



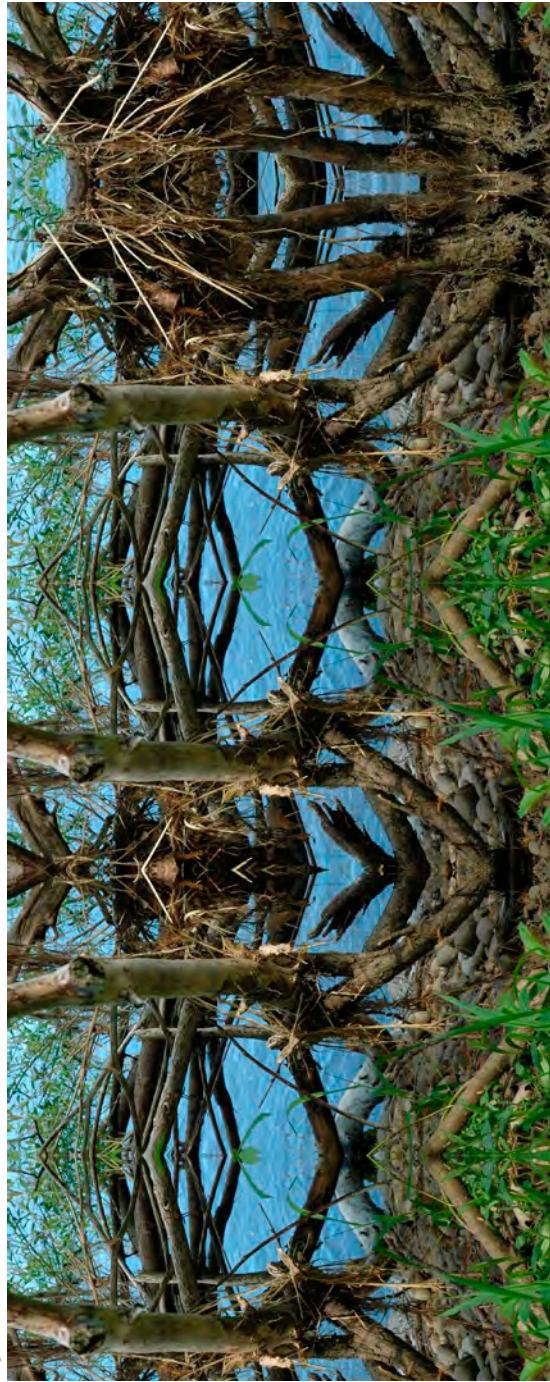
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Enlivenment

Towards a fundamental shift in the concepts of nature,
culture and politics

By **Andreas Weber**



**HEINRICH BÖLL STIFTUNG
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An Essay by Andreas Weber

Published by the Heinrich Böll Foundation

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FOREWORD

This essay contributes to the most crucial quest of our times, which also lies at the heart of the work of the Heinrich Böll Foundation: How is it possible to provide a life of dignity for all human beings, to live in coexistence and respect with the natural world and accept the planetary limits?

From the margins of hegemonic discourse, this essay invites the reader to look at the world afresh. It challenges the familiar terms of conventional politics and policy and their underlying assumptions. Can we continue to solely rely on the Enlightenment heritage that our rational thinking and technological creations can «appropriate nature» and «unlock its secrets» to serve our needs? Is nature really nothing but a game of winners and losers, of efficiency and self-interest? The idea of «Enlivenment,» as proposed here by Andreas Weber, challenges these assumptions as blindness to the realities of living biological and ecological systems. Instead of the mainstream, dualist metaphysics that treats the world as «dead matter», Enlivenment sees a pluralist world of living beings constantly entangled with each other within a biosphere that must be understood as a continuous unfolding of diversity, freedom and experience.

As Weber explains, an ongoing paradigm shift in the life sciences is providing us with a new picture of biology. It is moving away from a *reductionist worldview* that sees nature as a deterministic machine whose parts and processes can eventually be understood by rational, «outside» human observers, to an *enlivened worldview* that situates human beings deeply in a web of dynamic, living and unfolding creative relationships. Discarding a mechanical perspective of nature, science is beginning to see that the great, unexplored territory is the nature of life itself. Subjectivity, sentience, agency, expression, values and autonomy lie at the centre of the biosphere. This conclusion is not a matter of mere opinion or speculation; it is increasingly being validated by empirical evidence. Biological sciences are undergoing a massive transformation that has been compared to the one that physics experienced in the 20th century as it came to grips with the peculiar realities of quantum physics and relativity.

Weber gives us a glimpse of the different scientific paradigm now coming into focus. He calls it «Enlivenment,» because the new sciences are revealing organisms to be sentient, more-than-physical creatures that have subjective experiences and produce sense. Organisms *embody* meaning and express a «world-making» sensibility. Their subjectivity and feelings of being alive are not incidental to their evolutionary history, but central to it. Weber sees Enlivenment as an «upgrade,» not a replacement, of the deficient categories of Enlightenment thought – a way to move beyond our modern metaphysics of «dead matter» and acknowledge the deeply creative, poetic and expressive processes embodied in all living organisms.

This growing recognition has profound implications for contemporary politics and public policy frameworks. Our obsolete, mono-cultural worldview is literally preventing us from understanding the deeper causes of our multiple crises. Drawing on metaphors from pre-Victorian Darwinian science and social norms, biology and economics have developed an integrated – but erroneous – «bioeconomic» narrative about how life, nature and policy work. This worldview also defines how «sustainability practices» shall be crafted and implemented globally. In the bioeconomic view, humans are regarded as ego-driven machines «playing the game of life,» competing in an endless struggle to survive and triumph over others. We are all supposedly rational, utility-maximising individuals – *homo economicus*. It is this story that we tell ourselves about the world and about our place in it, and that in turn *shapes* the world and limits our imagination of possible alternatives.

In fact, however, nature is *not* efficient, but rather highly «wasteful» in generating «free» excesses and a «surplus of meaning» – both of which are essential in sustaining ecosystems, biological diversity, and individual experience. There is no place in nature for exclusive ownership or artificial scarcity through property rights; ecosystems are in effect open-source regimes of natural abundance. Nature is not a zero-sum game, but an expansive, collaborative unfolding.

As human civilisation tries to come to terms with climate change, loss of biodiversity, and other ecological challenges, it is imperative that the human economy begin to shed the myths of another century and begin to recognise the actual principles of the new meaning-centred biology and its functioning in natural ecosystems. We must scrutinise the dominant principles of «bioeconomics» and their inherent tendencies to «economise» life. These principles fail to acknowledge the scientific realities of life itself – that «life» and «aliveness» are fundamental categories of thought and that individual experience and meaning are significant realities of ecosystems which law, policy and institutions must recognise and foster.

A particularly exciting aspect of Weber's thinking is his exploration of resilient enlivenment-based models around the world today. These are the self-organising, living examples of the commons. The commons is all about enlivenment, and Weber explains why. Unlike markets focused on the production and distribution of goods and services, the commons engages people at the core of their «life-centres.» This approach is the basis of a new sort of economy that honours people's personal needs and intrinsic interests, enhancing their sense of aliveness and in the process, intensifying the aliveness of underlying ecosystems. The commons speaks to everyone's need for meaning, participation, social connection and identity. It celebrates tradition and custom, and the sense of belonging and place, while fostering adaptation and innovation.

The idea of the commons is transformational, too, because it redefines «wealth» as something much more than money. If human well-being is the goal, wealth must engage with the life-centre of individuals. The commons can unleash decentralised energies and open up new possibilities for change in ways that «spreadsheet thinking» about an economy cannot. The commons provides the outlines of a new/old provisioning paradigm that is both enlivening to humans and ecologically creative.

Weber has done a great service here by presenting some of the latest scientific findings about biological reality; outlining the implications of a fully embodied culture for politics and policy; and showing how the commons movement can help fulfill the principles of enlivenment. He provides a compelling path for moving toward a new level of thinking and a powerful vision for a humane, ecologically responsible future. This vision shows that the greatest achievements of the Enlightenment, our individual freedom and rights, can and must be combined with those of the coming Enlivenment, the unfolding of the relational, co-creative power of embodied, autonomous beings.

The framework of Enlivenment that Weber outlines here is a promising beginning for all those who stand ready to search for real solutions to the challenges of our future. But it is only a beginning. It will require much thought and respectful encounters among proponents of different perspectives to explore and expand the paradigm of Enlivenment.

Berlin, May 2013

Dr. Heike Löschmann

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INTRODUCTION

This essay proposes a new perspective on the interplay of nature, humans and economy. It tries to develop a set of alternatives around some basic assumptions our current worldview is built upon. The position taken here will be called «Enlivenment,»¹ because its central thesis is that we have to reconsider «life» and «aliveness» as fundamental categories of thought. Enlivenment tries to supplement – not to substitute – rational thinking and empirical observation – the core practices of the Enlightenment position – with the «empirical subjectivity» of living beings, and with the «poetic objectivity» of meaningful experiences.

I argue that the biggest obstacle to the vexing questions of sustainability (itself a very elastic term with multiple and conflicting meanings) is the fact that science, society and politics have for the last 200 years lost their interest in understanding actual, lived and felt human existence. Scientific progress – and all explanations of biological, mental and social processes – is based on the smallest possible building blocks of matter and systems. It advances through analyses that presume that evolution in nature is guided by principles of scarcity, competition and selection of the fittest. To put it in provocative terms, one could say that rational thinking is an ideology that focuses on dead matter. Its premises have no way of comprehending the reality of lived experience. Should it be so surprising, then, that the survival of life on our planet has become the most urgent problem?

Based on new findings predominantly in biology and economics, I propose here a different view. I argue that lived experience, embodied meaning, material exchange and subjectivity are key factors that cannot be excluded from a scientific picture of the biosphere and its actors. A worldview that can explain the world only in the «third person,» as if everything is finally a non-living thing, denies the existence of the very actors who set forth this view. It is a worldview that deliberately ignores the fact that we are subjective, feeling humans – members of an animal species whose living metabolisms are in constant material exchange with the world.

In the vision of the world that I propose here, we human beings are always part and parcel of nature. But this nature is much more like ourselves than we might imagine: It is creative and pulsing with life in every cell. It is creating individual autonomy and freedom by its very engagement with constraints. On an experiential level, as living

1 Thanks to Heike Löschmann of Heinrich-Böll-Foundation, Berlin, who in her customary talent of treating the most serious things with a light touch, coined this term in an informal talk in the presence of the author, on November 15, 2012.

creatures on this animate earth, we can understand or «feel» nature's forces if only because we are made of them.

