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Emergence and How One Might Live.

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by

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ABSTRACT

This thesis uses Manuel DeLanda's realist emergentist ontology to indicate a foundation for an ethics of open possibility and experimentation. DeLanda's emergentist ontology will be used as a bridge that links nature as a creative system to human life as self-consciously creative. As an emergent goal of human life as such, personal experimentation has an irreducibly ethical dimension. I will argue that John Russon's concept of mutual equal recognition or universality-as-sharedness best explicates the ethical implications implied by but not explored in the work of DeLanda.

Chapter 1 is a general introduction and lays out the three competing views to which this thesis is opposed and to which it offers an alternative. Chapter 2 explains the meaning and implications of DeLanda's conception of natural processes as creative, suggesting that there are ethical implications for how we ought to live life if reality is as DeLanda claims. These ethical implications are emergent properties of natural and social organisation. Thus, Chapter 3 will look at a selection of material from other contemporary thinkers on emergence, aiming to bring DeLanda's conception into further relief and explain its unique appropriateness for the ethical implications this thesis is explicating. In Chapter 4, the ethical implications of DeLanda's ontology will be made fully explicit. I will demonstrate how Russon's principle of mutual equal recognition is an emergent property of human history and, as such, the social foundation for the ethics of personal experimentation and open possibility implied by but not explicated in DeLanda's ontology.

DEDICATION

To my parents, Ken and Shelley Machum, all my love and thanks.

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CHAPTER I

INTRODUCTION

<u>Introduction</u>

The main ontological claim that this thesis defends is that science shows us that material nature is creative, that its creative processes have identifiable recurrent patterns, but also that these patterns do not limit creativity, but are that by which creativity happens. Myriad forms of organic life employ the same metabolic circuits; the great variety of meteorological phenomena that all emerge by convection, and the diversity of topological structures of the earth by the slow convective movements of its mantel. To think difference on the basis of these patterns is not to reduce complexity to simplicity, it is to see the open ended possibilities for creation and experimentation that basic natural processes and patterns make possible. Without these patterns there would be nothing. These patterns are not transcendent ideals. They are not gods or essences to be worshiped. They are immanent to the stuff that is and the foundation for the emergent properties that most interest me in this thesis.

However, my main concern is not ontological, but ethical. I want to show how the creativity of nature is the basis for personal creativity. The reason why invariant patterns ought not be treated as gods or essences is because worship is an attitude that closes off possibilities, whereas I want to defend possibility and experimentation as the highest ethical goal of human life. Hence, it is not a matter

of worshipping or idealising fixed realities, it is a matter of nurturing the conditions

of novelty and experimentation. It is a matter of nurturing the patterns so as to

maximise the combinations of material out of which structures and creations that

have value emerge. It is not a matter of taking the patterns from physics, chemistry,

biology, and technology and applying them directly to the social realm, it is a

matter of seeing how the creativity of nature that these sciences disclose can free

our notions of society from fixed and static hierarchies that limit the creativity of

human life. A conception of nature as creative grounds a conception of society as

an incubator of creativity and an ethics of personal experimentation. Personal

creativity and freedom is not a fiction of the human imagination, it is made possible

by nature itself as an open ended system of material creativity.

However we must bear in mind that, as you move from relatively simple

matter-energy-information, to chemical, to organic, to biological, to social systems,

to creative thought the patterns are differentiated by qualitative differences. The

function of emergent properties is to explain the possibility of these qualitative

differences. The human social realm is qualitatively different from the others (and

they from it), because human beings are self-conscious; the patterns of social life

are in equal part the products of intentional activity, whereas nature is not an

intentional system. The most important emergent phenomena of social life are

meaning, value, and normativity. We cannot treat these or any other social

emergences as a physicalist would. Although they develop out of physical material

processes, their real nature cannot be reduced to matter. They must be

comprehended by objective observation so that any important regularities and

patterns immanent to them become clear; to see how they emerge from the more basic patterns of natural life. But the goal is not reduction to material elements and dynamics, but opening towards unexplored possibilities made possible by the dynamics of natural and social life. To see the space of possibility we must understand the objective frames within which it opens up. Objective understanding of the parts allows us to see how they combine to create open systems like human societies, within which we can play with possibility, experiment, and improve our lives.

There is unique inherent value in all levels of reality, expressed as the properties, capacities and tendencies that define each. The human social realm has a particular inherent value because it is a set of material and symbolic relations that enables each person to become a unique individual human capable of contributing in novel and creative ways to the social wholes of which she is a part. This uniquely human value emerges directly from physical elements and interactions, but as nature teaches us insofar as it is emergent it is not reducible to the properties, capacities and tendencies of the physical materials that compose it insofar as it has those of its own. Social life makes possible, through its symbolic systems and institutions, a realm of human thought and meaning which, while it must contend with physical reality as a limiting frame, is capable of creatively altering its environment and itself (to alter one is to alter both). This *self-conscious* creativity of action makes it immediately apparent that we are dealing with a qualitatively different set of phenomena and capacities than in the non-human realms of natural elements and forces. It is not only more complex insofar as it is made up a material

that is more highly organised, but also more valuable than raw nature, in so far as it is uniquely capable of overcoming particular limitations on its creative activity by understanding and transforming them.

The human social world emerges from the interaction of humans and that it is "[e]mergent ... express[es] a degree of freedom from ... the causal forces that govern the parts. This claim means that more highly organised systems have greater latitude for different responses to different stimuli."[1] The creativity of the complexity entailed in the interaction of the different elements of the periodic table is impressive enough, but consider the interaction of different words, thoughts, ideas, beliefs, feelings and commitments and the creativity there entailed. This creativity creates and is created by the social realm, which creates value insofar as it creates us as beings who value things. We care because we are social and we are social because we care. If we care let's take care, we do care, let's take care. Human beings and the social realm that sustains us are not separated by an absolute ontological gulf from the more basic material process from which we have evolved. The point is that social creativity develops out of natural creativity, but is more valuable because it is self-consciously directed. The ethics of experimentation that I will defend thus finds its depth grounded in nature as spontaneous creativity, but requires a definite sort of social relationship—mutual equal recognition—to fully develop.

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[1] Jeff Noonan, *Materialist Ethics and Life-Value* (Montreal and Kingston: McGill-Queen's University Press, 2012), 27.

Contra Previous Realism and Materialism

While a definite form of social relationship is required by my ethics of experimentation, it also requires a definite understanding of the natural world, from which the social world develops. I have chosen to begin with Manuel DeLanda's ontology because it provides a credible conception of nature as spontaneous creativity that avoids the problems of reductionism that hamper older forms of materialism. His work covers a wide range of subjects, but it is unified by its realist ontology. It is *a* realism because unlike some previous realism, it does not end up with transcendent essences, seamless wholes or reified necessary (inevitable) general categories to 'explain' and describe reality and its constituents.[2] DeLanda's realism is interesting and attractive to my ethical project because it tries to rethink how we think and what we think about, by drawing from interesting and important ways of observing, analysing, simulating, and experimenting with reality. These ways of understanding reality are drawn from mathematics, science, social science, the arts, and the humanities. DeLanda follows Deleuze in believing that what these studies of reality show is that "...there are no... universals... nothing transcendent, no Unity, subject (or object), Reason; there are only processes, sometimes unifying, subjectifying, rationalising, but just processes all the same."[3] This conception of reality as creative process is important because world views or

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[2] Classic examples of these three would be Plato, Hegel, and Marx respectively.

[3] Gilles Deleuze, *Negotiations: 1972-1990*. 1990. Translation by Martin Joughin. (New York: Columbia University Press, 1995), 145.

ways of thinking that have made use of older sorts of transcendent types of universals have supported, founded, or been indifferent to many disastrous life-styles and social and political assemblages. By freeing our conception of nature from static categories, and grounding our understanding of society in DeLanda's conception of nature as creative, we at the same time see our way past old forms of oppressive and hierarchical practices towards a new ethics of mutual recognitions of each other's experiments in living.

DeLanda's alternative conceives reality as populated by historically assembled (emergent) wholes that are identified and explained by real historical processes. For example, if we want to understand cities, we do not start with an abstract theory about the 'City' in general. Instead, we look at actual cities, perhaps finding patterns or mechanisms that can be applied more generally to an actual population of studied cities. Wholes, like cities, humans, and languages, are assemblages which emerge from processes and are always in process. In other words, everything is to some degree emergent, that is, has properties, capacities and tendencies that are not shared by the parts whose interactions a whole emerges from and is sustained by. Assemblages (whole-parts) have no essences by reference to which their existence is explained and "[u]nlike organic totalities, the parts of an assemblage do not form a seamless whole," they are not static and closed, they are open and fluid.[4]   DeLanda draws the foundations and inspiration for this ontology from Deleuze, but DeLanda's articulation "[uses] ... different theoretical resources and lines of argument."[5] This indicates the robustness of the

[4] DeLanda, *New Philosophy of Society*, 4

[5] DeLanda, *ISVP*, 3.

ontology.[6] What is presented is a world of processes where nothing is closed, finished or

total, and nothing is explainable with reference to eternal essences or archetypes. So,

how do we explain the identifiable wholes there are?

DeLanda addresses this issue as follows:

> Given that essences are typically postulated to explain the existence of individuals or of natural kinds, eliminating them involves giving an *alternative explanation*, not reducing these individuals and kinds to social conventions.[7]

From the above quotation it is clear that DeLanda, while rejecting reductionist

explanations of material processes, also wants to avoid the opposite extreme of a

relativistic social constructivism. By 'social conventions' he means reducing everything

to contingent language-games which run the risk of eliminating material reality as any

sort of constraint or frame on human action. He is also arguing against the use of

generalised or reified categories, specifically in the case of the social sciences where their

use obscures the real social agents and groupings that could be the object of study. It is

not that these general categories are not useful, they have helped grow our understanding

of reality, it is that now thanks to this grown (and still growing) understanding we can

continue to replace generality with concrete creative complexity (from which contingent

generalities may emerge).

On my reading, DeLanda's ontology founds and is founded by a conception of

reality as creative complexity driven by difference. I make the link from his 'general

ontology' to the social realm through this conception of reality. Because the social realm

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[6] Multi-realisability is an important feature of what emerges from nonlinear systems; of solutions to nonlinear problems. The ontology itself exhibits this important feature of the reality it argues for.

[7] Manuel DeLanda, *Intensive Science and Virtual philosophy* (New York, NY: Continuum, 2002), 88. Hereafter *ISVP*.

(and the thought realm that emerges from it) has real effect (manifestation) in the physical realm—we change our natural environment through social activity—and it is equally a reality with unique properties, capacities, and tendencies manifested as creative complexity driven by difference, it is equally a material reality with all that entails and does not entail.

While Deleuze is the genetic father of this ontology insofar as he brought its important parts into interaction, DeLanda's version will, for the most part, be treated as the singular individual it is.[8] Given the breadth and depth of DeLanda's work, and its growing influence across many fields, this focus is warranted. What I intend to draw out of my reading of DeLanda's ontology is that it can found an ethics of open experimentation, by showing that creativity is a fundamental property of reality and needs to be nurtured as such. This interpretation rests on the assumption that there is a link between ontology, the social, and ethics. Broadly speaking, the links amount to the reality that the choices we make, the ways we chose to live and the choices that are available to us, entail views of reality which can be understood in more or less detailed and concrete ways. So, understanding views of reality (ontology) is part of understanding decision making and the decisions that are available to be made. Ontology and ethics entail each other through humans being social beings who bring meaning to reality, where reality is one that includes meaning and ideas as no more and no less real parts of reality. An ontology that is capable of grasping the layered complexity of

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[8] Singular (singularity) for Deleuze/DeLanda refers to uniqueness, not that there is necessarily only one; in Deleuze's world everything is in populations. In this case, DeLanda's ontology is a unique member of a population of theories that have emerged from the interaction of certain ways of thinking about the world. Ways that will be discussed in the next chapter.

natural, social, and individual reality is important because it provides grounds for ethics in real material processes. The possibility of an ethics of individual experimental learning and living is rooted in society as a collective effort of experimental learning and living, which in turn has emerged from nature as a set of unconscious material experiments in organisation.

Emergent Ethics *Contra* Progressive Teleology

Thus, the main goal of this thesis is to uncover the way in which DeLanda's ontology has ethical significance, even though he himself may not explicitly articulate what that significance is. The thesis thus addresses the question raised by Levi Bryant, Nick Srnicek and Graham Harman in "Towards a Speculative Philosophy."[9] "A ... serious issue … for realisms and materialisms is the question of whether they can provide any grounds or guidelines for ethical and political action. Can they justify normative ideals?"[10] I will argue that DeLanda's can because it provides a way of thinking that is open to immanent normative ideals that need not be justified by reference to transcendent ideals but ideals or goals that emerge from the socio-historical dimension of human life-activity.   Essentially, DeLanda can provide a materialist/realist ontological grounding for what Noonan would call life-grounded ethics or an ethics grounded in life-value.

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[9] Levi Bryant, Nick Srnicek and Graham Harman, eds. "Towards a Speculative Philosophy." *The Speculative Turn: Continental Materialism and Realism* (Melbourne, Australia: re-press, 2011).

[10] Bryant, Srnicek and Harman, *Speculative Turn*, 16.

DeLanda's ontology is suited for this because it is not a downwardly reductive physicalism, nor an upwardly reductive essentialism.

Plato is a classic example of essentialism, but there is also what DeLanda calls taxonomic essentialism, which is when general categories of classification are reified. He traces this form of essentialism to Aristotle, for whom, at the scale of species, categories of classification are necessary and eternal.   For an example of downward reduction see Daniel Dennett, *Freedom Evolves*, where, based on experiments that have reported finding a lag of a few microseconds between unconscious neural activity and 'conscious' decision, he argues that what we think of as conscious human decision making is reducible to previous neural activity in the brain. [11] However, as Deacon argued, raw sense data is colored by previous knowledge and interpretations "that have an irreducible social and symbolic content."[12] So, even if consciousness as decisions are initially 'made' unconsciously by the brain "consciousness itself cannot be removed from the complete account of the complex of processes that results in decisions and actions because the content to which the brain responds is not raw … but already symbolically processed and mediated."[13] Essentially Dennett does not account for the decisions and actions previous to the neural activity that is previous to the current decision.

Another downward reductionist is E. O. Wilson who asserts that "all tangible phenomena, from the birth of stars to the workings of social institutions, are based on

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[11] Daniel Dennett, *Freedom Evolves* (New York: Viking, 2003) 227-242.

[12] Noonan, *Materialist Ethics and Life-Value*, 37. Terence Deacon, *The Symbolic Species* (New York, NY: W. W. Norton, 1997)

[13] Noonan, *Materialist Ethics and Life-Value*, 37.

material processes that are ultimately reducible, however long and tortuous the sequence,

to the laws of physics."[14] However, as Noonan argues

> holding to the two basic materialist commitments—the primacy of the natural universe, and a
> rejection of ideal substances as causal determinants in natures development—does not entail
> reductionism because reductionism cannot provide consistent and complete reductions of
> meaningful human practices and values [like beauty and goodness] to the interactions of
> meaningless fields of energy.[15]

While maintaining a commitment to the foundational physicality of material

reality DeLanda gives equal material reality to the human social realm and what emerges

from it. Everything at all scales maintains a degree of irreducibility, of independence

from its parts and from the wholes of which it is a part, but equally everything at all

scales maintains a degree of reducibility, of dependence on its parts and on the wholes of

which it is a part.

DeLanda himself, however, does not unpack the ethical implications of his

realism. In order to explicate what remains implicit in DeLanda, I will draw upon John

Russon's concepts from *Human Experience*.[16] The connection that I find between

DeLanda and Russon is that both understand goals as emergent from processes that are

not themselves goal directed. Russon complements DeLanda's ontology insofar as he

concentrates explicitly on the social processes from which explicitly ethical goals

emerge. On my reading, then, Russon can be seen as providing the ethical conclusions

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[14] E. O. Wilson, *Consiliance: The Unity of Knowledge* (New York, NY: Random House, 1998), 291.

[15] Noonan, *Materialist Ethics and Life-Value*, 21.

[16] John Russon, *Human Experience: Philosophy, Neurosis, and the Elements of Everyday Life* (Albany, NY: State University of New York Press, 2003). Russon's empirical observation of human experience is framed by continental European philosophy of the last 200 years, and Plato, see the introduction to *Human Experience*.

implied by but not developed by DeLanda's understanding of nature as spontaneously creative. I argue that because Russon offers a historical (dynamic-temporal) process to explain the emergence (development and maintenance) of human identity and larger social wholes, his conception of the good of human life completes DeLanda's ontology by supplying it with concepts to grasp the ethical level of human social reality.

This ethics is centered on an emergent *telos* and *goal* for human life, one that is compatible with an ever-changing fluid reality, and an ever-changing fluid human agency that is part of that reality. I use the term *telos*, even with its historical baggage—that of being an imposed reified ideal end—because I want to distinguish conscious human goals from those that, whether conscious or not, can be identified through observation, analysis, and simulation of human populations. To a degree this is what social science, theory, and philosophy tries to do, I merely encourage us to consider new insights, methods, and tools and use them to be less general, reifying, and dogmatic in our observation, analysis, and simulation of human populations. The fundamental goal of human life—experimentation within a context of mutual recognition—emerges from the process of human development qua human development, and not from any source outside of human history altogether.

At the same time, DeLanda's ontology helps us to see that the fact that this telos is emergent from human history does not mean that it is somehow not materially real. This telos is not only immanent to human development but immanent to the Universe as creative process. We are a development within and of the universe. However, as much as I want to extend this telos to the universe, I also want to extend reality beyond the Universe, and that telos to reality. The Universe is just the largest whole we are aware

we are part of. The Universe is not exhaustive of reality; reality is not 'univocal', that is,

in the sense of it not being a closed totality:

> Not an analogy of organs or homology of structures but a *univocity of material* with variable connections and positions (assemblages). Not organic function or structural function but machinic functioning ... Univocity is also the thought of the multiple *n* assemblages into which the material enters."[17]

Reality is multiplicity, it includes the space created by human minds and groups of

minds, it is the assemblage of all the possibility spaces of all the possible

combinations/interactions of the matter-energy-information-thought that *might be*

regardless of how much of it we are able to recognise and so be recognised by. The

Universe is only all that *is* for us at a given time. 'Reality' includes not only that which

is, but also that which is not noticed and that which might be created. Reality is thus

effectively infinite in its potential for creativity and variation, and we are part of and

agents of this creative variation. When the human social realm and what emerges there is

given equal material reality, not by reducing it but by including it, the sheer infinite

multiplicity and creativity of reality, from leptons to ideas, is appreciated. One is not

reduced to the other, each is equally real as what each really is.

From my perspective, unlike physicalism, which is wholly and fundamentally

non-teleological with its meaningless physical world, DeLanda's project is only non-

teleological with reference to a specific type of teleology. It is opposed to the teleology

of necessary progress toward imposed necessary ideal ends—ends taken to be

transcendent, pre-existing, essential, and/or eternal. Such teleology and the ontologies

entailed are incompatible with a reality of ubiquitous creativity driven by ubiquitous

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[17] Deleuze, "The Interpretation of Utterances." *Two Regimes of Madness: Text and Interviews 1975-1995*. 2006. Translation by Ames Hodges and Mike Taormina (New York: Semiotexte, 2006) 93.

difference.   If a telos is to be compatible with DeLanda's account of reality, it must

emerge from reality through real historical processes and not impose stasis on fluidity.

Teloi, like everything else, are emergent from a process that has a temporal dimension.

So, in other words, they are historical and contingent rather than metaphysically

necessary. 'Not metaphysically necessary' in this context means that a different goal

could have emerged, or not at all. It is the teleology of necessary progress toward

necessary (ahistorical) ends that is the problem, not ends, goals or teloi in themselves.

As I explain more fully the contingent teloi of our lives the links between

DeLanda's and Russon's approaches to emergence will become clear. I will demonstrate

that what Russon calls "the natural goal of our intersubjective life" and what I call an

emergent goal and telos, that is, the "human project of mutual, equal recognition"[18] is a

coherent normative completion of DeLanda's ontology. Russon is compatible as a

completion of DeLanda insofar as DeLanda can be used to support the emergent goal

drawn from Russon. I label the resulting philosophy neo-materialism. This is a label

DeLanda uses for his own philosophy on occasion. The *neo* is used to distinguish it from

previous materialisms that employed transcendent archetypes, like reified social classes

and historical stages that follow 'necessary' progressions by 'necessary' means, as in

calcified forms of 'orthodox' Marxism.

