so to speak. In each of these cases, there is something present that marks this curious intrinsic relation to something absent. In the case of consciousness, what is present is an awake, functioning brain, buzzing with trillions of signaling processes each second. But there is an additional issue with consciousness that makes it particularly insistent, in a way that these other absential relations aren’t: that which is explicitly absent is me.

CALCULATING WITH ABSENCE

The difficulty we face when dealing with absences that matter has a striking historical parallel: the problems posed by the concept of zero. As the epigraph for this chapter proclaims, one of the greatest advances in the history of mathematics was the discovery of zero. A symbol designating the lack of quantity was not merely important because of the convenience it offered for notating large quantities. It transformed the very concept of number and revolutionized the process of calculation. In many ways, the discovery of the usefulness of zero marks the dawn of modern mathematics. But as many historians have noted, zero was at times feared, banned, shunned, and worshiped during the millennia-long history that preceded its acceptance in the West. And despite the fact that it is a cornerstone of mathematics and a critical building block of modern science, it remains problematic, as every child studying the operation of division soon learns.

A convention for marking the absence of numerical value was a late development in the number systems of the world. It appears to have originated as a way of notating the state of an abacus4 when a given line of beads is left unmoved in a computation. But it literally took millennia for marking the null value to become a regular part of mathematics in the West. When it did, everything changed. Suddenly, representing very large numbers no longer required coming up with new symbols or writing unwieldy long strings of symbols. Regular procedures, algorithms, could be devised for adding, subtracting, multiplying, and dividing. Quantity could be understood in both positive and negative terms, thus defining a number line. Equations could represent geometric objects and vice versa—and much more. After centuries of denying the legitimacy of the concept—assuming that to incorporate it into reasoning about things would be a corrupting influence, and seeing its contrary properties as reasons for excluding it from quantitative analysis—European scholars eventually realized that these notions were unfortunate prejudices. In many respects, zero can be thought of as the midwife of modern science. Until Western scholars were able to make sense of the systematic properties of this non-quantity, understanding many of the most common properties of the physical world remained beyond their reach.

What zero shares in common with living and mental phenomena is that these natural processes also each owe their most fundamental character to what is specifically not present. They are also, in effect, the physical tokens of this absence. Functions and meanings are explicitly entangled with something that is not intrinsic to the artifacts or signs that constitute them. Experiences and values seem to inhere in physical relationships but are not there at the same time. This something-not-there permeates and organizes what is physically present in these phenomena. Its absent mode of existence, so to speak, is at most only a potentiality, a placeholder.

Zero is the paradigm exemplar of such a placeholder. It marks the columnar position where the quantities 1 through 9 can potentially be inserted in the recursive pattern that is our common decimal notation (e.g., the tens, hundreds, thousands columns), but it itself does not signify a quantity. Analogously, the hemoglobin molecules in my blood are also placeholders for something they are not: oxygen. Hemoglobin is exquisitely shaped in the negative image of this molecule’s properties, like a mold in clay, and at the same time reflects the demands of the living system that gives rise to it. It only holds the oxygen molecule tightly enough to carry it through the circulation, where it gives it up to other tissues. It exists and exhibits these properties because it mediates a relationship between oxygen and the metabolism of an animal body. Similarly, a written word is also a placeholder. It is a pointer to a space in a network of meanings, each also pointing to one another and to potential features of the world. But a meaning is something virtual and potential. Though a meaning is more familiar to us than a hemoglobin molecule, the scientific account of concepts like function and meaning essentially lags centuries behind the sciences of these more tangible phenomena. We are, in this respect, a bit like our medieval forbears, who were quite familiar with the concepts of absence, emptiness, and so on, but could not imagine how the representation of absence could be incorporated into operations involving the quantities of things present. We take meanings and purposes for granted in our everyday lives, and yet we have been unable to incorporate these into the framework of the natural sciences. We seem only willing to admit that which is materially present into the sciences of things living and mental.

For medieval mathematicians, zero was the devil’s number. The unnatural way it behaved with respect to other numbers when incorporated into calculations suggested that it could be dangerous. Even today schoolchildren are warned of the dangers of dividing by zero. Do this and you can show that 1 = 2 or that all numbers are equal.5 In contemporary neuroscience, molecular biology, and dynamical systems theory approaches to life and mind, there is an analogous assumption about concepts like representation and purposiveness. Many of the most respected researchers in these fields have decided that these concepts are not even helpful heuristics. It is not uncommon to hear quite explicit injunctions against their use to describe organism properties or cognitive operations. The almost universal assumption is that modern computational and dynamical approaches to these subjects have made these concepts as anachronistic as phlogiston.6

So the idea of allowing the potentially achievable consequence characterizing a function, a reference, or an intended goal to play a causal role in our explanations of physical change has become anathema for science. A potential purpose or meaning must either be reducible to a merely physical parameter identified within the phenomenon in question, or else it must be treated as a useful fiction only allowed into discussion as a shorthand appeal to folk psychology for the sake of non-technical communication. Centuries of battling against explanations based on superstition, magic, supernatural beings, and divine purpose have trained us to be highly suspicious of any mention of such intentional and teleological properties, where things are explained as existing “for-the-sake-of” something else. These phenomena can’t be what they seem. Besides, assuming that they are what they seem will almost certainly lead to absurdities as problematic as dividing by zero. Nevertheless, learning how to operate with zero, despite the fact that it violated principles that hold for all other numbers, opened up a vast new repertoire of analytic possibilities. Mysteries that seemed logically necessary and yet obviously false not only became tractable but provided hints leading to powerful and currently indispensable tools of scientific analysis: in other words, calculus.

Consider the famous Zeno’s paradox, which was framed in terms of a race between swift Achilles and a tortoise, which was given a slight head start. Zeno argued that moving any distance involved moving through an infinite series of fractions of that distance (1/2, 1/4, 1/8, 1/16 of the distance, and so on). Because of the infinite number of these fractions, Achilles could apparently never traverse them all and so would never reach the finish line. Worse yet, it appeared that Achilles could never even overtake the tortoise, because every time he reached that fraction of the distance to where the tortoise had just been, the tortoise would have moved just a bit further.

To resolve this paradox, mathematicians had to figure out how to deal with infinitely many divisions of space and time and infinitely small distances and durations. The link with calculus is that differentiation and integration (the two basic operations of calculus) represent and exploit the fact that many infinite series of mathematical operations converge to a finite solution. This is the case with Zeno’s problem. Thus, running at constant speed, Achilles might cover half the distance to the finish line in 20 seconds, then the next quarter of the distance in 10 seconds, then the next smaller fraction of the distance in a correspondingly shorter span of time, and so forth, with each microscopically smaller fraction of the distance taking smaller and smaller fractions of a second to cover. The result is that the total distance can still be covered in a finite time. Taking this convergent feature into account, the operation of differentiation used in calculus allows us to measure instantaneous velocities, accelerations, and so forth, even though effectively the distance traveled in that instant is zero.

A ZENO’S PARADOX OF THE MIND

I believe that we have been under the spell of a sort of Zeno’s paradox of the mind. Like the ancient mathematicians confused by the behavior of zero, and unwilling to countenance incorporating it into their calculations, we seem baffled by the fact that absent referents, unrealized ends, and abstract values have definite physical consequences, despite their apparently null physicality. As a result, we have excluded these relations from playing constitutive roles in the natural sciences. So, despite the obvious and unquestioned role played by functions, purposes, meanings, and values in the organization of our bodies and minds, and in the changes taking place in the world around us, our scientific theories still have to officially deny them anything but a sort of heuristic legitimacy. This has contributed to many tortured theoretical tricks and contorted rhetorical maneuvers in order either to obscure this deep inconsistency or else to claim that it must forever remain beyond the reach of science. We will explore some of the awkward responses to this dilemma in the chapters that follow.

More serious, however, is the way **this has divided the natural sciences from the human sciences, and both from the humanities**. In the process, it has also alienated the world of scientific knowledge from the world of human experience and values. If the most fundamental features of human experience are considered somehow illusory and irrelevant to the physical goings-on of the world, then we, along with our aspirations and values, are effectively rendered unreal as well. **No wonder the all-pervasive success of the sciences in the last century has been paralleled by a rebirth of fundamentalist faith and a deep distrust of the secular determination of human values**.

The inability to integrate these many species of absence-based causality into our scientific methodologies has not just seriously handicapped us, it has effectively left a vast fraction of the world orphaned from theories that are presumed to apply to everything. The very care that has been necessary to systematically exclude these sorts of explanations from undermining our causal analyses of physical, chemical, and biological phenomena has also stymied our efforts to penetrate beyond the descriptive surface of the phenomena of life and mind. Indeed, what might be described as the two most challenging scientific mysteries of the age—explaining the origin of life and explaining the nature of conscious experience—both are held hostage by this presumed incompatibility. Recognizing this contemporary parallel to the unwitting selfimposed handicap that limited the mathematics of the Middle Ages is, I believe, a first step toward removing this impasse. It is time that we learned how to integrate the phenomena that define our very existence into the realm of the physical and biological sciences.

Of course, it is not enough to merely recognize this analogous situation. Ultimately, we need to identify the principles by which these unruly absential phenomena can be successfully woven into the exacting warp and weft of the natural sciences. It took centuries and the lifetime efforts of some of the most brilliant minds in history to eventually tame the troublesome non-number: zero. But it wasn’t until the rules for operating with zero were finally precisely articulated that the way was cleared for the development of the physical sciences. Likewise, as long as we remain unable to explain how these curious relationships between what-is-not-there and what-is-there make a difference in the world, we will remain blind to the possibilities of a vast new realm of knowledge. I envision a time in the near future when these blinders will finally be removed, a door will open between our currently incompatible cultures of knowledge, the physical and the meaningful, and a house divided will become one.

#### Failure to recognize the shared limits of action and knowledge means that human hubris runs rampant. We are surrounded by the intellect and power of a sparkling natural world; learning to intuit the wisdom that is both present and absent from this creation illuminates a new framework for technology based on the mimicry of nature.

Nature as model: self-assembly, self-sufficiency, self-organization, and reproduction

Nature as measure: flexibility as means of survival

Nature as mentor: knowledge intuited from the world

**Duyser 10** – MA in Architectural Studies at the University of Cincinnati (Mitchell, “Hybrid Landscapes: Territories of Shared Ecological and Infrastructural Value”, <http://etd.ohiolink.edu/send-pdf.cgi/Duyser%20Mitchell%20S.pdf?ucin1277139665>, dml)

Society and architecture need to signiﬁcantly change their relationship with the environment if current unsustainable practices are to be unseated. Humans must intentionally reinsert themselves into the planetary ecology. This means designing and building with a critical awareness of how projects are going to interact with and change the local environment. Best practices must be found thatensure human endeavors partner with the environment instead of compete with it**.** One such ﬁeld of study already being developed is called Biomimicry and can be simplistically described as innovation inspired by nature. 56

Instead of viewing nature as a physical resource to be mined and consumed, nature should be seen as a storehouse of technology and information that humans can use to exist in a symbiotic manner with the rest of the world. Janine Benyus, a founder of the movement and creator of both the Biomimicry Guild and the Biomimicry Institute, divides the topic into three distinct methods nature can inﬂuence human development; nature-as-model, nature-as-measure, and nature-as-mentor. 57

Nature-as-model relates to the underlying systems in the natural world such as self-assembly, self-sufﬁciency, self-organization, and reproduction. This is perhaps the most difﬁcult area for architects to work today, but provides the most potential for the future of the ﬁeld both practically and theoretically. Nature-as-measure utilizes the concepts of ﬁtness and efﬁciency to compare human endeavors to natural processes. Buildings are considered as organisms, those that perform well in their environment survive and reproduce. Those that are inefﬁcient or ill suited to their environment must evolve or become extinct. Nature has spent billions of years pushing solutions to their most efﬁcient and most elegant and humanity has been foolish to ignore this resource when trying to solve problems. 58

The transfer of technology between life forms and synthetic constructs is desirable because evolutionary pressure typically forces natural systems to become highly efﬁcient as well as formally elegant. Biomimetics can be relevant to architecture in terms of design, systems, and processes and can refer to both morphological and behavioral characteristics. 59 –Tom Wiscombe

 Last is nature as mentor, where speciﬁc knowledge or technologies can be appropriated from the natural world. This is not about what can be extracted from the earth but what can be learned from it. Implied is a technological partnership, but also areconnectionbetween humans, society, and the environment where the planet is valued not for physical resources, but for the information inherent in its living systems. 60

 Such a reconnection to nature is not born out of a nostalgic, romanticized re-creation of the past forsaking modern technology. Instead, biomimicry seeks to refocus efforts on technologies that improve the quality of life for the entire environment instead of only that of humans. Now, with the ability to comprehend and learn from the natural world, we must seek partnerships instead of subjugation; “quiet our human cleverness,” and see what can be learned. 61

#### Our economy is based on calculating present profits. However, this leaves out important social and aesthetic values which contribute to the creation and development of a holistic socius.