I propose here a new approach to understand our «sustainability dilemma» by urging that we embrace a new cultural orientation towards the open-ended, embodied, meaning-generating, paradoxical and inclusive processes of life. To some, this may sound as if I am proposing a new naturalism, the view that everything is composed of natural entities. But if so, it would be a naturalism of second order that takes into account that nature is not a meaning-free or neutral realm, but is rather a source of existential meaning that is continuously produced by relations between individuals, producing an unfolding history of freedom.

This essay is meant as a first step to probe the terrain. It tries to substitute the «bioeconomic principles» that are guiding so many of our economic, political, educational, and private decisions today, with new «principles of enlivenment». These are based on the observation that we are living in a biosphere, an unfolding process of natural freedom, and that as humans we are not only capable of directly experiencing this aliveness, but we also need to experience it ourselves. The experience of being alive is a basic human requirement that connects us to all living organisms and to «nature» (often misunderstood as something apart from us). Acknowledging this existential need is not only important for the future progress of the biological sciences; it is imperative to our future as a species on an endangered planet. Our inability to honour «being alive» as a rich, robust category of thought in economics, public policy and law means that we do not really understand how to build and maintain a sustainable, life-fostering, or enlivened, society.

Enlivenment is not an arcane historical or philosophical matter but a set of deep ordering principles for how we perceive, think and act. If we can grasp enlivenment as a vision, we can begin to train ourselves to see differently and approach political struggles and policy with a new perspective. The political consequences of adopting such an approach, which I call «policies of enlivenment,» are far-reaching. Embracing a non-dualistic viewpoint allows for more inclusion and cooperation because there is no disjuncture between «rational theory» and social practice; the two are intertwined.

At the same time this perspective allows for a deeper acknowledgment of the unavoidable messiness of life – conflicts, bad timing, shortcomings, etc. – for which rules of negotiation and accommodation have to be cultivated. The freedom that the Enlightenment has sought to advance is the individual's personal autonomy to be one's own master. The freedom that the Enlivenment seeks to advance is our freedom as individuals and groups to be «alive-in-connectedness» – the freedom that comes only through aligning individual needs and interests with those of the larger community. Only this integrated freedom can provide the power to reconcile humanity with the natural world.

I. *Enlivening* the crisis: Looking beyond the current ideology of death

This essay tries to describe the contemporary situation on our planet from a new perspective. When I use the term «contemporary situation,» I refer to the many familiar facets of our current multiple crises: environmental decline, biodiversity loss, climate change, North-South conflict, economic inequalities. But I am not referring only to the external or material aspects of these challenges, but also to their more or less hidden, subjective dimensions, which could be subsumed under the term «crisis of sense-making.» To stress the importance of this focus, let me only note that unipolar depression was «ranked as the third leading cause of the global burden of disease in 2004 and is predicted to move into the first place by 2030,» surpassing infectious and heart diseases, and cancer.²

I wish to propose that the multidimensional crises of the current global situation are best understood as a «crisis in global sense-making» that has several, and even contradictory, dimensions. Its aspects range from the threat to the global natural life-support systems from overfishing, deforestation, soil degradation, loss of species and abrupt climate shifts (among many other problems) to the degradation of human support systems for people's social and psychological lives.

All these single factors cannot be seen in isolation from one another and treated separately. They are aspects of the same problem. The mainstream approach to our manifold dilemmas, however, is to sort out various problems in separate «silos» and then search for specific, single «solutions.» This amounts to the only officially acceptable methodology in established institutions, whether they are educational institutions or public health systems, environmental organisations or international policy bodies. But an analytical approach that separates and externalises problems to make them technically manageable is precisely why these troubles have arisen in the first place. We are caught in a deadlock.

Therefore, if we hope to make any serious progress, we should first ask what is blocking us. Is there a universal source from which most contemporary dilemmas arise? We should look for common denominators in our thinking or policies that may be responsible so that we can begin to name related problems – and begin to look for a new perspective to face reality. Then perhaps we can develop a new narrative that more accurately describes the world that we live in – and wish to live in.

2 Deborah Wan (2012): «Foreword». In: *Depression: A global Crisis*. World Federation for Mental Health, World Mental Health Day October 10, 2012, p. 2.

Beyond the current metaphysics of dead matter

A profound flaw of our civilisation, with its multiple crises, could lie in the fact that we deny the world's deeply creative, poetic and expressive processes, all of them constantly unfolding and bringing forth a multitude of dynamic, interacting relationships. We might have forgotten what it means to be alive. All of the sciences, whether natural, social or economic, try to grasp the world as if it were a dead, mechanical process that could be understood through statistical or cybernetic analyses. Since Descartes' groundbreaking revolution of separating reality into a hidden, subjective, strictly non-generalisable *res cogitans* on the one hand – our minds – and a visible malleable, calculable, but dead *res extensa* on the other – the material world – human-kind's most noble endeavours have focused on separating reality and all its parts into discrete building blocks – atoms and algorithms. This is seen as the most fruitful way to advance human progress.

The scientific rules that are still as valid today as when they were established in the 17th century, require us to treat everything as dead matter. The automatic application of Ockham's razor has become a lethal weapon transforming every object of interest into an assemblage of non-animated building blocks.³ This tendency has cursed our civilisation with a sort of King Midas touch in reverse. This mythical king transformed any object into gold by the touch of his hands, eventually causing him to starve to death. All things that our civilisation touches with the X-ray vision of the scientific method in effect loses their aliveness. Science has erected a metaphysics of the non-living to analyse the most remarkable aspect of our being in the world, namely our being alive.

Enlightenment 2.0: «Enlivenment»

The common focus that could help us understand the current planetary crisis lies in the idea of «Enlivenment.» Enlivenment, in a first approach, means getting things, people and oneself to live again – to be more full of life, to become more alive. The idea is at once concerned with the «real life» of threatened species or ecosystems, or people under attack, and with the «inner life» of ourselves, representatives of the social species *Homo economicus*, who incessantly perform more or less necessary tasks and fulfill more or less real needs to maintain the huge machine we call «the economy.»

With the term *Enlivenment* we have found a starting point from which to identify the various neglected areas of reality that are hidden in the blind spot of modernist, scientific thinking. It is not accidental that the term bears so much resemblance to the name of its predecessor concept, the *Enlightenment*. With the rise of the Enlightenment (which actually took many centuries), the basic assumptions lying at the ground of modern times came into their full dynamism: namely, that the world is understandable on rational grounds; that humans can change it (because we can understand it);

3 Ockham's razor is a scientific principle of parsimony stating that among competing explanations the one that makes the simplest and fewest assumptions is the most trustworthy one to choose.

and that we not only have the chance, but also the right and obligation to change it to improve the human condition. With the Enlightenment modern humanism was born, a way of thinking and being that has incredibly improved human life and living conditions. But Enlightenment habits of thought – especially the rational and technocratic understanding of human agency – also have a dark side, as famously observed by critics of the «dialectics of enlightenment.»⁴

As Horkheimer and Adorno, and in their wake many others, argue, Enlightenment ideology brought about not only freedom, but also some of the great totalitarian-technocratic catastrophes of the 20th century. This tradition of thought is to some extent also responsible for the technocratic disasters of the current *unsustainability* of our planetary ecosystem. The main flaws of the Enlightenment approach – besides its presumption that reality is essentially transparent on its face and open to all – are its reliance on dualisms of thought, rational discourse, and the Newtonian subject-object split. Significantly, the Enlightenment project has no use for notions of life, sentience, experience, subjectivity, corporeal embodiment and agency. These concepts are in effect excluded from the Enlightenment view of the world.

I review this familiar history to stress that Enlightenment norms are not arcane historical or philosophical matters, but deep structural principles in modern culture that have a powerful effect in ordering how we perceive, think and act. Our economics, legal systems, government policies and much else are firmly based on Enlightenment principles. There are good reasons why conventional economic and political thought is unable to «solve» our sustainability crisis. It reflects profound errors of understanding about human thought (epistemology), relationships (ontology) and biological functioning.

The idea of Enlivenment is meant as a corrective. It seeks to expand our view of what human beings are as embodied subjects. This notion does *not* exclude the role of human rationality and agency, but it does connect them with other modes of being, such as our psychological and metabolic relationships with the «more-than-human» world, in both its animated and non-animated aspects.⁵ *Enlivenment* links rationality with subjectivity and sentience.

It is quite possible that the grand political goals the Enlightenment inaugurated 250 years ago, which in many areas of the world are still far from being realised, can only be achieved through a shift to the idea of Enlivenment. It just might be possible, for example, that achieving a broader social inclusion in the polity of a state will require a deep «existential recognition» of all citizens in a state, particularly ethnic minorities. By this, I mean that universal emancipation may require a deeper understanding of the «aliveness» of a person in order to recognise and accept his or her needs. Therefore, the Enlightenment might be waiting for «an upgrade» to version 2.0 if it is to make good on its stated claims. This version shall be called *Enlivenment*.

4 See Max Horkheimer & Theodor W. Adorno (1983): *Dialektik der Aufklärung*. Frankfurt a. Main: Suhrkamp.

5 For this term see David Abram (1996): *The Spell of the Sensuous: Perception and Language in a More Than Human World*. New York: Pantheon.

What is life, and what role do we play in it?

By using the term Enlivenment to reorient ourselves to the planetary crisis, we can begin to focus on a singular deficiency in contemporary thought: a lack of understanding of what life is. We might even say we have forgotten what life means. We are unaware of our most profound reality as living beings. This absentmindedness is an astonishing fact – but it is also a logical outcome of our rational culture. The «meaning of life» and questions about human purpose, satisfactions and aspirations have long been ignored in biology, in economics and the humanities.

And yet, this notion of «meaning of life» embodies some simple, everyday questions that stand at the centre of human experience. It demands that we consider: What do we live for? What are our inner needs as living creatures? What relationships do we have, or should we have, to the natural order? How do we produce things for our immediate needs or the market? How must we create, maintain and earn our livelihoods? My proposal is to shift focus to a new question: *What is life, and what role do we play in it?*

It was once considered the highest exercise of human cognition and sentience to explore what life means, to debate which relationships create and maintain it, and to ask how to live it. But for at least the past century, talk about these ancient, crucial dimensions of life has been treated as the dusty relics of some obscure graveyard of intellectual history. It may well be that by excluding such talk about life, its meanings, its dimensions and the inner tensions between living agents and their relationships, we have lost the most important reference point to act in a wise and sustainable manner. After all, who would deny that s/he is alive? And yet the existential realities of living are treated as somehow too prosaic or arcane to discuss.