Learning *Contra* Arresting Development

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[18] Russon, *Human Experience*, 72.

Neo-materialism "eliminates … [the] immutable world of transcendent archetypes."[19] However well intentioned the aims behind the positing of those archetypes, or general categories, may be or have been they distort both the nature of historical development and human goals. Getting rid of transcendent essences is essential to the construction of an ethics of experimentation because, "[w]hen you invoke something transcendent you arrest movement ... instead of experimenting."[20] Transcendent ideas of this kind arrest development, learning, and growth. Once we have eliminated the transcendent ideas, thought can focus upon actual populations of humans behaving in particular ways, what they actually do, and what open spaces for novel forms of activity there are. We proceed from a dynamic reality to possibility rather than a stereotyped categorisation of reality to fixed hierarchies and settled ways of doing things.

However, I do not defend simple accumulation of experience through experimentation. Rather, I defend genuine engagement with what one can and does engage with. The good of life involves learning, growth, development, and self-transcendence, not simply random accumulation of experiences.[21] By engaging everything engaged in a reflective and critical way we can learn more and better deal with what we engage with, whether that engagement be intentional or unintentional. By having a sense of the resources available to us and the ways that matter-energy-information-thought can be affected, we can respond to the situations in which we find ourselves in ways that are novel, creative, and also instructive for others. The

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[19] DeLanda, *ISVP*, 88.

[20] Deleuze, *Negotiations*, 146.

[21] Self-transcendence is a term from Russon that will be fully articulated later, but essentially it captures difference driven development, and so emergence.

opportunities for such learning and creation are always instances where our bodies and

minds are connecting with different material process:

> New [knowledge and new] skills, in short, increase one's capacities to affect and be affected, or to put it differently, increase one's capacities to enter into novel assemblages, the assemblage that the human body forms with a bicycle, a piece of solid ground and a gravitational field, for example. Of course, the exercise of a new skill can soon become routine unless one continues to push the learning process in new directions. In addition, while rigid habits may be enough to associate linear causes and their constant effects, they are not enough to deal with nonlinear causes that demand more adaptive, flexible skills.[22]

Everything, including one's self, can be designed for redesign, or better, designed for

continuous redesign. Recycling becomes a ubiquitous process of continual upgrading:

cradle to cradle to cradle, as opposed to the currently prevalent cradle to dump. [23]

The understanding of reality as open dynamic process lays the ground work for a

socio-cultural space-time in which we do what we do because we can and want to, for its

own sake, for exploration; where we are no longer alienated from each other and the rest

of what surrounds—though there will always be a degree of alienation insofar as there

will always be some things at some scale beyond our experience, as well as some

assholes with whom conflict is inevitable. Dissolving all alienation is another way of

framing the ever distant horizon toward which we can consciously develop—a space-

time that can support most humans living a rich life of critical self-transformation. We

have an infinite distance to go. Each life is an experiment to learn from.

In order to understand these ethical conclusions, however, we need to first

examine in detail the ontological foundations that support them. The next chapter will

add detail to DeLanda's world view and so provide an ontological basis for the

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[22] DeLanda, *New Philosophy of Society*, 50-51.

[23] Recycling here refers to the products of our labours, but conceptually this statement also applies to human development (emergence) as learning/self-transcendence.

conception of social order that living a life of genuine experimentation and learning

requires.

CHAPTER II

WORLD VIEW

Introduction

This chapter is going to take a conceptual journey through DeLanda's ontology.
A large part will discuss what I take to be key concepts for understanding reality as
creative complexity driven by difference. The chapter will also discuss some of the
ways of thinking and ways of living founded on those ways of thinking that DeLanda and
Deleuze's ideas and concepts are alternatives to. These alternative ways of thinking are
part of preparing us to think about an immanent pattern of human development that does
not limit but encourages the sustainable development of open ended diversity of life-
activities. The chapter will be organised as a series of commentaries on the key terms of
DeLanda's ontology.

Scale

The ground affords the animal a solid surface only because relative to the speed or temporal scale... of the
animal, the ground changes too slowly. At geological time scales this piece of solid ground would indeed
be much more fluid.[24]

This quotation introduces us to the importance of the concept of scale in

DeLanda's world view. Central to the concept of scale is how the relationship between

parts and wholes is understood. One established position on part-whole relations is

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[24] DeLanda, *ISVP*, 97 *n*. 51

micro-reductionism. Examples of this are micro-economics, which reduces social wholes (e.g. a nation-state, friend group or social justice movement) to "mere aggregates of many rational decision makers", and micro-sociology, which reduces social wholes to aggregates of "many phenomenological experiences".[25] For DeLanda, this reductionism eliminates complexity and so is inadequate to the nature of reality. In its place he puts the idea of *emergent properties*.[26]

For DeLanda, micro-reductionism is blocked by the concept of emergent properties. Emergent properties are properties of a whole that are not present in its atomised parts. These properties are actualised as capacities that the parts on their own would lack, as a human neural network has the capacity for conscious thought that no neuron on its own has. These properties, like the wholes they uniquely identify, emerge from and are sustained by the interaction of parts at scales below the whole.

Another established position regarding part-whole relations is macro-reductionism. For macro-reductionists the whole totally determines its parts, or in other terms (*pace* some Marxists), the superstructure completely determines the substructure. For DeLanda:

> Blocking macro-reductionism demands ... the concept of *relations of exteriority* between parts. Unlike wholes in which "being part of this whole" is a defining characteristic of the parts, that is, wholes in which the parts cannot subsist independently of the relations they have with each other (relations of interiority) we need to conceive of emergent wholes in which the parts retain a relative autonomy, so that they can be detached from one whole and plugged into another one entering into new interactions.

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[25] Manuel DeLanda, *Deleuze History and Science*, (New York, NY: ATROPOS Press, 2010) 3. Hereafter *DHS*.

[26] Emergence, as one of the most important concepts of this thesis, will be explained throughout, specifically in Chapter III "EMERGENCE". For interest see: *Star Trek: The Next Generation*, "Emergence", Season 7, Episode 23, May 9, 1994.

> With [emergent properties and relations of exteriority] we can define social wholes, like interpersonal networks or institutional organisations, that cannot be reduced to the persons that compose them, and that ... do not reduce those persons to the whole, fusing them into a totality in which their individuality is lost.[27]

The rejection of micro and macro reductionism leads to DeLanda's ontology being *flat*.

By 'flat' I mean that the entities that populate reality are not hierarchised ontologically. Whether an entity is part or whole is relative to the scale being observed. In any case, neither is any less singular or unique, neither is subordinate to the other. To illustrate, consider a community (e.g. an ethnic community in a city) where we see that the emergent property of density (the degree of connection between its members) and the emergent "capacity to store reputations and enforce norms, are non-reducible ... [aspects] of the community as a whole, but [also] that neither involves thinking of it as a seamless totality in which the members' personal identity is [solely] created by the community".[28] People can and do relate to other communities and the people in them, and by choice or otherwise can and do join other communities, while communities themselves also have properties that interact with members' identities and the members as independent agents make decisions and take actions that affect the identity of the community.

Another articulation of this idea is that wholes exist *alongside* their parts, that is, that once a whole emerges it reacts back on its parts as a separate and equally individual singularity. In *A Thousand Years of Nonlinear History* DeLanda calls the strong mutual

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[27] DeLanda, *DHS*, 3-4.

[28] DeLanda, *DHS*, 4.

interaction between individuals (part-wholes) *feedback*.[29] It is important to note that in

DeLanda's "extended sense the term 'individual' has no preferential affinity for a

particular scale (persons or organisms) and refers to any entity that is singular and

unique".[30] As he says, there is no "ontological distinction between levels of existence

(such as genus, species, organism) here all entities must be thought of as existing at the

same ontological level differing only in scale".[31] That entities differ only in scale means

that the properties of a "whole are not transcendent (existing on a supplementary

dimension above its parts) but immanent" to its parts and their interactions. It also means

that wholes, such as "communities ... are as historically individuated as the persons that

compose them."[32] All individuals at all scales are equally contingent, they are all only

necessary and identifiable with reference to their history (their process of their

emergence) and they as they are as emergent from said process.

Contingency and Necessity

DeLanda's concept of scale demonstrates how all realities are singularities that

interact with other singularities in definite processes. The emergent properties and

patterns that these interactions generate are unpredictable. Hence considerations of scale

lead us to considerations of the meaning of contingency and necessity in DeLanda's

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[29] Manuel DeLanda, *A Thousand Years of Nonlinear History* (New York, NY: Zone Books, MIT Press, 1997). Hereafter *1000yrs*.

[30] DeLanda, *DHS*, 5

[31] DeLanda, *DHS*, 5

[32] DeLanda, *DHS*, 5

ontology. We will explore this idea through an example drawn from individual life-

history.

How our lives go can be seen to be contingent with reference to the 'free' choices

we make within the range offered by the reified ideals of reality conceived as static. For

instance, some believe it necessary that I be educated, get a job, pay my taxes and raise a

family. However, the specifics of that education, what job I get and consequently how

much tax I pay as well as the size of and how I raise my family (all within a relatively

narrow range of tolerance) are matters of contingency, that is, dependent on the 'free'

choices 'I' make within static reality. [33] The reified ideal is pursued as necessary and the

real is what happens by chance or choice in pursuit of the ideal. What happens, the real,

is subordinate to the ideal. In actuality, I argue following DeLanda, the ideals or goals

that we have are immanent to and emerge from the life we actually live and as such are

contingent. There is very little, if anything, that is necessary anymore than insofar as it

has happened. Necessity is what is real as the result of what has happened, not as having

been programmed by an ideal. Nor is necessity to be conflated with probability founded

on experience, no matter how likely.

Like the path that water cuts on its way to the ocean, the path of human

development is contingent and only necessary after the fact, and then not permanently so.

In the case of water, given the specific mixture of rock and soil over which it must flow,

the intensity and volume of its flow, meteorological influences, and geological events, the

path that it takes is the only path it could have taken; the path it did take given reality.

All that is necessary is what has happened, and only insofar as it has happened.

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[33] Tolerance is not genuine engagement or recognition. Tolerance here is merely 'putting up with'.

Human beings across recorded history have always found, and continue to find regularities that become part of our collection of predictables. These regularities or stabilities, however, are only such relative to the range of spatio-temporal scales we manage to experience. In other words, at some scale they are contingent.

How we view necessity and contingency thus depends upon the scale at which we examine things. One can begin at the 'top' with a whole, break it into its parts, and try to make those parts add up to the whole, or one can begin at a 'lower' level with the interaction of parts and look at how a whole emerges from those interactions. What looks contingent when we look at things from below can appear necessary when we look at things from above. Hence the next crucial concept is bottom-up and top-down methodologies.

Bottom-up and Top-down

Bottom-up synthesis allows us to see how things emerge; it allows us to see the feedback between things that catalyses development (emergence). The components distinguished and enumerated by top-down analysis can be used to run synthetic bottom-up simulations, which are the only way we can adequately try to understand reality and its complexity. The goal is not just to describe regularities, but to explain their emergence and so have a more detailed understanding. Think of the degree of detail, complexity, in current Solar System models that provide us predictions through running as computer simulations. Compare that to earlier models/simulations of the Solar System as concentric circles or wandering gods. As DeLanda says:

…emergent (or "synergistic") properties belong to the interactions between parts, so it follows that a top-down analytical approach that begins with the whole and dissects it into its constituent parts (an ecosystem into species, a society into institutions), is bound to miss precisely those properties. In other words, analysing a whole into parts and then attempting to model it by adding up the components will fail to capture any property that emerged from complex interactions, since the effect of the latter may be multiplicative (e.g., mutual enhancement) and not just additive. Of course, analytical tools cannot simply be dismissed due to this inherent limitation. Rather, a top-down approach to the study of complex entities needs to be *complemented* with a bottom-up approach: analysis needs to go hand in hand with synthesis.[34]

A bottom-up approach begins with the constituent (smaller spatio-temporal scale) components of the object of study and proceeds up to the object. In ecology we now look at complex interacting populations, rather than relatively simple food chains or hierarchies. If a city is to be studied one would begin with a selection of parts considered important (humans, animals, buildings, infrastructure, businesses, institutions, organisations, communities), assess their degrees of freedom (what they can do), examine the feedback between them and see how the social and physical entity 'city' emerges from and is sustained by that feedback. We could then continue up and look at the feedback between the city and other cities and between cities and larger entities of which they are parts e.g., nation-states. A bottom-up approach

preserves 'methodological individualism' (appropriate to a bottom-up perspective) but rejects the idea that individuals make decision solely according to self-interested (maximising) calculations, and instead models individuals as rule followers subject to different types of normative and institutional constraints that apply collectively.[35]

A bottom-up approach also

Reject[s] the methodological holism of sociology but preserves what we may call its 'ontological holism,' that is the idea that even though collective institutions emerge out of the interactions among individuals, once they have formed they take on 'a life of their own' (i.e., they are not just reified entities) and affect individual action in many different ways.[36]

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[34] DeLanda, *1000 yrs*, 17-18.

[35] DeLanda, *1000 yrs*, 19.

[36] DeLanda, *1000 yrs*, 19.

Real historical processes, like those that build and erode mountains and those that discourage and encourage human development, can, to a greater and greater extent, be observed using the complex bottom-up simulations that have been made possible by computers. Classic analytical tools (linear equations, for example) do not work for nonlinear problems. However, bottom-up computer simulations do.[37]

A top-down linear approach begins with a postulated ideal, something reified or static, enumerates the components that precede the ideal, and then compares something real to the ideal and its list of parts, finding that something's degree of deviance. This type of approach is "always carried out with reference to something that's supposed to be missing."[38] On the other hand, a bottom-up approach would, for instance, begin with the components of an actual essay, look at how they interact, and see if and how a whole essay emerges from those interactions. In this way it becomes clear how what emerges does so, but in a way that remains open to other interpretations.

Arguably, everything we do entails an ideal or goal, or is driven by one. The problem emerges when people do not recognise that goals, like everything else, emerged from a contingent historical process. There are no goals, ends or imperatives that are necessary in the 'natural' or 'divine' sense, that is, that transcend or pre-exist history, as was generally thought to be necessary in classical metaphysics. We can always reassess and alter our goals, as well as our necessary presuppositions, like the presupposition that

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[37] See the introduction to DeLanda, *1000yrs*, Manuel DeLanda, *War in the Age of Intelligent Machines* (New York, NY: Zone Books, MIT press, 1991), hereafter *WAR*, and most recently, specifically and completely, Manuel DeLanda, *Philosophy and Simulation: The Emergence of Synthetic Reason* (New York, NY: Continuum, 2011). Hereafter *Philosophy & Simulation.*

[38] Deleuze, *Negotiations*, 146.

language is everything or the presupposition of a material reality. Effectively, everything

is always already a process, and "processes are becomings, and aren't to be judged by

some final result but by the way they precede and their power to continue..."[39] All we

can really know about real things is the real interactions (processes) from which the

unique properties, capacities, and tendencies that identify things emerge. To understand

things we need to look at the nonlinear dynamics that create and sustain them.

Nonlinear

As we have seen, according to DeLanda, reality is flows of matter-energy-

information from which entities, existing at varying spatio-temporal scales, emerge as the

products of concrete historical processes: reality is fluid, creative, and nonlinear. As he

writes:

> In a very real sense, reality is ... matter-energy undergoing phase transitions of various kinds, with each new layer of accumulated "stuff" simply enriching the reservoir of nonlinear dynamics and nonlinear combinatorics available for the generation of novel structures and processes. Rocks and winds, germs and words, are all different manifestations of this dynamic material reality, or, in other words, they all represent the different ways in which this ... matter-energy[-information] expresses itself.[40]

This is not reductive because the human social realm of which words, thoughts, and ideas

are an equally real part is simply one of the ways material reality expresses itself. With

this in mind we can distinguish between linear and nonlinear historical accounts.

An historical account is linear when it sees history as a progression toward an

ideal end, be that end in the present, the past or the future, be it the end of history, be it

still progressing or be it regressing. In a linear account of history, the end (the ideal

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[39] Deleuze, *Negotiations*, 146.

[40] DeLanda, *1000yrs*, 21.

telos) is taken as the starting point, consequently what has come before is seen as inferior stages progressing toward that end, or regressing from it, as the case may be. Some might want to think of the movement of 'spirit toward the absolute' or 'society toward communism', or some religious population toward some ideal time/place. Progress (or regress) can only be conceived with reference to an ideal. This is a problem when that ideal is imposed as necessary/pre-existing/transcendent/eternal because in so being it is not true to reality.

For linearity, what succeeds is seen to leave behind and be unaffected by what has been succeeded. Some humans tend to see what is 'new' or 'now' as inherently better than what has come before. Whether they are conscious of it or not this belief is because 'now' is closer to their 'ideal end', or in other words, conscious of it or not, these humans structure and judge their reality according to an ahistorical ideal, for instance, the freedom fighters who crashed aeroplanes on September 11th 2001. Or someone who believes that 'negative' traits can be attributed to groups of people based on bodily pigmentation, proportion and configuration.

In *1000yrs* DeLanda gives us an account of history where there is no ideal telos, and development is animated by feedback. DeLanda:

…far from advancing in stages of increased perfection … successive emergences [are]… mere accumulations of different types of materials, accumulations in which each successive layer does not form a new world closed in on itself but, on the contrary, results in coexistences and interactions of different kinds… each new layer of accumulated "stuff" simply enrich[ing] the reservoir of nonlinear dynamics and nonlinear combinatorics available for the generation of novel structures and processes.[41] …each new human phase simply add[s] itself to the other ones, coexisting and interacting with them without leaving them in the past.[42]

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[41] DeLanda, *1000 yrs*, 21.

[42] DeLanda, *1000 yrs*, 16.

As an example of development through feedback, we can think of the way philosophical concepts are used in the works of individual philosophers, how they incorporate each other, interact with each other, distinguish themselves from each other again and again and in different ways through the work of other philosophers, unique conceptions emerging from the mix. Some of these others are seen by some to surpass what came before. But these works are then taken back by others to interact with their priors. We continue to read Plato, Aristotle, Kant, Hegel, and Marx. The history of philosophy can be viewed as a field of interacting ideas. Its story is one of the influences of these ideas, their interaction, and what emerged there from. Philosophy's history is not the story of ideas surpassing each other, it is the story of a growing field of interacting ideas.

DeLanda's thousand year history of the west is such a history. It tells the story of how matter-energy-information-thought has flowed and stabilised in real spaces over real durations of time. It neither merely describes what there has been nor deduces it as necessary from some transcendent ideal (or one being pursued by a great human); it tries to explain how things happen and what spaces for further activity there might be. Here is an example of DeLanda's nonlinear history:

> Cities began to change under the influence of these new nodes. New York and Chicago in particular experienced an intense electrification and metallisation, which resulted in the birth of the skyscraper, an original urban form unique to the United States, prior to World War II. The iron frame, which allowed masonry walls to be replaced with glass, had been pioneered in European cities such as London and Paris. But it was in America that this metallic endoskeleton evolved into the skyscraper. Electric motors in turn allowed elevators to transport people vertically through these huge towers. Chicago pioneered the use of steel and electricity in the construction industry, catalyzed by the great fire of 1871, which destroyed the city's commercial center literally cleared the way for innovative building techniques to be applied. By the 1890s, Chicago was the world capital of the skyscraper, with New York a close second. But its electricity and steel acted as centripetal forces, making possible the intense human and machine concentrations represented by the new megacities, the internal combustion engine and the automobile had a centrifugal effect, allowing people to move out of central cities into rapidly growing suburban areas.[43]

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[43] DeLanda, *1000 yrs*, 92

DeLanda describes some of what there is and how it came to be, how it had affect and was affected once actualised, without any reference to an ideal, a purpose, or a final cause, just difference, process, and change, material flows of humans, electricity, and metal. Nonlinear history does not see progress but does see "strong mutual interactions (or feedback)…between components."[44] DeLanda is promoting real historical processes over ideal historical progress. Each of the aspects of the social/geophysical structures described in the above quotation developed contingently, and each upon emerging interacted with what was already here, in all cases preparing the way for new developments; new coherent structures without a transcendent telos; in many ways without intentional human design, at least without a grand pre-existing plan, just a contingent assemblage of knowledge, matter, skills, and space.