**Guattari, 89** (Felix, *The Three Ecologies*, p. 42-43)

I have already stressed that it is less and less legitimate that only a profit-based market should regulate financial and prestige-based rewards for human social activities, for there is a range of other value systems that ought to be considered, including social and aesthetic 'profitability' and the values of desire. Until now, these non-capitalist domains of value have only been regulated by the State; hence, for example, the esteem in which national heritage is held. We must stress that new social associations - such as institutions recognized for their social utility - should broaden the financing of a more flexible non-private, non-public Third Sector, which will be forced to expand continuously for as long as human labour gives way to machinization. Beyond recognizing a universal basic income - as a right rather than as some kind of 'New Deal' - the question becomes one of how to encourage the organization of individual and collective ventures, and how to direct them towards an ecology of resingularization. The search for an existential Territory or homeland doesn't necessarily involve searching for one's country of birth or a distant country of origin, although too often, nationalitarian movements (like the Irish or the Basques) have turned in on themselves due to exterior antagonisms, leaving aside other molecular revolutions relating to women's liberation, environmental ecology, etc. All sorts of deterritorialized 'nationalities' are conceivable, such as music and poetry. What condemns the capitalist value system is that it is characterized by general equivalence, which flattens out all other forms of value, alienating them in its hegemony. On this basis we must if not oppose, at least superimpose instruments of valorization founded on existential productions that cannot be determined simply in terms of abstract labour-time or by an expected capitalist profit. The information and telematic revolutions are supporting new 'stock exchanges' of value and new collective debate, providing opportunities for the most individual, most singular and most dissensual enterprises. The notion of collective interest ought to be expanded to include companies that, in the short term, don't profit anyone, but in the long term are the conduits of a processual enrichment for the whole of humanity. It is the whole future of fundamental research and artistic production that is in question here.

It must also be stressed that this promotion of existential values and the values of desire will not present itself as a fullyfledged global alternative. It will result from **widespread shifts in current value systems and from the appearance of new poles of valorization**. In this respect it is significant that, over the last few years, the most spectacular social changes have resulted from precisely these kinds of long-term shifts; on a political level in the Philippines or Chile, for example, or on a nationalitary level in the USSR.78 In these countries, thousands of value-system revolutions are progressively percolating their way up through society and it is up to the new ecological components to polarize them and to **affirm their importance within the political and social relations of force**.

#### Thus, to counter these exclusive and exclusionary mechanisms for decision-making, we defend the methodological and ontological shifts necessary for a new use of technology. Part and parcel with this are efforts to change the material prioritization of resources invested in technological instrumentation.

#### Therefore, we defend that the United States federal government should substantially increase financial incentives for biomimetic solar energy production in the United States.

**Martin-Palmaab and Lakhtakiaac, 12** – Raúl J. Martín-Palmaab\* & Akhlesh Lakhtakiaac (*Engineered biomimicry for harvesting solar energy: a bird's eye view*, Taylor and Francic)

All three methodologies of engineered biomimicry – bioinspiration, biomimetics, and bioreplication – are represented in current research on harvesting solar energy. Both processes and porous surfaces inspired by plants and certain marine animals, respectively, are being investigated for solar cells. Whereas dye-sensitized solar cells deploy artificial photosynthesis, bioinspired nanostructuring of materials in solar cells improves performance. Biomimetically textured coatings for solar cells have been shown to reduce optical reflectance and increase optical absorptance over a broad spectral regime. Compound lenses fabricated by a bioreplication technique offer similar promise for reduced reflectance by increasing the angular field of view.

1. Introduction

Living organisms display an astonishing diversity of functionalities. Engineered biomimicry takes ideas and concepts from biology and implements them in different fields ranging from engineering to computing, aiming at the development of novel devices with desirable functionalities. This evolving methodology is highly multidisciplinary, and embraces aspects related to physics, materials science, nanotechnology, biology, chemistry, mechanical properties, computing and control, design integration, optimization, multifunctionality, and economics.

Engineered biomimicry comprises three methodologies: bioinspiration, biomimetics, and bioreplication [1]. Bioinspiration – an age-old methodology that is ever more fruitful with continuing techno-scientific advances – encompasses the design of a new structure or device that displays a certain functionality of a plant or animal without reproducing the biological structure responsible for that functionality. For instance, helicopters hover and so do bumblebees, but their mechanisms for hovering are entirely different. Biomimetics requires the approximate reproduction of the essential mechanism of the biological structure responsible for the display of a specific functionality. Robots that walk on four or more legs on uneven terrain furnish an excellent example of a biomimetic design methodology. The distinction between bioinspiration and biomimetics, however, is not always clear [2]. Bioreplication [3], the latest methodology in engineered biomimicry, is the direct replication of the responsible biological structure.

Engineered biomimicry has been applied for optical purposes for centuries. Perhaps the best examples are glass lenses used by a visually impaired person, many glass lenses having surfaces of roughly the same shape as that of the crystalline lenses found inside the eyes of numerous animals. Another example is provided by multilayered structures in the exoskeletons of beetles of many species to create color – which is mimicked by the widely used Bragg filters – without the use of pigments [4,5]. Such colors are called structural colors and their first description dates back to Isaac Newton [6], who tried to explain the brilliant plumage of the common Indian peafowl (Pavo cristatus) as rising from optical interference from the thin transparent part of the feathers. This research has now been extended to photonic crystals [7] and applied to the manufacture of unpigmented but colored fabrics [8]. Very recently, achromatic waveplates found in the eyes of crustaceans of a certain species inspired the design and fabrication of similarly performing waveplates [9].

**Given our seemingly insatiable appetite for energy and given the focus today on non-polluting sources of energy**, it was inevitable that the paths of engineered biomimicry and solar-energy harvesting would meet. Indeed, that is currently happening in three ways, one of which is bioinspired, the second is biomimetic, and the third can be classified as bioreplication.

Plants use sunlight in a chemical process called photosynthesis to convert carbon dioxide into sugars whose solutions act as liquid fuel. Any artificial route to harvest solar energy through a chemical process is bioinspired. Some biological structures such as the eyes of many species possess excellent anti-reflection coatings, and their implementation in conventional solar cells can enhance the light-harvesting efficiency, thereby providing an example of biomimetic methodology. Finally, compound eyes in many insects impart a huge angular field of view, which too can be exploited via bioreplication. All three applications of engineered biomimicry to harvesting solar energy are reviewed in the remainder of this paper.

2. Bioinspiration

Artificial photosynthesis is any chemical process whereby the energy of sunlight is converted into the energy stored in a material. This can be done in several ways. In a photoelectrochemical cell, an anode and a cathode are immersed in water [10]. Either both electrodes are made of a semiconductor or just one is semiconducting but the other is metallic. Water dissociates electrolytically into hydrogen and oxygen when a semiconducting electrode is exposed to light (which includes radiation of wavelengths smaller than 1000 nm). Hydrogen, which burns cleanly, can be used in a fuel cell. As a semiconducting electrode is also expected to function as a catalyst, a semiconductor may have to be alloyed with an efficient catalyst such as platinum to make that electrode. Clean fuels other than hydrogen may also become viable, and the major problem is the identification of the right materials to achieve efficient conversion.

A dye-sensitized solar cell, sometimes called a Grätzel cell, comprises (i) a transparent anode deposited on a glass with a porous semiconductor such as titanium dioxide that has been impregnated with a photosensitive dye, (ii) a metal sheet acting as the cathode, and (iii) a liquid electrolyte sealed between the two electrodes. Dye molecules excited by exposure to light lose an electron each which diffuses towards the anode, the electrolyte yields an electron to each positively charged dye molecule, and the electron-deficient electrolyte molecules physically move towards the cathode to replenish themselves from the cathode which receives additional electrons from the external circuit. Thus, rather than a fuel, the output of a dye-sensitized solar cell is electricity itself. This type of third-generation thin-film solar cell is quite inexpensive but its typical efficiency is not yet close to that of silicon solar cells.

Nanostructuring of materials which host a photochemical reaction is expected to improve performance. Recently, it has been proposed that arrays of hollow nanowires of zinc oxide can be sensitized to solar light and used as more efficient building blocks for different types of nanostructured solar cells, including organic, hybrid and dye-sensitized [11]. As may be inferred from Figure 1, looking like sea urchins (pentameric echinoderms of subclasses Perischoechinoidea and Euechinoidea), these nanowire arrays combine characteristics of three-dimensional and one-dimensional materials, are highly porous, and have a large specific surface area. These structures are fabricated as perfectly ordered arrays over large areas by an approach that combines colloidal patterning and electrochemistry. Exquisite control of dimensions and morphologies is possible by this hybrid approach.

View larger version(219K)

Figure 1. Top view and higher magnification (inset) images from a scanning electron microscope of an ordered hollow urchin-like structure of ZnO nanowires [11]. Courtesy of Dr. J. Elias (EMPA Materials Science and Technology).

Additionally, hollow structures of porous tin oxide have been fabricated by wet-chemical processing followed by annealing [12]. These coralline structures grow by assimilating smaller spherical structures. Dye-sensitized solar cells with photoanodes made of these structures have been reported to exhibit enhanced photovoltaic performance in comparison to photoanodes comprising spherical structures. The radial morphology of the coralline structures is believed to be responsible for providing larger effective surface area for dye sensitization and photon capture [12].

3. Biomimetics

Given that a significant fraction of light impinging the surface of most materials is reflected back, optical devices [13,14] including solar cells [15,16] incorporate surface texturing to reduce optical reflection resulting in enhanced light absorption. Sub-wavelength surface features are being increasingly used [14,17] to change the optical reflection characteristics of surfaces – instead of using multilayer antireflection coatings which usually require (i) the use of high-vacuum deposition techniques; (ii) accurate control of layer thicknesses; and (iii) selection of materials with suitable refractive index (appropriate real part and low imaginary part), appropriate mechanical properties (strength, adhesion, etc.) and coefficient of thermal expansion. Randomly sized and spaced pyramids [14,18,19], deep vertical-wall grooves [20], V grooves [21,22], and arrays of nanopillars [6–11 11,23] on the surface of silicon wafers have been widely utilized to reduce optical reflectance. Several surface-texturing techniques [24] including anodization [25] have also been used.

Nanopillars can be nanocylinders, nanocones, or nanonipples. Their arrays should function as graded-index materials in the visible and near-infrared spectral regimes [26,27]. An array of sub-wavelength nipples is commonly seen in moth eyes and fly eyes, as shown in Figure 2, which has led to many biomimetic efforts to improve solar-cell performance. Techniques employed to fabricate such nanopillar-array coatings comprise traditional bottom-up and top-down approaches [28].

View larger version(170K)

Figure 2. Scanning electron microscope image of the compound eye of a fly.

Closely packed arrays of nanonipples were recently patterned on silicon substrates using spin-coated silica colloidal monolayers as etching masks; see the scanning electron microscope image provided in Figure 3 [29]. The anti-reflection coatings made using this bottom-up non-lithographic technique were found to exhibit broadband antireflective performance superior to commercial coatings. Similar biomimetic anti-reflection coatings have also been used for GaAs substrates [30]. The nanonipple array also enhances hydrophobicity [31,32] so that the surface is self-cleaning [33].

View larger version(154K)

Figure 3. Tilted image on a scanning electron microscope of a templating array of 360-nm-diameter spheres of silica and the silicon nipples etched underneath. Courtesy of Prof. P. Jiang (University of Florida).

Similar low-reflection surfaces textured with arrays of nanopillars with different periods (pillar-to-pillar distance, from 150 nm to 350 nm), heights (from around 150 nm to 500 nm) and shapes (pillar width-to-period ratio from around 0.3 to 0.7) were fabricated by electron-beam lithography on silicon wafers [34]. In parallel, numerical simulations using the rigorous coupled-wave analysis (RCWA) indicated that as the height and shape of nanopillars as well as the array period affect reflectance, these parameters require optimization for best performance in the specific wavelength range over which the surface is required to function. Subsequently, RCWA was used to theoretically optimize the period of moth-eye arrays for low-reflection surfaces on silicon solar cells [35].

In another approach, moth-eye anti-reflection coatings were made of acrylic resin and deposited on polyethylene terephthalate substrates [36]. The geometry of closely packed arrays of nanonipples was optimized for operation in the 400–1170 nm wavelength range that almost completely covers the solar spectrum for using silicon solar cells. Optical simulations using RCWA indicated that the optimal nanonipples are 300 nm in height, 100 nm bottom width, and 30 nm top width, leading to reflectance lower than 0.87% in the 400–1170 nm wavelength range and a minimum of 0.1% at 400 nm for normally incident light. The same reflectance of a moth-eye coating (with nipples of approximately 200 nm height, 90 nm bottom width, and 50 nm top width) was experimentally determined to be lower than about 1% in the desired wavelength range, with a minimum of 0.55% at 700 nm wavelength.