If we are to recover reliable references points for sustainable living, and so find the wisdom to confront the manifold crises of our time, I will argue in the sections below that we must first look for a fresh account of the principles of existence of living beings. This requires that we carefully reconsider how relationships in the biosphere are organised – and experienced. Are there basic rules how organisms realise their existence? What makes ecological systems sound? What makes the individual experience of a «full life» possible? How is exchange of goods, services and meaning possible without degrading the system? In the following sections, I will work through such questions with the goal of formulating a «policy of Enlivenment».

These are complicated fields – and rather down-to-earth questions at the same time. Hence we should not be afraid of getting too general. Generations of «experts» in different scientific specialties have given in to such fear and refused to address the mysteries of lived existence. The heritage left by such safe, narrow-gauged thinking has been devastating.

I propose to follow a rather pragmatic focus: First, we have to diagnose why we have an aversion to thinking or talking about life. Then, it is important to consider how a contemporary account of life could be imagined without falling back into essentialist thinking, but rather to open genuinely new windows of thought. Finally, we should

try to understand what recent scientific findings reveal about the unfolding of life's processes – and how this could lead to a new approach that overcomes dualist mode of thinking, our reflexive mental habit of separating resources and natural agents, reason and the physical world, human life and animate nature, and physical bodies and human meaning.

Enlivenment is more than sustainability

If we look back to the last thirty years of sustainability politics, we can observe a lot of progress – the enactment of laws to protect nature, the setting of safety thresholds for toxic materials, the ban on fluorocarbons, and so on. But the basic contradiction remains, that we consume the very biosphere that we are a part of and that we depend upon. From this perspective, we have not been able to come closer to solving the sustainability question; we remain trapped in its underlying, fundamental contradictions.

The different view of sustainability I will develop in this essay, therefore, does not emphasise technical improvement or sound treatment of scarce resources as a priority. Rather, it sees in the goal of «leading a fuller life» the most important stepping stone toward changing our relationships with the animate earth and among ourselves. If we adopt this perspective, we will begin to see that something is sustainable if it enables more life – for myself, for other human individuals involved, for the ecosystem, on a broader cultural level. It is crucial to rediscover the linkage between our inner experience and the «external» natural order.

To understand what «more life» means from the standpoint of a sustainability position, and to help us put human species and the rest of nature on the same plane, I propose that we regard «life as embodied beings» as a common denominator for all living organisms. Life is what we all share. And life is what we all can feel: The emotional experience of feeling our needs and having them satisfied is a direct sign of how well we realise (or fail to realise) our aliveness. The world is a place that is constantly seeking to express its creative powers through a continuous interplay of meaningful relationships. In this scenario of «life as embodied beings,» human beings, as natural creatures, experience the forces and structures of nature as much as other beings. But we humans have our species-specific way of dealing with the openness of nature and the unfolding natural history of freedom – namely, symbolic culture.⁶

If we treat sustainability as that what makes us vibrant with perspectives of personal growth and development, it gives us an entirely new (and more accurate) field of vision for understanding the challenges we must meet. Or, as Cunningham

⁶ For an in-depth approach to this question from a biopoetical point of view see Andreas Weber (2001): «Cognition as Expression. On the autopoietic foundations of an aesthetic theory of nature», *Sign System Studies* 29(1): 153-168; id. (2007): *Alles fühlt. Mensch, Natur und die Revolution der Lebenswissenschaften*. Berlin: Berlin Verlag; id. (2010): «The Book of Desire: Towards a Biological Poetics». *Biosemiotics* 4(2): 32-58; id. (2012): «There is no outside. A Biological Corollary for Poetic Space». In Silver Rattasepp, Tyler Bennett, eds.: *Gatherings in Biosemiotics. Tartu Semiotics Library 11*. Tartu: University of Tartu Press, 225-226.

expressed it: Nobody will be very impressed if you answer the question «How is your marriage?» with «Oh, it's sustainable.» But everyone would turn his or her head if you replied: «Well, it's energising. It makes me feel alive.»⁷

The Green New Deal as Anthropocenic Economics

The idea behind Enlivenment differs from popular, faddish proposals to design a «green economy» or campaign for a «green new deal.»⁸ In these proposals, the dualist opposition between human culture and nature and its resources is not even addressed, let alone resolved. If anything, these policy approaches intensify dualist tensions by trying to increase technological efficiency and the objectification of nature.

In this essay, I shall not criticise the «green economy» approach on the basis of its incapacity or inability to incite real change. In truth, this is difficult to judge. Critics point to the «rebound-effect» (or Jevons Paradox), in which increased efficiencies from «green innovation» may decrease the resources used in a given market, but they also free up that money to spend on other things, resulting in massive net increases in economic growth and resource usage. We can see this effect at work in the increased carbon dioxide production caused by «efficient» information technologies and the Internet.

All proposed «efficiency revolutions» invariably point to nature itself as the supreme model of efficiency. But this model is wrong. Nature is not efficient, as I will discuss below. It is only to a huge extent edible or usable. Living beings are one interrelated, embodied whole, of which humans comprise only a fractional portion. The real flaw of the efficiency approach to sustainability is that nature is still seen as something «outside» that can be used for human means. But nature is not outside of us. It is inside of us – and we are inside of it.

There is a threshold limit for any increase in efficiency, and that limit is the natural imperfection of embodied being – or as the Jewish scholar Gershom Scholem calls it, the «necessary imperfection of every creation.» Humans as natural beings will always suffer from deficiencies: They are mortal and full of contradictions – as every organism is. Higher efficiency is not capable of improving upon that. Efficiency as a solution therefore amounts to a «category error» in thinking.

The Enlivenment approach differs from the green economy approach in another key respect: Whereas green economics remain committed to the idea of material «growth» as the best way to improve the conditions of life, Enlivenment approaches recognise that nature does not grow in absolute terms. The «GDP of the biosphere» (if one may be so absurd) has remained constant for a very long time. Nature's ecology is a steady-state economy. The only factor of nature that grows is the immaterial dimen-

7 Storm Cunningham (2008): *reWealth!: Stake Your Claim in the \$2 Trillion reDevelopment Trend That's Renewing the World*. Washington: McGraw Hill.

8 Ralf Fücks (2013): *Intelligent wachsen: Die grüne Revolution*. München: Hanser; Thomas L. Friedman (2010): *Was zu tun ist: Eine Agenda für das 21. Jahrhundert*. Frankfurt am Main: Suhrkamp; see also Andreas Weber (2008): *Biokapital. Die Versöhnung von Ökonomie, Natur und Menschlichkeit*. Berlin: Berlin-Verlag.

sion, which could be called depth of experience: the diversity of natural forms and the variety of ways to experience aliveness.

There is another perspective to the global sustainability question that is widely discussed today: The «Anthropocene hypothesis.» The idea is that we are now living in the «Anthropocene» era, a distinct geological epoch in which human culture has largely overtaken the biogeochemical realities of households; humans can now dominate and control matter, energy streams and the distribution and existence of biological species. Here, the difference between man and nature is claimed to be resolved – but not by recognising that all living beings and living systems are subject to the same natural dynamics and creative principles (as the Enlivenment idea tries to propose), but by declaring that humans can assert mastery over the whole of inanimate and living nature on earth.

The Anthropocene position shares with the green economy idea the underlying anthropocentric assumption – that we can (or even must) start from a uniquely human standpoint to come to terms with the problems of sustainability. Both regard Darwinistic theories and free-market ideology as the inexorable premises of economic life (a paradigm of thinking that I will discuss in the next chapter). Another difference between both anthropocentric approaches and the Enlivenment approach is their stance towards perfectability. Anthropocenes are strictly utopians in believing that perfect schemes can be achieved; the biocentrism of Enlivenment perspective recognises, as a matter of theory, the unavoidable messes, shortcomings and efficiency drains that are an inescapable part of biological and human reality, which no cultural or technological improvements can eliminate. (For a more in-depth discussion, see Chapter VI.)

Science becomes reconnected with life

The refusal to study aliveness as a scientific phenomenon, however, is weakening. Today many scientific disciplines that have historically resisted a worldview that could open up space for the primordial human experience of embodied feeling, have begun to search for a way out. Independent of each other, such disciplines as biology, psychology, physics and even economics are rediscovering the phenomenon of the living.

Biology in particular is discovering that sentience and felt expression in organisms are not just epiphenomena but rather the way living beings exist in the first place. Scientists like the Harvard embryologists Marc Kirschner and John Gerhart, the Copenhagen and Tartu-based theoretical biologists Jesper Hoffmeyer and Kalevi Kull, and science theoretician Elizabeth Fox Keller, are starting to acknowledge that meaning and expressiveness are deeply rooted in the heart of nature. Such eminent biological and systems thinkers as Lynn Margulis, Francisco Varela, Alicia Juarrero, Stuart Kauffman and Gregory Bateson have opened up a picture in which organisms are no longer seen as machines competing with other machines, but rather as a natural phenomenon that «creates» and develops itself in a material way while continuously making and expressing experiences. Being alive, these researchers wish to show, is

not a case of cause-and-effect alone, but also a complicated interplay of embodied interest and hence feelings. Brain researchers like Antonio Damasio recently have shown that emotions, not abstract cognition, are the stuff of the mind.⁹

If we consider all these changes in contemporary biology, a completely different picture of the living world necessarily emerges. We are starting to see that humans do not exist at the exterior or edge of «nature,» but are deeply interwoven into the material, mental and emotional exchange processes that all of the more-than-human world participates in. This is leading biological sciences to a major paradigm change of the sort that physics experienced a century ago. The physical sciences have for a long time been able to show that the separation of an observer (subject) and an observed phenomenon (object) is an artifact of causal-mechanic, linear thought. For quantum physics, there is no locality or temporal chronology. Rather, any event can be connected to any other. The physicist David Bohm has called this the «implicate order» of the cosmos. This view not only calls into question locality and chronology, it blurs the separation of physical and psychological reality. We exist in a space-time that is a continuum of «insides» (meanings) and «outsides» (bodies).