In the introduction to *1000yrs* DeLanda offers the 'classical' (pre-nonlinear) theories of Thermodynamics and Evolution as examples of linearity in science. He does this to illustrate the way of thinking whose prioritisation is a problem. The 'classical' theories admitted only one possible historical outcome; "optimal design or optimal distribution of energy represented an end of history for these theories."[45] However, in the case of biology,

As [it] begins to include … nonlinear dynamical phenomena in its models—for example the mutual stimulation involved in the case of evolutionary "arms races" between predator and prey—the notion of a fittest design loses its meaning.[46]

So without historically necessary outcomes how do we think about reality, about how it moves, and how it changes? DeLanda highlights three ways of thinking, or explanatory

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[44] DeLanda, *1000 yrs*, 14.

[45] DeLanda, *1000 yrs*, 13-14.

[46] DeLanda, *1000 yrs*, 14.

strategies. 1. From, among others, chemistry and contemporary thermodynamics DeLanda draws *intensive thinking* (*gradients* /productive difference/dynamic tension animating processes, and *bifurcation*). [47]   In general terms, intensive thinking is thinking about things being animated by differences, like the difference between hot and cold air animating convection currents. It also gives us bifurcation, which essentially captures that at critical thresholds matter-energy-information-thought can abruptly jump from one relatively stable state to another, for instance, water to ice. These thresholds, or better, what emerges from the process of emerging from crossing one of these thresholds are infinitely sensitive to the conditions at a critical point in the crossing. Infinitesimal differences in conditions can have a large impact on outcomes, making perfect prediction effectively impossible. The concept of bifurcation further weakens the idea that we can say anything necessarily about the future, though we can with ever more detailed and complex simulations make very probable claims (barring a bifurcation).

2. In addition to intensive thinking he takes the idea of *population thinking* from evolutionary biology and mathematics. Population thinking entails the idea of adaptive

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[47] More will be said about and by using these concepts, but for now an orienting quote from DeLanda:

> Deleuze replaces the false genesis implied by ... pre-existing forms which remain *the same* for all time, with a theory of morphogenesis based on the notion of *the different*. He conceives difference not negatively, as lack of resemblance, but positively or productively, as that which drives a dynamical process. The best examples are *intensive differences*, the differences in temperature, pressure, speed, and chemical concentration, which are key to the scientific explanation of the genesis of the form of inorganic crystals, or of the forms of organic plants and animals. (DeLanda, *ISVP*, 5-6) Gradient is a compact term for "the capacity of intensive differences to act as energy storage devices" (DeLanda, *Philosophy & Simulation*, 9).

I consider dynamic tension to be an analogous concept in Russon.

Bifurcation will be discussed further in a later section.

change through the sorting of variably replicating populations, which entails the idea that

everything at all scales exists in populations.

3. From topology he takes 'topological thinking' which entails non-metric (so

beyond our direct experience) spaces of possibility where we can view immanent patterns

of becoming. These spaces have as many dimensions as the things being studied have

important degrees of freedom. From here we also get the idea that things can be grouped

in highly variable populations based on invariance over a specific range of

transformations.

John Protevi summarises the key ideas discussed thus far very clearly:

All of ... [this] depends on accepting the strong case put forth [by DeLanda] in *ISVP* that Deleuze's project in *Difference and Repetition*[48] and *The Logic of Sense*[49] - continued in the collaborative works with Guattari - establishes the ontology of a world able to yield the results forthcoming in complexity theory. ... complexity theory models material systems using the techniques of nonlinear dynamics, which, by means of showing the topological features of manifolds (the distribution of 'singularities') affecting a series of trajectories in a phase space, reveals the patterns (shown by 'attractors' in the models), thresholds ('bifurcators' in the models), and the necessary intensity of triggers (events that move systems to a threshold activating a pattern) of these systems. By showing the spontaneous appearance of indicators of patterns and thresholds in the models of the behaviour of complex systems, complexity theory enables us to think material systems in terms of their powers of immanent self-organisation.

There are four main benefits here. (1) The first is the critique of hylomorphism, that is, the notion that matter is chaotic or passive and so in need of rescue (by means of the laws of God, or a transcendental subject, or the scientific project) to provide it with order or novelty. (2) We can thus avoid the issue of reduction to physics, the science whose laws predict the behaviour of 'matter' at its simplest. (3) Furthermore, by modeling the negative and positive feedback mechanisms characteristic of complex systems, complexity theory thereby enables us to ground the concept of emergence in the effects of such mechanisms.[50] (4) And as a last benefit, complexity theory enables us to dispense with the false problem of 'downward causation' by

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[48] Gilles Deleuze. *Difference and Repetition*. 1968. Translated by Paul Patton. (New York: Columbia University Press, 1994). Hereafter *D&R*.

[49] Gilles Deleuze. *The Logic of Sense*. 1969. Translated by Mark Lester with Charles Stivale, ed. Constantin V. Boundas. (New York: Columbia University Press, 1990).

[50] Silberstein & McGeever, *SOE*, 197. Here cited by Protevi.

showing that the constraints of a pattern, described by an attractor, are not a case of efficient causality, but instead need to be thought of as a 'quasi-cause'.[51]

For DeLanda, Deleuze's singularity and importance lies in making these three ways of thinking interact. Something he first did explicitly in *D&R*. These sciences and mathematics of complexity and chaos have shown us that equilibrium and predictable linear causality are special ideal cases and that most of reality most of the time operates far from equilibrium and, and so as a nonlinear system.[52] For DeLanda one of the outcomes has been an epistemological shift, that is, a shift in explanatory strategies or how problems and solutions are understood.

Well-Posed Problems

Linear analysis seeks solutions that permanently solve problems, but this limits us to problems of a specific kind, generally unremarkable, uninteresting, and unimportant ones. Where nonlinear synthesis deals with "…well-posed problems… [that] do not disappear behind their solutions, just like virtual multiplicities [universal singularities] do not disappear behind actualised individuals."[53] Although DeLanda does not remark upon

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[51] John Protevi, "Deleuze, Guattari, and Emergence," *Paragraph: A Journal of Modern Critical Theory*, 29.2 (July 2006): pp. 19-39, p. 19-20 (hereafter *DGE*).

See also DeLanda, *ISVP,* 80, 110, 126, where quasi-causes are discussed and said to replace final causes.

[52] A … distinction: complexity theory is not chaos theory. Chaos theory treats the growth of unpredictable behaviour from simple rules in deterministic nonlinear dynamical systems, while complexity theory treats the emergence of relatively simple functional structures from complex interchanges of the component parts of a system. (Protevi, *DGE*, 21)

Another distinction is that chaos, in its contemporary technical sense, is not randomness, it has a complex fractal order.

[53] DeLanda, *ISVP*, 135. Further DeLanda:

the connection, it is clear that ethics is a field that can benefit from his idea of posing

problems in a way that allows for unanticipated, creative solutions. I will return to this

point below.

Posing problems well is about picking remarkable, interesting, and important

problems for which the solutions have not already been decided in advance. Speaking of

scientific experiments, DeLanda writes:

> [Scientific experiment is now about] the distribution of the important and the unimportant defining an experimental problem (what degrees of freedom matter, what disturbances do not make a difference) [which] are not grasped at a glance the way one is supposed to grasp an essence (or a clear and distinct idea), but slowly brought to light as the assemblage stabilises itself through the mutual accommodation of its heterogeneous components.[54]

DeLanda gets around the whole reductionism question by "proposing a Deleuzean

epistemology that redefines science from the search for laws in nature to the search for

topological regularities in scientific fields, or as he puts it, the distribution of singular and

ordinary points in a problem."[55] These regularities, remember, do not limit the field of

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As I discussed in Chapter 4, problems are not reducible to their solutions but rather are defined by their conditions: a given distribution of the singular and the ordinary, the important and the unimportant. As such, problems are inherently "obscure yet distinct" and only acquire clarity in the process which progressively specifies each of their solutions (DeLanda, *ISVP*, 220).

... I used as a guiding constraint the avoidance of the categories of typological thought: resemblance, identity, analogy and contradiction. But I could have as well said that what guides this construction is the avoidance of the image of thought implied by these categories: "a natural capacity for thought endowed with a capacity for truth or an affinity with the true ..." [Deleuze, *D&R*, 131]. This image ... has the result of turning the plane of immanence [the virtual space created by the presuppositions entailed by one's concepts] into a plane of transcendence. Or ... to trap philosophy within the plane of reference, linking it to linguistic propositions which are either true of or false of their referents. This manoeuvre ... closes the road to the virtual or the problematic. [However] if ... the image of thought leads to a plane of immanence, then philosophy "does not consist in knowing and it is not inspired by truth. Rather it is categories like Interesting, Remarkable, or Important that determine success or failure" [Gilles Deleuze and Félix Guattari. *What Is Philosophy*. 1991. Translated by Hugh Tomlinson, and Graham Burchell. (New York, NY: Columbia University Press, 1994), 82. (hereafter *WIP*)]. (DeLanda, *ISVP*, 221)

[54]DeLanda, *ISVP*, 177.

[55] Protevi, *DGE*, 38 *n*. 6.

possibility in any absolute or deterministic way, but instead are the ground from which

novelty emerges.

The same can be said about the problems of living and building the human world.

Skyscrapers and cars, to return to the examples above, emerged as solutions to the 'well-

posed problem' of urban life in a specific space-time, but far from permanently solving

the problem they drove the development of novel formulations of the well-posed problem

of life and the development of further novel solutions and formulations. Cars and

skyscrapers emerged from the interaction of people, networks, organisations,

corporations and many other things and they each, once born, brought people and other

intensive flows together in novels ways. Unanticipated new problems and unanticipated

new goals emerged. Out of those novel combinations came other novel emergences, like

the interstate system and the elevator, and new goals like hitchhiking and elevator sex,

and so other novel combinations and still more emergences, intensities change and

bifurcations are crossed, *ad infinitum*. Deleuze concludes: "That's what it's like on the

plane of immanence: multiplicities fill it, singularities connect with one another,

processes or becomings unfold, intensities rise and fall."[56]

Well-posed problems thus enable people to discover regularities and patterns, but

equally to respond to these regularities and patterns creatively. Well-posed problems are

part and parcel of DeLanda's overall ontology. Here again we see the importance of a

definite perspective on the structure and dynamics of the natural world for our

understanding of the social world, and ultimately of the ethical principles that can best

govern individual experiments in living within it. Alternative worldviews, either idealist

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[56] Deleuze, *Negotiations*, 146-7.

or physicalist, run the risk of dogmatism. I will examine the problem of dogmatism in

linear thinking in the next section.

The Dogmatic Image of Dichotomous Linear Thinking

Todd may, commenting on Deleuze, says of the nature of dogmatism:

What is the dogmatic image of thought?[57] It is not the possession of a few philosophers, ensconced in their offices, alone with their ideas. Nor is it a treatise to be found in a dusty library, an arcane or secret program that has been passed down to generations in some sort of intellectual conspiracy. The dogmatic image of thought is ours. It is our template for conceiving the world.[58] The dogmatic image of thought perceives a universe composed solely of physical entities in more or less predictable relationships with one another, a humanity characterised by narrow norms of behaviour, a realm of entities rigidly demarcated from one another: these are worlds that constrict rather than widen the question of how one might live.[59]

The dogmatic image of thought is our habitual way of thinking; it is what we imagine

thinking to be, reified as what it necessarily is to think; it is the form of thinking, which

has contingently emerged, that has come to be taken as what it necessarily is to think.

One can also call Deleuze's dogmatic image of thought dichotomous thinking or linear-

static thinking.

Elizabeth Grosz, articulating the Derridian concept of dichotomous thinking, says:

Dichotomous thinking necessarily hierarchizes and ranks the two polarized terms so that one becomes the privileged term and the other its suppressed, subordinated, negative counterpart.[60] The subordinated term is merely the negation the denial, the absence or privation of the primary term, its fall from grace; the primary term defines itself by expelling its other and in this process establishes its own boundaries and borders to create an identity for itself.[61]

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[57] For more detail see, Chapter 3 of *D&R*, and Chapter 2 of *W IP*.

[58] Todd May, *Gilles Deleuze: An Introduction* (New York, NY: Cambridge University

Press, 2005), 74.

[59] May, *Gilles Deleuze*, 17.

[60] Here Elizabeth Grosz cites Jacque Derrida simply by name.

[61] Elizabeth Grosz, *Volatile Bodies: Toward A Corporeal Feminism* (Bloomington: Indiana

University Press, 1994), 3.

I hold that the fundamental dichotomy of the dogmatic image of thought is the ideal/real dichotomy, where the ideal is the primary term of the dichotomy and the real is the secondary or subordinate term. An important, problematic, ontological ideal that gets plugged into our ideal/real dichotomous template is the static linear nature of the world. This structure of thought precludes grasping the real's nonlinear fluidity. A crucial task for my argument is to show the inadequacy of this ideal. DeLanda's nonlinear history, as explored in *1000yrs*, and his realist assemblage theory approach to social ontology in *A New Philosophy of Society* provide the basis for this argument. [62]

Under the dogmatic image of thought we conceive the world on the basis of pre-given ideals, which unduly limits the field of reality to that which accords with the ideal. Real possibilities which do not conform to the ideal are excluded, impeding our ability to experiment and create. Seeing the world as static leads us to look for necessary ideals towards which we must progress. If the world and humans are necessarily always already a certain way there must be one best and right way for humans to live. However, in reality the world and humans are not always already a certain way, and so there is no one best and right way to live, where 'best' means 'conformity to an abstract ideal'. In a creative reality, the best way to live is creatively, as I will explain more fully in the final chapter.[63] Belief in such ways has led to events like the holocaust and the Rwandan

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[62] Manuel DeLanda, *A New Philosophy of Society: Assemblage theory and Social Complexity* (New York, NY: Continuum, 2006). Hereafter *New Philosophy of Society*.

[63] I am not arguing for a pluralistic free for all, however wide the parameters may be the space of possible lives is parameterised. However multiple the realisations there is an immanent pattern that is

genocides, as those who do not conform to the ideal are liquidated because they do not (cannot) conform.

DeLanda's ontology and its nonlinear bottom-up approach dissolve the ideal/real dichotomy by establishing fluidity (nonlinearity) and feedback (complex mutual interaction) within and across scales. While DeLanda does not explicitly draw ethical conclusions, his critique of dogmatically linear thinking prepares the ground for my ethics of experimentation. It does so by undercutting the ontological grounds for regulatory ideals that would dogmatically prescribe one way of being as ultimately best. It does not tell us how we *should* live, but opens the problem of how one *might* live. Note that the question is formulated as 'how *one* might live' rather than how *we* might live. 'One' can be a person but can also be a species, a city, a planet, a rock, an atom, or a word. Things like atoms, rocks, and words are what Deleuze would call *nonorganic life*. These things, although neither organic nor biological, are on the same ontological plane as everything else insofar as all is creative complexity driven by difference. They, like organic life, live in variably replicative populations, are sorted, emerge, and are sustained, by processes of interaction animated by difference. They too interact and give birth to things beyond themselves. It is this immanent life (creativity) that replaces transcendent causes like essences or god. If matter did not do this on its own we would not be here to pose the problem. While it does not make sense to ask of an atom how it might live in the same way one might ask a human, it does make sense to ask what any individual atom might become. The answer is that it might become any number of things

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supportive of the best for most. The parameters are determined by the broadest, least actually determining, material (physical and social) human life requirements.

depending upon the assemblages it is capable of forming with other atoms. Nature is creative, in other words, and we can learn from this creativity.

Thus, when faced with the question of how we *should* live our genuine development, one of critical self-transformation toward a greater degree of mutual equal recognition (self-identity, authenticity), is arrested. Simply put, this development is arrested because we cannot reconcile the discrepancy between our real lives (and what it might be) and the ideal life imposed as necessary. As a result some tend to just get through the day, in some cases with the promise of an ideal after life.

Repeatedly asking how we should live has produced a succession of ideals that appear to be progressive when they are analysed top-down with reference to the current ideal at the top, be it 'god', 'good', 'utopia', 'freedom', 'democracy', 'individuality', or 'success'. The point is not that these ideals in themselves are bad but rather that when what they are, how they manifest, how they are understood and enacted, is taken as necessary rather than contingent and malleable, that problems of limitation arise.

Similarly, today's choices of jeans, dish soap, window coverings and toothpaste, limit the idea of freedom to consumer choice. This freedom is just our *simple freedom* to choose, not *complex freedom* to choose what we choose. This simple freedom is not placed into a dichotomous hierarchy with complex freedom; the only aim is to give each their due, to prioritise neither over the other. Our current world seems to be a world where many do not take on the responsibility entailed in their freedom to choose. That is the responsibility to learn about reality so that better choices can be made, perpetually producing better choices to be made. Our complex freedom emerges from our simple freedom, but has emergent properties, capacities and tendencies of its own. From making

choices in the world emerges making choices that will affect the range of available choices. A loss of complex freedom is one way to articulate having our development arrested by false teleology and its ideals.

Marriage, for instance, is commonly held as an ideal human relationship, but in reality there are many types of marriages and relationships that are all, at least as, perhaps more, fulfilling and 'functional' than a given ideal form of marriage. There are also forms of relationship that exist in the virtual realm that might be actualised, but as long as we think with reference to an imposed ideal rather than the real and the goals that emerge from it, many of these other ways of (experiments in) relating will remain unactualised. [64]

Thinking with reference to a specific form of marriage as an ideal can lead a grandmother to feel bad for her content and developing granddaughter simply because she is not married and procreating. Simultaneously, it can take away from the granddaughter's contentment and the development of what she might be because she knows she is disappointing, saddening or worrying her grandmother. This ideal decreases the mutuality and equality of the recognition between them and the overall degree of it in each of their lives.

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[64] The virtual (to be discussed further in dedicated sections to follow) is drawn from the intensive, population, and topological thinking with previously discussed. In brief:

> … the virtual is the realm of patterns and thresholds, that is, those multiplicities, Ideas, or abstract machines that structure the intensive morphogenetic processes that produce actual systems and their behaviours. A behaviour pattern, or a threshold at which a behaviour pattern is triggered, needs to be ontologically distinguished (or 'modally' distinguished) from behavior … Thus patterns and thresholds are virtual, while behaviour is actual. An event, in creating new patterns and thresholds, restructures the virtual. (Protevi, *DGE*, 25)

As knew elements were born during the formation of the Universe virtual possibility spaces (phase spaces) were also born.

Those in relationships that differ from the imposed ideal are recognised by the others who dogmatically subscribe to the ideal, but only as degrees of deviance from the norm. Marriage and procreation can emerge purely as a feeling of obligation to others. This fact however, does not diminish the feeling that the obligation is a real demand. This demand is made by those whose recognition we require to confirm our own recognition of ourselves as a self-conscious human; we need what we are conscious of confirmed (the degree varies). Marriage, when it is the object of dichotomous thinking, becomes the pull of an ideal rather than something humans are immanently driven towards. Pull refers to that of an obligation, as distinct from the drive of immanent responsibilities and desires, things as much felt as reasoned to be what we want and need. What we are actually driven towards, what we actually recognise and how we want to be recognised are obscured by the reified ideal. As we can see, what matters from the DeLandian perspective is not conformity to an ideal, but the possibility of creating a stable assemblage (a freely negotiated relationship). Unlike in nature, however, where stability depends upon unconscious bonds, stability of social and individual experiments depends upon the recognition of others. The ethics of experimentation that I am building does not predicate recognition on conformity to an ideal, but simply on whether the experiment works for those directly involved in it as a possible way of being that does not impede any other person's way of being human.

When we judge with reference to an ideal, by contrast, deviation from that ideal to a degree beyond the range of tolerance appears to be a deviation from what it is to be human according to those doing the judging. May articulates this as follows:

> If homosexuality is abnormal, it is an abnormality that swallows up the rest of one's existence; every gesture, every emotion is reducible to the core fact of the homosexuality. That is why it

seems so important to intervene. What is at stake is not simply a deviant form of activity; it is a deviant form of life.[65]

The dogmatic image of thought and its prioritisation of linear top-down analyses with reference to imposed ideals encourage these non-mutual and non-equal forms of recognition and arrest genuine development.