A fabricated coating textured with nanonipples was placed on top of a crystalline silicon photovoltaic module and characterized indoors and outdoors for performance [37]. Typically, the optical-to-electrical efficiency of the module improved by 5%, which may turn out be cost-effective if the coating production becomes inexpensive.

4. Bioreplication

Bioreplication is the latest methodology in engineered biomimicry, having arrived on the scene just about a decade ago [3]. Its potential application for solar-energy harvesting is based on two observations [38]. The first observation is the wide angular field of view that many dipterans including house flies have. Each eye of a house fly is a compound eye, comprising numerous elementary eyes (ommatidia) arranged radially on a curved surface, as shown in Figure 2. The second observation is the almost halving of the reflectance, averaged over a huge angular sector and the 400–110 nm wavelength range, predicted through geometrical-optics simulations for a prismatic compound lens (with a surface inspired by the compound eyes of dipterans) adhering to a silicon solar cell [39].

A multistep experimental technique, now called the Nano4Bio technique, has been developed to replicate the corneal layer of a compound eye from an actual specimen. Industrial-scale replication being possible with the Nano4Bio technique [1], the idea is to cover the surface of a solar cell with numerous replicas of compound eyes in order to enhance the angular field of view of the solar cell.

Since the characteristic lengths of a compound eye range from about 200 nm to a few mm, direct fabrication of such a structure will require complex processing and most methods can produce just one replica per biotemplate (i.e. the compound eye). In contrast, the Nano4Bio technique can be used to fabricate multiple high-fidelity replicas of a single biotemplate. As depicted schematically in Figure 4, in the first step of this technique, a modified conformal-evaporated-film-by-rotation (CEFR) technique is deposit a 250 nm thick conformal coating of nickel on the biotemplate [40–42 42]. In the second step, a roughly 60-μm-thick structural layer of nickel is electroformed onto the thin layer to give it the structural integrity needed for casting or stamping. The biotemplate is then plucked off and plasma ashing is carried out to completely remove all organic material, in the third step. What is left behind is a master negative made of nickel. This can be used either as a die for stamping or a mold for casting multiple replicas, in the fourth step. Casting alone has been implemented thus far, with high fidelity obtained at the 2 μm length scale; stamping is expected to improve the reproduction fidelity at even lower length scales. The Nano4Bio technique can produce multiple replicas simultaneously of multiple biotemplates.

View larger version(45K)

Figure 4. Schematic of the Nano4Bio technique.

5. Concluding remarks

The most recent and significant research activities in the field of engineered biomimicry for harvesting solar energy have been reviewed here. The field can be said to be in its infancy as now, and bioinspired and biomimetic methodologies have seen the most intense activity. Engineered biomimicry could provide advantages over conventional engineering, as shown for example by a comparative simulation study of bioinspired texturing and V-grooved texturing of the front surface of silicon solar cells [39]. We expect that the next few years will witness increased activity with all three methodologies as well as industrial adoption.

#### Paradigm shifts packaged through alternative modes of technological production can serve as the impetus for relationships that recognize the ethical and aesthetic value of the world all around us.

**Johnson, 10** – received her PhD from the University of Minnesota for doctoral work that focused on the political and social implications of “biomimicry,” an emerging field within which scientists reverse engineer biological traits for technological production (Elizabeth R. Johnson, *Reinventing biological life, reinventing ‘the human’*, Ephemera Journal volume 10(2): 177-193)

**This is not animism, any more than it is mechanism; rather, it is universal machinism**. (Deleuze and Guattari, 1988: 283)

Biomimetic innovation is built on the detailed study of ‘existence proofs’ exhibited in animal physiology: an animal’s capacities are taken as evidence of an existing potential already designed and engineered to work in the world.4 It proceeds by ‘reverse engineering’ the observable behaviors expressed in biological life: without fully understanding an organism’s ‘design code’, biomimeticists attempt to engineer machinic organisms or synthetic materials capable of expressing that animal’s functions. An array of techniques and technologies – chemical engineering, robotic hardware, advanced computing technologies, and mathematical modeling software – are marshaled to enhance our own techno-abilities by remaking the capacities found in biological life.

Naturalists, ecologists, and evolutionary biologists historically presented an understanding of lobsters in relation to their ‘natural’ marine habitat, in connection to the organisms and the nonliving systems in which they live and to which they are related. In zoology textbooks, lobsters are situated next to their kin: pages on shrimp, crayfish, and other crustaceans surround those on the lobster (see, for example, Castro and Huber, 2005). Natural historians and ecologists place primacy on how lobster bodies emerged within an historical trajectory or how they relate to other bodies within a bounded ecological assemblage. Biomimicry, on the other hand, is unconcerned with the ‘place’ or the ‘natural’ order of the organism’s evolutionary development. Indeed, as a practice, it expresses little interest in where, when, and how lobsters emerged or in the crabs, clams, and shrimp related to them by networks of kinship or consumption. Instead, biomimetic scientists investigate lobster bodies for what they can do: how they orient themselves to the world and how such orientations are different from our own. Rather than being concerned with classification, **biomimeticists attend to the animal’s potential to connect with other forms of life, technologies, and social problems**, valuing lobsters for their capacity to move with agility and track chemicals underwater.

Biomimicry’s transformative potential is seductive; it is easy to fixate on how and where biomimetics shifts our conceptions of ‘life’. One may be (as I was) drawn to the ways in which biomimicry is Spinozan or Deleuzian in its attention to embodied capacities and its drive to appropriate them in bodies elsewhere. Machines that become lobsters or lobsters that become machines are not, as they say, associated by ‘mere metaphor’. These animals, their traits, and the products developed with knowledge of them are not valorized on account of animal symbolisms or the meanings attributed to their animality (as in Nicole Shukin’s work). Rather, these animals become valued because of their functionality, efficiency, and ‘natural’ talents. Biomimicry breaks down bodies the barriers: animal and machine become indistinguishable as the capacities of one are substituted for another. A lobster on a treadmill is a lobster defined by its ‘intensive’ functions – what its neuroethology can do and how it does it. Indeed, the animals that inspire biomimetic design may be best understood as ‘composition[s] of speeds and affects on the plane of consistency: a plan(e), a program, or rather a diagram, a problem, a question-machine’ (Deleuze and Guattari, 1988: 258). This biological apparatus thus can be read as a set of ‘intensive parts’: powerful and embodied capacities for action that are transferable from one body to another to solve any barrier to movement as the need – or question – arises. Read in this way, biomimetic practices are perhaps less ‘post-human’ than post-animal or post-species altogether.5

Supporters of the so-called biomimetic movement have billed it a ‘revolution’ in technoscientific innovation. But what kind of revolution is this? What are we to make of these rearrangements of biology and technology? Do lobsters and their robotic counterparts merely offer a vivid illustration of Deleuze and Guattari’s machinic assemblage of bodies and relations of moving parts? Or is there something more potent – politically, ethically, socially – to be expected from biomimicry’s techno-biologies? Advocates of biomimicry would have us think as much. So too would much of the existing literature in ‘post-humanism’ and animal studies.

Historical traditions founded on a purified category of ‘the human’ absorb the blame for many of the problems characteristic of our contemporary global situation. Giorgio Agamben’s figuration of ‘bare life’ encapsulates this argument in what are perhaps the starkest of terms. A life is rendered ‘bare’ when it subject to exclusion from the protections provided by law or social securities: the taking or neglect of ‘bare life’ requires no accountability. Agamben argues that such a state is predicated on the philosophical distinction between human and animal, a distinction that allows for the subsequent attribution of ‘animal’ qualities to the lives of humans. As inferior to but resident within ‘the human’, category of ‘the animal’ legitimizes the labeling of populations as ‘unfit’ for life in the polis, be they excluded on the basis of race, religion ethnicity, gender, class, or geographical origins (Agamben, 2004). In The Open, Agamben explores the history of science and philosophy that articulates this process of categorization as a legitimation of exclusion. He names this process the ‘anthropological machine’. Following this logic, Kelly Oliver notes that the human and animal, distinguished as such, serve as the founding concepts that ground acts of injustice and cruelty to humans as well all other species: ‘the anthropological machine… produces the monstrous category “animal” that not only effaces nearly infinite differences between species but also corrals them all into the same abject and inferior pen’ (Oliver, 2007: 11).

Similarly, but from within a more materialist tradition, Donna Haraway’s Cyborg Manifesto catalyzed a conversation that has located the negative qualities of science and politics in the ‘Western’ tradition – ‘racist, male-dominant capitalism; the tradition of progress; the tradition of the appropriation of nature as resource for the productions of culture; the tradition of reproduction of the self from the reflections of the other’ – within origin myths of purity and the maintenance of a ‘border war’ a between organisms and machines as well as humans and animals (Haraway, 1991: 150). The appointed ‘guru’ of the biomimetic movement and recent recipient of the UN’s ‘Champion of the Earth’ award in Science and Innovation, Janine Benyus, has composed a narrative of the our ecological crisis and its associated injustices that resonates with both Agamben and Haraway’s work. She locates our collective crisis on Earth in the ‘severed’ connection between humans and the Earth. As in Agamben’s narrative, this loss of connection is the result of an originary rupture, located in this instance with the agricultural revolution. We have lost, she laments, ‘cooking fires to storytell around [and] ceremonial dances to reenact the movement of the herds’ (Benyus, 1997: 183). But, for Benyus, historical progress has been one of a continual series of such ruptures, each inaugurated by technological development, and each leading humans further from what Benyus refers to as ‘our home’. The following is her version of the historical narrative:

Our journey began ten thousand years ago with the Agricultural Revolution, when we broke free from the vicissitudes of hunting and gathering and learned to stock our own pantries. It accelerated with the Scientific Revolution, when we learned, in Francis Bacon’s words, to ‘torture nature for her secrets.’ Finally when the afterburners of the Industrial Revolution kicked in, machines replaced muscles and we learned to rock the world. But these revolutions were only a warm-up for our real break from Earthy orbit – the Petro-chemical and Genetic Engineering Revolutions. Now that we can synthesize what we need and arrange the genetic alphabet to our liking, we have gained what we think of as autonomy. Strapped to our juggernaut of technology, we fancy ourselves as gods, very far from home indeed. (ibid)

Benyus’s history of our collective loss of connection to the earth is a story of compounding catastrophe that calls to mind Walter Benjamin’s Angelus Novus, who ‘sees one single catastrophe, which keeps piling wreckage upon wreckage and hurls it at his feet’ (Benjamin, 1996: 392).

3. Remaking life, remaking the human

Life creates the conditions conducive to life. (Benyus, 2002)

For Benyus as for Agamben, salvaging a saner life from the wreckage of history seems to require somehow absolving ourselves of ‘original’ catastrophe by rearticulating the human (and animal) differently. Indeed, like all of the aforementioned theorists, Benyus calls for dismantling conceptions of human exceptionalism that seems to have become increasingly sedimented throughout history as the ‘wreckage’ is piled higher and higher. For Agamben – as well as Kelly Oliver and Cary Wolfe – this requires **the** destabilization **or even** erasure of the categories of human and animal through **the recognition of shared limits, vulnerability, or an embrace of** Derrida’s ‘**nonpower at the heart of power’**. Haraway, along with Bruno Latour, Michel Serres, Sarah Whatmore, and Jane Bennett, attempts to rework the ‘human’ in practice, by writing of bodies-inrelation – bodies that have ‘never been human’ in spite of the centuries of philosophical and political writings that seem to assure the contrary. These writers enliven alternative histories, citing empirical evidence of our becomings with objects, animals, and bacteria and telling stories in which ‘the human’ is neither the protagonist nor even an active agent. Like the work of Deleuze and Guattari, these histories are meant to transform how we envision our own life activity. Together these authors all suggest that we not only recognize and acknowledge, but also actively practice ever-changing ‘strange kinships’ that ‘[allow] for an intimate relation based on shared embodiment without denying differences between life-styles or styles of being’ (Oliver, 2007: 18); **we are encouraged to reproduce life as if we were accountable for the entire ‘universal machine’ rather than the individuals and groups** (some, although not others) who we have selected out of it. For Haraway, this consists of ‘retying the knots of multi-specied living on earth’ (Haraway, 2008: 2) and **better attending to the ‘sym-bio-genesis’ of all beings by recognizing that they are “the fruit of ‘the co-opting of strangers, the involvement and infolding of others into ever more complex and miscegenous genome**”’ (Margulis and Sagen, quoted in Haraway, 2008: 31). Accordingly, such transformations in how we practice everyday life and how we imagine our own subjectivities offer the potential to enact ‘autre-mondializations’ – alternative global political arrangements divorced from neoliberalism and liberal humanism (Haraway, 2008).