Research into the commons paradigm has demonstrated that any economic activity at its base is not just an exchange of objects and money; it is a rich set of ongoing flows and relationships. So, too, with human relationships with natural ecosystems: humans are constantly engaged in ecological exchanges of gifts that not only distribute material goods and services, but also engender a sense of belonging and commitment, and hence feeling and meaning. Seen from this viewpoint, economic exchange cannot meaningfully distinguish between agents and resources as wholly independent entities; they are both entangled with each other. In the same way, land and its inhabitants cannot be wholly separated, they are mutually dependent. In any given habitat, ecological exchange brings with it reciprocal flows of matter, energy and existential relatedness («natural gifts»).

¹⁰

Finally, in their practice artists are discovering that creative processes are able to change perception. Imagination can bring about productive change in oneself and in the world. Ecopsychology is able to prove that only by experiencing other beings in a more-than-human-world can we grasp and develop our deepest qualities as human beings.¹¹ The new picture of reality that the arts and sciences promise is one of

9 Gregory Bateson (1972): *Steps to an Ecology of Mind*. New York: Ballantine. Francisco J. Varela, Evan T. Thompson, Eleanor Rosch (1993): *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge: MIT Press; Stuart Kauffman (1996): *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity*. Amer Chemical Society; Lynn Margulis (1999): *Symbiotic Planet: A New Look at Evolution*. New York: Basic Books; Alicia Juarero (1999): *Dynamics in Action. Internal Behaviour as a Complex System*, Cambridge: MIT Press; Antonio Damasio (2000): *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt Brace; Andreas Weber & Francisco J. Varela (2002): «Life after Kant. Natural purposes and the autopoietic foundations of biological individuality». *Phenomenology and the Cognitive Sciences* 1: 97-125.

10 Lewis Hyde (2007): *The Gift. Creativity and the Artist in the Modern World*. New York: Random House.

11 Abram (1996), op. cit.

a deeply sentient and meaningful universe. It is *poetic* – productive of new life forms and ever-new embodied experiences. It is expressive of all the subjective experiences that individuals make. It is a universe where human subjects are no longer separated from other organisms but rather form a meshwork of existential relationships – a quite real «web of life». This «flesh of the world», as the French philosopher Merleau-Ponty called it, is possibly best understood as a creative play of overcoming unsolvable paradoxes from moment to moment, no matter the realm – ecology, culture, economics or the arts.¹²

Seen from this perspective, any policy to foster sustainability acquires a new scope and new metrics of success. Sustainability can be successful only if it enhances the aliveness of human agents, and of nature and society. Thus, it could be enriching to develop more deliberate «*policies of enlivenment*» – not as a matter of natural laws dictating the order of human society, but as a strategy to honour the manifold embodied needs of sentient individuals in a more-than-human world.

A new narrative of living relationships

It is necessary to explore a new narrative for what life is, for what it is to be alive, for what living systems do, and what their goals are. We need to explore how values are created by the realisation of the living, and how we, as living beings in a living biosphere, can adapt the production needed for our livelihoods to that reality, the only reality we have. Even though this narrative will encompass different areas and disciplines, life is the binding dimension for all of them. As a living being, the human organism integrates and connects diverse fields of existential experience, metabolic exchange and social relationships.

The narrative that I propose is by no means an objectivist account, however – a mechanics or a cybernetics of reality. It will be objective in the sense that poetics is objective: transmitting shared feelings by working in the open dimension of continuous imagination, which is the field of life itself. The narrative of the living that I wish to unfold here will thus strive for «poetic objectivity» or «poetic precision.» This is the most appropriate way to describe the living world with its endless unfolding of existential relationships and meanings.

Nature, in the enlivening perspective, is not a causal-mechanical object but a relational network between subjects who have individual interests to stay alive, grow and unfold. Enlivenment means to push biological thinking beyond the objectivist paradigm in which it is now imprisoned, and to emulate the shift that physics made 100 years ago when it moved beyond Newtonian thinking. To end the Newtonian approach to the biosphere, other organisms, ourselves as embodied beings and the whole of ecological and economical exchange processes, will mean to acknowledge that we, as human observers, are as alive and expressive as the other organisms and ecosystems that we are observing. Such a biology is emphatically non-reductionist. Its

¹² Maurice Merleau-Ponty (1964): *Le visible et l'invisible*. Paris: Gallimard.

main goal is to understand how freedom can arise and yet be anchored in a material, living world.

My argument here is in line with evolutionary biologist Edward O. Wilson's recent cultural turn – in which he distanced himself from Richard Dawkins' «selfish gene» position – in stating that we need a «second Enlightenment.»¹³ If natural processes inevitably yield subjectivity, meaning and feeling, our science, and our science-based policy and economy, must take these lived dimensions into account. What is needed is an «Enlivenment» as a «second Enlightenment» – a new stage of cultural evolution that can safeguard our scientific (and democratic) ideals of common access to knowledge and the powers connected with it – while at the same time validating personal experience that is felt and subjective: the defining essence of embodied experience. The Enlivenment that I envision includes other animate beings, which, after all, share the same capacities for embodied experiences and «worldmaking.»

Enlivenment therefore is not just another naturalist account to describe ourselves and our world that can then automatically dictate specific policies or economic solutions. The reflection I propose is indeed naturalist – but it offers a «wild naturalism» in the sense of David Abram –, a naturalism that is based on the idea of nature *as an unfolding process of ever-growing freedom and creativity paradoxically linked to material and embodied processes*. The biosphere is alive in the sense that it does not only obey the rules of deterministic or stochastic interactions of particles, molecules, atoms, fields and waves. The biosphere is also very much about producing agency, expression, and meaning.

13 Edward O. Wilson (2012): *The Social Conquest of the Earth*. Cambridge: Harvard University Press.

II. Bioeconomics: the hidden megascience

In this section I want to explore on a more specific level why we living beings have mostly forgotten or marginalised the notion of life. To do this, I wish to draw attention to the astonishing interconnections and mutual support between the two guiding metaphysics of our culture. These are (Neo-)Darwinism, with its big idea of biological optimisation, in which functional adaptations supposedly create biodiversity, and (Neo-)Liberalism, with its concept of economic efficiency, supposedly creating wealth and equal distribution.

For more than 150 years, both assumptions have become intertwined streams of one coherent pattern of thought that forms the basic matrix of our official understanding of reality. The premises of neo-Darwinism and neoliberalism constitute the tacit, taken-for-granted understanding of «how the world works». Inside its deep and compact logical structure, the two currents of biological and economic optimisation theory are so mutually reinforcing and normative that respectable thoughts considers them beyond question.¹⁴

It is not by chance that «*eco-nomy*» and «*eco-logy*» are nearly identical terms. Both build on the metaphor of housekeeping and the provisioning of existential goods and services (the Greek word «*oikos*» means «house», «householding» or «family»). Both concepts have a particular and related manner of treating the organisation of this existential supply. Both start from the idea that keeping a house – or making a living, for that matter – is a theatre of competition and contest whose object is an ever-more-optimal efficiency. In the neoDarwinian, neoliberal narrative, the household is not, however, a place where feeling agents pursue their individual good. The householding process is strangely conceived of as completely subject-less. Its logic does not need to take account of the actual presence of agents. Indeed, it does not need to take life into account at all.

The process is subject-less and self-organised in the sense that eternal, external laws (that of selection and that of economic survival) punish or reward the behaviour of atomistic black boxes called «Homo economicus» – economic man – or in a more modern telling, the «selfish gene». To yield results in this framework of thinking, neither contemporary economics nor «eco-sciences» need to consider actual, lived experience. The framework has excluded life in the existential, experiential sense. We might therefore say that the prevailing «bioeconomic megascience,» the deep metaphysics of our age, is a science of non-living.

¹⁴ Andreas Weber (2012): «Natural Anticapitalism». In: Bollier, D.; Helfrich, S., eds., *The Wealth of the Commons. A World beyond Market & State*. Amherst, Massachusetts.

The metaphysics of eco-efficiency mirror 19th century social reality

Both Darwinism and Liberalism were born in pre-Victorian England at about the same time. Their theoretical premises explicitly and implicitly refer to the social conditions and practices of a country undergoing the wrenching disruptions of industrialisation. At that time there existed a rigidly stratified society without any structured system of social care and cooperation.

Through their intellectual proximity to each other, Darwinian evolutionary theory and Adam Smith's free-market theories became a sort of «political economy of nature». While Charles Darwin was struggling with an explanation for the diversity of living nature, political economist Thomas Robert Malthus proposed an idea that became a pivotal point in the development of evolutionary theory and hence for the still-valid understanding of biology as result of evolution-by-optimization.

Malthus was obsessed by the idea of scarcity as a driving force of social change. There will never be enough resources to feed a population that steadily multiplies, he argued, and a struggle for dominance must necessarily take place in which the weakest will lose. Charles Darwin adopted this piece of socio-economic theory, drawn from Malthus' observations of Victorian industrial society, and applied it to his comprehensive theory of natural change and development. Interestingly, even the more empirical-biological part of Darwin's theory dealing with «selection» was not based on observations of long-term natural change. It was based on the experiences and practices of Victorian breeders (Darwin himself raised pigeons and orchids).

The resulting discipline, evolutionary biology, is a more accurate reflection of pre-Victorian social practices than of natural reality. In the wake of this metaphorical takeover, such concepts as «struggle for existence,» «competition,» and «fitness» – which were central justifications of the political status quo in (pre-)Victorian England – tacitly became centrepieces of our own self-understanding as embodied and social beings. And they still are – especially in those parts of the world that even now resemble pre-Victorian England. Biological, technological, and social progress, so the argument goes, is brought forth by the sum of individual egos striving to out-compete each other. In perennial rivalry, fit species (powerful corporations) exploit niches (markets) and multiply their survival rate (profit margins), whereas weaker (less efficient) ones go extinct (bankrupt). This metaphysics of economics and nature, however, is far more revealing about our society's opinion about itself than it is an objective account of the biological world.