In reality, treating experiments in living as deviations from an ideal tends to lead to reactionary or resentful responses or recognitions. Instead, we can recognise what happens just as something that happened as the result of a process. If we do or do not like a happening, then we can seek to understand its process so that we can encourage or discourage its happening accordingly.   If we do not like people flying aeroplanes into buildings then we can try to understand the conditions that support people choosing to do so and work toward changing those conditions. The same can be said regarding starving and diseased populations (from fungi to humans) around the world.

Let me take another example. It is not important that the Greeks invented western philosophy, it is important that it emerged from the interaction of humans in a situation. The crucial questions are: what are the processes of its emergence, maintenance and development, what are the interacting parts of the assemblage, what brought them together and what are the differences that sustain their interaction, and not, 'how did this assemblage follow from a pre-given regulatory ideal?'

 Genuine development, as has been indicated and as I will elaborate upon in the final chapter, is development toward a greater degree of mutual equal recognition for all, entailing a more experimental approach to goal-setting and living. So where might this abstract goal exist in DeLanda's reality, given that it does not contain a transcendent

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[65] May, *Gilles Deleuze*, 10.

realm? The short answer is the realm of immanent patterns of becoming, or the immanent patterns of the processes by which things emerge and that sustain them as actual entities, e.g. the metabolic circuits that sustain biological life. The next section will deal directly with this realm of patterns called the virtual.

The Virtual

For DeLanda, the general and the particular are replaced by the Deleuzean concepts *universal singular* and *individual singular*. This does not, for example, map onto the division species (general) and organism (particular). As we have seen both species and organism are on the same ontological plane; they are both historically actualised individual singularities. Individual entities or emergences are not identified as particular manifestations of general categories. They are the unique actualisations of concrete processes identified by their emergent properties, capacities, and tendencies, all of which are universal singularities that are shared by populations. They are points or areas in the phase space (possibility space) of a given population that the members of that population tend towards.

> A phase space is an imaginary space with as many dimensions as 'interesting' variables of a system; the choice of variables obviously depends on the interests of the modeller. The phase space model is constructed using a manifold, an n-dimensional mathematical object. The manifold qua phase space represents the range of behaviour open to the system: 'what a body can do'. [66]

These universal singularities are not causal essences or forms, i.e., not the essence of Raven which causes all Ravens to be Ravens as a more or less ideal manifestation of the essence. The patterns of the virtual are *quasi-causes*, that is, these patterns, whatever

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[66] Protevi, *DGE*, 21.

they are (our current list is short), occurring in the flows of matter-energy-information-thought, actualise what there is, but not resemble what there is, as emergent from them. Though short the list may be, it certainly, through multi-realisability, in a sense explains, a good bit of reality. The patterns of the virtual are quasi-causal insofar as they do not directly determine all the unique detailed features of a given actual thing. If they did there would be a completely unique pattern for each individual thing or kind, they would be essences. Instead, these patters define a space of possibility in which an unpredictable number of different concrete realisations emerge.

Universal singularities exist in the no less real realm of the virtual. Universal singularities can be thought of as diagrams (in the case of the non-biological) and body plans (in the case of the biological). They are also, importantly, a space of possibilities structured by certain parameters (degrees of freedom), thresholds of change (bifurcations), and identifiable patterns (attractors).[67] A possibility space, the parameters, the bifurcations and the attractors are each universal singularities and together a universal singularity, much like each human is an individual singularity and part of the individual singularities like friend groups and the human species. The parameters are the boundaries of the space and the attractors and bifurcations structure the space. Attractors and bifurcations manifest as the properties, capacities and tendencies, immanent to the interacting matter-energy-information-thought. They are actualised at certain intensities, always with a degree of variability, and so uniquely identify the actual individual singularities.

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[67] Attractors will be more fully explored in a dedicated section to come.

A relatively simple example of this, used by DeLanda, is that hurricanes, without

metaphor, embody or actualise the same diagram (universal singularity) as a steam motor.

They are both animated by the same gradients.[68]   They are both quasi-caused by a certain

pattern that is variably actualised given a range of certain materials at a certain range of

intensities. These real virtual patterns are emergent, that is, immanent to the interaction

of difference, and it is from them that the rich variety of actual reality emerges. His point

is to describe and explain the real processes from which what there is emerges, not just

establish that there are processes and then metaphorically apply a conceptualised process

to establish a logical model on which to found prescriptions for how we should live, or to

argue for the practical perpetuation of the same, or the realisation of the inevitable.

DeLanda's writes:

> When we say (as Marxists used to say) that "class struggle is the motor of history" we are using
> the word "motor" in a purely metaphorical sense. However, when we say that "a hurricane is a
> steam motor" we are not simply making a linguistic analogy; rather, we are saying that hurricanes
> embody the same diagram used by engineers to build steam motors—that is, we are saying that a
> hurricane, like a steam engine, contains a reservoir of heat, operates via thermal differences, and
> circulates energy and materials through a carnot cycle. (Of course, we may be wrong in ascribing
> this diagram to a hurricane, and further empirical research may reveal that hurricanes in fact
> operate in a different way, according to a different diagram.)[69]

Each hurricane is a unique actualisation of a universal singularity (a space of possibilities

structured by certain parameters, bifurcations, and attractors), one, as it currently appears

to our empirical understanding, that when diagramed has a significantly similarly

structured possibility space to that of the steam motors that humans have made. In the

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[68] Here is a list of gradients at different scales and within different assemblages: gradients of

energy, of matter, of information, of fitness, of gains from trade, of human or other resources, of

legitimacy, of subjective states, of solidarity, of status, to name a few of the effectively infinite gradients of

reality. See: DeLanda, *Philosophy & Simulation*.

[69] DeLanda, *1000yrs*, 58-59

same way, each human is a unique actualisation of an equally unique body plan (universal singularity), one that is shared by many actual individuals that to varying degrees share properties, capacities and tendencies. Although given the individuals and intensities that surround a given individual, which of each of these are actualised in what combination can and does vary widely (another scale of variation) even within reproductively isolated species. How actual individuals are grouped depends on which ones of each of these three are selected as relevant to the study being undertaken.

For instance, a whale, a human and a bird are but very few of those that can be considered to actualise the body plan that is called chordata. A significant amount of the biological life on Earth is a topological transformation of this body plan. This body plan is the assemblage of the properties, capacities and tendencies of certain materials placed into certain interactions. Given this variety of actualisation, the virtual capacities of an individual singularity, and more so of a universal singularity, are effectively infinite (a parameterised infinity, given the matter-energy-information-thought involved and what is immanent to it), although temporally finite (at least for the foreseeable future), especially in the case of individual biological organisms. The parameters are not imposed on the matter involved; the matter involved entails its own parameters given what it is and what it can do in concert with what it interacts with.

As mentioned, the differences between actual entities that share a universal singularity are only topological transformations of that universal singularity. This one way to group entities, that is, to parameterise the space of possibilities with the 'laws' of topology, which is a geometry of non-metric n-dimensional shapes in non-metric n-dimensional spaces. From this view, the universal singularity is what remains unchanged

or invariant through transformations; through all its multiple-realisations. However these transformations are limited (the aforementioned 'laws') or there would be no way to group things. Topological transformations exclude cutting and gluing, they include stretching, compressing, and folding. The classic example is that, topologically, a donut and a coffee cup are the same shape, or share the same topological invariances; one can be transformed into the other without cutting or making new connections. Universal singularities are points of topological invariance shared by populations of actual entities. Between the shape that represents a whale and that which represents a human topologically, although very different will share points of invariance, these are the universal singularities shared by humans and whales. These bound a particular space or universal singularity, but the space of each is one in its own right made up of others that it shares with other species, those it shares only with its species, those only with its genetic and social lineages, and those unique to the individual. Things like the need for quality nourishment, shelter and clothing founded on, encouraged by, and satisfying of our need for each other socially, are the topological invariants of human life when viewed as material in phase space.

It will be asked, is this not the reintroduction of essences? In a sense yes, except these are not eternal, they are historically produced emergences which do not resemble the actual entities that actualise them. I do not know the exact history, for instance, of the 'torus' (one of the patterns [attractors] found to recur in phase space), but there is the history of the matter-energy-information-thought in the known Universe, and as new elements emerged and interacted in different ways, there would have been a moment when the torus pattern first emerged as actualised in certain material. Recall that these

virtual patterns are immanent to actual material; the virtual is not reducible to the actual, but it requires the actual. Also the torus pattern as something recognised by humans emerged in a specific space-time. Thus, the virtual is patterns that define a field of possibility in which real things emerge. At this point then, we must turn to the crucial discussion of the forces that drive interaction of elements, the patterns they give rise to, and thus the emergence of actual things.

The Intensive

The virtual is reality's immanent patterns of organisation; it is the ways that matter behaves when animated by intensive gradients, given what that matter actually is, in given real cases. Gradients are intensive differences in things like temperature, chemical concentration, and density. They animate the flows of matter-energy-information-thought out of which the entities that inhabit the reality we are aware of are assembled, given the parameters of the virtual that are immanent to those flows. In other words, "virtual multiplicities (viewed as self-posed ontological problems) depend on intensive assemblages like ecosystems to progressively give rise to ontological solutions," like orchids and wasps.[70] There are virtual problems in the human realm as well. For example, humans cohabitating generates virtual problems of relationship negotiation, but these problems are not instances of ideal types, but follow from the fact that human beings cohabitate.

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[70] DeLanda, *ISVP*, 177.

The intensive is that which animates matter-energy-information-thought. There is an isomorphism between the patterns generated by systems animated by intensive differences and patterns produced in other complex systems. Isomorphism captures something similar to multi-realisability. For instance, there is isomorphism between patterns observable in things like the internet, computer simulations, human transportation, and the weather. Consider the chemical gradients that animate the development of ovum. DeLanda on embryogenesis:

> The egg … possesses an obscure yet distinct structure defined by zones of biochemical concentration and by polarities established by the asymmetrical position of the yolk (or nucleus). But even though it does possess the necessary biochemical materials and genetic information, these materials and information do not contain a clear and distinct blueprint of the final organism.[71] [But]… a gene encodes for a messenger RNA in nurse cells when translated form a protein and this protein forms a gradient in the egg, where the concentration dictates body regions, head, thorax and abdomen.[72]

Again, I want to stress the role of creative and unpredictable outcomes. There are only quasi-causal patterns, not absolute determination of outcome, whether in nature or society.

The intensive as animator or process and change is open to greater or lesser degrees of intentionality in the emergence of novel virtualities (problems), and thus also novel responses. This is significant for history and emergent goals because human social life, although it does generate its own directionality, is ultimately responsive to conscious decision-making. If it were not, ethics would be inconceivable, and therefore, so too my

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[71] DeLanda, *ISVP*, 16. See also, Vladimir Glisin, "Molecular Biology in Embryology. "The Sea Urchin Embryo", in *Self-Organizing Systems. The Emergence of Order*, ed. Eugene Yates (Plenum, New York 1987), 163, cited by DeLanda regarding this.

[72] Robert W. Korn. "The Emergence Principle in Biological Hierarchies." *Biology and Philosophy* 20 (2005): 137-151, pp. 140.

ethics of experimentation (conscious creation of new possibilities for living). Different

emergent goals are possible for us depending upon how we understand the natural and

social worlds of which we are a part. We can, as DeLanda does, look at the rise and fall

of particular populations in terms of things like the intensity of trade allowed by the

intensity of connection allowed by the intensity, frequency, and shape of air and sea

currents between particular locations and populations. Underlying material patterns

generate pressures and opportunities, but what actually happens depends also on the

choices people within these patterns make in response to these pressures. Reality, for

DeLanda, that which actually happens in any given context, is the outcome of the

interaction between the virtual and the intensive.

The Virtual The Intensive and The Actual: Reality

A bottom-up approach can show us "… *intensive processes which generate actual*

forms … [and that] *concrete mechanisms of immanence explain ... how the virtual is*

produced out of the actual."[73] These mechanisms are simply and amazingly what happens

when different things interact. As much as the virtual is the plans, the quasi-cause, for

what might be actual, the virtual is immanent to the actual; "echoing without resembling

each other".[74] DeLanda:

> ... in ... [this] ontology there exist two histories, one actual and one virtual, having complex
> interactions with one another. On one hand there is a historical series of actual events genetically
> involved in the production of other events, and on the other, an equally historical series of ideal

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[73] DeLanda, *ISVP*, 88.

[74] Deleuze, *D&R*, 189.

events defining an objective realm of virtual problems of which each actualised individual is but a specific solution.[75]

Human history encodes infinite possibilities for realisation; actual history is the path actually taken, the ethics of experimentation seeks out paths not taken but virtually present for actualisation of we so choose.

Let us take the example of this thesis. The interactions of me, my advisor, and many other things including flows of biomass, electricity, and language, actualised this thesis as symbols printed on paper and bound in pleather. The interaction of these actual things, the assemblage of their degrees of freedom, produced the space of possibilities within which the thesis emerged. The shape of that space, the trajectories of the things interacting in that space, and where and how those trajectories gather and stabilise is the virtual diagram of the thesis (though actually mapping a space this complex is currently still beyond our technical skill. These areas of gathering or stabilisation are the attractors of the space. Among others, these attractors are actualised in sleeping, eating, working, recreating, linguistic, seasonal, and social patterns. The space of the thesis, though perhaps less importantly, perhaps still interestingly, also has areas involving things like meteorological, climatic, and geological patterns.

One way attractors can be identified is by their temporal manifestation. They can be steady, periodic, or chaotic. Another way is identifying them in terms of flow. These flows can be laminar, wavy, or turbulent. Each of these has a basic form in topological phase space, a point, a circle, and a complex fractal shape, respectively.

Knowing about the above distinctions between different attractors adds detail to viewing things in terms of phase space. In the space of the thesis one could think about

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[75] DeLanda, *ISVP*, 188.

the different attractors for the different flows involved. Being aware of these universal but still singular patterns allows us a different way of understanding and perhaps controlling the patterns of our lives. Having this way of distinguishing things adds itself to our other ways, and can help us understand and so design the systems and outputs we do, in more detailed, controlled, and experimental ways. One might consider things quasi-caused by chaotic attractors interesting and important and so in the processes of writing something intentionally move their sleep cycle and other life patterns away from previously stable patterns. Or observing themselves they may notice that when in a processes of writing they tend to move away from regularity, and so, chose to take steps to maintain regularity. Attractors give us another way to think about these things. Thinking this way can help you to look at the real patterns in your life. How do you really spend your space-time? What really composes your space-times and in what ways? Be real about it. I argue that having the conditions to do so is a responsibility to do so and to help create the conditions for more to do so. This is a real pattern, we can encourage it.

However, to reiterate, these patterns, isomorphic across scales and realms, define general parameters but do not determine absolutely. Multi-realisability works ubiquitously; that things are multi-realisable supports these patterns being realised across scales and realms but also supports these realisations (actualisations) of the patterns themselves being *multi*. That there are shared quasi-causal patterns does limit what is actualised. Furthermore, that one pattern is being actualised at one moment does not preclude a shift to another pattern in a future moment. The significance of this point for social ontology and ethics should be apparent.

The move from one attractor to another can be within a type (one periodic to another) or from one type to another (steady to chaotic), they can go in any direction and lack perfect predictability due to infinite sensitivity to the infinitesimal at critical moments of transition. These transitions are the previously mentioned bifurcations where natural or social reality unfolds in one way rather than another. The next section will discuss them in more detail.

Bifurcation

Bottom-up approaches, like DeLanda's approach to history in *1000yrs*, along with the sciences that are integral to his view, show us that things are especially unpredictable at or around bifurcations. A bifurcation is the threshold (space-time, situation, degree of intensity) when and where something shifts from one relatively stable state to another, from one pattern to another, away from their current attractor to another; it is like a phase transition, for example freezing, or the onset of turbulence.

At all space-times, even highly controlled scientific experiments, there are factors not accounted for that lead to a novel and unexpected emergence. Away from or nowhere near a bifurcation any number of things may be added or taken away without consequence, but, at or near a bifurcation, a small variation can catalyse a completely different emergence than given some other variation, or the same variation at a slightly different space-time. For instance, someone having never encountered water would have no way of predicting that at certain temperature intensities H_2O shifts between gas, solid, and liquid, especially given the range of temperatures that are, for most humans, of no obvious consequence to water, ice, and steam. Having then encountered H_2O and its

bifurcations within a range of temperature intensities they would be able to predict the occurrence and outcome of its bifurcations (as see it as the same thing exiting differently). However, even in this relatively simple case the predictions can only have a degree of probability and accuracy since the exact conditions of and outcomes for these bifurcations are variable depending on, for instance, atmospheric pressure and dissolved substances in the water, but also the precision of the thermometer used. The first two are material factors affecting the change of state, the thermometer though not an important material factor (though its presence would absorb or add a portion of the energy affecting the H_2O) it is an important factor for the accuracy of human prediction. None of these things noticeably matter with reference to the state of the water until near or at the bifurcation, when a small variation in any of the important parameters has a marked effect on the occurrence and outcome of the bifurcation. This can be observed in the wide variety of precipitation that forms in Earth's turbulent atmosphere.

We can apply like reasoning to human history. Think of the whole of humanity as a material, a fluid, something with intensity and that is affected by intensities. As human population increases its own intensity increases, along with all the matter-energy-information-thought flows associated with humans i.e., genes, memes, minerals, electricity, water, oil, biomass, money, and so on. Who knows when a bifurcation might be crossed and what unanticipated possibilities for living might arise as a consequence. For instance—to speak in vary broad terms—an intensification of population density in Detroit followed by a sharp decrease, given innumerable other factors, including many fires, has ended up entailing an emerging population of urban farms and farmers. There came a time when this may have been predicted by somebody, but not too long ago

nobody would have predicted it, it was not part of the plan. There was no plan. Intensities changed, bifurcations were crossed, different attractors became actualised, and so Detroit has urban farms and farmers. Detroit, with its early mass deployment of the car, was also the birth place of the mall. We did not invent cars to get to the mall, nor were they conceived together as part of a grand plan. The point is to look at what really happened, what were the actual dynamics that led to the expansion of Detroit and then its loss of population. Did people leave because of crime, because they were encouraged to by marketing, because they wanted to, because they could, because they were racist, because of a loss of jobs? Why was there crime, why did marketing go the direction it did (and the answer is not simply money, we can look at actual studies and histories of actual marketing and formulate an amendable concrete answer), why did people want to, how were they able to, why and how racism (a relatively old and young question extensively answered, far from permanently solved), why less jobs, why 'jobs' at all? There is a multitude of factors at a multitude of scales.

Because of our immediate spatio-temporal scale we spend most of our time between bifurcations, or within ones that proceed just slowly enough for us to easily not notice. In an apparently stable world the deterministic laws of the current apparently static state of things tend to dominate. However, as discussed, at or around a bifurcation subtle "fluctuations and random elements play an important role."[76] The same small thing that happened without consequence a million space-times before can now affects characteristics of the state of things post-bifurcation. Some argue that this simply makes

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[76] Ilya Prigogine and Isabelle Stengers. *Order out of Chaos: Man's New Dialogue with Nature* (Boulder and London: New Science Library, 1984), 176.

it a technical problem of accounting for all factors, but given that the closer to the

bifurcation the smaller the fluctuation needs to be, it is a regress to the infinitely

infinitesimal. There will always be a scale smaller and bigger than we are able to

perceive that will affect the outcome of bifurcations. While this absence of perfect

knowledge of initial conditions rules out perfect prediction and control, it grounds the

possibility of exploration and experimentation across natural and social reality. This

possibility of novel experimentation has both an evolutionary significance for humanity

(without experiment and change we will certainly die), but more importantly an ethical

significance: it enables us to live freely and together in the context of mutual recognition

of new ideas for living.

However, as much as scale discloses unpredictability, entities at different scales

are emergent and so have properties, capacities, and tendencies independent from their

parts at other scales. It is this reality that has allowed us, at a given range of scales, to

predict certain things, to a degree, using the various methods and tools built up through

history. These methods and tools themselves are evolving spaces of possibility structured

by attractors and bifurcations. Attractors are the regularities that stabilise, temporarily, a

given system. The next section will discuss attractors in more detail.