Janine Benyus’s work and that of the biomimeticists with which she is associated seem to follow through on these recommendations in practice. While less Continental philosophy than New Age, Benyus’s 1997 book, Biomimicry: Innovation Inspired by Nature, describes a collection of projects that suture together the now existing pieces of our historical ‘wreckage’ with the products of biological histories. The ultimate aim is to remake how we make technologies by modeling them on biological structures and functions. Rather than blindly push forward with a vision of technological ‘progress’ whose outcomes are unknown, we can look to nature to identify how it creates the conditions for life’s expansion. As she explains:

Evolution itself is believed to have occurred in fits and starts, plateauing for millions of years and then **leaping to a whole new level of creativity after crises**… my hope is that we’ll have turned this juggernaut around, and instead of fleeing the Earth, we’ll be homeward bound, letting nature lead us to our landing, as the orchid leads the bee. (Benyus, 1997: 5)

This is not all, however, as according to Benyus, engineering a future that is both ‘calm’ and sustainable requires more than the technological fix that biomimicry promises. Rather, it also requires fixing what we broke in the Agricultural Revolution in her narrative: our connection to the earth. And this, she suggests, is the ultimate promise of biomimicry – that it will undermine the conceptions of human and nonhuman life upon which the traditions of technological production and progress were built.

Print and online news media outlets view biomimetic productions with a sense of profound irony: journalists approach the idea that scientists at elite institutions and engineers at multinational corporations are looking to ‘lowly creatures’ to teach them how to overcome technological and conceptual roadblocks with humor (Gaidos, 2010: 22; Stresing, 2003). Benyus, however, foregrounds the potential for biomimicry to unsettle our notions of human exceptionalism as its most profound contribution. Rejecting a human-environment relationship best characterized by extraction, exploitation, and domination, Benyus characterizes biomimicry as a means of production founded on mutual enhancement and education: it’s not ‘what we can extract from nature, but ... what we can learn from her’ (Benyus, 1997: 2, emphasis in original). For her, biomimetic production is not about using animal life (or using it up), but about exploring it as a source of enchantment and inspiration. And, for Benyus, this is the true hope of biomimicry: that they will engender a more respectful, responsible, and humble engagement with nonhuman as well as human life.

When we view nature as a source of ideas instead of goods, **the rationale for protecting wild species and their habitats becomes self-evident**. To have more people realize this is my fondest hope. In the end, I think biomimicry’s greatest legacy will be more than a stronger fiber or a new drug. It will be **gratitude, and** from this, **an ardent desire to protect the genius that surrounds us**. (Benyus, 2008)

By transforming how we make everything from plumbing pipes to robots, Benyus argues that biomimicry naturally stretches the categories of human and nonhuman beyond their limits, shaking the foundation of human exceptionalism and forging more collaborative engagements with nonhumans for a more democratic and sustainable future. If we accept these conclusions, such engagements not only promise to solve our ecological crisis, but also the problematic social and political conditions that have led to it. Just as biomimicry disintegrates what we know of ‘lobsters’, Benyus and other advocates promise that it will break apart the human, locating it elsewhere, outside of itself in such a way that it can no longer refer back to an essential identity or reproduce an idealized image of human nature. Read through this lens, biomimicry might suggest an end to the ‘lethal and bloody’ operation of the ‘anthropological machine’ through a re-making of production and the reconsideration of the how humans, animals, and other things come together to produce things and, subsequently, to produce the world. Its practice of transgressing traditions borders and its emphasis on inspiration over appropriation seem to offer a **foundation for modes of production that are more ethical**, more attentive to and responsible for the bodies with which we produce. In Benyus’s words, ‘We will have to **climb down from our pedestal** and begin to see ourselves as simply a species among species**, as one vote in a parliament of 30 million**. When we accept this fact, we start to realize that what is good for the living Earth is good for us as well’ (ibid).

## 2AC

### 2ac fw

#### Debate can mean different things to different people and we should come together in this common space to learn from one another, but this can only occur if we have respect for the value that different perspectives and belief systems bring to the discussions that we were already having

Kalantzis, 06 – Ph.D., School of History, Philosophy, & Politics, Macquarie University; B.A., History and Linguistics, Macquarie University; Dean, College of Education, University of Illinois at Urbana-Champaign, 2006--, former teacher (Mary, *Changing Subjectivities, New Learning*, PEDAGOGIES: AN INTERNATIONAL JOURNAL, 1(1), 7–12, http://newlearningonline.mu.commongroundpublishing.com/learning-by-design/files/2010/10/PedagogiesArticle.pdf)

Whether it be in the realms of civics, work, or everyday cultural life, we are in the midst of enormous change. To remain apt, education must reflect these changes. Maybe, there are even times and places where educators can lead change.

Take civics. For better or worse, the key phenomenon in the realm of civics is that the nation-state is shrinking. Whatever the root causes—small government conservatism, globalisation, or the new dynamics of a post–Cold War world—the realities of this change are felt everywhere.

The society of self-regulating community—civil society—is becoming a more significant locus of action and decision. The Internet is governed, not by any state, but through the community of experts and interested parties that is the World Wide Web Consortium. Diasporic communities are governed, not by home governments, but by highly distributed community organisations whose points of connection are common cultural principles. In education, we are witnessing the rise of community and private schooling and the self-managing public school, as well as the need for teaching **to become an increasingly self-regulated profession**. As the state contracts, there is no alternative to creating governance structures within the communities of practice of civil society.

With the shrinking of the state, a certain kind of society disappears, too. Compare the relationship of state and civil society today with the command societies of the 20th century—the communism of Lenin and Mao, the fascism of Hitler and interwar Japan, and the paternalistic regimentation of the West’s welfare state. When a greater capacity to decide and act is devolved to civil society, a higher level of participation and reflexivity is required of citizens.

So deep is this change that it extends even to the nature of personality. The society of the strong state established relationships of command and compliance at every level, not just in the state itself but in workplaces (the bosses and supervisors whose orders were to be obeyed), in homes (the heads of households who made decisions and disciplined), in schools (the orders of headmasters and teachers, **mandated curricular content and tests of definitively correct answers**).

Take that archetypical command personality Howard Roark, modern architect and towering individual in Ayn Rand’s procapitalist novel The Fountainhead (1952/1996). At the vanguard of unadorned modernism, he stands alone against the world, unwilling to compromise his designs, and for his singularity of purpose, he triumphs. At almost the same moment, anticapitalist Mexican artist Diego Rivera was painting the heroes of modernity on the murals of the Rockefeller Centre in New York. Overlooking the mighty works of modern man—the cities, the bridges, the industrial landscapes whose horizons are punctured by smokestacks— were the heroic engineer, the heroic architect, the heroic intellectual, the heroic political leader, the heroic gang-supervisor, and (his Rockefeller patrons also hoped) the heroic capitalist. Rivera was removed from the job when it became obvious that among the faces of the heroes was a likeness of Lenin. Notwithstanding 20th-century sensitivities to their ideological differences, Roark and Lenin were equally command personalities and in that sense substitutable in the tableau of modernism. Both left and right, in their time, lionised command personalities.

For every command personality, there had to be a multitude of unquestioning functionaries, and upon their compliance the system depended. The ideal citizen of the strong state was compliant; the ideal worker of the capitalist or communist industrial enterprise was compliant; the ideal learner in the classroom of disciplined knowledge was compliant.

Today, the command personality is an anachronism. At work, for instance, crude command structures are replaced by a more sophisticated cultural co-option—the co-option of teamwork, vision and mission, and corporate culture, in which everyone is supposed to personify the enterprise, to think and will and act the enterprise. Roark’s aesthetic insistence has become an archaism—he would let his business fail before compromising on the rigorous modernism of his designs. “Any colour you like, so long as it’s black,” said another heroic command personality, Henry Ford. Today, there can be no entrepreneurial heroism because the customer is always right and products and services need to be customised to mesh with the multiple subjectivities of niche markets—the big SUVs, the smart sports cars, the spacious family cars, the microcars for crowded cities, cars of any hue and trim—so many permutations, in fact, that sometimes an individual order has to be placed before a vehicle is manufactured. Fordist mass production is displaced by today’s mass customisation.

In our lives as cultural beings as well, there has been a profound shift in the intersubjective balance of power. Take something as fundamental as narrative. In everyday family and community life, the narratives of gaming have become a bigger business than the narratives of Hollywood. From the most impressionable of ages, children of the Nintendo, PlayStation, and X-Box generation have become inured to the idea that they can be characters in narratives, capable of determining or at least influencing the story’s end. They are content with being no less than actors rather than audiences, players rather than spectators, agents rather than voyeurs, users rather than readers of narrative. Not content with programmed radio, they build their own playlists on their iPods. Not content with programmed television, they read the narratives of DVD and Internet-streamed video at varying depth (the movie, the documentary about the making of the movie) and dip into “chapters” at will. Not content with the singular vision of sports telecasting of mass television, they choose their own angles, replays, and statistical analyses on interactive digital television. Meanwhile, the autocreative potentials of the digital media and the “semantic web” have only begun, with phenomena such as blogging. These potentials create new economies of cultural scale, geographies of distribution, and balances of cultural power. The costs of owning the means of producing widely communicable meaning have been hugely reduced, and with this, the small and the different have become as viable as the large and the generic (Cope & Kalantzis, 2004).

Whether it be in the domains of governance, work, or cultural life, the command society is giving way to the society of reflexivity. Or so we might say in moments of strategic optimism. In moments of pessimism we might experience these same phenomena as fragmentation, egocentrism, randomness, ambiguity, and anarchy. And when this pessimism turns to fear, we might want to return to earlier, simpler command structures—in nations, workplaces, households, and schools.

Pessimists and optimists alike can agree that we are in the midst of a transformation that is creating new forms of subjectivity and new kinds of personality. These transformations can be viewed from within a systemic perspective and beyond it. From a systemic point of view, these are the kinds of governance structures, the kinds of organisations, and the kinds of people required today for the most conservative, small government, and proenterprise points of view. We hear these points of view ex pressed in the public rhetoric of innovation and creativity, the knowledge economy, and individual autonomy and responsibility. Notwithstanding the high-sounding rhetoric, these transformations when left to run their course may only legitimate and even exacerbate systemic inequities—iniquities, indeed.

History, however, is more open-ended than that. Inevitably, human systems are so complex that they allow possibilities outside the scope anticipated by their progenitors and apologists. For every moment when the ideologues of small government succeed in shrinking the state, there is another moment in which people learn the civilities of self-government in their various communities of practice; for every moment when command structures in workplaces are replaced by collaborationist structures, there is another moment in which people acquire the collaborative competencies of socially directed work; for every moment when compliant personalities are replaced by the egocentrism of individualism, there is another moment in which new relationships of codependence and mutual reliance are created and the bonds of sociability are extended and deepened. Whatever the domain, there is a shift in the balance of power and in the moral economy of agency that favours egalitarianism and liberty—and this, despite and beyond prevailing systems and structures of power. **From this, something genuinely new could emerge**.

Whether one’s agenda is to support today’s systems of governance, work, and culture or to create new and more equitable ones, subjectivity and agency loom larger than they did in the era of the command society. Yet, all too often, our institutions and practices of schooling reflect the epistemological frames of reference and personality types of the command society, in the communication patterns of classroom discourse, for instance, or the information architectures of curriculum, or the rigid expectations of “right” and “wrong” answers in testing regimes.

We educators have been struggling to develop a new dynamics of agency for a century now, starting with the progressivisms of John Dewey and Maria Montessori. One of the solutions to the problem of agency in learning has been a “constructivism” derived from a 20th-century psychological canon in which Piaget’s theories dominate. In the context of a command society, however, their emphasis was on the level and extent of receptivity at a particular age or at a particular cognitive stage. The raw materials of “intelligence” were biologised, and variations were accounted for **in terms of individualised “capability**” and the increments of what was supposed to be innate, universal development. Today, the cognitive sciences do a similar psychological job. Their agenda is to account for the mechanisms of receptivity more than for the mechanisms in which learned knowledge is genuinely made by conscious agency.

If, however, one follows and extends a line of thought begun by Vygotsky, other possibilities for pedagogy emerge. If knowledge is a psychological construct that is more social than individual, if learning is the stuff of active appropriation of the world in a social context, if educability amounts to more than equation of external transmission with individual receptivity, what then are the bases of a theory of pedagogy?

Building on Vygotsky, Bill Cope and I have been proposing a theory of learning that is grounded epistemologically rather than psychologically. By “epistemological,” we mean what we do to know (Kalantzis & Cope, 2004, 2005). As humans, we might be driven by the mystery of human consciousness, but the critical question is what we do with its drives. Here are some acts of knowing that we have been considering of late as a part of our Learning by Design research and development project: we experience (by immersion, making tacit connections in familiar or new contexts); we conceptualise (by abstracting, naming things, and developing explicit generalisations); we analyse (inferring and interpreting cause, effect, and human interest);we apply (by making an intervention in the world of use able things and meanings, be that intervention predictable and appropriate or innovative). In every one of these acts of knowing, we learn the world by doing something in the world.