This reciprocal borrowing of metaphors between the disciplines did not only transform biology. It also mirrored back onto economics, which came to see itself more and more as a «hard» natural science. It deliberately derived its models from biology and physics, culminating in the formulation of the mathematical concept of Homo economicus. If you study the liberal classics, which are widely taught in universities, the textbooks still invoke 19th-century economists who mingle concepts from the natural sciences with economic theory. William Jevons was the British economist

and logician who postulated that economics describes the «laws of the heart», and Léon Walras was the French economist who claimed that «economic equilibrium» follows deterministic laws imported from physics.¹⁵

The resulting picture – the individual as a machine-like egoist always seeking to maximise his utility – has become the implicit but all-influencing model of human values and behaviour. Its shadow is cast over a whole generation of psychological and game-theoretical approaches to economics. For its part, evolutionary biology has also taken inspiration from economic models. The idea of the «selfish gene,» for example, is not much more than the metaphor of *Homo economicus* extended to biochemistry.

It should not be surprising in the least that biology and economics have come to function as two branches of one and the same science. Each works with the same structural assumptions and equivalent perspectives in their respective fields of inquiry. And they both exclude the sphere of living beings and lived experience from their description of reality. The great danger of this closed, totalistic pattern of thinking is its capacity to obscure reality and become a self-fulfilling prophecy. If we are convinced that we have to describe reality as non-living, and treat it accordingly, life and living processes become highly problematic fields of thought and action. They become inscrutable if not suspect.

This is our predicament today. If our formal systems of thought about the biosphere see it as nonliving, this will inevitably engender a lack of concern toward life and to a loss of species and a gross indifference to experience. How many times have the *Wall Street Journal* or *The Economist* sneered at the vulnerability of the snail darter and other endangered species threatened by development projects? If we conceive of human beings as *Homo economicus*, as non-sentient automatons whose behaviours can be described by algorithms, sentience will be ignored if not forbidden and felt experience will be seen as irrelevant. This is exactly what is happening.

By contrast, to see reality as a living process would literally change everything. This is the challenge of Enlivenment as a «transcendent paradigm.» Its insistence that our policies focus on living experience provides the deepest possible ethical leverage for intervening in our global system.¹⁶ Of course, this approach is moot in today's political culture. But political change must start with our imagining of a different reality. Only by imagining a different world have people ever been able to change the current one.

How dualism encloses the freedom of embodied individuality

We can call this alliance between biology and economics an «economic ideology of nature,» or «bioeconomics.» Today it reigns supreme over our understanding of human culture and world. It defines our embodied dimension (*Homo sapiens* as a gene-governed survival machine) as well as our social identity (*Homo economicus* as an egoistic maximiser of utility). The idea of universal competition unifies the

15 Léon Walras (1954): *Elements of Pure Economics*. Irwin; W. Stanley Jevons (1871): *The Principles of Political Economy*, London: MacMillan; for discussion see Weber (2008), op. cit.

16 For an eye-opening discussion on our limited ability to identify relationships in any given system cf. Donella Meadows (2007): *Thinking systems: A primer*. Sustainability Institute, v.13, 4-Sep-07.

two realms, the natural and the socio-economic. It validates the notion of rivalry and predatory self-interest as inexorable facts of life. You have to eliminate as many competitors as possible and take the biggest piece of cake for yourself. The economic ideology of nature amounts to a license to steal life from others. In truth, the roots of this thinking precede pre-Victorianism. Philosopher Thomas Hobbes famously viewed the world as a «war of all against all,» and his times also saw the forcible enclosure of the commons – the private theft of nature’s abundant supplies, which had previously been open in principle to everyone.

This unfolding of modern economic thinking with its endless focus on competition developed in tandem with dualism – the metaphysical division of the world into «brute matter» to be exploited and «human culture» permanently casts human liveliness in a problematic – or even «absurd» – relationship to the rest of the universe.

It is noteworthy that liberal economists openly acknowledge the inadequacy of their worldview even as they cling obsessively to it. John Maynard Keynes, for example, clearly criticised the standard framework of economic thinking as perverting life’s most noble attitudes. «For at least another hundred years, we must pretend to ourselves and to everyone that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little longer still», Keynes claimed.¹⁷ He had a point: Our cultural tradition can only be described as a bond with the devil. But to deny the character of reality never has been a good strategy for resolving a problem.

How nature’s inefficiencies result in enlivened ecosystems

What are the most prominent flaws of our bioeconomic view? What can we say about the validity of the common assumptions of the bioeconomic paradigm? Most if not all of them ignore the fact that we are living subjects in a living world constituted by subjective, creative agents. The orthodox assumptions of bioeconomics already violate the state of the art research in the physical sciences that show that no relationships between subjects and objects are possible if you clearly separate the observer and observed. But what observations in ecology – the natural household – could also push a shift toward an economic *Enlivenment*?

The prevailing biological view of the organic world – and the picture of man within it – is changing. New research is shifting the paradigm from the Darwinistic idea of a battlefield between antagonistic survival-machines to that of a complex interplay among various agents with conflicting and symbiotic goals and meanings. In the new biological paradigm, the organism is starting to be seen as a subject that interprets external stimuli and genetic influences rather than being causally governed by them. An organism negotiates the terms of its existence with others under conditions of limited competition and «weak causality.» This shift in the axioms of «biological liberalism» is opening up a new picture of the organic world as one in which freedom evolves and organisms, including humans, play an active, constructive role

¹⁷ John Maynard Keynes (1991): «The Future». *Essays in Persuasion*, London: W. W. Norton.

in imagining and building new futures. The natural world as it actually works *refutes* many axioms of the bioeconomic worldview:

- **Efficiency:** The biosphere is not efficient. Warm-blooded animals consume over 97 percent of their energy only to maintain their metabolism. Photosynthesis achieves a ridiculously low efficiency rate of 7 percent. Fish, amphibians and insects have to lay millions of eggs only to allow for the survival of very few offspring. Instead of being efficient, nature is highly redundant. It compensates for possible loss through incredible «wastefulness.» Natural processes are not parsimonious but rather rely on generosity and waste. The biosphere itself is based on a «donation,» the foundation of all biological work – solar energy – which falls as a gift from heaven.
- **Growth:** The biosphere does not grow. The quantity of biomass does not increase. The throughput of matter does not expand; nature is running a steady-state economy – that is, an economy where all relevant factors remain constant in relation to one another. Also, the number of species does not necessarily increase; it rises in some epochs and falls in others. The only dimension that really grows is the diversity of experiences: ways of feeling, modes of expression, variations of appearance, novelties of patterns and forms. Therefore, nature does not gain mass or weight, but rather depth.
- **Competition:** It has never been possible to prove that a new species arose from competition for a resource alone. Species are rather born by chance: they develop through unexpected mutations and the isolation of a group from the remainder of the population through new symbioses and cooperations (the process by which our body cells arose from bacterial predecessors cooperating in intracellular symbiosis, for example). Competition alone – for example, for a limited nutrient or ecological niche – causes biological monotony: the dominance of relatively few species over an ecosystem.
- **Scarcity:** Resources in nature are not scarce. Where they become so, they do not lead to a creative diversification, but to an impoverishment of diversity and freedom. The basic energetic resource of nature, sunlight, exists in abundance. A second crucial resource – the number of ecological relationships and new niches – has no upper limit. A high number of species and a variety of relations among them do not lead to sharper competition and dominance of a «fitter» species, but rather to richer permutations of relationships among species and thus to an increase in freedom, which is at the same time also an increase of mutual dependencies. The more that is «wasted» – and thus consumed by other species –, the bigger the common wealth becomes. Life has the tendency to transform all available resources into a meshwork of bodies. In old ecosystems where solar energy is constant, as in tropical rainforests and high oceans, this brings forth more niches and thus a greater overall diversity. The result is an increase of symbioses and reduced competition. Scarcity of resources, experienced as the temporal lack of specific nutrients, leads to less diversity and the dominance of few species, as for example in temperate coastal mudflats.

■ **Property:** There is no notion of property in the biosphere. An individual does not even possess his own body. Its substance changes permanently and continuously as it is replaced by oxygen, CO₂, and other inputs of energy and matter. But it is not only the physical dimension of the self that is literally made possible through communion with other elements, it is the symbolic as well: language is brought forth by the community of speakers who use it, and in the process, creates self-awareness and identity. Habits in a species are acquired by sharing them. In any of these dimensions the wildness of the natural world is necessary for the individual to develop its innermost identity. This world has *become*, and not been made by any particular individual, nor can it be exclusively possessed. Individuality in both its physical and social and symbolic senses, can only emerge through a biologically shared and culturally communicated commons.

In the next section we will analyse how these observations are being corroborated by biological science, giving rise to a new, emergent paradigm that is transforming a science of natural objects to a narrative of natural subjects.

III. Life-as-Meaning: Biopoetics as paradigm for living relationships

More than a decade ago, writing in the journal *Science*, the molecular biologist Richard Strohmman foresaw a paradigm shift that he termed the «organic turn in biology» (1997).¹⁸ By 2013 many of his assumptions had been empirically confirmed. The theoretical foundations of the classical molecular-evolutionary model in biology have now been called into question. Biology today is undergoing a profound reassessment of its core premises.

The current dramatic changes in theoretical biology, however, are not yet culturally recognised. On the contrary, the dogma of bioeconomics, as described in the last section, has never been as influential as it is today. Mainstream biology, as it is taught in school and university classes, and as it is vulgarised in the mass media, continues to grip the popular imagination. But at the frontiers of original thinking in biological sciences, a lot of deep, conceptual change is going on. The Newtonian dogma of a genetic blueprint commanding a machine-like organic system while constantly striving for new efficiencies driven by the laws of natural selection, can no longer be confirmed in many areas of research. Rather, biologists are beginning to observe a living world consisting of interrelated subjects who are sentient and expressive of this sentience, which manifests itself in (inner) experiences and (external) behaviours.

Epigenetic regulation plays a much more important role than previously thought, which means that individual organisms can influence the fate of their own genes.¹⁹ It is now well-established that parental experiences can be passed on genetically²⁰ and even that cultural practices of child treatment may directly influence children's genomes.²¹ The emerging, more holistic paradigm of biological regulation and identity now holds that the identity of biological subjects is often not that of one species alone: the majority of organisms must be viewed as «metabiomes» consisting of thousands of symbiotic, mostly bacterial species, according to recent research.²²

18 Richard Strohmman (1997): «The coming Kuhnian revolution in biology». *Nature Biot.* 15: 194-199.

19 Eva Jablonka, Marion Lamb (2005): *Evolution in Four Dimensions. Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*. Cambridge, Mass. and London: MIT Press.