Attractors

Mathematically, attractors are patterns or tendencies of a system as viewed 'in'

phase space, the areas surrounding them, the area within which trajectories are drawn into

its pattern, are called basins of attraction. The scare quotes on 'in' are a reminder that

phase space is an abstract mathematical construct to experiment with interactions and rates of change, it is non-metric, its shapes are not shapes, its spaces not space, it is n-dimensions of possibility, it is a realm of instantaneous values where the behavior of interacting components emerge as patterns and trajectories. John Protevi does some work similar to DeLanda's. Protevi's article, *DGE*, has been and will continue to be used as a means to further and alternatively define some of the aspects of the conception of reality and emergence being promoted by this thesis. Protevi writes the following concerning attractors, basins of attraction, and bifurcations:

> ... the areas of phase space surrounding attractors - representing normal behaviour of the system in one or another of its behaviour patterns - are called 'basins of attraction'. The behaviour patterns described by attractors are formed by the action of negative feedback mechanisms. The layout of attractors in the phase space, which describes the layout of the patterns of behaviour of the system, is defined by the layout of singularities, which are mathematical objects that define the topological structure of the manifold; a singularity is a point where the graph of the function changes direction … A singularity in the manifold indicates a bifurcator in the phase space model which in turn represents a threshold where the real system changes qualitatively … A singularity ... defines where attractors are found by indicating the limits of basins of attraction … In model terms, in zones of sensitivity or crisis situations we find fractal borders between basins of attraction, so that any move, no matter how small and in no matter what direction, might - or might not - trigger the move to another basin of attraction. Here we have an irreducible element of 'chance' even though the system is thoroughly deterministic.[77]

However, a point of clarification is necessary. The singularities described above are equated with bifurcations, which is how the term is employed by mathematicians. Deleuze took this term and widened from a mathematical object in phase space to capture reality (the multi-realisable virtual, and the individual actual) because it indicates remarkable points of interest and importance (like bifurcations). The "action of negative feedback mechanisms" in the above quotation is analogous to the feedback discussed earlier.

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[77] Protevi, *DGE*, 23.

Attractors function by drawing out a particular possibility virtual within a given material context to create an individual singularity. The number of parameters and attractors defines the degree of complexity of any system. A pendulum and a soap bubble are examples of single point or steady attractor phase spaces, coming to rest perpendicular to Earth and minimizing surface tension respectively. A more complex example would be the attractors that are common to the formation of all solid precipitation, that which, though each snowflake is a uniquely singular embodiment of it, remains common to all. Is it the water, the process of freezing or physical features of the speck of dust at its core that make each snow flake unique but identifiable? The answer is all of the above, and infinitely more, in combination; the formation of a snow flake is an example of nonlinear causality. It is the same component materials, the same process, the same diagram that is actualised each time, but each flake is a unique product. What emerges from the combination of the components and the different intensities that drive the process is an individual singularity with properties, capacities, and tendencies different than those of its parts. These emergent characteristics of the whole supersede those of the parts considered in abstraction.

Let me flesh this point out by returning to the example of this thesis. It as an actual thing actualises attractors (there are multiple and varied attractors given the complexity, that is, the number of things involved, and their number of degrees of freedom). As for the writer, as part of the process of actualising a thesis, his development is being animated by, among other things, his complex attraction (in some ways steady, periodic, and chaotic) to actualising his ideas as a defensible thesis. In the human intentional realm I equate goals and attractors. This equation anticipates adding a

normative emergent telos and goal to nonlinear material reality. At this point let me return to the example of the writer:

In the final semester of his BA the goal of his ideas being expressed as a major paper propelled him to attend writing workshops, to go to student services, then the 'special needs' department, which led to psychological testing which led to strategies and tools for completing essays (some of which were added to his existing process). His writing has always suffered an inability to reconcile what he actually wrote with the ideal image he had of an academic essay. Rather than just trying to say what he wanted to say using the materials available he struggled to make essays be like some vague notion of what an essay is supposed to be like. The focus was the ideal form rather than the real content, not that a 'form' is not important, but that it should emerge from what is trying to be said—also not that this thesis has actualised in such a form. Even when the essays were 'complete', i.e. handed in, he was alienated from them and the development that could have come from them was to a degree arrested; they could not be recognised as something with which he identified.

Faced with a reified ideal that the real tends to be irreconcilable with, people tend to give up or sabotage themselves by, for example, misusing durations of time; they are left to wallow in the devalued real whose development, along with their own as part of it, has been arrested. Had the goal of expressing his ideas in essay form not been there, and been strong enough, he would have given up out of frustration.

Another example is when the ideal telos of an impossible to attain body type leads people to devalue their real body and arrests the development of what it really (virtually and actually) might be. In some cases not only arresting development but

turning to even more explicit self-destruction. On the other hand the genuine (emergent, contingent) goal of health for a given body animates the development of what that body really might be. [78]

Though the writer's development and that of the essay were arrested to a degree, because the goal of expressing his ideas in essay form inhibited him, he was still driven to keep trying, to keep developing. How and why? Along with natural and more removed situational factors, an important factor was the encouraging support of other humans and social wholes. In other words, there was sufficient recognition of his value and the value of the project from others to sustain his efforts to the degree adequate for the project's completion. Equally he and the project were adequately recognisant of what needed to be to the degrees adequate to result in the completion of the project. All of which could have proceeded any number of other ways, but proceeded the way it did and has resulted in these words; strange, interesting, and important given the creativity of reality.

To sum up: I argue that there is an ethically important equation between attractors and goals. It is on this equation that I found the notion that DeLanda's reality has room for emergent teloi and goals. It is in the virtual realm of immanent patterns of becoming that one might find something like an emergent goal. An emergent goal that, given that there are better and worse experiments, answers, happenings, lifestyles and thoughts, does not lead us to reified social and political structures that limit the actualisation of human capacities and contentment. So while it is effectively infinitely

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[78] Much could be said about what is meant here by health or by health in general, a matter for another work.

open to difference, it is ethically not open to things that limit sustained human actualisation of physical, social, and mental capacities and contentment. I submit mutual equal recognition as a universal singularity (immanent pattern) that is actualised by the emergences that are better for the largest number of humans over the largest duration. A more detailed understanding of emergence would be beneficial if we are going to think about the emergence of goals within DeLanda's reality populated by equally real emergent assemblages. To recap some of what has been said about what it is to be an emergent assemblage. To be emergent entails having properties, capacities, and tendencies, not present in ones components, and so entails not be reducible to those parts. It entails there being no fundamental parts and no fundamental wholes, everything is equally a whole-part, considering something a part or a whole is relative to the scales being considered. The concept assemblage captures being a historical, emergent, whole-part, which equally entails being dependent on the interaction process of parts, which entails being open and changeable. Being open and change-able means that parts can come and go, assemblages can exchange parts, parts can birth new assemblages. All things, from rocks to thoughts, are equally but differently assemblages that emerge from and catalyse creative complexity driven by difference.

Emergent properties are what allow us to comprehend the development of qualitative differences within an exhaustive conception of the real as material. All things which are are assemblages of material elements, but they are not all reducible to the parts from which they develop. We need concepts appropriate to the qualitatively distinct assemblages that emerge: chemical, biological, social, ethical. The next chapter will examine the crucial concept of emergent properties in more detail, comparing DeLanda's

understanding with those of other important thinkers in the field.   These other

approaches will both supplement DeLanda, but also illustrate the greater overall

explanatory power of his approach for the purposes of this thesis. This chapter on

emergent properties will also serve as the hinge that takes us from the problem of

ontology generally to the problem of social order and individual experimentation with

which the thesis will conclude.

CHAPTER III

EMERGENCE

<u>Introduction</u>

As mentioned above, it is through emergence that the conceptual link is drawn

between DeLanda's neo-realist ontology and Russon's ethics of recognition. For both

thinkers emergence is part of a contingent reality pregnant with possibility. I will

highlight the features of DeLanda's account of emergence that makes it particularly

appropriate for my project by contrasting it with Michael Silberstein and John

McGeever's, Robert Korn's, John Protevi's, and Margret Archer's 'emergentist' thought.

Archer's work will be used to complete the bridge implied but not developed in

DeLanda's thought between general ontology human society, agency, and ethical

principles.

<u>DeLanda: Properties, Capacities, and Tendencies</u>

For DeLanda, the identities of concrete emergent wholes, those whose existence

can be known, are defined by their emergent properties, capacities and tendencies.[79]

These concrete emergent wholes are sustained by the interaction of wholes at other scales

(the parts of a given whole), wholes with their own properties, capacities, and tendencies

that emerge from the interaction of other wholes (their parts).   For example, as I

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[79] DeLanda, *Philosophy & Simulation*, 3.

discussed in the previous chapter, a species as much as an organism has a birthday (event of speciation) and potential death (event of extinction). DeLanda writes: "The human species exists 'alongside' the human organisms that compose it ... in an ontological plane populated only by historically individuated entities".[80] In addition to differing in scale, "the historically contingent identities of ... [individual entities are] defined by their emergent properties, capacities, and tendencies".[81] Properties, capacities, and tendencies are all emergent aspects of emergent individuals. I will use the example of a that DeLanda employs in the introduction to *Philosophy & Simulation*, to further explain these key points.

Properties of a whole are always actual. In the case of a knife the emergent property of sharpness (a triangular cross section which emerges from the interaction of metallic atoms in a particular way, a way whose process of emergence and maintenance includes humans) is always actual for a knife. Capacities of a whole may go un-actualised; the capacity of a knife to cut may never be actualised. Further, when a capacity is actualised it is not as a state, but as an event. In the case of the knife, the relevant event is cutting. Also, the event of a capacity being actualised "is always double: [in the case of a knife] to cut-to be cut." Something's capacity being actualised requires the existence of a situation that enables the exercise of that capacity. A knife needs cuttable things to exercise its capacity to cut. "Thus, while properties can be specified without reference to anything beyond themselves, capacities to affect must

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[80] DeLanda, *DHS*, 5-6

[81] DeLanda, *Philosophy & Simulation*, 3.

always be thought in relation to capacities to be affected."[82] It is worth noting that capacities can be relative to scale. Something that cannot be cut at one scale can be cut at another. For example, at the scale common to humans a knife has the capacity to cut flesh, while at the molecular scale a human scale knife might compress something, more likely just displace, but most likely do nothing at all. A knife can cut organs and organisms but not individual molecules.

While properties and capacities are distinct from each other, DeLanda also describes a complex symmetry between them. On the one hand, capacities depend on properties—to cut and to be cut depends on the property of sharpness. On the other hand, sharpness emerges from metallic atoms exercising their capacities to interact in certain ways and, to anticipate, manifesting their tendency toward solidity within certain intensive ranges. In other words, the relation of properties and capacities is relative to scale. At one scale, capacities depend on properties. However, when we view reality at multiple scales we see that the properties at one scale depend on the capacities of the parts at scales below.[83] A friend network and its properties depends on its members capacities, for example, to communicate and remember.

As for tendencies, these are things that manifest themselves relative to different intensities. For instance, the metal of a knife has the emergent property of solidity but at certain intensities of temperature it manifests its tendency to liquefy and at even greater intensities, to gasefy. At a certain intensity of conflict a given friend network will

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[82] *Philosophy & Simulation*, 3-4

[83] DeLanda, *Philosophy & Simulation*, 4

manifest a tendency to break apart. At a certain lack of intensity of contact between its members a tendency to dissolve.

Tendencies and capacities are ontologically similar insofar as they are both real but can go unactualised. When they are actualised, they are actualised as events. The main difference is that tendencies are typically finite while capacities are not because of their correlation with the capacities to be affected of countless other things.[84] "Capacities involve a much larger set of possibilities than tendencies because entities can exercise their capacities in interaction with a potentially innumerable variety of other entities."[85] The more complex an entity is, the greater the number of tendencies it has. For example, a human friend network has a much greater variety of possible tendencies than a sharpened piece of metal. Recall that more complexity is the same thing as more highly organised. A fluid body of mixed temperatures is more complex, than one of uniform temperature, insofar as there are the patterns that emerge from the interaction of the different temperature intensities. By the same description the mixed body is more highly organised insofar as there is coherent organised movement of its constituent parts. This is a way of conceptualising how more complexity is not merely a quantitative but also and importantly qualitative. A shift to more complexity, like the shift from atom to molecule, to human, is by some measures a quantitative shift up in the degree of complexity and organisation from the parts which precede, but it is also a qualitative shift in complexity and organisation and importantly in the creative freedom that can be

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[84] DeLanda, *Philosophy & Simulation*, 4-5.

[85] DeLanda, *Philosophy & Simulation*, 20.

enabled in dealing with the situations of life at these scales of greater creative complexity

driven by difference.

Before moving forward, let me reiterate some key elements of the idea of

emergence. Emergent properties are animated by the interaction of differences.

Emergent wholes are objectively irreducible to their constituent parts. Finally, they are

not closed totalities but individual entities capable of novel activity. Especially significant

are those emergent properties associated with life. As DeLanda argues "... it is hard to

see how we could specify mechanisms of emergence for life or mind in general, as

opposed to accounting for the emergent properties and capacities of concrete wholes like

a metabolic circuit, an assembly of neurons,"[86] or the 2012 philosophy department at the

University of Windsor.

The next section will continue the process of detailing DeLanda's conception of

emergence and supporting its use for this thesis. Specifically, the distinction Silberstein

and McGeever make between epistemological and ontological emergence will be

discussed in relation to my reading of DeLanda.

Silberstein and McGeever[87]

I begin with a quotation from Silberstein & McGeever:

... [We] distinguish *epistemological emergence*, where emergence is merely an artefact of a particular model or formalism generated by macroscopic analysis, functional description or some other kind of 'higher-level' description or explanation, from cases that potentially involve *ontological emergence*. By this we mean features of systems or wholes that possess causal capacities not reducible to any of the intrinsic causal capacities of the parts nor to any of the

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[86] DeLanda, *Philosophy & Simulation*, 3.

[87] Hereafter Silberstein & McGeever.

(reducible) relations between the parts. Emergent properties are properties of a system taken as a whole which exert a causal influence on the parts of the system consistent with, but distinct from, the causal capacities of the parts themselves. Ontological emergence therefore entails the failure of part—whole reductionism.... Part—whole reductionism says that all wholes are completely reducible to their most basic parts (entities without parts). There are two ways of cashing this. The first, as in Scharf, is as follows: "a whole is explained by being shown to be nothing but the parts, inter-related in a certain manner ... micro-reduction requires that compound elements (objects composed of parts) and their properties be explainable in terms of their parts and their inter-relations".[88] Kim[89], on the other hand, puts the point thus: "wholes are completely determined, causally and ontologically, by their parts".[90]

We have here two more thinkers opposed to reductionism, but more than that we have a distinction not explicitly present in DeLanda, that between epistemological and ontological emergence. The value of their work is that they give us the term— ontological emergence—that we need to fully understand DeLanda's position, for it is clear that ontological emergence is what DeLanda is talking about. He would agree that "ontological emergence (the failure of part-whole reductionism) is the most interesting and important kind of emergence."[91] They also agree that emergence not only blocks philosophical essentialism and sociological micro-reductionism, but from science, "the very idea that the stuff at the bottom (whether it be fundamental laws or fundamental entities) provides the ultimate explanation for all phenomena."[92]

However, Silberstein & McGeever do have a problem with disciplines that look to "dynamical systems theory, with its characterisation of nonlinear systems ... [to] provide

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[88] A. Scharf, "Quantum Measurement and the Program for Unity of Science", *Philosophy of Science*, 60 (1989), pp. 601-23, at p. 602. Here cited in Silberstein & McGeever, *SOE*, 182 *n.* 1.

[89] J. Kim, "Supervenience and Nomological Incommensurables," *American Philosophical Quarterly*, 15 (1978), pp. 149-56, at p. 154. Here cited in Silberstein & McGeever, *SOE*, 182 *n.* 2.

[90] Silberstein & McGeever, *SOE,* 182-83.

[91] Silberstein & McGeever, *SOE*, 183.

[92] Silberstein & McGeever, *SOE*, 183.

support for the existence of some sort of emergence."[93] This approach is the one

DeLanda takes. Silberstein & McGeever's critique amounts to the claim that the users of

nonlinear dynamics tend towards epistemological emergence. Referring to cases where a

theorist simply points to nonlinear complexity and claims emergence i.e. that it only

appears emergent because we cannot otherwise explain it, yet.[94]

Below is a graphic summary of what Silberstein takes to be the main versions of

ontological and epistemological emergence.

Relata of emergence[95]

Real world items	**Representational items**
ONT-emergence between	EPIST-emergence between
• Parts/wholes	• Concepts
• Properties	• Theories
• Events/processes	• Models
• Causal capacities	• Frameworks
• Laws	• Laws
• Entities …	• States of a dynamical system…

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[93] Silberstein & McGeever, *SOE*, 184-85.

[94] Protevi, *DGE*, 27.

[95] Michael Silberstein, "Reduction, Emergence and Explanation," in *The Blackwell Guide to the Philosophy of Science*, eds. Peter Machamer and Michael Silberstein eds. 80-107 (Malden, Mass. USA: Blackwell Publishers 2002) 90.

The distinction between these two types of emergence, for the purposes of this thesis, is fairly straight forward. However, for the purposes of explicit philosophy of science a more fine grained analysis would be appropriate.[96]

To reiterate, in general terms, something is epistemologically emergent when it is considered emergent merely because we do not know how to explain it. "Emergentists will propose level-specific laws, while reductionists will claim them to be merely 'epistemological emergence' or simply markers of our (temporary) ignorance."[97] In more detail, Silberstein & McGeever argue in relation to this distinction that

> The first problem is whether any specific claim is merely an epistemological one regarding the ineliminable nature (emergence) of some 'higher-level' description or explanation, or whether it is a robust ontological claim about the emergence of some novel feature of reality. If the former, then we should ask why the higher-level description or explanation is ineliminable. ... what exactly is being alleged to emerge from what? For example, is it properties, property instances, entities, new laws or dynamics that are being alleged to emerge? We must also ask how the emergence of the new feature is alleged to occur, and what relations it bears to that from which it emerged.[98]

Answering these questions (and others) is analogous to what DeLanda undertakes in all his analyses of entities and processes.

However, their argument might also be read as specifically challenging something like DeLanda's conception of the virtual and what populates it. He most explicitly and succinctly makes his case for the reality of the virtual as emergent and being populated by real emergences in the first two chapters of *Philosophy & Simulation*, and the most detailed presentation is in *ISVP*. Recall from the previous chapter that the virtual and its inhabitants came to be with and evolve through the interaction of actual things, and it can

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[96] See also, Silberstein & McGeever, *SOE*, and Silberstein, "Reduction Emergence and Explanation" in *The Blackwell Guide*.

[97] Protevi, *DGE*, 27.

[98] Silberstein & McGeever, *SOE*, 185.

be actually represented mathematically and computationally. Recall also that it can be

thought about as the realm of problems for which actualities are solutions. When the

interactions that sustain a given virtuality cease, it dies. For instance, the virtual problem

of a body trying to maintain itself afloat in water, for which there are effectively infinite

solutions, would not be real if there were no bodies and no water. So virtualities are

ontologically real emergent properties of actual systems, because they are the ground of

possibility of what actual systems can do:

> Do [virtual entities] exist, for example, as *transcendent* entities in a world beyond that of matter and energy? Or are they *immanent* to the material world? If all the matter and energy of the universe ceased to exist, would [virtual entities] also disappear (immanent) or would they continue to exist (transcendent)?
>   If [virtual entities] are immanent they must be both irreducible to any particular material process while at the same time requiring that some process or another actually exists. This implies that topological facts about possibility spaces can be discovered without reference to the nature of the degrees of freedom, only to their number, and without reference to the nature of the gradient (thermal, gravitational, mechanical, chemical) only to its existence. But the fact that the existence of a gradient, any gradient, is necessary confirms the immanent status of [virtual entities]. [Virtual entities] are, therefore, perfectly acceptable entities in a materialist philosophy.[99]

Thus, the superior value of DeLanda's understanding of reality as including

virtuality is that it gives us a more inclusive conception of ontological emergence than in

Silberstein & McGeever. Cases of 'epistemological' emergence, perhaps most common

for us at our scale, remain themselves cases of emergences from interactions animated by

gradients in various ways at various scales and automatically entail the emergence of new

virtual problems. Moreover, at least through the actions of humans these emergences

will in some way have a material, intensive, and so again actual manifestation in the

world. I argue that for DeLanda, as manifest in his commitment to a flat ontology, all

emergence is 'ontological' or that the distinction between epistemological and

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[99] DeLanda, *Philosophy & Simulation*, 19-20.

ontological emergence does not matter. In the end, Silberstein & McGeever appear to be

in agreement.