The command society could never trust learners to be agents of knowing. Instead, they were the receptors of knowledge—although even this was a conceit of power, because now we understand the perennial role of the reader, the listener, or the viewer. We thought that they were receptors because this illusion also drove our politics, our workplaces, our public culture, and our pedagogy. In hindsight there was resistance as often as there was compliance, even if that resistance was branded subversion, laziness, or failure at school.

Today, we can remain under no such illusion. The increasingly critical self-governing structures of civil society, the tricks and tropes of the self-managing work team, the user-driven narratives of popular culture make any such illusions impossible. The children of Nintendo will simply walk away if the pedagogy served up to them by institutionalised schooling does not engage every fibre of their subjectivity. The workplace of the near future will simply be uncompetitive if its workers do not contribute their all, from their creative potential to their ability to maintain relationships of supple reflexivity across the myriad niche customers and affiliates. **The cultures of the near future will ossify if they fail to leave space for the “readers” to follow their own proclivities and shape their own cultural ends**.

The minute that one allows so much scope for agency, one finds oneself facing layers upon layers of difference. One discovers actually existing agencies in the massively plural and not the fabrications and falsifications of the command society with its one-people–one-state nationalism, of the regime of mass production and mass consumption, and of the pretensions to cultural homogeneity of the society of mass media and mass culture. The differences are material (class, locale), corporeal (race, gender, sexuality, ability/disability) and circumstantial (culture, life experience, interest, affinity). We can acknowledge these differences, perform neat demographic metrics, and, in the name of diversity, build programmes to suit group by group. Or we may think that we can, at least until we encounter a deeper difference that, in the interstices of these demographics or even solidly in the middle of each demographic, defies neat categorisation and prediction. These differences are manifest in the profoundly variable dispositions and sensibilities that one encounters from person to person. This is the stuff of the lifeworld, not individualised personality. Such difference is accountable in terms of the infinitely variable and therefore always uniquely complex range of sociocultural influences that come to bear on any one individual. The more we take agency for real, the more multifarious its manifestations become.

And to face all these agencies in one classroom! The solution of the command society was that of one teacher talking at the middle of the class, one textbook telling one narrative one chapter at a time, one test evaluating one way of knowing. **The result was assimilation** to the middle way **or failure**.

Constructivism blandly suggests that we bring agency into this picture. It is as if we can give all learners the same dose of agency, commensurate with their stage of the template of human developmentalism. But it is not just agency in the abstract that we have to harness. The complexity is such that the simple nostrums of constructivism serve us poorly indeed.

If it is to be at all relevant, the classroom of the reflexive society must allow alternative starting points for learning (what the learners perceive to be worth learning, what engages the particularities of their identities). It must allow for alternative forms of engagement (the varied experiences that need to be brought to bear on the learning; the different conceptual bents of learners; the different analytical perspectives that the learners may have on the nature of cause, effect, and human interest; and the different settings in which they may apply or enact their knowledge). It must allow for different learning styles (preferences, for instance, for particular emphases in knowledge making and patterns of engagement—experiential, conceptual, analytical, or applied). It must allow for different modalities in meaning making, embracing alternative expressive potentials for different learners. And it must allow for alternative pathways and destination points in learning.

#### Even if they win some link to fairness --- it is because the topics we choose are non-controversial and designed to cater to debate like politics and the states cp --- this is why we are debating energy for the 5th time even though almost everyone in the community would agree on the importance of renewables and haven’t debated education since the 80s --- vote aff to disrupt the smooth functioning of a community oriented around exclusion

**Wise, 08** (Tim Wise, *White Like Me: Reflections on Race from a Privileged Son*, 2008, p kindle)

When we were on the negative side, I would argue, among other things, that poverty should be allowed to continue because it would eventually trigger a glorious socialist revolution (which isn't even good Marxist theory, let alone a morally acceptable position to put forward) , or that civil liberties should be eradicated so the United States could transition to a society in which resource use was limited by force, family size was strictly controlled, and thus planeta ry destruction was averted. The reason I call this process a white one is because whites (and especially affluent ones), much more so than folks of color, **have the luxury of looking at life or death issues** **of war, peace , famine, unemployment, or criminal justice as a game, as a mere exercise in intellectual and rhetorical banter**. For me to get up and debate, for example, whether or not full employment is a good idea, presupposes that my folks are not likely out of work as I go about the task. To debate whether racial profiling IS legitimate likewise presupposes that I, the Senator, am not likely to be someone who was confronted by the practice as my team drove to the Debate] tournament that day, or as we passed through security at the airport. In this way, competitive Debate reinforces whiteness and affluence as normative conditions , and makes the process far more attractive to affluent white students. Kids of color and working-class youth of all colors are simply not as likely to gravitate to an activity where pretty much half the time they'll be forced to take positions that, if implemented in the real world , might devastate their families and communities. Because Senators are encouraged to think about life or death matters as if they had little consequence beyond a given Debate round, the fact that those who have come through the activity go on to hold a disproportionate share of powerful political and legal positions-something about which the National Forensics League has long bragged- is a matter that should concern us all. Being primed to think of serious issues as abstractions increases the risk that the person who has been so primed will reduce everything to a brutal cost-benefit analysis, which rarely prioritizes the needs and interests of society's less powerful. Rather, it becomes easier at that point to support policies that benefit the haves at the expense of the have-nots, because the damage will be felt by others whom the ex-debaters never met and never had to take seriously. Unless debate is fundamentally transformed- and at this point the only forces for real change are the squads from Urban Debate Leagues who are clamoring for different styles of argumentation and different evidentiary standards- it will continue to serve as a staging ground for those whose interests are mostly the interests of the powerful. Until the voices of economically and racially marginalized persons are given equal weight in Debate rounds with those of affluent white experts (whose expertise is only presumed because other whites published what they had to say in the first place), the ideas that shape our world will continue to be those of the elite, no matter how destructive these ideas have proven to be for the vast majority of the planet's inhabitants. Until Debate is substantially diversified, so that previously ignored voices will have a chance to be heard on their own terms, and in their own styles, little will change. What Debate needs most IS an infusion of persons who because of their life experiences are almost guaranteed to be less naive; people who know full well that the system is anything but fair. Such persons have a right to be heard, and white, upper-middle-class, and affluent debaters need to hear them. They need to know how power works, and they will never gain an understanding of that by listening over and over to the voices of others like themselves. But Debate will never change in this way unless the gatekeepers of the activity are prepared to step up and demand it, not just with their words but with their actions, their money, their judging criteria, and even their ballots. Folks of color and working-class folks won't join an activity if they feel their wisdom isn't going to be taken seriously. If they wanted to be ignored, they would hardly need to get dressed up and travel to Debate tournaments in a hot van to do it. They could stay home and be ignored, because the powerful ignore them every day anyway. Understand, this is no mere ethical plea for inclusion. Continuing to ignore the v01ces of the marginalized carries great risks for us all, because it is precisely such persons who so often view the world differently and far more accurately than the privileged . As a case in point, the polls taken right before the U.S. invasion of Iraq in March 2003 indicated broad white support for going to war, but almost nonexistent support among blacks. Most white folks were convinced not only of the war's moral legitimacy, but were sure that everything would go swimmingly, because other white people like Rumsfeld and Cheney said so. But black folks knew better. Those with privilege had the luxury of thinking they would be greeted as liberators. But black folks know that invaders rarely bring true freedom-they've been there, done that. For the sake of us all, and to slow down the rate at which blood 1S spilled across the globe, we desperately need to listen to those who live without the luxury of blinders.

### 2ac cap k

#### What is material? The affirmative disagrees with their representation of economics as a monocausal explanation for how power functions – the world is a collection of differences and attempting to impose a singular model of knowing on it paradoxically makes analysis impossible

**Manuel DeLanda, 1997**, Adjunct Associate Professor – Graduate School of Architecture, Planning and Preservation – Columbia University, A Thousand Years of Nonlinear History, p. 46-8

Even in this age of huge multinational corporations, the command element in the commercial mixture is far from 100 percent. The economist John Kenneth Galbraith, who sharply differentiates between spontaneous economic activity (markets) and planned economic processes (big business), calculates that today roughly half of the Western economy has been taken over by capitalist hierarchies. The other half comprises the low-profit regions, which those hierarchies willingly abandon to the market. According to Galbraith, what gives capitalism this freedom of motion is economy of scale, which is why since the Middle Ages commercial capitalism has been associated with wholesale and not retail. A large firm is better able to absorb shocks and fluctuations and create the plans and strategies that may win it a degree of independence from market forces, indeed the ability to control and manipulate those forces to a certain degree. Such considerations led Braudel to the startling conclusion that "we should not be too quick to assume that capitalism embraces the whole of western society, that it accounts for every stitch in the social fabric...that our societies are organized from top to bottom in a 'capitalist system.' On the contrary...there is a dialectic still very much alive between capitalism on one hand, and its antithesis, the 'non-capitalism' of the lower level on the other."56 And he adds that, indeed, capitalism was carried upward and onward on the shoulders of small shops and "the enormous creative powers of the market, of the lower story of exchange.... [This] lowest level, not being paralysed by the size of its plant or organization, is the one readiest to adapt; it is the seedbed of inspiration, improvisation and even innovation, although its most brilliant discoveries sooner or later fall into the hands of the holders of capital. It was not the capitalists who brought about the fast cotton revolution; all the new ideas came from enterprising small businesses."57 There is a misconception, widely shared by economists and philosophers on either side of the political spectrum, that capitalism developed in several stages, being at first competitive and subservient to market forces and only later, in the twentieth century, becoming monopolistic. However, starting in the thirteenth century, capitalists engaged in various noncompetitive practices, in order to create the large accumulations of money that have always characterized the upper levels of the trade pyramid. As we discussed, the early medieval fairs, the meeting points of rich merchants from all over Europe, were veritable hierarchies of meshworks, in which the luxury and money markets dominated the upper echelons. Neither in the long-distance trade of prestige goods nor in the worlds of precious metals and credit did supply and demand reign supreme. On the contrary, most fortunes in these areas were made by the manipulation of these market forces through a variety of noncompetitive practices. There was, of course, intense competition among rich merchants and families, much as today large corporations compote with one another, but these rivalries among oligopolies are fundamentally different from the kind of "anonymous competition" in which small producers and traders engage.58 From the Middle Ages to the nineteenth century, not only did individual businesses engage in monopolistic practices, entire cities did too, even groups of cities. By means of noncompetitive practices, a town could greatly aid its merchants and financiers, protecting them from foreign rivals, and stimulating the accumulation of money within its walls. The medieval cities that controlled the Mediterranean and the Baltic and North Seas financed much of their growth from manipulation of markets and by acquiring exclusive control of certain flows, such as spices and silks from the Levant in the case of Venice, or salt in the case of Lübeck. With a monopoly on luxury goods, won and maintained by military force, fourteenth-century Venice dominated the cities around it, not only the small towns constituting its supply regions but other giant towns, such as Florence and Milan. In the north, between the thirteenth and fifteenth centuries, cities like Lübeck and Bruges formed a meshwork of cities known as the Hanseatic League, which was capable of collective action without a centralized organization behind it. The league also engaged in monopolistic practices to trap the towns within its zone of economic influence in a web of supervision and dependence.59 We will return shortly to other forms of market manipulation which, according to Braudel, have always characterized certain commercial institutions since the Middle Ages. This will make clear how wrong it is to assume (as many economists to the right and center of the political spectrum tend to do) that market power is something that may be dismissed or that needs to be studied only in relation to some aberrant institutional forms such as overt monopolies. But certain conceptions from the left (particularly the Marxist left) also need to be corrected, in particular, a teleological conception of economic history in terms of a linear progression of modes of production. In this Braudel explicitly agrees with Gilles Deleuze and Felix Guattari: capitalism could have arisen anywhere and long before it did in Europe.60 Its emergence must be pictured as a bifurcation, a phase transition that might have taken place somewhere else had the conditions been right (for instance, in the huge camel caravans along the Salk Road in the thirteenth century).61 Moreover, the institutions that emerged after this bifurcation must be viewed not as replacing previous institutions (i.e., markets) but as fully coexisting with them without forming a societywide "system." It is true that prices across Europe were pulsating to the same rhythm from medieval times and this gave the entire continent a certain economic coherence (sometimes referred to as a "world-economy"), but it would be a mistake to confuse world-economies with the "capitalist system," since India, China, and Islam also formed coherent economic areas (as powerful as those of Europe) without giving rise to capitalism.62 The conceptual confusion engendered by all the different uses of the word "capitalism" (as "free enterprise" or as "industrial mode of production" or, more recently, as "world-economy") is so entrenched that it makes an objective analysis of economic power almost impossible. One could, of course, simply redefine the term "capitalism" to include "power to manipulate markets" as a constitutive part of its meaning and to rid it of some of its teleological connotations. But as philosophers of science know well, when a theory begins redefining its terms in an ad hoc way to fit the latest round of negative evidence, it shows by this very act that it has reached the limits of its usefulness. In view of this, it would seem that the only solution is to replace this tired word with a neologism, perhaps the one Braudel suggested, "antimarkets," and to use it exclusively to refer to a certain segment of the population of commercial and industrial institutions.63