20 Joachim Bauer (2008): *Das kooperative Gen*. Hamburg: Hoffmann und Campe.

21 Don Powell (2009): «Treat a female rat like a male and its brain changes». *New Scientist*, 2690, 8.

22 Ruth E. Ley, Catherine A. Lozupone, Micah Hamady, Rob Knight, & Jeffrey I. Gordon (2008): «Worlds within worlds: evolution of the vertebrate gut microbiota». *Nature Reviews*, 6, 776-788.

We have become aware that an organism must be regarded as a kind of ecosystem – i.e., as a «super-organism» built from innumerable cellular «selves» – and that a given organism is not simply the result of a linear cascade of causes and subsequent effects. Current views in empirical biological research, particularly in developmental genetics, proteomics and systems biology, are beginning to appreciate self-production and autopoiesis as central features of living beings. (Autopoiesis, literally «self-creation,» is a term introduced by Chilean biologists Humberto Maturana and Francisco Varela to describe the capacity of an organism to continuously generate and specify its own organisation autonomously.) Genetic coding, developmental and regulatory processes are increasingly discussed in terms of an organism's capacity to interpret and experience biological meaning and subjectivity.²³

These findings not only challenge the standard empirical approach to organisms. They transform our underlying assumptions about what life is. Is an organism a machine, assembled from parts that have to be viewed as still smaller machines or sub-assemblies? Or is life a phenomenon in which subjectivity, interpretation and existential need are key forces that cannot be excluded from the picture without distorting our understanding of how an organism functions and without obstructing the path to further explanations?

In the emerging new picture, organisms are no longer viewed as genetic machines, but basically as materially embodied processes that bring forth themselves.²⁴ Each single cell is a «process of creation of an identity».²⁵ The simplest organism must be understood as a material system displaying the intention to maintain itself intact, to grow, to unfold, and to make a fuller scope of life for itself. A cell is a process that produces the components necessary to produce these developments – while the materials, carbon, nitrogen, oxygen, phosphorus, silicon flow through it.

The cell is not only a material unity, but a meaningful self that is producing itself. A cell is not a tiny machine that acts on genetic orders. Its basic activity rather consists in the ever-ongoing production of the components of itself. The strange force we can witness in lifeforms, and which we can recognise as also driving ourselves, is the drive to keep the process going and to preserve this specific identity.

This has one central consequence that makes the enlivened picture of biology so much different from its predecessors: A system that intends to keep itself intact automatically develops interests, a set of perspectives, one might say, and therefore a self. It becomes a subject with a body. If natural history is the unfolding of selves, it no longer makes sense to speak about organisms as agents without individual experiences and expressed interests, as it is customary in bioeconomics. Subjectivity is not an illusion that may help an organism maximise its evolutionary success, but rather the very force that makes biological existence possible in the first place.

²³ Marc W. Kirschner, & John C. Gerhart (2005): *The Plausibility of Life. Recolving Darwin's Dilemma*. New Haven: Yale University Press.

²⁴ For a detailed overview see Weber & Varela (2002), op. cit., Weber (2010), op. cit.

²⁵ Francisco J. Varela (1997): «Patterns of Life: Intertwining Identity and Cognition». *Brain and Cognition* 34: 72–87.

Life: Empirical subjectivity

Let me sum up the traits of this new framework for conceptualising what a living being is:

- **It self-produces itself** and thereby
- **Manifests its intentions to maintain itself and grow**, evade disturbances and actively search for positive inputs such as food, shelter, and presence of mates.
- **It shows behaviour that is constantly evaluating influences** from the external (and also its own, internal), world.

Therefore, we can say:

- That an organism **acts out of concern and the experience of meaning**.
- An organism is **an agent or a subject with an intentional point of view**. Or, to put it more generally: We can call this way of meaning-guided worldmaking «feeling».

But this description is not enough. Any living being, any living subject, is also, always, materially embodied. Therefore:

- An organism **shows or expresses the conditions under which the life process takes place**. A living being transparently exhibits its conditions. We could call this basic condition of experience «*conditio vitae*» – the condition of life.
- The «*conditio vitae*» is also **the basic shared poetic condition**, because it shows in a non-textual and non-algorithmical manner the principles of living creativity, the basic laws of agency and embodiment, which are also manifestly in ourselves as human beings. Every organism is an expression of the conditions of existence.

From these observations we can conclude:

- That **every organism is to a certain degree autonomous**. It creates its identity and uses matter for this creation. Living beings show a distinct autonomy concerning the necessities of metabolism and are not completely determined by external factors. Seen from this perspective, the history of nature is also the history of the evolution of «embodied freedom.»

What can we say about this understanding of the living world? How does it differ from the bioeconomic one described in the last section that still is the official version of reality guiding socio-cultural, economic, and political decisions? This new picture of life that is emerging from the latest scientific research obviously suggests that we need to revise the many economic and political policies that are based on the misleading NeoDarwinistic/neoliberal vision of life. But what salient features of this new paradigm might be identified to help us imagine and construct «policies of enlivenment»? What would a new set of principles possibly look like?

We do know that any new principles should be compatible with our new understanding of biological reality. Still, it is important that we not search for «laws» – universal, invariable rules that apply to everything, as the Enlightenment paradigm would insist – but rather that we search for general parameters, guidelines or attitudes that might foster an enlivening behaviour. The idea of Enlivenment does not specify explicit outcomes or norms for how an enlivened society should be conceived. Rather, it is concerned with the overarching principles and attitudes that can foster the emergence of open, mutual, and cooperative processes. Some of these principles might be framed as follows:

- Natural history should not longer be viewed as the unfolding of an organic machine, but rather as the natural history of freedom, autonomy and agency.
- Reality is alive: It is full of subjective experience and feeling; subjective experience and feeling are the prerequisites of any rationality.
- The biosphere consists of a material and meaningful interrelation of selves.
- Embodied selves come to into being only through others: The biosphere critically depends on cooperation and «interbeing» – the idea that a self is not possible in isolation and frenetic struggle of all against all, but is from the very beginning dependent on the «other» – in the form of food, shelter, mates and parents, communication partners. Self is only self-through-other. In human development this is very clear, as the infant must be seen and positively valued by its caretakers to be able to grow a healthy self.
- The biosphere is not cooperative in a simple, straight-forward way, but *paradoxically* cooperative: Symbiotic relationships emerge out of antagonistic, incompatible processes: *matter/form, genetic code/soma, individual ego/other*. Incompatibility is needed to achieve life in the first place, and therefore any living existence can only be precarious and preliminary – an improvised creative solution for the moment.²⁶ Existence comes into being through transitory negotiations of several incompatible layers of life. In this sense, living systems are always a self-contradictory «meshwork of selfless selves».²⁷
- The individual can only exist if the whole exists and the whole can only exist if individuals are allowed to exist.
- The experience of being alive, of being in full life, of being joyful, is a fundamental component of reality: the desire for experience and to become one's own full self is a general rule of «biological worldmaking,» which consists of both interior/experiential and exterior/material construction of a self.
- Death is a reality. Death is inevitable and even necessary as the precondition for the individual's striving to keep intact and to grow. Death is an integral component of life. (We should talk, rather, of *Death/Life* when referring to organic reality.) Against this background enlivenment is what an organism constantly

26 For the incompatibility argument see Kalevi Kull (2012): «Introduction». In: Silver Rattasepp; Tyler Bennett, eds.: *Gatherings in Biosemiotics. Tartu Semiotics Library* 11. Tartu: University of Tartu Press .

27 Varela (1991), op. cit.

does: every organic act is an act of creation, be it unequivocally productive or «stuck» as disease with its symptoms.

- The living process is open. Although there are general rules for maintaining embodied identity in interbeing, its form and way is entirely subject to situational solutions. Also, in this respect the creative processes of the biosphere have creative and enlivening parallels in the arts.
- There is no neutral, transhistorical information, no general «scientific» objectivity. There is only a common experiential level of understanding, interbeing and communion of a shared «*conditio vitae*». New structures and levels of enlivenment can be made possible through enacted imagination.

From these observations it seems possible to complete the highly limited «mainstream» ecological worldview that now prevails (nature viewed as an exterior pool of resources) with an *interior* or intentional aspect. To the scientific *third-person-perspective* of «objective reality» that now prevails, we can add a *first-person ecology*. Conversely, the empirical objectivity that is so familiar to contemporary science must be enlarged by an «empirical subjectivity» – a shared condition of feeling and experience among all living beings.

Objectivity in this view has a «poetic» aspect. This means that insights that have been excluded by the «objective-only» position – because they are not real in a material, physical sense – may be valid in a poetic interior sense. Gregory Bateson describes this when he compares classical («objective») logic with a logic that is embodied and subjective. The classical logical argument that Bateson gives is «1. Men are mortal, 2. Socrates is a man, hence 3. Socrates is mortal.» The «poetic argument» would resemble the following logic using the metaphor of grass, which, like humans, is also a living being: «1. Men are mortal, 2. Grass is mortal, hence 3. Men are grass.»²⁸ This insight is of course not literally true, but it is true as an experiential, or poetic, insight. Insights of this kind can change our behaviour and in this sense are an influential element of our living reality.

The poetical dimension is the world of our feelings, of our social bonds and of everything else that we experience as significant and meaningful. The poetic is therefore part and parcel of our everyday world of social communication, exchanges, and interactions. It is the world of first-person-perspective, which is always there, and always felt and experienced. It is the world that we live in most intimately, and it is ultimately the world for which we conceive and make various policies. The world of economic exchange, which is a social exchange between living beings, takes place in this world as well.

28 Gregory Bateson, Mary Catherine Bateson (2004): *Angels Fear: Towards An Epistemology Of The Sacred*. Hampton Press.

Nature is inside *and* outside

The standpoint of poetic objectivity does not mean to propose an entirely individualistic or solipsistic worldview. Rather, I argue that the subjective perspective of embodied beings is a necessary complement of the prevailing objective approach. Here, too, we must come to terms with the reality of incompatibility – or paradox – in everyday life. As living organisms we have to learn to experience and to describe the world «from the inside» (emotionally, subjectively, socially) while also treat it as an external physical reality that exists «outside» of us. Bruno Latour has ingeniously explained that any procedure that attempts to «purify» the biosphere by insisting upon its physical dimensions only – while denying that it is a sphere of meaning or «semiosphere» as well – will only generate even greater, albeit hidden, tensions. Psychological repression of inner antagonisms will only generate neurosis; they can only be overcome through living expression.²⁹

Nature – its principles of contradictions, yielding meaningful experiences – is also «inside» ourselves. It is not too far-fetched to claim that to fully experience the symbolic and experiential side of our beings and to integrate them into our personalities, we are dependent on the presence of nature – forests, rivers, oceans, meadows, deserts, wild animals. In some respect, only the other – another living presence – can give life to the self. Nature acts like a twin that animates our symbolic selves. We gather food for our thoughts and mental concepts from the natural world. We transform plants and animals into intellectual symbols according to their real or presumed qualities. The snake, the rose and the tree are each examples of powerful organic images that speak to our human identity, which is why they recur so often throughout human history in our art, myths and other cultural forms.