> It is possible that, in such a radically relational [interactive] world, the standard divisions and hierarchies between phenomena that are considered fundamental and emergent, aggregate and simple, kinematic and dynamic, and perhaps even between what is considered physical, biological and mental, are redrawn and redefined [*a la* Deleuze/DeLanda]. These divisions will be dependent on what question is being put to nature and what scale of phenomena is being probed. Again in such a world there will be no discrete hierarchy of causally closed levels. Ontological emergence means monism without reductionism.
>
> The obvious move for physicalists to make in response to all this is to try to screen off any ontological emergence from the macroscopic world. ... First, ontological emergence within quantum mechanics makes it plausible that it exists elsewhere, even if it is not quantum mechanical in nature. Second, either everything is reducible to fundamental physics or it is not. If it is reducible, if everything is quantum mechanical, then ontological emergence is ubiquitous ... If, on the other hand, the macroscopic is not reducible to the microscopic ... then the entire world of classical objects is somehow ontologically emergent. In short, ontological emergence is most probably a real feature of the world.[100]

Again I promote DeLanda because of his thoroughgoing inclusivity. The next section

will discuss Korn's conception of emergence and his view of causal hierarchies, showing

how he too is not inclusive enough, a conclusion which further supports my choice to use

DeLanda as the ontological basis of the arguments of this thesis.

Korn

In "The Emergence Principle in Biological Hierarchies" Korn is attempting to

rehabilitate the concept of hierarchy within biology. His motivations for doing this are

not explicit, though some are indicated and will be so in this section i.e. that things lower

on the hierarchy are 'freer', from which normative/social implication could be drawn. To

begin, a quotation from Korn about his conception of hierarchy and its relation to

emergence:

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[100] Silberstein & McGeever, *SOE*, 200.

> I have developed a ... concept of a hierarchy that can be used to inspect the phenomenon of emergence ... A hierarchy is held together by descending constraints and new features can arise when an upper level entity restrains its components in new combinations that are not expected when viewing the components...[101]

Here Korn's conception of hierarchy, as will be seen, are analogous to Archer's conception of stratification (which is similar to scale as it has been presented). Korn's hierarchies are stratified (scaled) emergent wholes. While he says they are more than the sum of their parts, there is also the indication of a commitment to downward causation. He holds that wholes are different from their parts but tweaks it as follows:

> Components of a hierarchy, however, are constrained and have less freedom of activity than they did before they entered the hierarchy, leading to the conclusion that the whole is much less than the sum of its parts when the parts are considered in an unconstrained context.[102]

Korn explains why this qualification concerning 'freedom' is important:

> A pendulum clock tells time which none of its parts can even begin to do because the parts are fashioned and arranged in a specific manner so that the constraints make the whole function coordinately as a clock. The parts, however, can be refashioned and rearranged into a toy crane, a dentist's drill or a primitive analog computer.[103]

We see that Korn is referring to the virtual capacities of the parts, but he (as the reductionist he is) is prioritising the lower levels of the hierarchies he seems to impose as necessary. However, as we have seen entities at each scale are ontologically equal, they each have an equally effectively infinite list of virtual capacities. Parts as 'constrained' within wholes, thanks to relations of exteriority, maintain their capacities and in a sense gain those of the whole they are interacting to sustain. New spaces of possibility are opened to parts by being part of a whole. While some of their capacities are blocked (constrained) by coming together as a whole, these capacities are not lost, and others are

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[101] Robert W. Korn. "The Emergence Principle in Biological Hierarchies." *Biology and Philosophy* 20 (2005): 137-151, pp. 137. Here after *EPBH*.

[102] Korn, *EPBH*, 140.

[103] Korn, *EPBH*, 140.

gained. When a human body assembles with a bicycle certain capacities, like walking or crawling are not available to be actualised, but they are not lost and a whole new range are opened by being part of this assemblage. It is about the quality as well as the quantity of freedom. An atom may have a great amount of freedom as an atom, it could be part of a planet, a human, or a star, but what can and does it actually do as an individual atom? What can and does it actually do as part of a molecule? Things it cannot do as an atomised atom. An atom floating in a void may have all of its infinite possibilities, but that is all it has, it does not and cannot do anything. A human would be less free, have less opportunity to learn and develop without the hierarchies and meshworks that we are part of ('constrained' by). This is not to deny that there are assemblages that reduce the freedom of their parts, it is to reserve the concept for human situations that do constrain human freedom to actualise capacities.

Korn ends up reifying scales and preferring the lower to the higher. He accepts emergence but wants to make simpler things more free. He describes inverted hierarchies, where the most 'free' elements are on the bottom and as we move up to emergent scales, where things can do things their parts cannot, the distinguishing feature is not the novel properties, capacities and tendencies (novel freedoms), but how wholes constrain their parts. This approach is the opposite of the one DeLanda adopts. For DeLanda, parameters or degrees of freedom or constraints are important but they are not primary or fundamental. They are equally part of a reality of creative complexity driven by difference, and it is the way that constraint produces novelty and creative solutions that are fundamental to the ethical concerns of my argument. For example, being part of social justice movements 'constrained' (changed) what one could and did do, but also

enabled women to vote (it changed the mixture of the infinite calculus of how things are

constrained and enabled). In a broad sense constraint is ubiquitous insofar as interaction

parameterised by emergent properties, capacities, and tendencies is ubiquitous (the same

for enablement). That anything is free to do anything at all entails interaction,

enablement and constraint. Moreover, speaking to constraint in a narrower sense similar

to Korn's, we will see in the next section that there is emergence that does not involve

constraint but the emergence of novelty within a given set of parameters that expands, at

least alters, those parameters. The next section will briefly look at three types of

emergence distinguished by Protevi.

Protevi

Protevi distinguishes *diachronic*, *synchronic* and *transverse* emergence. These

three terms help conceptualise the wider view of emergence being promoted by this

thesis. In general terms, diachronic is the emergence of novelty, synchronic is the

emergence of order (which can of course be novel), and transverse is the emergence of

assemblages that have biological, social and/or technical components. Protevi also calls

transverse emergence and its observation/analysis/simulation 'political physiology'.[104]

Synchronic emergence, according to Protevi is

> ... definition: a synchronically emergent structure is that which enables focused systematic
> behaviour through constraining the action of component parts. This definition encapsulates what
> Thompson and Varela 2001[105] call 'reciprocal causality': the mutual constitution of local-to-global

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[104] Protevi, *DGE*, 20.

[105] Thompson, Evan, and Francisco Varela (2001). "Radical Embodiment: Neuronal Dynamics
and Consciousness," *Trends in Cognitive Science* 5: 418-425.

or 'upward' causality that produces focused systematic behaviour and the global-to-local or 'downward' causality that constrains the local interactions of components. Synchronic emergence is the emergence of 'order out of chaos' as the popular formula has it.[106]

Protevi notes that this type of emergence has unfortunately dominated much of the discussion of emergence. It is this focus that allowed Korn to reduce all emergence to scaled hierarchies distinguished by downward constraint. It has also supported other reductionism in the social sciences, such as structure to agency or *vice versa*, or "the issues of physicalism, eliminative materialism, reductionism, supervenience, and so forth" in philosophy of mind.[107]

However, there is also "diachronic emergence … [which] is the creation of new patterns and thresholds in a system."[108] Diachronic emergence explains how wholes can maintain their identity even though their parts change. For example, while new players for the Toronto Blue Jays are always emerging and receding, the team itself remains.[109] This position helps to explain what has been said about emergent wholes not being closed totalities.

The final form of emergence according to Protevi is transverse emergence. This form comes in four varieties.[110] What are important are not the details of each form, but

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[106] Protevi, *DGE*, 27.

[107] Protevi, *DGE*, 27.

[108] Protevi, *DGE*, 26.

[109] Protevi, *DGE*, 30.

[110]   1. Homeostratic synchronic transversal emergence:
        a. organic (symbiosis among organisms; ecosystems among groups of organisms)
        b. social (institutions forming a larger entity: colleges forming a university)
        c. technical (e.g., computers and routers forming the Internet).

        2. Homeostratic diachronic transversal emergence:
        a. organic (symbiogenesis: Margulis' theory of the origin of the eukaryotic cell)

the general explanatory power of transverse emergence. It captures nuanced forms of

emergence important to the thesis. 1. Emergence of things from the interaction of parts

that are necessary for the thing to be what it is e.g. a colony emerging from ants. 2.

Emergence of something from something else or what Protevi calls 'system change' e.g.

the change of American democratic politics from something exclusively for white males

to something ostensibly for any registered citizen. 3. Emergence of things from the

interaction of social, biological, and technical parts, this form would seem to broadly

capture most of the human world, for instance, all that has emerged from the assemblage

of human-horse-saddle, or human-symbols-media being assembled with various social

wholes. 4. The emergence of novel virtual problems. These nuanced forms of

emergence are of interest insofar as they are the types of emergence most important to

explain how the ethical can develop out of the natural and the social. The ethical

emerges as a distinct region of experimental solutions to the problems of social life,

which in turn develop out of the problems posed for human being by its situation in

nature.

What is important is that our freedom and our unity is difference. In every

encounter there is the problem of maintaining identity in the face of a challenge to it.

> b. social (system change: change of the university from education of elite into a
> centre for mass vocational training / military-industrial research)
> c. technical (system change: from ARPANET to Internet to world wide web)
>
> 3. Heterostratic synchronic transversal emergence: (a bio-social-technical assemblage)
>
> 4. Heterostratic diachronic transversal emergence: (mutation and co-evolution of such
> assemblages in 'machinic phyla'). (Protevi, *DGE*, 32)

"'machinic phyla' ... [are] groups of assemblages defined by their affects: what they can do and

what they can undergo." (Protevi, *DGE*, 32) In DeLandian terms, groups defined by their

capacities.

Stable solutions are those that depend upon the maintenance of dynamic tensions between the different elements of the encounter. An ethically legitimate solution depends not only on stability, but on the genuine recognition of the value of the different approaches to living that different people create as emergent solutions to the problems social and natural context impose upon us. However, in order to fully grasp the ethical significance of these ontological matters, we must turn our attention explicitly to the social realm. The work of Margaret Archer –while not unproblematic, as we will see, establishes the bridge between natural and social emergences that the argument needs to establish its ethical conclusions.

<u>Archer</u>

In what follows I will not present a comprehensive analysis of Archer, as her work is not the subject of the thesis. I am using quotations from *Being Human* to establish a connection between the general ontological theory of DeLanda and the social theory and ethics of Russon. [111] While Archer is highly valuable in this regard, it is also the case that her understanding of emergence suffers in some regards in relation to DeLanda. Thus, while I am using Archer's work, I am not using it uncritically.

Archer and DeLanda are in agreement concerning some of the problems facing social theory. They both highlight the dangers of micro and macro reductionism, although she uses the terms 'upward' and 'downward' conflation, or 'Modernity's Man' and 'Society's Being.' *Contra* either form of reductionism, both she and DeLanda

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[111] Margaret Archer. *Being Human.* (Cambridge: Cambridge University Press, 2000).

essentially argue that parts and wholes mutually interact in feedback loops within and

across scales. But whereas DeLanda does not draw any essential distinction between

natural and social wholes, Archer concentrates on emergent properties peculiar to society:

> In contradistinction to both 'Society's Being' and 'Modernity's Man', social realism introduces a stratified view of 'the subject' whose different properties and powers (PEPs [personal emergent properties]) emerge at each level. To anticipate, the four strata involved are the self, the person, the agent and the actor. The latter two are undoubtedly our 'social selves' which emerge respectively through our involuntary embroilment in society's distribution of resources and our voluntary involvement in society's role-array. However, they are themselves dependent upon the prior emergence of a continuous sense of self and are co-dependent with the emergence of personal identity, which reflectively balances its social concerns with those embedded in the natural and practical orders of reality.[112]

Archer thus provides the specific conceptual grounds I need to establish the ethical

conclusions that interest me. DeLanda demonstrates that nature is itself dynamic and

creative, Archer demonstrates the ways in which society enables the emergence of the

specifically human capacities for intentional action and creativity. Thus, while both

DeLanda and Archer support the idea that reality is scaled, Archer develops concepts

specific to the relevant scales of human social life: institutions, individual wholes, minds.

Like DeLanda, she uses a scaled reality to counter both macro and micro reductionist

claims. She concentrates upon the emergent properties (selves, consciousness, etc.,) that

explain how human beings—composed of natural elements—are nevertheless capable of

creating value and meaning in their lives. These capacities are unique properties and

powers (analogous to capacities and tendencies) of human beings that bridge the distance

between unconscious natural creative process and intentionally creative human action.

That which she argues with regard to the social is not incompatible with DeLanda's

more general ontology. We can see the similarity between them in her attempt to

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[112] Archer, *Being Human*, 254-55.

privilege neither the micro (biology) nor macro (society) scales when understanding

individual human capacities:

> The properties and powers of the human being are neither seen as pregiven, nor as socially appropriated, but rather these are emergent from our relations with our environment. As such, they have relative autonomy from biology and society alike, and causal powers to modify both of them. In fact, the stratified view of humanity advocated here sees human beings as constituted by a variety of strata. Each stratum is emergent from, but irreducible to, lower levels because *all strata possess their own sui generis properties and powers*.[113]

As we can see, she argues the reduction is impossible because all levels of reality have

emergent properties peculiar to themselves. That which is crucial for Archer is mapping

the proper concepts onto the proper scale—natural concepts to natural reality, social to

social realities, and so on:

> At any moment the CS [(Cultural System)] is the product of historical Socio-Cultural interaction, but having emerged (emergence being a continuous process) then qua product, it has properties of its own which influence discursive relations with S-C [(socio-cultural)] actors. In other words, there are causal influences exerted by the CS on the S-C level.[114]

So individual activity is not absolutely free, but constrained, but not absolutely

determined, either. Human beings can respond creatively within the given natural and

social contexts in which they find themselves. This possibility of creative response, we

will see, is crucial to the possibility of an ethics of experimentation. Thus, the value of

Archer is that she enables the argument to bridge the divide between unintentional natural

systems and intentional human action.

At the same time, there is also a danger in the way Archer explains the

relationship between these layers of strata. It could be the case that her generalised

categories, the CS and the S-C, become reified. General categories, like essences, may

describe things, but they do not explain them, since they do not actually exist. At

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[113] Archer, *Being Human*, 87, my emphasis.

[114] Archer, *Being Human*, 173.

minimum, reified general categories do not adapt to the ever-changing reality they intend to describe. All that describes and explains reality is reality, and so for us observation, analysis, simulation, and experimentation with real populations of real things and the immanent patterns of development they can isomorphically share. Reified general categories dictate (top-down) the program of study, missing the process animated by difference.   They do not let the real tell its story.

While DeLanda's general ontology lacks specifically social categories—which is why we need to examine Archer's work—it remains essential to the overall project because of its concrete specificity and avoidance of attributing causal powers to general categories. We cannot speak of 'society' or 'culture' or any terminological combination of the two as real independent things. We can speak of actually existing social entities, like a specific community, group, or state, study its history looking for the actual things that interacted and how they interacted to catalyze and sustain its emergence. From the study of these real processes we can diagram mechanisms of emergence that will help us understand populations of entities, but only insofar as that population remains relatively stable, until inevitable bifurcation.

These mechanisms may apply to populations of different things at different scales. There are trans-scale and trans-population mechanisms (there is isomorphism and multi-realisability), however, there are things unique to each population at each scale and so unique patterns. [115] The previous patterns are there but there are new ones added to the mix. There are also the differences in how given pattern actualises within nonorganic,

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[115] For details on isomorphism and its observed cases see DeLanda, *ISVP*, 170-171, and DeLanda, *Philosophy & Simulation*, Chapter 1.

organic, biological, and social materials. The important thing demonstrated by the observation of real populations, real mathematical models of populations, and real simulations of populations, as well as studies (including simulations) of human agency (a property and power of humans as part of populations) is that there is robust isomorphism between certain patterns generated by the interacting materials of all realms. In very general terms, isomorphism is resemblance with respect to important (singular, significant, relevant) degrees of freedom, animating gradients, attractors, and bifurcations.

Archer sometimes seems to lose sight of the importance of interaction of all elements and runs the risk of privileging a 'continuous sense of self' in her theory. Consider the following: "Introspectively, we are all constantly aware of the *main* property upon which this emergent process depends."[116] Regardless of the specific emergent process the idea that there is a *main* property on which it depends is problematic even if the study of the process is confined to one scale (recall bifurcations, as events of emergence). In this case Archer is referring to the emergence of personal identity. And the 'main' property on which this process depends is "that we live a rich inner life: that we are in continuous communion with ourselves and that we engage in a continual running commentary with the events going on around us."[117] This is perhaps saying something she does not intend to say.

It can be argued that it is because humans are social that they have the capacity for 'inner life,' and also that we are able to be social because we have an inner life. I

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[116] Archer, *Being Human*, 193. My emphasis.

[117] Archer, *Being Human*, 193.

contend it just is not important to give primacy to one or the other and there are definite consequences to doing so. Giving primacy to one or the other, at least seems to leave the door to reductionism and reification open.

Archer is fundamentally trying to give humans and social wholes their due independence from each other, without denying their mutual dependence. Her goal is clear from claims such as: "independent properties and powers have to be granted to both 'structures' and to 'agents'."[118] In the case under consideration, however, if 'inner life' is the 'main' human property that the emergence of personal identity depends on, then effectively everything that humans with personal identities are part of (everything that emerges from the interaction of personal identities) depends on this property of personal inner life, not on the capacity to interact. Do we interact with each other because we have an inner life or have an inner life because we interact with each other (because we are here to interact with each other and do)? Neither needs to be made primary, unless one wants to introduce a reified ontological hierarchy, which Archer may want to: PEP's, CEP's, and SEP's. If anything is primary it is interaction and all that entails, but not 'primary', interaction is just the way of things insofar as things are different and in contact.

Archer perhaps does not extend her conception of emergence far enough. One can grant that even the structures and patterns, the scales, the most general conditions of being human we can observe are as historical and contingent as individual humans. At times, for instance speaking of "The structures into which we are born"[119], she is arguably

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[118] Archer, *Being Human*, 255.

[119] Archer, *Being Human*, 262.

talking about something significantly similar the throwness Heidegger and others did. But one can understand that even this experience, so fundamental to 'being human', can be recognised as just as historically contingent as everything else. But what is gained by this recognition? Openness to the possibility of transcending 'being human' as it has contingently developed to be; it opens us to the possibility and value of experiment. It is a stretch, given the effective reality of what Heidegger *et al* describe, but life may one day come into, be introduced to, conscious of, and live reality unimaginably differently.

Some of the above critiques are merely semantic, directed at a certain inconsistency in her use of language which makes it appear that contingency is being subordinated to an overarching necessity. Nevertheless, the language is important if one wants to promote a realist point of view that does justice to the complexity and creativity of all scales and realms of reality. It is important to speak of real dynamics of real social entities, not generalised categories like CS and S-C that are imposed as the structure of necessary scales. While Archer may be talking about a pattern that really exists she might be careful not to imply that scales themselves are any less historical and contingent. Scales themselves are not real, populations of entities and processes are real and can be differentiated by scale.

In elaborating a description of the dynamics of social reality that seems to lack a commitment to real concrete entities and processes (real populations of variable replicators being sorted by their situation, animated by differences, within a space of possibilities) Archer offers us a description that could, however currently apt, become obsolete or worse. DeLanda gives us descriptions, but more importantly a point of view that is inherently adaptive and that produces inherently adaptive results by strictly

observing the dynamics of real things (which includes computer simulations and mathematical models), always keeping contingency, bifurcation, multi-realisability and isomorphism in mind. When supplemented by Archer's social categories, it provides the needed ontological foundation for an ethics of experimentation.