#### Ethical judgments about capitalism in the abstract should be avoided – its complete abandonment is neither possible nor desirable – an insistence on meshwork alternatives will result in worse forms of oppression

**Manuel DeLanda, 1997**, Adjunct Associate Professor – Graduate School of Architecture, Planning and Preservation – Columbia University, A Thousand Years of Nonlinear History, p. 66-70

Thus, much as sedimentary rocks, biological species, and social hierarchies are all stratified systems (that is, they are each the historical product of a process of double articulation), so igneous rocks, ecosystems, and markets are self-consistent aggregates, the result of the coming together and interlocking of heterogeneous elements. And just as the diagram defining the “stratifying abstract machine” may turn out to require more complexity than our basic diagram of a double articulation, so we may one day discover (empirically or through theorizing and computer simulations) that the diagram for the meshwork-producing process involves more than the three elements outlined above. Moreover, in reality we will always find mixtures of markets and hierarchies, of strata and self-consistent aggregates. As Simon says, it may seem prima facie correct to say that whereas markets figure most prominently in coordinating economic activities in capitalist countries, hierarchic organizations play the largest role in socialist countries. But that is too simple a formula to describe the realities which always exhibit a blend of all the mechanisms of coordination. The economic units in capitalist societies are mostly business firms, which are themselves hierarchic organizations, some of enormous size, that make only a modest use of markets in their internal functioning. Conversely socialist states use market prices to a growing extent to supplement hierarchic control in achieving inter-industry coordinatnon.99 There is one final aspect of meshwork dynamics I must examine before returning to our exploration of the “geological” history of human societies. We may wonder why, given the ubiquity of self-consistent aggregates, it seems so hard to think about the structures that populate the world in any but hierarchical terms. One possible answer is that stratified structures involve the simplest form of causal relations, simple arrows going from cause to effect.100 According to Magoroh Maruyana, a pioneer in the study of feedback, Western thought has been dominated by notions of linear (nonreciprocal) causality for twenty-five hundred years. It was not until World War II that the work of Norman Wiener (and engineers involved in developing radar systems) gave rise to the study of negative feedback and with it the beginning of nonlinear thinking. The classic example of negative feedback is the thermostat. A thermostat consists of at least two elements: a sensor, which detects charges in ambient temperature, and, an effector, a device capable of changing the ambient temperature. The two elements are coupled in such a way that whenever the sensor detects a change beyond a certain threshold it causes the effector to modify the surrounding temperature in the opposite direction. The cause-and-effect relation, however, is not linear (from sensor to effector) since the moment the effector causes a change in the surrounding temperature it thereby affects the subsequent behavior of the sensor. In short, the causal relation does not form a straight arrow but folds back on itself, forming a closed loop. The overall result of this circular causality is that ambient temperature is maintained at a given level. Maruyana opposes negative feedback with "positive feedback" (a form of nonlinear causality that we have already encountered in the form of autocatalysis). While the first type of reciprocal causality was incorporated into Western thought in the 1950s, the second type had to wait another decade for researchers like Stanislav Ulam, Heinz Von Foerster, and Maruyana himself to formalize and develop the concept.101 The turbulent dynamics behind an explosion are the clearest example of a system governed by positive feedback. In this case the causal loop is established between the explosive substance and its temperature. The velocity of an explosion is often determined by the intensity of its temperature (the hotter the faster), but because the explosion itself generates heat, the process is self-accelerating. Unlike the thermostat, where the arrangement helps to keep temperature under control, here positive feedback forces temperature to go out of control. Perhaps because positive feedback is seen as a destabilizing force many observers have tended to undervalue it relative to negative feedback. (In the so-called Gaia hypothesis, for instance, where stabilizing negative feedback is postulated to exist between living creatures and their environment, positive feedback is sometimes referred to pejoratively as "anti-Gaian.")102 Maruyana sees the question in different terms. For him the principal characteristic of negative feedback as its homogenizing effect: any deviation from the temperature threshold at which the thermostat is set is eliminated by the loop. Negative feedback is "deviation-counteracting." Positive feedback, on the other hand, tends to increase heterogeneity by being "deviation-amplifying": two explosions set off under slightly different conditions will arrive at very different end states, as the small original differences are amplified by the loop into large discrepancies.103 We have already observed the many roles that positive feedback has played in the turbulent history of Western towns. However, it is important to distinguish between simple autocatalytic dynamics and complex autocatalytic loops, which involve not only self-stimulation but self-maintenance (that is, positive feedback and closure). Another way of stating this distinction is to say that the increase in diversity that mutually stimulating loops bring about will be short-lived unless the heterogeneous elements are interwoven together, that is, unless they come to form a meshwork. As Maruyana writes, "There are two ways that heterogeneity may proceed: through localization and through interweaving. In localization the heterogeneity between localities increases, while each locality may remain or become homogenous. In interweaving, heterogeneity in each locality increases, while the difference between localities decreases."104 In other words, the danger with positive feedback is that the mere production of heterogeneity may result in isolationism (a high diversity of small cliques, each internally homogeneous). Hence the need for intercalary elements to aid in articulating this diversity without homogenization (what Maruyana calls "symbiotizatson of cultural heterogeneity"). Negative feedback, as a system of control and reduction of deviation, may be applied to human hierarchies. Decision making in stratified social structures does not always proceed via goal- directed analytic planning but often incorporates automatic mechanisms of control similar to a thermostat (or any other device capable of generating homeostasis).105 On the other hand, social meshworks (such as the symbiotic nets of producers whom Jacobs describes as engaged in volatile trade) may be modeled on positive-feedback loops as long in our model also incorporates a means for the resulting heterogeneity to be interwoven. Moreover, specific institutions will likely be mixtures of both types of reciprocal causality, and the mixtures will change over time, allowing negative or positive feedback to dominate at a given moment.106 The question of mixtures should be also kept in mind when we judge the relative ethical value of these two types of structure. If this book displays a clear bias against large, centralized hierarchies, it is only because the last three hundred years have witnessed an excessive accumulation of stratified systems at the expense of meshworks. The degree of homogeneity in the world has greatly increased, while heterogeneity has come to be seen as almost pathological, or at least as a problem that must be eliminated. Under the circumstances, a call for a more decentralized way of organizing human societies seems to recommend itself. However, it is crucial to avoid the facile conclusion that meshworks are intrinsically better than hierarchies (in some transcendental sense). It is true that some of the characteristics of meshworks (particularly their resilience and adaptability) make them desirable, but that is equally true of certain characteristics of hierarchies (for example, their goal-directedness). Therefore, it is crucial to avoid the temptation of cooking up a narrative of human history in which meshworks appear as heroes and hierarchies as villains. Not only do meshworks have dynamical properties that do not necessarily benefit humanity (for example, they grow and develop by drift, and that drift need not follow a direction consistent with a society's values), but they may contain heterogeneous components that are themselves inconsistent with a society's values (for example, certain meshworks of hierarchies). Assuming that humanity could one day agree on a set of values (or rather on a way of meshing a heterogeneous collection of partially divergent values), further ethical judgments could be made about specific mixtures of centralized and decentralized components in specific contexts, but never about the two pure cases in isolation.

 The combinatorial possibilities—the number of possible hybrids of meshworks and hierarchies—are immense (in a precise technical sense),107 and so an experimental and empirical attitude toward the problem would seem to be called for. It is surely impossible to determine purely theoretically the relative merits of these diverse combinations. Rather, in our search for viable hybrids we must look for inspiration in as many domains as possible. Here, we have looked to a realm that would normally seem out of bounds: the mineral world. But in a nonlinear world in which the same basic processes of self-organization take place in the mineral, organic, and cultural spheres, perhaps rocks hold some of the keys to understanding sedimentary humanity, igneous humanity, and all their mixtures.

### 2ac plan text pic

#### You can’t do the aff without a plan --- they have no mechanism for implementing biomimetic solar power --- to disrupt the fascism of the status quo, we should respond to the macro-situation

**May, 05** [Todd, prof @ Clemson. “To change the world, to celebrate life,” Philosophy & Social Criticism, Vol 31 nos 5–6 pp. 517–531]

To change the world and to celebrate life. This, as the theologian Harvey Cox saw, is the struggle within us.1 It is a struggle in which one cannot choose sides; or better, a struggle in which one must choose both sides. The abandonment of one for the sake of the other can lead only to disaster or callousness. Forsaking the celebration of life for the sake of changing the world is the path of the sad revolutionary. In his preface to Anti-Oedipus, Foucault writes that one does not have to be sad in order to be revolutionary. The matter is more urgent than that, however. One cannot be both sad and revolutionary. Lacking a sense of the wondrous that is already here, among us, one who is bent upon changing the world can only become solemn or bitter. He or she is focused only on the future; the present is what is to be overcome. The vision of what is not but must come to be overwhelms all else, and the point of change itself becomes lost. The history of the left in the 20th century offers numerous examples of this, and the disaster that attends to it should be evident to all of us by now. The alternative is surely not to shift one’s allegiance to the pure celebration of life, although there are many who have chosen this path. It is at best blindness not to see the **misery** that **envelops** so **many** of our fellow humans, to say nothing of what happens to sentient non-human creatures. The attempt to **jettison world-changing** for an un- critical assent to the world as it is requires a **self-deception** that I assume would be anathema for those of us who have studied Foucault. Indeed, it is anathema for all of us who awaken each day to an America whose expansive boldness is matched only by an equally expansive disregard for those we place in harm’s way. This is the struggle, then. The one between the desire for life- celebration and the desire for world-changing. The struggle between reveling in the contingent and fragile joys that constitute our world and wresting it from its intolerability. I am sure it is a struggle that is not foreign to anyone who is reading this. I am sure as well that the stakes for choosing one side over another that I have recalled here are obvious to everyone. The question then becomes one of how to choose both sides at once.

 Maybe it happens this way. You walk into a small meeting room at the back of a local bookstore. There are eight or ten people milling about. They’re dressed in dark clothes, nothing fancy, and one or two of them have earrings or dreadlocks. They vary in age. You don’t know any of them. You’ve never seen them before.

Several of them seem to know one another. They are affectionate, hugging, letting a hand linger on a shoulder or an elbow. A younger man, tall and thin, with an open face and a blue baseball cap bearing no logo, glides into the room. Two others, a man and a woman, shout, ‘Tim!’ and he glides over to them and hugs them, one at a time. They tell him how glad they are that he could make it, and he says that he just got back into town and heard about the meeting. You stand a little off to the side. Nobody has taken a seat at the rectangle of folding tables yet. You don’t want to be the ﬁrst to sit down. Tim looks around the room and smiles. Several other people ﬁlter in. You’re not quite sure where to put your hands so you slide them into your jean pockets. You hunch your shoulders. Tim’s arrival has made you feel more of an outsider. But then he sees you. He edges his way around several others and walks up to you and introduces himself. You respond. Tim asks and you tell him that this is your ﬁrst time at a meeting like this. He doesn’t ask about politics but about where you’re from. He tells you he has a friend in that neighborhood and do you know ...? Then several things happen that you only vaguely notice because you’re talking with Tim. People start to sit down at the rec-tangle of tables. One of them pulls out a legal pad with notes on it. She sits at the head of the rectangle; or rather, when she sits down there, it becomes the head. And there’s something you don’t notice at all. You are more relaxed, your shoulders have stopped hunching, and when you sit down the seat feels familiar. The woman at the head of the table looks around. She smiles; her eyes linger over you and a couple of others that you take to be new faces, like yours. She says, ‘Maybe we should begin.’