This process works in a reverse direction as well. Nature embodies what we are, too. It is the living – and enlivening – counterpart of our emotions and our mental concepts. Only by being perceived and reflected by other life are we able to understand our own. Only in the eyes of another being can we ourselves become a living being. We need the regard of the most unknown. This manner of building up our identity is one of the most prominent cultural constants in human beings, from the use by indigenous peoples of animal symbols (e.g., in rock art) to the constant use of nature metaphors in contemporary poetry. Such practices can release those layers of feeling in ourselves that otherwise remain locked up. We need the experience of engaging with a «living inside» that stands in front of us, displaying itself as a fragile, mortal body. We need other organisms because they are in a very real sense what we ourselves are (biologically and psychically), but they give us access to those hidden parts of ourselves that we cannot see – precisely we cannot observe ourselves while observing. There is always a blind spot central to the establishment of our own identity. Seen from this point of view, other beings are the blind spot of our self-understanding.

²⁹ Bruno Latour (1993): *We Have Never Been Modern*. Cambridge, MA: Harvard UP.

IV. Natural anti-capitalism: Biospheric householding as the foundation of an enlivened economy

Enlivenment means to get back to living reality as the inspiration and insight for all areas of science. This sounds like an essentialist position, the metaphysical idea that objects have essences that distinguish them from accidental characteristics.

And indeed enlivenment is essentialist. But the essence is the vibrant, poetic, felt reality of individual-and-communal-embodied existence. This concept of existence is not conventionally essentialist, but rather paradoxical in its deepest foundation. Enlivenment enables both individuality and collective identity by recognising both biophysical necessity and a poetic freedom «inscribed within it.» This proposed framing of living existence as an «enlivened integration» of necessity and freedom does not mean to «copy» the supposedly deterministic «laws» of nature. It is meant to reassert a seemingly obvious fact – that the manmade structures and practices of human societies are the creations of living beings in a living world.

This shift of perspective has particularly important implications for economic science. The double metaphor of eco-nomy/logy, if applied in a proper, non-reductionist way, provides a perspective for seeing all living household processes, ecological or human, from the same angle. Unlike previous attempts to «naturalise» economics with biological justifications – the essence of social Darwinism and (neo-)liberalism – enlivenment looks to biological systems to understand the default patterns of (self-) organised flows of matter and information. We quickly come to realise that exchange processes in living, ecological spheres are neither efficiency-oriented nor controlled by external forces that render individuals impotent and without agency. Nor are living spheres bereft of intentionality, sense or self; they are instead a paradoxical and always embodied combination of different levels of selves realising themselves through material and meaning-based exchanges.

If economic theory was unburdened from its Darwinistic-optimisation content, and if the notion of «market» were to give way to the idea of «household of and with the biosphere», we could more clearly see how economic processes that enhance life could be designed. We could even see that a certain form of householding, which is undergoing a huge renaissance at the moment, is clearly favoured by nature: the

economy of the commons.³⁰ From the standpoint of enlivenment nature is a commons economy consisting of subjects that are continuously mediating relationships among each other – relationships that have a material side, but also always embody meaning, a sense of living and the notion of belonging to a place.

«Stone age economics»³¹

It is interesting to note that «primitive» and prehistoric «economies» – ways to provide food, shelter, and of relating to the environment – have many similarities with »commons economies». Many archaic cultures do not differentiate between «nature» and «culture» or «animate» and «inanimate»; the two sets of opposites are organically integrated into a single worldview.³² Such cultures do not restrict their ways of relating to ecosystems to the non-human world; again, their modes of thinking and perceiving integrate a multitude of actors, including other humans, all of which are continuously entangled in interactions.

The similarities in the principles of exchange that we see in primitive economies and commons can also be seen in natural ecosystems. In all three, any transformational process has to be internally balanced to some extent, and brought into dynamic alignment with external factors. This helps explain why the cultures of commons-based systems often mirror the cosmic exchange system of natural ecosystems. Social bonds evolved to become part and parcel of the ecosystem.

In Western thought, however, nature has for several centuries been considered the Other – the unfathomably evil and wild forces of the world that we can only protect ourselves against by imposing a disciplined «crust» of institutional civilisation.³³ Still, for millennia human societies have understood the biosphere as a commons-based economy and treated their internal cultures, material resources and immaterial exchange relations as a part of a huge, all-encompassing commons. Modern industrial cultures typically condescend to such «primitive» economies by dismissing their «superstitions» and extolling the virtues of objective science. But who is being naïve and parochial? The behaviour of such societies reflects some deep insights into the

30 See Elinor Ostrom (2012): *Future of the Commons: Beyond Market Failure & Government Regulations*. London: Institute of Economic Affairs.; Silke Helfrich & David Bollier (2012): *The Wealth of the Commons: A World beyond Market and State*. Amherst, MA: Levellers Press. (German version: Silke Helfrich & Heinrich-Böll-Stiftung, eds.: *Commons: Für eine neue Politik jenseits von Markt und Staat*. Bielefeld: Transcript. Download at: www.boell.de).

31 For the term see: Marshall D. Sahlins (1972): *Stone Age Economics*. New York: De Gruyter.

32 For a detailed argument see Philippe Descola (2005): *Par-delà nature et culture*. Paris: Gallimard.

33 Hence the assumption that without institutions we would immediately fall into that barbarism again, as the prominent historian Timothy Garton Ash noted in an analysis on the (false) reports of violence in the wake of the hurricane Katrina disaster in New Orleans. Timothy Garton Ash (2005): «It always lies below: A Hurricane produces anarchy. Decivilisation is not as far away as we like to think». *Guardian*, September, 8. The idea that the state is the only reliable barrier against barbarism is also forcefully rebutted by Rebecca Solnit in her study of people's transcendentally kind and courageous behaviours in the wake of natural catastrophes and human accidents. Solnit (2010). *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster*. London: Penguin.

meaning of ecological and existential reality. It is the «moderns» who have profoundly lost touch with their ancient wisdom.

The human tradition of interacting with material things on a social basis – and not just through impersonal, cash-mediated market relations – is the hallmark of a commons. It holds great promise for building a more sustainable future because it represents the building blocks of an embodied economy in which humans are tightly integrated with the more-than-human-world. The ecological and psychological realism inherent in this worldview holds many lessons for us today. For human actors are materially a part of the world they are dealing with, and their individual experiences of meaning derive from the ways in which their material interactions are organised. An economy that does not exclude nonhuman beings and land also does not distinguish between material exchange processes and meaningful human relationships.

The economy of living nature: the circle of the gift

Nature, understood as a creative process of interacting, embodied subjects, can serve as a model for an economic concept of the commons. Basic structures and principles of «natural commoning» – self-organising, dynamic, creative – have been the basis of biospherical evolution. I argue that the principles of (self-) organisation in nature provide a template for any commons economy. These principles include:

■ General principles, local rules

Every patch of living earth functions by the same ecological principles – but still each is a unique individual realisation of these principles. In a temperate forest, for example, there are different rules for flourishing than in an arid desert. Each ecosystem is the sum of many rules, interactions and streams of matter, which share common principles but are locally unique.

■ Interbeing: balance of individuality and the whole

The primeval biological principle is, as naturalist John Muir put it: «Everything is hitched to everything else.»³⁴ In the ecological commons a multitude of different individuals and diverse species stand in various relationships to one another – competition and cooperation, partnership and predatory hostility, productivity and destruction. All those relations, however, follow one higher principle: Only behaviour that allows for the productivity of the whole ecosystem over the long term and that does not interrupt its capacities of self-production, will survive and expand. The individual is able to realise itself only if the whole can realise itself. Ecological freedom obeys this basic necessity. The deeper the connections in the system, the more creative niches it will afford for its individual members.

New species can alter the equilibrium of an existing system, opening up novel opportunities for growth and innovation. On the other hand, if the set of ecological relationships changes for some reason, individuals of a certain species may

34 John Muir (2011): *My First Summer in the Sierra*. Boston: Houghton Mifflin Harcourt.

have access to fewer and fewer resources and eventually go extinct. Keystone species – e.g., large herbivores in temperate grasslands – provide an anchor down the equilibrium for a whole landscape. Large herbivores need savannas to thrive – which, in turn, must be grazed to remain intact.

■ **Strict non-dualism: there are no commons without commoners**

Living beings not only use the commons provided by nature, they are physically and relationally a part of them. The individual's existence and the commons as a system are mutually interdependent. The quality, health and beauty of this system is based on a precarious balance that has to be negotiated from moment to moment. Individual organisms cannot have too much autonomy lest they destabilise the commons by letting free riders over-exploit the system (e.g., pests like crown-of-thorns starfish disease in tropical coral reefs). But conversely, the system cannot impose overly strict or hostile controls lest it interfere with the natural processes of the system (e.g., heavy use of fertilisers or pesticides disrupting natural processes). Or consider how animals transported to far-off islands such as the Galapagos can alter whole ecosystems and start a new territorial narrative of biological history. The simple lesson here is: We cannot separate the individual from the whole. They are both parts of one bigger picture.

■ **Material resources are linked to (immaterial) meaning and sense**

Throughout natural history, ecosystems have developed multiple patterns of dynamic balance that lead to extraordinary refinement and high levels of aesthetic beauty. The forms and beings of nature amount to ingenious solutions for maintaining delicate balances in a complex system. The beauty of living things stems from the fact that they are embodied solutions of individual-existence-in-connection. It is why most humans experience feelings of belonging and connection with other living systems.

■ **Reciprocity: Loss at individual level affects the whole and vice versa**

All systems have a «balance level» of health. If disruptions or damage force the individual, community or species to experience too much stress, then the resilience of the whole will weaken. The «balance level» is not a fixed threshold, but more of a zone for absorbing what Varela and Maturana call «disruptive perturbation.»³⁵ Stress that exceeds the structural resilience of the system means that the system cannot produce a «surplus of meaning»³⁶ – i.e., it cannot provide its gifts on other parts of the ecosystem. The degree of tolerable stress can be very difficult to observe and even more difficult to predict.