Despite these criticisms, then, Archer's *Being Human* supplies the understanding of human social reality that links the general ontology of emergence and creative complexity driven by difference to human intentional activity, and thus to the possibility of an ethics of experimentation. By making her social ontology isomorphic with general ontology of complexity, and by that model human agency emergent from being social, she grounds the ethical action of human agents in the maintenance of the conditions of their agency. The ethical action of human agents is grounded in the life-requirements of their lives as social agents, in maintaining their social-life-requirements. What having a general ontology of creative complexity driven by difference in the picture adds is the recognition that our social life and it requirements emerge from and interact with our physical life requirements, which emerge from the physical requirements of life as we know it, which emerge from our physical environment. The inclusion of such an ontology provides a detailed and concrete way of looking things at all scales, in their dependence and their independence, grounding them in reality. It does not reduce life to matter but raise matter to life, with the aim of expanding our ethics from ourselves and our groups to equally include all that sustains us as that we emerge from and interact with. In other words, it allows us to ground our ethics in material reality, of which the social realm is an important part.

Thus we can see that both Archer and DeLanda are promoting the position that the way we live, however necessary and/or rationally conceived it may appear (at our scale), has a history and an irreducible element of contingency to it. In other words, they want us to recognise that our ways of life and the histories that identify them are contingent and so the ways we live are, and remain, mutable. My only concern with Archer is that she sometimes seems to lose sight of the importance of contingency and falls back into formulaic accounts of social process.

In statements like the following: "as a human being *sequentially* becomes a self, then a primary agent and has the *possibility* of next developing into a corporate agent and finally into a personalised actor"[120] we see the potentially problematic idea that the development of a self is a 'sequence', but given that developing to the next stage in the sequence in only 'possible', we also see another instance of the idea that human development can be arrested. This result is contrary to her deeper connection with the openness and creativity of neo-materialism, as indicated by the following quotation:

> ... [human's] can re-design the social array of roles, such that the positions available to them are ones in which they willingly invest themselves, and thus become the kinds of 'social selves' with whom they can voluntarily identify.[121]

While this view of what a better world might be like does resonate with this thesis, this is not the only type of discussion she offers concerning bettering the world. One might choose just talking about emergence and its need for interacting variety, solely encouraging the fostering and maintenance of difference and its interaction, out of which new and better ways of life for more may emerge. Archer, like older historical materialists, concentrates her politics on the 'oppressed,' their 'situation,' and the means

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[120] Archer, *Being Human*, 269

[121] Archer, *Being Human*, 269.

of mobilizing them.[122] This is of course important but perhaps not the only route to change.

Alternatively, we can show how what we, and the social entities that emerge from us, have been doing as social entities is inherently, at least initially (prior to development becoming arrested at some fixed point), self-transcending toward greater self-identification—which is not to say that we should just leave it to happen on its own. It is to say that anyone who can be, and is aware of this, is aware that to engage its project consciously is to animate betterment of and for oneself, and, of and for everyone, and everything else.

The focus can be the encouragement of heterogeneity and interaction, arguing to maintain both for their own sake, as intrinsic values of human life, rather than for change out of pity for the down-trodden or rage about being down-trodden. The point is encouraging positive change through positively constructing systematic alternatives. The 'mobilised oppressed' strategy has shown itself to be problematic, as has the mobilised vanguard of the oppressed. And the pity from above strategy has shown itself to be of questionable affect as a motivator of social change among those with resources—many of whom are essentially good people who would rather not have their world 'disrupted', but would gladly welcome reasonable sustained change whose ends they understand and are able to experience as betterment for all, including, and importantly, for themselves.

Marx described how some are oppressed and everyone is alienated (and so in some way oppressed). We do not need to re-write that which has already been written. Instead, let us talk about ways to make life better for everyone. Let's talk about ways to

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[122] See for e.g. Archer, *Being Human*, 269-70. Where she writes of disrupting the structure.

do it that do not involve one faction disrupting, overcoming, assimilating, or eradicating another. Let's talk about what is and has been better about the ways we are and how to encourage it. Let's experiment and see how one might live. I will now conclude the argument by unpacking this conception of an ethics of experimentation.

The next chapter will look at Russon's understanding of human socio-historical development and the role emergent goals play in it. As we will see, for Russon, mutual equal recognition is an emergent goal of human history. It provides the necessary social basis for the ethics of experiment I defend.

CHAPTER IV

EMERGENCE, SELF-TRANSCENDENCE, LIFE

Russon

DeLanda's general ontology, supplemented by Archer's social categories,

provides the ground from which Russon's ethics of open possibility can grow. His social

world is one that is open to possibilities and experimentation, while still having a

significant ethical dimension. The previous three chapters laid out a case for the reality,

in all realms, being a place of possibility and experimentation. Assuming that reality is

as this ontology says, the only ethical question that is adequate to that reality is how

might one live? Russon has an answer to this question that is not limiting, that is open to

a creative, experimental response that reality as I interpret DeLanda's ontology, makes

possible.

Below is Russon's example of the emergence of the democratic political system

in Ancient Greece, both from historical and literary analysis. It is an example of

Russon's use of a conception of emergence and his notion that humans and social wholes

are in an on-going process of development and self-transformation.

> Ancient Greece offers a helpful case study of the pattern of development of such family life. Athens, for example, was governed by a small number of long-established extended families each of which sought to win pre-eminence in power over the others. It was here that our modern sense of a specifically "political" life emerged, in the struggles by which Athens sought to establish a system of social organisation that denied to the family the right to identify itself as the primary social reality and to insist instead that the city—a social field built out of a variety of families— had to be recognised as worthy of the primary allegiance of all of its citizens, and that the city rather than the family would set the terms for legitimate and illegitimate action.[123]
>
> [There was a need] ... for something beyond the family and its vendetta-logic to govern human affairs, and the *Oresteia* ends with the emergence of a transfamilial council—the core of

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[123] Russon, *Human Experience*, 63.

the idea of a "state"—that recognises a larger sphere of social relations where family ties are not the ultimate ground for determining just action.[124]

As we can see, Russon does not infer political structure form a pre-existing essence, but describes its historical emergence.

The same attention to historical emergence applies to his understanding of what is most valuable in human life. For Russon, "[h]uman fulfillment is accomplished in the establishing of a perspective governed by the norm of universality-as-sharedness."[125] But this is a "universality that has only an immanent meaning"[126] and the sharedness is necessarily the interaction of difference, in that we are each an individual situated inter-subjective body with its own singular set of familiarities.

The human as an embodied contact with a world beyond itself is always reaching beyond itself into the world, is always, in a sense, self-transcending. "As bodies, we contact a world beyond ourselves, and, through our engagement with that world, we are drawn to develop beyond our original capacities."[127] "Experience, therefore, is not the construction of a representation that is somehow internal to an independent sphere called mind; experience is, rather, being outside myself in the world."[128] What we contact is what and a degree of *how* we experience. The initial contact in this world and introduction to the rest of it, for Russon, is the family.

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[124] Russon, *Human Experience*, 64.

[125] John Russon, "On Human Identity: The Intersubjective Path from Body to Mind." (*Dialogue XLV,* 2006, 307-314) 307. Hereafter *OHI*.

[126] Russon, *OHI*, 314.

[127] Russon, *OHI*, 310.

[128] Russon, *OHI*, 308.

> "The family" is the name for the enactment of this self-transformative process. A child is initiated into the reality of intersubjective experience— the "how" of others—through a history of particular dealings with particular others.[129]

The family is a human being's initial familiar others, it is part of what a human first contacts through its self-transcending process. The family's members are the initial example of who we are and what there is. The family is that which initiates the human into the larger social world and so its own process of emergence, socialising humans, is also a self-transcendence. Said differently, the process of the family, the interaction of its parts, while sustaining the family also pushes the parts that sustain it away (to different degrees and in different ways).

Russon's analysis of these dynamics admittedly focuses on a family structure that is arguably 'western'. But this is simply a case of looking at a specific population and describing the patterns that emerge without reference to a predetermined model or ideal end, bearing in mind that this structure like all is contingent at some scale. "If we are to be adequate empiricists, we must let our (rigorously enacted) observations specify the terms and parameters of our theories, rather than holding description answerable to theory."[130] DeLanda follows the same path, as evidenced by him only looking at concrete (real) things and processes as the source of understanding.

Granting the contingency of the family, at the scale and space-time of humans as long as we have known ourselves, Russon's conception of the family as initially most familiar others, remains consistent across populations of animal based social entities. From that initial self-transcendence toward a family, virtually infinite paths might be taken, but the process can be and is arrested differently and for different durations for

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[129] Russon, *OHI*, 312.

[130] Russon, *OHI*, 308.

different people. However, this self-transcendence could be maintained indefinitely. We could consciously move toward a reality of maximising this capacity for the most people. I contend that the ontology and the epistemology indicated by this thesis are compatible with a move to this reality.

DeLanda+Russon

Where a reified ideal telos can arrest our development in various ways to varying degrees because of the irreconcilability of the ideal/real dichotomy, an emergent telos emerges from the real and propels us to develop the real. [131] Russon's mutual equal recognition (universality-as-sharedness) is submitted as the emergent telos that can animate sustained human development of the real in novel and experimental ways.

DeLanda's reality is one of creation animated by difference, of fluidity, where I argue, humans need not have their development arrested by ideals imposed as necessary. Having our development arrested, for Russon, places us in 'neurotic postures', or a state of self-contradiction. Russon:

> In studying this stance of our intersubjective contacting that is so familiar to us—the stance of the "ego"—we will again be discerning the dynamic, self-transcending character of a stance that typically takes itself to be static and settled. We will see how disparity between what it is and what it takes itself to be is the source of significant problems in human life. In studying this posture we will see why human life characteristically faces problems in its development—specifically, we will understand how the development of our subject-object contact becomes a neurotic posture. [132]

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[131] Recall that the virtual, actual and intensive are all the real. So, these genuine teloi can and do emerge from the immanent (virtual) patterns represented in phase space and simulations, they need not only emerge from the actual.

[132] John Russon, *Human Experience: Philosophy, Neurosis, and the Elements of Everyday Life* (Albany, NY: State University of New York Press, 2003), 72. Hereafter *Human Experience*.

Essentially, if we take ourselves and others to be self-transcending rather than static (separate/totalised/essential) we will be less neurotic. Russon's critique of how we think with reference to this, the prejudice of presence (which includes in here/out there, mind/body, subject/object dichotomies or dualisms), resonates with the critique of the dogmatic image of thought. [133] Holding on to these prejudices and dichotomies, among other things, supports operating on one's surroundings (including body) in a way that does not recognise that this operating not only can but does affect oneself and others in some way at some scale. Russon, speaking of the image of thought in question, with reference to the human self, the body, the world, and how we think about it:

> According to this narrative, the self (as we saw in our study of the prejudices of presence in chapter 1) is a discrete individual, separate from a world of things and other individuals upon which one passes judgment, and separate from one's own embodiment, which is treated as a tool or a vehicle that one "has" or "uses."[134]

The world is static, I am separate from that world out there, my body is part of that separate out there, both are mine to do what with I will. People who follow this narrative often devalue the out there and deal with it inadequately. The 'other' (including our body) is something to operate on or pass judgment upon, rather than learn from, experiment with, and teach. Out there is taken to be something that we are in a sense entitled to but not responsible for or to. Or in other neurotic (arrested) cases it is taken something to be feared or as something devoid of meaning and possibility.

Contra this problematic understanding of human existence and identity, we can "...come to understand existence as simply the dynamic of embodiment within which the two poles of self and other come to be defined, and out of which the substance of their

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[133] See the first section of *Human Experience* called 'Challenging Traditional Prejudices'.

[134] Russon, *Human Experience*, 83.

development into complex self-identities grows."[135] It is a process of interacting

differences that self-identity (like all) emerges from.

What brings these 'poles' together into interaction, what capacity is immanent to

our initial condition, such that when actualised it opens a possibility space for the

emergence of an experimental self-identity? I argue that it is our capacity for self-

transcendence within a society of mutually recognising selves that enables this creation.

Linking a general ontology of creative complexity to the social allows the above to be

more clearly understood, which allows it to be seen as the material foundation for an

ethics that supports open experimentation as human flourishing.   Insofar as human

beings reach beyond themselves, there is interaction and so development. *Human* self-

transcendence is unique to humans, but it emerges from the developmental processes of

nature whereby non-living material elements 'transcended' themselves through the

emergent properties of life to which their interaction gave rise. What is unique to human

self-transcendence is that we can think about ever new and experimental ways to

transcend what we do. A sunflower self-transcends to do what it does, but it cannot

transcend what it does and still be a sunflower. Beyond some basic doings like

socialising, eating, drinking, sheltering, and sleeping to adequate degrees (which can all

be done in highly variable ways), as well dying, there is nothing necessary that humans

do to be humans.[136] We can live differently, a sunflower cannot. Sunflowers, like all

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[135] Russon, *Human Experience*, 26.

[136] Though even these currently 'necessary' basic doings (including death) might be transcended eventually—as the transhumanists would have it.

life-forms, can evolve, but human beings can consciously do so in directions that they themselves invent.

Human Experience/Emergence

Russon, like DeLanda, dissolves the ideal/real dichotomy, uses a bottom-up approach and his philosophy resonates with the sciences of dynamics and complexity.[137] For both, reality, like music, must also be experienced in its movement, not just frozen and atomised. The following, in broad strokes, traces Russon's approach and correlates it with DeLanda's.

Russon begins his approach to human experience 'in its movement' with (1) the *form* of human experience, which consists in (1.a) *interpretation* or the effort to organise and integrate all of the dimensions of our experience into a coherent whole, (1.b) *embodiment* or the point where each of us is something specific (our individual mode of contact, how we are open to and how we open to others and the rest of reality), and (1.c) *memory* or the present explication of the significance implicit in the identities of objects with which we are engaged, where how we engage relates to our past commitments. Someone's location in space-time emerges from their projects, which emerge from their past as remembered and interpreted, and from what s/he is committed to. In the terms of this thesis, Russon's 'forms' of human experience are the parameters (degrees of freedom) of the space of human possibilities that he has selected as important.

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[137] As I argue, but see also: David Morris, "The Open Figure of Experience and Mind," *Dialogue* XLV (2006): 315-326.

The next phase is (2) the *substance* or stuff of human experience which consists of (2.a) *familiar others* and (2.b) *unfamiliar others* (things we are and are not habituated to) and (2.c) *neurosis* or holding contradictory beliefs that place us into neurotic situations where our habits impede rather than enable. [138] For instance the situation that emerges from believing in a democratic emancipatory project while postulating a static (ideal) reality. This phase can be correlated with the intensive.

I thinking about the intensive as related to the social we can think of neurotic postures mentioned in the previous section. They are literally, though not only, physical postures we contort our bodies into, as well as involuntary and awkward behaviours, including ways of walking, talking, and eating. Insofar as these are related to our beliefs (expectations founded on memory) and how we make contact with reality, which is related to how we interpret reality, neurotic postures are also more than merely our physical postures. For Russon, the very notion of normalcy is the prevalent neurotic posture among members of 'western' social wholes. However, it is important to note that neuroses/habits acquired from contacting what and those that surround us, are initially and for the most part how we are in the world. For DeLanda too, "[t]he main territorialising process providing the assemblage [human identity] with a stable identity is habitual repetition."[139] These processes of habituation (learning) have intensive characteristics, given that they are interactions with difference (the unfamiliar) proceeding toward familiarity. Like convection trying to move temperature differences

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[138] The term phase has been maintained because it lacks hierarchical connotation while it captures that there is a development in passing from one phase to another. Phase transitions can go in any direction.

[139] DeLanda, *New Philosophy of Society*, 50.

toward equilibrium. However like convection in the mantel or the atmosphere where equilibrium is never reached because the difference is maintained by the core and the sun respectively, humans are constantly bombarded with unfamiliarities and so the process of learning (habituation) never needs to end. The familiar-unfamiliar gradient will never be equalised, though it can be engaged more or less consciously and its process can be more or less arrested.

Russon's final phase (scale, strata) of complexity (order and novelty) in *Human Experience* is (3) the *process* of experience or how one lives life, as immanent to and emergent from its form and substance. For Russon, this process is not inhibitively neurotic when it consists of learning qua therapy qua philosophy, that is, when it consists of "bringing the multiple significance that is our experience into a situation of coherence."[140] The successively more complex modes of experience we move through each emerge from complex interactions within, between, and across the previous ones. There is multi-scaled feedback and emergence.

At each phase Russon shows how the next more complex way of contacting reality (being open to and experiencing reality) emerges from the previous, adding another layer which then interacts with the previous layers. For instance, "The family is thus both an autonomous form of inter-subjective experience and also an agent for initiating the family members into the larger form of social experience."[141] The family is emergent and not a closed totality; it is an assemblage that to varying degrees enables its parts to enter other assemblages. When we are habituated to the complexities of being

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[140] Russon*, Human Experience*, 76.

[141] Russon, *Human Experience*, 69.

part of an assemblage (for instance a family) we can maintain that assemblage without being limited to it, that is, we can enter into other more complex assemblages without dissolving the prior one (though we might).

Russon conceptualises the process of habituation as how we develop into more complex worlds. How, for instance, once we are habituated to driving a vehicle we are then open to the world made possible by having the vehicle as a mode of making contact with the world. Initially our attention is held by acquiring the habit. Another example is how with each reading of a text more and different things can be understood. Another example would be how with each editing of an essay familiarity with the essay allows one to address things that would not have been caught previously. There is also how the individual edits from one time through potentially catalyse other changes the next. Once we are habituated or familiar we can add a new layer, our identity is changed.

> Personal identity … may be deterritorialised not only by loss of stability but also by augmentation of capacities [by self-transcending] … When a young child learns to swim or to ride a bicycle, for example, a new world suddenly opens up for experience, filled with new impressions and ideas [with unfamiliar to become familiar, opening other new unfamiliarities...].[142]

To articulate the development toward complexity through habituation another way, we could say that initially we find our significance only in our needs. Consider a new born. They are only an interpretation of their immediate contact with reality, with their whole self they reach out for what they need to be content and comfortable, they are nothing but what they need/want and having those needs satisfied. From the perspective of our initial awareness of embodiment 'I' am *all* that matters, but through contact with (openness to, self-transcendence toward, response-ability to) demands that 'I' do not control, 'I' realise that 'I' am merely *something* that matters. And as 'I' become familiar

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[142] DeLanda, *New Philosophy of Society*, 50.

(habituated) with this, 'I' am opened by and to these others. As we become familiar with the complexities of our family we become open to those of larger social populations and so on.

For Russon, "the development of human self-identity ... is the form of the inherent goal of the human project of mutual, equal recognition".[143] In other words, the development of a coherent and healthy human self-identity is the realisation of the project of mutual equal recognition. This telos, taken up as a goal or not, shows itself to be immanent to the process of human development qua human development and not given from the outside, as an eternal idea towards which human history develops. As Russon argues,

> Our very nature is this propulsion towards being a person, equal to others as a representative of what it is to be human. This means a political ideal of universal equality is immanent to our nature; it equally means that an ideal of objectivity—knowing according to the perspective anyone would adopt—is immanent to our nature. What we see in our analysis of ourselves as bodies, however, is that this universality can never be an escape from specificity or from the perspectival character of our identity, for this specificity is the sole context within which the ideal of universality is meaningful. Universality in human life, then, whether in politics or in knowledge, is not a pregiven perspective that we can adopt by leaving our perspectival roots. It is rather the ever-present norm, immanent to all our dealings, which precisely takes the form of a demand to reconcile: political universality is realised as disparate cultures accomplishing a sharedness of perspective; epistemological universality is realised jointly in the identification with that which we seek to know (we saw this in habit, above) in a context of a social accomplishment of sharedness of perspective.[144]

While it might sound as if Russon's language presupposes something like 'substance ontology,' I argue he is not a proponent of such a position. The first move in justifying my interpretation is to define the conception of 'immanent'. 'Immanent', in DeLanda's sense, essentially means emergent from, or, could not be without that to which it is inherent, but is not reducible to it. When something is immanent to

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[143] Russon, *Human Experience*, 73.