 I can offer only a suggestion of an answer here today. It is a suggestion that brings together some thoughts from the late writings of Maurice Merleau-Ponty with those of Foucault, in order to sketch not even a framework for thought, but the mere outlines of a framework. It is not a framework that would seek to ﬁnd the unconscious of each in the writings of the other. Neither thinker ﬁnishes or accomplishes the other. (Often, for example regarding methodology, they do not even agree.) Rather, it is a framework that requires both of them, from their very different angles, in order to be able to think it. My goal in constructing the outlines of this framework is largely philosophical. That is to say, the suggestion I would like to make here is not one for resolving for each of us the struggle of life-celebration and world-changing, but of offering a way to conceive ourselves **that allows us to embrace both** sides of this battle at the same time. Given the thinkers I have chosen as reference points, it will be no surprise when I say that that conception runs through the body. Let me start with Merleau-Ponty. In his last writings, particularly in The Visible and the Invisible, he offers a conception of the body that is neither at odds nor even entangled with the world, but is of the very world itself. His concept of the ﬂesh introduces a point of contact that is also a point of undifferentiation. The ﬂesh, Merleau-Ponty writes, ‘is the coiling over of the visible upon the seeing body, of the tangible upon the touching body, which is attested in particular when the body sees itself, touches itself seeing and touching the things, such that, astangible it descends among them’.2 We must recall this economy of the ﬂesh before we turn to Foucault. There is, for Merleau-Ponty, a single Being. Our world is of that Being, and we are of our world. We are not something that confronts the world from outside, but are born into it and do not leave it. This does not mean that we cannot remove ourselves from the immediacy of its grasp. What it means is that to remove ourselves from that immediacy is neither the breaking of a bond nor the discovery of an original dichotomy or dualism. What is remarkable about human beings is precisely our capacity to confront the world, to reﬂect upon it, understand it, and change it,

while still being of a piece with it. To grasp this remarkable character, it is perhaps worth recalling Gilles Deleuze’s concept of the fold. The world is not composed of different parts; there is no transcendent, whether of God or of subjectivity. The world is one. As Deleuze sometimes says, being is univocal. This oneness is not, however, inert or inanimate. Among other things,it can fold over on itself, creating spaces that are at once insides and outsides, at once different from and continuous with one another. The ﬂesh is a fold of Being in this sense. It is of the world, and yet encounters it as if from a perceptual or cognitive distance. It is a visibility that sees, a tangible that touches, an audible that hears. Merleau- Ponty writes:

There is vision, touch when a certain visible, a certain tangible, turns back upon the whole of the visible, the whole of the tangible, of which it is a part, or when suddenly it ﬁnds itself surrounded by them, or when between it and them, and through their commerce, is formed a Visibility, a Tangible in itself, which belong properly neither to the body qua fact nor to the world qua fact . . . and which therefore form a couple, a couple more real than either of them.3

 For Merleau-Ponty, thought and reﬂection do not attach themselves to this ﬂesh from beyond it, but arise through it. As our body is of this world, our thought is of our bodies, its language of a piece with the world it addresses. ‘[I]f we were to make completely explicit the architectonics of the human body, its ontological framework, and how it sees itself and hears itself, we would see the possibilities of language already given in it.’4 This conception of the body as ﬂesh of the world is not foreign to Foucault, although of course the terms Merleau-Ponty uses are not his. We might read Foucault’s politics as starting from here, inaugurated at the point of undifferentiation between body and world. The crucial addition he would make is that that point of undifferentiation is not historically inert. The body/world nexus is inscribed in a history that leaves its traces on both at the same time, and that crosses the border of the ﬂesh and reaches the language that arises from it, and the thought

that language expresses. How does this work?

 Maybe it doesn’t happen that way. Maybe it happens another way. Maybe you walk into a room at a local community center. The room is large, but there aren’t many people, at least yet. There’s a rectangular table in the center, and everyone is sitting around it. A couple of people look up as you walk in. They nod slightly. You nod back, even more slightly. At the head of the table is someone with a legal pad. She does not look up. She is reading the notes on the pad, making occasional marks with the pen in her right hand. Other people come in and take places It the table. One or two of them open laptop computers and look for an outlet. Eventually, the table ﬁlls up and people start sitting in chairs behind the table. Your feel as though you’re in an inner circle where you don’t belong. You wonder whether you should give up your chair and go sit on the outside with the others who are just coming in now. Maybe people notice you, think you don’t belong there. At this moment you’d like to leave. You begin to feel at once large and small, visually intrusive and an object of scrutiny. You don’t move because maybe this is OK after all. You just don’t know. The room is quiet. A couple of people cough. Then the woman seated at the head of the table looks up. She scans the room as if taking attendance. She says, ‘Maybe we should begin.’

 Merleau-Ponty’s discussion of the body as ﬂesh is an ontological one. Although he does not see the body as remote from its historical inscription, his discussion does not incorporate the role such inscription plays.

For a body to be of the world is also for it to be temporal, to be encrusted in the continuous emerging of the world over time. And this emerging is not abstract; rather, it is concrete. The body/world nexus evolves during particular historical periods. This fold of the ﬂesh, this body, is not nowhere and at any time. It is there, then; or it is here, now. A body is entangled within a web of speciﬁc events and relations that, precisely because it is of this world, are inescapably a part of that body’s destiny. As Merleau-Ponty tells us in Phenomenology of Perception, ‘our open and personal existence rests on an initial foundation of acquired and stabilized existence. But it could not be otherwise, if we aretemporality, since the dialectic of acquisition and future is what constitutes time.’5 The medium for the body’s insertion into a particular net of events and relations is that of social practices. Our bodies are not ﬁrst and foremost creatures of the state or the economy, no more than they are atomized wholes distinct from the world they inhabit. Or better, they are creatures of the state and the economy inasmuch as those appear through social practices, through the everyday practices that are the ether of our lives. Social practices are the sedimentation of history at the level of the body. When I teach, when I write this article, when I run a race or teach one of my children how to ride a bicycle, my body is oriented in particular ways, conforming to or rejecting particular norms, responding to the constraints and restraints of those practices as they have evolved in interaction with other practices over time. Through its **engagement in these practices**, my body has taken on a history that is not of my making but is nevertheless part of my inheritance. It is precisely because, as Merleau-Ponty has written, the body and the world are not separate things but rather in a chiasmic relation that we can think this inheritance. And it is because of Foucault’s histories that we can recognize that this inheritance is granted through speciﬁc social practices.

And of course, as Foucault has taught us, social practices are where the power is. It is not, or not simply, at the level of the state or the modes of production where power arises. It is, as he sometimes puts it, at the capillaries. One of the lessons of Discipline and Punishis that, if the soul is the prison of the body, this is because the body is inserted into a set of practices that create for it a soul. These practices are not merely the choices of an individual whose thought surveys the world from above, but instead the fate of a body that is of a particular world at a particular timeand place. Moreover, these practices are not merely in service to a power that exists outside of them; they are mechanisms of power in their own right. It is not because Jeremy Bentham disliked the prison population that the Panopticon became a grid for thinking about penal institutions. It is instead because the evolution of penal practices at that time created an opening for the economy of visibility that the Panopticon represented. When Foucault writes

that . . . the soul has a reality, it is produced permanently around, on, within the body by the functioning of a power that is exercised on those punished – and, in a more general way, on those one supervises, trains and corrects, over madmen, children at home and at school, the colonized, over those who are stuck at a machine and supervised for the rest of their lives6

his claim is informed by four other ones that lie behind it: that bodies are of a piece with the world, that the body/world nexus is a temporal one, that the medium of that corporeal temporality is the practices a body is engaged in, and that that medium is political as well as social. The last three claims are, of course, of the framework of Foucault’s thought. The ﬁrst one is the ontological scaffolding provided by Merleau-Ponty. And it is by means of all four that we can begin to conceive things so as to be able to choose both world-changing and life- celebrating at the same time.

 It could happen yet another way. Increasingly, it does. There is no meeting. There are no tables and no legal pads. Nobody sits down in a room together, at least nobody sits down at a place you know about. There may not even be a leaﬂet. Maybe you just got an email that was for- warded by someone you know slightly and who thought you might be interested. At the bottom there’s a link, in case you want to unsubscribe. If you don’t unsubscribe you get more notices, with petitions to sign or times and places for rallies or teach-ins or marches. Maybe there’s also a link for feedback or a list for virtual conversations or suggestions. If you show up, it’s not to something you put together but to something that was already in place before you arrived. How did you decide on this rally or teach-in? You sat in front of your computer screen, stared at it, pondering. Maybe you emailed somebody you know, asking for their advice. Is it worth going? If it’s on campus you probably did. It matters who will see you, whether you have tenure, how much you’ve published. There are no Tims here. You’ve decided to go. If it’s a teach-in, you’ve got plausible deniability; you’re just there as an observer. If it’s a rally, you can stand to the side. But maybe you won’t do that. The issue is too important. You don’t know the people who will be there, but you will stand among them, walk among them. You will be with them, in some way. Bodies at the same time and place. You agree on the issue, but it’s a virtual agreement, one that does not come through gestures or words but through sharing the same values and the same internet connections. As you march, as you stand there, nearly shoulder to shoulder with others of like mind, you’re already somewhere else, telling this story to someone you know, trying to get them to understand the feeling of solidarity that you are projecting back into this moment. You say to yourself that maybe you should have brought a friend along.

 There are many ways to conceive the bond between world-changing and life-celebrating. Let me isolate two: one that runs from Merleau-Ponty to Foucault, from the body’s chiasmic relation with the world to the politics of its practices; and the other one running back in the opposite direction. The ontology Merleau-Ponty offers in his late work is one of wonder. Abandoning the sterile philosophical debates about the relation of mind and body, subject and object, about the relation of reason to that which is not reason, or the problem of other minds, his ontology forges a unity of body and world that puts us in immediate contact with all of its aspects. No longer are we to be thought the self-enclosed creatures of the philosophical tradition. We are now in touch with the world, because we are of it. Art, for example, does not appeal solely to our minds; its beauty is not merely a matter of the convergence of our faculties. We are moved by art, often literally moved, because our bodies and the work of art share the same world. As Merleau-Ponty says, ‘I would be at great pains to say whereis the painting I am looking at. For I do not look at it as I do a thing; I do not ﬁx it in its place. My gaze wanders in it as in the halos of Being. It is more accurate to say that I see according to it, or with it, than that I see it.’7 It is only because my body is a fold of this world that art can affect me so. But this affection is also a vulnerability. As my look can happen according to a work of art, so it can happen according to a social practice. And even more so in proportion as that social practice and its effects are suffused through the world in which I carry on my life, the world my body navigates throughout the day, every day. I do not have a chance to look according to a painting by Cezanne very often; but I do encounter the effects of normalization as it has ﬁltered through the practices of my employment, of my students’ upbringing, and of my family’s expectations of themselves and one another. The vulnerability of the body, then, is at once its exposure to beauty and its opening to what is intolerable. We might also see things from the other end, starting from politics and ending at the body. I take it that this is what Foucault suggests when he talks about bodies and pleasures at the end of the ﬁrst volume of the History of Sexuality. If we are a product of our practices and the conception of ourselves and the world that those practices have fostered, so to change our practices is to experiment in new possibilities both for living and, inseparably, for conceiving the world. To experiment in sexuality is not to see where the desire that lies at the core of our being may lead us; that is simply the continuation of our oppression by other means. Rather, it is to construct practices where what is at issue is no longer desire but something else, something that might go by the name of bodies and pleasures. In doing so, we not only act differently, we think differently, both about ourselves and about the world those selves are inseparable from. And because these experiments are practices of our bodies, and because our bodies are encrusted in the world, these experiments become not merely acts of political resistance but new folds in the body world nexus. To construct new practices is to appeal to aspects or possibilities of the world that have been previously closed to us. It is to offer novel, and perhaps more tolerable, engagements in the chiasm of body and world. Thus we might say of politics what Merleau-Ponty has said of painting, that we see according to it. Here, I take it, is where the idea of freedom in Foucault lies. For Foucault, freedom is not a metaphysical condition. It does not lie in the nature of being human, nor is it a warping, an atomic swerve, in the web of causal relations in which we ﬁnd ourselves. To seek our freedom in a space apart from our encrustation in the world is not so much to liberate ourselves from its inﬂuence as to build our own private prison.

Foucault once said:

There’s an optimism that consists in saying that things couldn’t be better. My optimism would consist rather in saying that so many things can be changed, fragile as they are, bound up more with circumstances than with necessities, more arbitrary than self-evident, more a matter of complex, but temporary, historical circumstances than with inevitable anthropological constraints ...8 That is where to discover our freedom.

And what happens from there? From the meetings, from the rallies, from the petitions and the teach-ins? What happens next? There is, after all, always a next. If you win this time – end aid to the contras, divest from apartheid South Africa, force debt-forgiveness by technologically advanced countries – there is always more to do. There is the de-unionization of workers, there are gay rights, there is Burma, there are the Palestinians, the Tibetans. There will always be Tibetans, even if they aren’t in Tibet, even if they aren’t Asian. But is that the only question: Next? Or is that just the question we focus on? What’s the next move in this campaign, what’s the next campaign? Isn’t there more going on than that? After all, **engaging in political organizing** is a practice, or a group of practices. It contributes to **making you who you are**. It’s where the power is, and where your life is, and where the intersection of your life and those of others (many of whom you will never meet, even if it’s for their sake that you’re involved) and the buildings and streets of your town is. This moment **when you are seeking to change the world**, whether by making a suggestion in a meeting or singing at a rally or marching in silence or asking for a signature on a petition, is not a moment in which you don’t exist. It’s not a moment of yours that you sacriﬁce for others so that it no longer belongs to you. **It remains a moment of your life**, sedimenting in you **to make you what you will become,** emerging out of a past that is yours as well. What will you make of it, this moment? How will you be with others, those others around you who also do not cease to exist when they begin to organize or to protest or to resist? The illusion is to think that this has nothing to do with you. You’ve **made a decision to participate in world-changing**. Will that be all there is to it? Will it seem to you a simple sacriﬁce, for this small period of time, of who you are for the sake of others? Are you, for this moment, a political ascetic? Asceticism like that is dangerous.