[144] Russon, *OHI*, 313-314.

something, a population, it emerges from the population simply because of what that population is (its properties, capacities to-to be, and tendencies). Recall also that all emergence involves the interaction of different things. It is not that universal equality and objectivity 'emanate' from humans, it not that they are 'the essence of the human project'. Given humans as they are and the parts that compose them, from the interaction involved in humans being humans, universal equal recognition emerges as the outcome of their interactions and conflicts. Contrary to substance ontology, these emergent goals or teloi do not entail a homogenisation, but openness to experiment and experiments. If this driving goal were a simple one toward everyone being the same, we would be, for instance, if this were the case the oppressed would not revolt. The goals of universality-as-sharedness are pursued through learning, not through narrowing by conforming to an abstract ideal imposed from without. It is not about all of us being and knowing the same, it is about us recognising difference, having it interact, and learning from it.

Wars can be seen as an example of recognition as it manifests under the ideal/real dichotomy, while they are also exemplary of development fuelled by feedback, and self-transcendence. Given that, as Russon and other theorists of recognition have argued, an important human drive is needing and wanting to be recognised by others as one recognises oneself, or, "having our own measuring of significance measure up to the standards of others."[145] In war, or in situations that spawn violence, there is a lack of mutuality in the recognition of one group for another, if not each for the other. For instance they might recognise each other equally as enemy but not mutually insofar as

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[145] Russon, *Human Experience*, 73. For more, see for example Robert Brandom's Woodbridge Lectures and Hegel's master-slave dialectic.

they do not recognise each other as they each recognise themselves and demand to be recognised. Further, perhaps one or both cannot be mutually recognised because the way they recognise themselves and want to be recognised inherently does not adequately recognise others. Conflict can be seen to emerge from deficiencies of mutuality and equality which are products of the self-contradiction (internal conflict) that arises from not being recognised by others in the way one recognises one's self or *vice versa*. Instead we can try to recognise others as they recognise themselves and try to be in a way that others can recognise, which is inherently a way that recognises others (where others is not only humans but everything). In other words, we can maximise our capacity to recognise and be recognised, and they are facets of the same thing, to genuinely do one is always to do both.

DeLanda points out that conflict, as a form of feedback, and an intense one at that, has driven much development by forming auto-catalytic loops e.g. like those formed by arms races between predator and prey in biological evolution, or those between warring European nations throughout much of the last millennium. [146] It is the difference between the interacting components that leads to novel combinations and novel emergences. But, for humans, this difference can be mutually and equally recognised and so does not have to manifest as violence. We can have interaction of difference and development that is just as (probably more) intense than it is with violent conflict if we consciously and openly engage difference, interaction, and development.

For both thinkers, development entails interaction and interaction entails difference. The self transcends itself in order to be itself, which entails interacting with

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[146] See DeLanda, *1000yrs* and DeLanda, *WAR*.

others (difference) and from this the social entity 'family' emerges. The family too, as part of sustaining itself as what it is, transcends itself by initiating the members whose development it harbours into larger social scales, who then transcend themselves, catalyzing the emergence and maintenance of other things at other scales.

Russon's bottom-up approach to *who we are*, and DeLanda's bottom-up approach to *what there is*, both dissolve dichotomies and explain things through processes of emergence. DeLanda's bottom-up approach has provided an ontological basis from which to understand Russon's bottom-up approach.

This section will end by broadly correlating *1000yrs* and *Human Experience*. In *1000yrs* DeLanda begins with what he calls (1) *geological history*, which deals with the "dynamical elements (energy flow, nonlinear causality) that we have [without metaphor] in common with rocks and mountains and other nonliving historical structures."[147] That is, how all things, in the same way as rocks are "nothing but accumulations of materials shaped and hardened by history"[148]—the form or parameters of reality. In Russon's case he is not talking about all of reality but only human reality. Nonetheless he begins his journey up with the 'form' or parameters. Next is (2) *biological history*, that is, how things interact and lead to the emergence of entities like species, food chains, families, interpersonal networks, and groups. For Russon, the substance or stuff of our reality, that is the intensive. Through discussing the evolution of species and the dynamics genes DeLanda shows that while there are patterns shared between the physical and the biological, there those that are unique to the biological. Last is (3) *linguistic history*, that

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[147] DeLanda, *1000yrs*, 20.

[148] DeLanda, *1000yrs*, 25.

is, how relatively simple social entities interact and other more complex social entities like organisations, governments, anti-markets and nation-states emerge from the feedback facilitated by language—For Russon the process of our reality is at its most complex at the scale of responsible human agency as a property and power of human linguistic society. More generally the process of reality refers to how novelty and organisation emerge from interacting populations. But also DeLanda's *linguistic history* is the history of language as viewed through intensive, population, and topological thinking. And is an example of a realm where many of the patterns from the physical and biological can be found to exist along with patterns unique to the material that is human languages.

We now turn to a more detailed discussion of the telos submitted by this thesis.

Mutual Equal Recognition

Talk of an emergent telos is not talk about secret forces or positive thinking as a causal force in some mystical sense. Nothing happens because of a force, a god, or 'positive thinking'. The argument concerns the real creative potential of material assemblages as a result of their own real natures. That is not to say that these creative potentials are as fantastic as those we can imagine, it is to say that they are more incredible, inspiring and unimaginable, because they are real.[149] In a real way, if you can 'think positive' and 'feel better' and so engage the world in a more active, adaptive and resilient way, barring anomalies like biohazards or getting hit by a bus, your life will go

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[149] "…we saw only reality all around us, taking the imaginary and the symbolic to be illusory categories." (Deleuze, *Negotiations*, 144).

better. Put differently, if you are out there trying when opportunities emerge you are able to engage them. If you recognise in a more mutual and equal way, on the whole, more will probably come back to you. It is about creating a pattern not necessarily getting the better of each individual interaction.

This pattern of recognition could be described as forming an autocatalytic loop, a self-sustaining gradient ($\rightarrow$recognition$\rightarrow$lack of recognition$\rightarrow$recognition$\rightarrow$, or, $\rightarrow$familiar$\rightarrow$unfamiliar$\rightarrow$familiar$\rightarrow$; the more that is recognised the more there is to recognise; the more you know, the more there is to know), that animates the genuine development of individual humans, social wholes and their sustaining substrata.

Insofar as we emerge from the interaction of wholes that precede us and given that we exist alongside some of these others, the self-sustaining gradient of recognition can be seen to animate human development. Ontogeny recapitulating phylogeny recapitulating cosmogony, where what is shared is the self-sustaining universal singularity of recognition (interaction of difference). Generalising and skipping many phases: Oxygen and hydrogen 'recognise' each other$\rightarrow$amino acids and proteins 'recognise' each other$\rightarrow$building humans that can really, self-consciously recognise each other$\rightarrow$and then collectively recognise the Universe as their ultimate origin—all is the Universe recognising itself, the form of recognition always developing.

At human social scales, the levelling of classes, and the constitutional establishment of 'rights' are examples of development animated by recognition, but neither is an end in itself, nor will there ever be an end; there will always be more to be mutually equally recognisant of and more ways to be so.

A further example of development animated by mutual equal recognition is the development of what could be called our environmental consciousness. Historically, humans have been (and are) largely unaware or ignorant of their effect on the planet. This is the case even if they have relatively low impact on their surrounding environment, which tends to be due to low population and low intensity ways of living, or even if they have some mystical and/or ritualised sense of interconnectedness with and so some kind of respect for 'the environment'. The ignorance amounts to humans not seeing things at enough spatio-temporal scales. Generally, humans did (and still do) not recognise their environments and Earth as equally evolving entities we are a part of, and if they did it was not to a degree adequate to actually understanding the mechanisms connection and affect beyond its mere fact. Humans did (many still do) not recognise their surrounding environs and Earth as that which recognises them by composing their reality as the sole sustaining substrata (so far, and for a long while yet) of our existence—again this need not only be recognised mystically and artistically, it also needs to be recognised scientifically, empirically and philosophically. Our consciousness-awareness-intentionality-recognisance is developing and we are becoming more aware of our effect on the planet (we can think bigger; take more into account). We can look at things in terms of larger more detailed historical accounts, we can think in terms of different entities, we can think in terms of things at different spatial scales (like atoms, us, communities, nation-states, planets, and beyond) and we can think in terms of the different life spans and rates of development (temporal scales) that these entities have and exist at (like geological time, human time, evolutionary time and cosmic time).

Along with the development of this consciousness there has been correlative physical, technological and cultural development, for example, blue box trucks and recycling infrastructure, consumer LED light products, solar panels, wind turbines, documentary film, live oration, and TV commercials about environmental issues and awareness. None of these are final solutions, they are attempts or experiments, they are solutions to a well-posed problem. But we might wonder, along with Protevi,

> Has global warming pushed us already into a crisis, modelled by a zone of sensitivity in which a minor fluctuation that otherwise would not have budged us off our attractor, but merely moved us to another point on that attractor, will now push us into another attractor, the ice age attractor, that is, into a new climate pattern? Or will the global system create a new pattern, neither temperate nor ice age, but something different? The global climate system might be creative and resilient, but there's no guarantee the new pattern will provide a viable environment for human beings![150]

And as a result, reassess the methods and intensity with which we are engaging how we might live in interaction with the environment.

To recapitulate the key points: the ways we *have* lived have been experiments, they have been developments driven by our drive for mutual equal recognition. However, for the dogmatic image of thought, the successive life styles that have emerged were each in their turn seen to be part of a necessary progression toward an ideal homogenous and universal life style. Effectively, our development is arrested to varying degrees for durations of time, until the next inevitable bifurcation, which changes us, but is then taken and made to be a necessary step in a necessary progression.

To assume that we can figure out a final answer to how we *should* live is to assume we know what the future holds i.e. that the world is static, or at least wholly linear and so technically perfectly predictable. If we make conscious that nothing is static, that the subject and the object are not dichotomously divided (not oppositionally hierarchised) but part of dynamic tensions or gradients. If we consciously engage

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[150] Protevi, *DGE*, 26

development within fluid reality driven by mutual equal recognition, who knows how one

might live? What we can know is that there will be as many experiments (answers), as

there are lives, if society permits this sort of creativity. As Russon argues,

> …the society that is universally open to the human condition must be one that accepts this necessity of social diversity as its premise. The "universal" society, then, is one that acknowledges the experiential primacy of cultural pluralism—of narrative pluralism—and sees the universality of a shared human environment as something to be achieved through learning to make such narratives communicate rather than as a given, already existent situation of human equality.[151]

As we are, humans navigate by becoming familiar with their surroundings (all

biological life does this in a certain sense). This being the case, each human is a singular

assemblage of familiarities; we are each individuated singularities with our own

memories, habits, and narratives. And so, our condition is immanent pluralism, even if

only because we each view the world from different eyes. Moreover, "our very

familiarity with the human world propels us into relations with strangers,"[152] recall how

becoming familiar with riding a bike opens us to (propels us into) a world of new

(strange) experiences, or how the family propels us into other social wholes.

I am as strange to you as you are to me, and we are to they, and they are to we,

since we each have our own familiar sphere. There can be as much or as little difference

between two bankers as there is between one of those bankers and an escort. If

difference is mutually equally recognised who knows what novel ways of living might

emerge from the virtually infinite novel combinations of different components; who

knows what capacities might be actualised? Not that there are not better and worse ways

of living. If your way encourages the maximising of the capacities of others your

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[151] Russon, *Human Experience,* 72.

[152] Russon, *Human Experience,* 73.

capacities will be maximised. The only prescription is allowing the capacities of others to be maximised and trying to maximise one's own which is trying to maximise everybody's.

When we are not and, more importantly, do not recognise each other, our development is arrested; when we do not recognise ourselves as we are, obscuring what we might be, because of imposed ideals our capacity to and our capacity to be recognised is diminished. "We are our possibilities for interactions with things, and things are their possibilities for our interaction."[153] Limiting our interaction limits our development and thus also the possibilities for our capacities to be actualised.

The emergent goal (property, capacity, and tendency) of mutual equal recognition includes seeking to recognise yourself as you really, rather than ideally, are. This does not refer to finding an eternal essential self, or perpetuating the ways you have been and are. To try to see one's self in its reality is part of the continual process of transcending that self. To be familiar with how one actually lives is to be opened to what is beyond that way of living. All this serves to support open experiments in how one might live.

If people were mutually equally recognised, not merely ignorantly tolerated with reference to their degree of deviation from an ideal, they may not feel the need/desire to engage in, for instance, abusive behaviour. Similarly, someone (who has the choice) might not feel the need to individuate themselves by choosing to dress inadequately for their climate (even when they have the option); they would dress adequately and reap the benefits. In all situations there are types of clothing and ways of wearing clothing that

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[153] Russon, *Human Experience,* 31.

facilitate and encourage connection and interaction with the environment and so further develops recognition of the environment and the other humans that are part of it. If you are comfortable you are more open to recognising and being recognised by what surrounds you. This protection of our flesh is actually a maximisation of our flesh, it increases the things that can be contacted and the ways things can be contacted. Also, it leaves our flesh supple and sensitive and so more open to experience, experimentation and observation in situations where protection is not needed. The more supple our senses the more we can recognise, the more intimate our contact with what surrounds us, the more solutions to how one might live we can create, the less our development is arrested.

The project of mutual equal recognition, for Russon, describes and explains how and why humans move through increasingly complex modes of making contact with reality. Human beings move themselves from crawling, to walking, to running, from babbling, to talking, to formulating arguments, spoken and then through other mediums. Mutual equal recognition can explain and describe how and why we develop. Given the continuum of matter-energy-information-thought that we are part of, as mentioned, I argue that mutual equal recognition is an emergent telos of the known universe of matter-energy-information-thought: We are part of the open assemblage of n assemblages developing its recognition of itself.

As much as human behaviour in a given situation is an expression of our interpretation of the demands the situation makes on us as significant, so is the behaviour of an other an expression of their interpretation of the demands a situation makes on them as significant. This is what needs to be mutually equally recognised for us to freely and openly engage asking the question of how one might live. Insofar as we are each other's

examples and confirmation we have a responsibility to each other; we are response-able. The degree to which this response-ability is engaged correlates with the degree to which development is arrested for and by one.

> …in the case of the larger society, just as in the case of the family and the case of the body, we can see that the determinate form that one's given situation takes will set the limits to the resources that the situation offers for inhibiting or enabling one's development, one's self-transcending activity of contact.[154]

Mutual equal recognition as an explicit goal, that is, fully actualising our immanent response-ability as a goal, opens us to confident experimentation; it drives us to ask how one might live with mutual equal recognition as an explicit goal.

> To be a body, a subject-object, is to be a being of possibility, a being open to the emergence of determinateness from a horizon of indeterminacy. The hand is a determinacy ... [that makes] grasping possible—it is that by which I can grasp—and as such it is a route that opens us to a multitude of as yet unimagined experience.[155]

Given this determinate openness, the multitude of possible experiences, and the relational character of capacities to affect and be affected i.e. reality as it is and our self-transcending character, we can only ask how might one live?

I contend that all philosophy, religion, science, and art, further, that everything humans do, to varying degrees manifests and expresses (1) what there is, (2) how it came be, (3) why it is the way it is, and (4) prescribes a way of living. In most of his work, DeLanda tries not to explicitly address (4), doing his Deleuzean best to merely pose the problem well. I guess through it all we remain a degree Marxian, holding to the eleventh thesis on Feuerbach: "The philosophers have only *interpreted* the world ...; the point is, to *change*, it."[156] So, we have made some prescriptions, but really they amount to

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[154] Russon, *Human Experience*, 69.

[155] Russon, *Human Experience*, 31.

[156] Karl Marx, *Selected Writings*, ed. L. H. Simon (Indianapolis: Hackett, 1994), 176.

prescribing that the individual choose to take on the project of prescribing (designing) their own life, given the virtual parameters of reality and the actual parameters (material conditions) individual to them. As just indicated, a goal of this project, then, is also minimising the human created actual parameters that limit capacities to actively engage in critical self-transformation. Let's not limit each other, let try to limit the limitations on each other. Let the virtual pose the problems, free the actual, which frees the virtual, which frees the actual, which frees...

How Might One Live?

As I have argued, seeing the world as static and determined from without by an ideal telos has led us to ask how we *should* live and moreover to impose answers to his question as necessary. In contrast, genuinely engaging fluid reality projecting toward mutual equal recognition opens us to asking "how might one live?" and its virtually infinite imaginable and unimaginable possibilities. According to May "how might one live?" is the question central to Deleuze's philosophy.

> It's an odd question, in some sense; a question we don't ask ourselves very often. We get up in the morning, we brush our teeth, we crawl into our clothing, and we burn our days as though it were impossible to live any other way, as though this particular life were the only one to be lived. As though the universe were so constructed that it required our lives to unfold in this way and in no other.[157]… It is a difficult question, a frightening one. There is much in us that rebels against confronting it, taking it into our lives and creating ourselves in light of the freedom it offers. It is simpler just to brush our teeth, crawl into our clothing, and burn our days than to ask what we might become.[158]

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[157] May, *Gilles Deleuze*, 1.

[158] May, *Gilles Deleuze*, 8.

The *Star Trek*[159] franchise can be seen as an engagement with thought experiments in how one might live. Each species encountered, each new technological or sociological development that emerges leads the characters to explicitly explore how they might live considering what has been encountered and what is emerging from the interaction. Each encounter is taken by the lead characters as an opportunity (if possible) to develop a genuine relation of learning, helping, and teaching.

I reference Star Trek because I know it better than I know Shakespeare or some other respected/time tested reference. And because I have learned a lot from it, and believe others might too. There are things to be gained, as there are from any and all interactions. Not that some things do not take too much in giving what they give. Some things currently end apparent human life. Besides those that kill you, there is something to be gained from any situation, even if the situation is an overall loss. Not to make light in any way or to imply that he would not trade what he got for never having had the experience, but Primo Levi gained insights into humanity, himself, war, life and death, through his time in Auschwitz, and he wrote a book about it.[160] You can scan the scales of your experience and find the remarkable, interesting, and important. You can by some measure try to improve your toilet cleaning method each time. Life can be lived by developing the habit to improve and learn from any and every situation. The point is not to hierarchise, but to grow, develop, try new things, and expand your self and its capacities.

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[159] Created by Gene Rodenberry.

[160] See Primo Levi, S. J. Woolf, and Philip Roth. *Survival in Auschwitz: the Nazi assault on humanity* (New York: Simon & Schuster, 1996).

Humans are determined to be self-determined; material reality has determined us to be able to creatively change material reality. Through learning (experimenting/exploring) we become more self-determined within the effectively infinite range of what might be done given reality. Though determined we are free insofar as the layers of determination are infinite and so also our journey of learning. But this is not just a simple journey of discovering what is always already there. What we think of as always already there has not always already been there, at a large enough scale everything flows. All life-styles, in the broadest and most detailed sense, are contingent actualisations of human capacities given particular contingent conditions. We cannot perfectly predict/control life-styles by controlling conditions but we can to the degrees we can alter ourselves and our conditions and experiment with how one might live. This can be done in an ethically responsible way with reference to the real material (physical and social) life-requirements of human beings.

With each passing moment we are in a novel reality. Although we are often unaware of this, we can get into the habit of making ourselves aware of it by learning to think at other scales. Everything is a spatio-temporal historical development and we can affect these developments in varying ways and to vary degrees correlative to our degree of understanding. Regarding understanding, if reality is nonlinear and ontologically flat, if there is feedback within and across scales, if difference is the animator, and if replication is variable, there can be no permanent prescription for how we or anything should live. The only questions are how have things been? And how might they be?

Genuine development embraces the unending nature of development and the difference that animates it. Genuine development encourages adaptability and resilience,

and the emergence of the most (quality and quantity) for the longest (quality and quantity). Genuine development thrives on heterogeneity. If we flee from a life of genuine development, we are sentenced to self-contradiction and arrested development in the name of homogeneity (equilibrium[161]). This sentence would remain a problem even if that homogeneity is marketed as 'diversity', 'equality', 'multi-culturalism', 'democracy' and 'freedom'.

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[161] "*Nonequilibrium brings order out of chaos*" (Prigogine & Stengers, *Order out of Chaos*, 286). Without difference there is homogeneous randomness. A contained body of water that is turbulent due to temperature differences has order, a contained body of water with no differences and no motion being produced by the influence of an outside source of energy, has no order, it is random, its molecules move this way and that without rhyme or reason; there is no difference, nothing changes.

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