 Freedom lies not in our distance from the world but in the historically fragile and contingent ways we are folded into it, just as we ourselves are folds of it. If we take Merleau-Ponty’s Being not as a rigid foundation or a truth behind appearances but as the historical folding and refolding of a univocity, then our freedom lies in the possibility of other foldings. Merleau-Ponty is not insensitive to this point. His elusive concept of the invisible seems to gesture in this direction. Of painting, he writes:

the proper essence of the visible is to have a layer of invisibility in the strict sense, which it makes present as a certain absence . . . There is that which reaches the eye directly, the frontal properties of the visible; but there is also that which reaches it from below . . . and that which reaches it from above . . . where it no longer participates in the heaviness of origins but in free accomplishments.9

Elsewhere, in The Visible and the Invisible, he says:

if ... the surface of the visible, is doubled up over its whole extension with an invisible reserve; and if, ﬁnally, in our ﬂesh as the ﬂesh of things, the actual, empirical, ontic visible, by a sort of folding back, invagination, or padding, exhibits a visibility, a possibility that is not the shadow of the actual but its principle . . . an interior horizon and an exterior horizon between which the actual visible is a partitioning and which, nonetheless, open indeﬁnitely only upon other visibles . . .10

What are we to make of these references? We can, to be sure, see the hand of Heidegger in them. But we may also, and for present purposes more relevantly, see an intersection with Foucault’s work on freedom. There is an ontology of freedom at work here, one that situates freedom not in the private reserve of an individual but in the unﬁnished character of any historical situation. There is more to our historical juncture, as there is to a painting, than appears to us on the surface of its visibility. The trick is to recognize this, and to take advantage of it, not only with our thoughts but with our lives. And that is why, in the end, there can be no such thing as a sad revolutionary. To seek to change the world is to offer **a new form of life-celebration**. It is to articulate a fresh way of being, which is at once a way of seeing, thinking, acting, and being acted upon. It is to fold Being once again upon itself, this time at a new point, to see what that might yield. There is, as Foucault often reminds us, no guarantee that this fold will not itself turn out to contain the intolerable. In a complex world with which we are inescapably entwined, a world we cannot view from above or outside, there is no certainty about the results of our experiments. Our politics are constructed from the same vulnerability that is the stuff of our art and our daily practices. But to refuse to experiment is to resign oneself to the intolerable; it is to abandon both the struggle to change the world and the opportunity to celebrate living within it. And to seek one aspect without the other – life-celebration without world-changing, world-changing without life-celebration – is to refuse to acknowledge the chiasm of body and world that is the well- spring of both.

If we are to celebrate our lives, if we are to change our world, then perhaps the best place to begin to think is our bodies, which are the openings to celebration and to change, and perhaps the point at which the war within us that I spoke of earlier can be both waged and resolved. That is the fragile beauty that, in their different ways, both Merleau- Ponty and Foucault have placed before us. The question before us is whether, in our lives and in our politics, we can be worthy of it. So how might you be a political body, woven into the fabric of the world as a celebrator and as a changer? You went to the meeting, and then to the demonstration. How was it there? Were the bodies in harmony or in counterpoint? Did you sing with your feet, did your voice soar? Did your mind come alive? Did you see possibilities you had not seen before? Were there people whose words or clothes, or even the way they walked hand in hand (how long has it been since you’ve walked hand in hand with someone out in public?) offer you a possibility, or make you feel alive as well as righteous? And how about those people off to the side, the ones on the sidewalk watching? Maybe they just stared, or maybe nodded as you went past. Or maybe some of them shouted at you to stop blocking the streets with your nonsense. Did you recoil within yourself, see yourself as in a mirror, or as the person at Sartre’s keyhole who’s just been caught? Did you feel superior to them, smug in your knowledge? Or did they, too, show you something you might learn from? Are they you at another moment, a moment in the past or in the future? Are they your parents that you have not explained to, sat down beside, or just shared a meal with? That one over there, the old man slightly stooped in the long overcoat: whom does he remind you of? What message might he have unwittingly brought for you? And why does it have to be a demonstration? You go to a few meetings, a few more demonstrations. You write some letters to legislators. You send an email to the President. And then more meetings. The next thing you know, you’re involved in a political campaign. By then you may have stopped asking why. This is how it goes: demonstrations, meetings with legislators, internet contacts. Does it have to be like this? Are demonstrations and meetings your only means? Do they become, sooner or later, not only means but ends? And what kinds of ends? In some sense they should always be ends: a meeting is a celebration, after all. But there are other ends as well. You go to the meeting because that fulﬁlls your obligation to your political conscience. Does it come to that? There are other means, other ends. Other means/ends. Some people ride bicycles, en masse, slowly through crowded urban streets. You want environmentalism? Then have it. The streets are beautiful with their tall corniced buildings and wide avenues. To ride a bike through these streets instead of hiding in the armor of a car would be exhilarating. If enough of you do it together it would make for a pleasant ride, as well as a little lived environmentalism. Would you want to call it a demonstration? Would it matter? There are others as well who do other things with their bodies, more dangerous things. Some people have gone to Palestine in order to put their bodies between the Palestinians and the Israeli soldiers and settlers who attack them. They lie down next to Palestinians in front of the bulldozers that would destroy homes or build a wall through a family’s olive orchard. They feel the bodies of those they are in solidarity with. They smell the soil of Palestine as they lay there. Sometimes, they are harmed by it. A young woman, Rachel Corrie, was deliberately crushed by a US bulldozer operated by an Israeli soldier as she kneeled in front of a Palestinian home, hoping to stop its demolition. To do politics with one’s body can be like this. To resist, to celebrate, is also to be vulnerable. The world that you embrace, the world of which you are a part, can kill you too.

And so you experiment. You try this and you try that. You are a phenomenologist and a genealogist. You sense what is around you, attend to the way your body is encrusted in your political involvements. And you know that that sensing has its own history, a history that often escapes you even as it envelops you. There is always more to what you are, and to what you are involved in, than you can know. So you try to keep vigilant, seeking the possibilities without scorning the realities. It’s a difﬁcult balance. You can neglect it if you like. Many do. But your body is there, woven into the fabric of all the other bodies, animate and inanimate. Whether you like it or not, whether you recognize it or not. The only question is whether you will take up the world that you are of, or leave it to others, to those others who would be more than willing to take your world up for you.

#### Link turn – absent a theory of meaning, there is no mechanism for showing how absent features impact the present. Our aff is a pre-requisite to wide-spread persuasion and incorporation of non-anthropocentric attitudes

**Patton, 05** (Paul Patton, *Deleuze and Democracy*, Contemporary Political Theory, http://www.palgrave-journals.com/cpt/journal/v4/n4/full/9300236a.html)

Mengue turns this difference into opposition in suggesting that the position of majority is by nature opposed to the creativity of the minoritarian: majoritarian democratic politics inevitably 'crushes' creative becomings (Mengue, 2003, 102). According to this view, to adopt the standpoint of the majority is always to abandon the standpoint of the untimely and the creative in favour of the state and established values. This is a misrepresentation of Deleuze and Guattari's view and an implausible view of democratic politics. Legislative measures introduced in a number of democracies in recent years have served to broaden the standard to include non-whites, non-males and even to allow equal rights to homosexual partners. These measures suggest that, far from 'crushing novelty' as Mengue suggests, democratic politics can have its own forms of creativity. No doubt such measures have been implemented in response to micropolitical changes already underway. For this reason, William Connolly reminds us that in order to be responsive to new claims for the reconfiguration of the standard democratic political life needs to be infused with a public ethos of critical engagement (Connolly, 1999, 51). For Deleuze and Guattari, the different forms of minority becoming provide the impulse for change at the level of social and political institutions, but this change only occurs to the extent that there is **adaptation and incorporation** on the side of the majority. When they say that the power of minorities 'is not measured by their capacity to enter into and make themselves felt within the majority system, nor even to reverse the necessarily tautological criterion of the majority', they mean that the majorities do not determine the limits of the potential for transformation (Deleuze and Guattari, 1987, 471). They do not mean to suggest that minorities do not enter into and produce effects upon the majority. On the contrary, they insist upon the importance of piecemeal changes to the form and content of a given majority: 'molecular escapes and movements would be nothing if they did not return to the molar organizations to reshuffle their segments, their binary distributions of sexes, classes and parties' (Deleuze and Guattari, 1987, 216–217).6 Deleuze and Guattari's insistence on the transformative potential of minoritarian becomings does not imply a refusal of democratic politics, much less a rejection of democratic principles. The irreducible character of the difference in kind between majority and minority aligns them firmly with the proponents of democratic pluralism such as Connolly, for whom the key to an open-ended democratic process lies in the 'productive tension' between majoritarian governance, rights and recognition on the one hand, and minoritarian becoming on the other (Connolly, 2002, 172). For Deleuze and Guattari, it is precisely those excluded from the majority as defined by a given set of axioms who are the potential bearers of the power to transform that set, whether in the direction of a new set of axioms or an altogether new axiomatic. These are the source of minoritarian becomings that carry the potential for new earths and peoples unlike like those found in existing democracies.

## 1AR

### 1ar new word pic

Freire, ’70 **(Paulo Freire, Pedagogy of the Opressed, 1970)**

If it is in speaking their word that people, by naming the world, transform it dialogue imposes itself as the +way by which they achieve significance as human beings. Dialogue is thus an existential necessity. And since dialogue is the encounter in which the united reflection and action of the dialoguers are addressed to the world which is to be transformed and humanized, this dialogue cannot be reduced to the act of one person’s “depositing” ideas in another; nor can it become a simple exchange of ideas to be “consumed” by the discussants. Nor yet is it a hostile, polemical argument between those who are committed neither to the naming of the world, nor to the search for truth, but rather to the imposition of their own truth. Because dialogue is an encounter among women and men who name the world, it must not be a situation where some name on behalf of others. It is an act of creation; it must not serve as a crafty instrument for the domination of one person by another. The domination implicit in dialogue is that of the world by the dialoguers; it is conquest of the world for the liberation of humankind. Dialogue cannot exist, however, in the absence of a profound love for the world and for people. The naming of the world, which is an act of creation and re-creation, is not possible if it is not infused with love.[[4]](http://www.marxists.org/subject/education/freire/pedagogy/ch03.htm#n4)Love is at the same time the foundation of dialogue and dialogue itself. It is thus necessarily the task of responsible Subjects and cannot exist in a relation of domination. Domination reveals the pathology of love: sadism in the dominator and masochism in the dominated. Because love is an act of courage, not of fear, love is commitment to others. No matter where the oppressed are found, the act of love is commitment to their cause — the cause of liberation. And this commitment, because it is loving, is dialogical. As an act of bravery, love cannot be sentimental; as an act of freedom, it must not serve as a pretext for manipulation. It must generate other acts of freedom; otherwise, it is not love. Only by abolishing the situation of oppression is it possible to restore the love which that situation made impossible. If I do not love the world — if I do not love life — if I do not love people — I cannot enter into dialogue. On the other hand, dialogue cannot exist without humility. The naming of the world, through which people constantly re-create that world, cannot be an act of arrogance. Dialogue, as the encounter of those addressed to the common task of learning and acting, is broken if the parties (or one of them) lack humility. How can I dialogue if I always project ignorance onto others and never perceive my own? How can I dialogue if I regard myself as a case apart from others — mere “its” in whom I cannot recognize other “I"s? How can I dialogue if I consider myself a member of the in-group of pure men, the owners of truth and knowledge, for whom all non-members are “these people” or “the great unwashed"? How can I dialogue if I start from the premise that naming the world is the task of an elite and that the presence of the people in history is a sign of deterioration, thus to be avoided? How can I dialogue if I am closed to — and even offended by — the contribution of others? How can I dialogue if I am afraid of being displaced, the mere possibility causing me torment and weakness? Self-sufficiency is incompatible with dialogue. Men and women who lack humility (or have lost it) cannot come to the people, cannot be their partners in naming the world. Someone who cannot acknowledge himself to be as mortal as everyone else still has a long way to go before he can reach the point of encounter. At the point of encounter there are neither utter ignoramuses nor perfect sages; there are only people who are attempting, together, to learn more than they now know.