A second important point is that the existence of a «balance level» does not mean static equilibrium or «homeostasis»; it is a dynamic negotiation among the system's elements about exactly how far it can stretch to accommodate the stress. Tolerable stress, which includes minor and major catastrophes, can actually be a stimulation as long as it remains within ecotone levels (an ecotone is the patchy

35 Humberto R. Maturana, Francisco J. Varela (1980): *Autopoiesis and cognition: The realisation of the living*. Boston: D. Reidel.

36 Varela 1997, op. cit.

fringe between two or more specific areas). Beyond that, disruptions can become devastating for the whole, eventually destroying it. On the larger system level, this destruction will lead to a new equilibrium, but not with the same players as before.

■ **Property: No copyright – copyleft is always rewarded**

Nothing in nature can be exclusively owned or controlled; everything is open source. The quintessence of the organic realm is not the selfish gene but the openly available source code of genetic information that can be used by all. The genes being patented today by bio-corporations are non-rival and non-exclusive in a biological sense. That is the only way they may generate biological and experimental novelty. DNA has been able to branch into so many species only because all sorts of organisms could use its code, tinker with it and derive combinations that were meaningful and useful to them. This is also the way *Homo sapiens* came about: Nature was playing around with open source code. Some 20 percent of our genome alone consists of former viral genes that have been creatively recycled.

■ **Resource trade as gift exchange**

As there is no property in nature – there is no waste. All waste products literally are food for some other member of the ecological community. At death every individual offers itself as a gift to be feasted upon by others, in the same way it received the gift of sunlight to sustain its existence. There remains a largely unexplored connection between giving and taking in ecosystems in which «loss» is the precondition for generativity.

A thorough analysis of the economy of ecosystems can yield powerful guidelines for new types of enlivened economy – an economy based on commons. We should look to natural processes – as expressions of the natural history of freedom – to guide our thinking about how to transform the embodied, material aspect of our existence into a culture of being alive. The term «commons» provides a conceptual binding that can help us conjoin the natural and social/cultural worlds and make them more compatible (if not synergistic). To understand nature as an authentic, aboriginal commons also opens the way to a novel understanding of ourselves – in both a biological and social sense.

Economic enlivenment: integrating freedom and necessity

If nature actually is a commons, it follows that the only possible way to achieve a stable, long-term productive relationship with it is by building an economy of the commons. It can help dissolve the traditional duality of humans and nature, and orient us toward respectful, sustainable models of engaging with the more-than-human aspects of nature. The self-realisation of *Homo sapiens* can be best achieved in a commons, simply because such a culture – and thus any socioeconomic system – is our own species-specific realisation of natural existence. It is our individual cultural interpretation of the principles of the biosphere.

Although the deliberations that have led us to this point stem from a thorough analysis of biology, their results are not biologicistic (in the sense of applying only to

biological phenomena, or reducing everything to biological phenomena). Quite the opposite: Analysis shows that the organic realm is the paradigm for the evolution of freedom. Natural principles may impose certain necessary parameters to life, but those principles are nondeterministic and allow for significant zones of creativity and autonomy.

It is necessary to acknowledge a profound paradox in the meaning of freedom here. I want to make clear that the Enlivenment idea of freedom is different from the freedom that the free market/neoliberalism constantly invokes. One could say that the latter is a narrow, selfish form of freedom (consumer choice, individual licentiousness/hedonism) while the former is a more adult, serious notion of freedom because it acknowledges the reality of the community, time and any individual's living conditions. An organism is producing freedom (or autonomy) as its living core acts on the matter passing through it. It reacts to influences with its own dispositional traits, not in the deterministic style of a causal chain. Therefore, individuals possess a certain degree of autonomy over its material circumstances. But at the same time it is dependent on it. This is the core paradox.

Freedom is made possible only by obeying necessity. Only a strong limitation empowers autonomy. (Another paradox!) The living individual, though an independent agent, is totally dependent on its surroundings, which are needed if an individual is to have food, shelter and community. Freedom, therefore, in a certain sense, always presupposes a negotiation with necessity. One might even call this *commoning*.

Biological freedom in this sense is always freedom-in-and-through-relation. Therefore, it does not have much to do with the idea of unfettered individual freedom that free-market advocates champion. The equivalent of the «market» – the *oikos* of nature – is the natural system whose own needs limit the individual's freedom, but on the other hand is the source through which such freedom can only come into being in the first place.

This argument is a paradigmatic showplace of how an Enlivenment approach can augment the Enlightenment position. The enlivened idea of freedom does not do away with the classical-humanistic account of autonomy (as strictly biologicistic accounts do), but rather it limits its absoluteness to an «embodied relativity». There is no such thing as individual freedom detached from the living world, and any attempt to claim it inevitably will violate the necessities of embodied life, of an organic being's living needs. So from an Enlivenment viewpoint freedom (as enframed in constraint) is a natural process.

The basic idea of the commons is therefore grounded on an intricate understanding of freedom and its relationship to the whole: the individual enjoys many options of self-realisation but the only viable ones depend upon the flourishing of the life/social systems to which she belongs. To organise a community between humans and/or non-human agents according to the principles of the commons means to increase individual freedom by enlarging the community's freedom. Both expand together – and mutually through one another.

Contrary to what our dualistic culture supposes, reality is not divided into material substances of atoms and molecules on the one hand (governed by deterministic principles of biophysics) and non-material culture/society (which are non-deterministic and mental/semiotic in character). The truth about living organisms is that they depend on a precarious balance between autonomy and relatedness to the whole on *all* their levels of functioning. Biological evolution is a creative process that produces rules for an increase of the whole through the self-realisation of each of its members. The rules are different for each time and each place, but we find them everywhere life is. One could say, indeed, that they are the basic structures of any enlivenment. They are valid not only for autopoiesis – the auto-creation of the organic forms – but also for a well-achieved human relationship, for a prospering ecosystem as well as for an economy in harmony with the biospheric household.

As it happens, these rules are the operational principles of the commons. They offer practical ways for commoners to build a new economy that is in greater alignment with natural systems – by limiting «externalities» that harm the rest of the ecosystem and other humans; by generating abundance for the large whole; by providing a new vision for human development; and by fostering social and ecological exchanges that are enlivening.

Taken more broadly, the idea of enlivenment might be able to provide a unifying principle for the economic (and also social) sciences to dissolve the supposed opposition between nature and society/culture. It has the potential to blur and transcend the dualistic separation that our thinking has imposed on the ecological and social realms. Any structure that aspires to function as a commons faces the challenge of realising the well-being of the individual while not damaging the surrounding and encompassing whole.

A significant liberation occurs through the process of enlivenment because one need no longer separate theory and practice; the two can be constructively conflated, freeing us to build what can actually be built and to avoid chasing after totalistic, utopian theories. Reflections on theory need no longer take place in some separate, isolated realm controlled by a priesthood of «experts.» Theory can return to practice and become integrated with it, joining itself to the rituals and idiosyncrasies of mediating, cooperating, sanctioning, negotiating and agreeing, to the burdens and the joy of experienced reality. Once we are able to see through the lens of enlivenment, we will recognise that the practices of a commons economy are identical with the practices of embodied existence.

V. From enlivenment to shared livelihoods: the emergence of a commons-based economy

The enlivenment approach is not just an abstract philosophical re-imagining of the world. It is an emerging reality in countless corners of the earth. The principles of enlivenment do not apply to the living biosphere alone, but to a wide variety of social innovations that are attempting to build a new sort of economy based on a personal practice that enhances the participants' aliveness. These phenomena can be seen in highly diverse contexts – traditional societies, indigenous cultures, Internet culture, urban spaces, land and water management, and many others. Self-organised communities of people are bypassing the NeoDarwinian/neoliberal model by inventing their own, novel forms of self-provisioning and governance.

It should not be surprising that this highly eclectic, uncoordinated social transformation is emerging mostly from the fringes of the mainstream economy. It amounts to a real-time reinvention of economics and governance by living communities of practice. Theory is still trying to catch up with the phenomena, but it is clear enough that commons-based initiatives are enacting the principles of enlivenment with varying degrees of self-awareness. The emergent new forms are blending the interests of the individual and the whole, and of meaning and material production and exchange. In ways described in Section IV, these enlivenment-based models are integrating the social and the natural, and sense-making with practical action.

This section will review some of these contemporary practices and projects and show how they explicitly honour aliveness, relationships and community as central elements of building new types of livelihoods. It is striking that many of these projects explicitly reject the roles and rituals of conventional economics and state bureaucracies. They also tend to rebuff the cultural ethic of consumerism and mainstream market logic, and to affirmatively honour participation, openness, accountability and a rough equality. In this commons-based economy, people are not «consumers» and «producers» whose roles are defined by goods bought and sold through market exchange. They are, instead, *commoners* who initiate, debate, deliberate, negotiate and plan amongst themselves as part of the process of meeting their collective needs.

Since market players despise alternative provisioning schemes as unwelcome competition, commons-based alternatives tend to flourish mostly on the edges of the mainstream economy and in cultural backwaters. Enlivenment communities often thrive in precarious milieus of the global South, for example, where people with little money have little choice but to devise solutions outside of the bioeconomic corporate

market system. The older, neglected practices of commoning are often a viable if not enlivening alternative to the impersonal, predatory norms of the market economy.

It is important to note that, even though the market economy tends to obscure this «hidden social economy», commons-based systems play a significant role in meeting people's needs.³⁷ An estimated two billion people in the world depend upon commons of forests, fisheries, water, farmland, wild game and other resources for their everyday subsistence.³⁸ Huge segments of the software and computer industries now revolve around open-source software platforms whose code is freely shareable and modifiable.³⁹ This infrastructure, in turn, now hosts a complex global culture of digital commons that includes Wikipedia, collaborative websites, Creative Commons-licensed content, open access scholarly journals, music remix and video mashup communities, among many others. The commons can also be seen in countless academic disciplines, community institutions, urban spaces, social activities, alternative currencies and blood and organ donation systems. Despite all this, leading economics textbooks continue to ignore the commons as a functional alternative to current markets. As one commentator noted, mainstream opinion regards the commons as «no more than the institutional debris of societal arrangements that somehow fall outside modernity.»⁴⁰

An obvious reason why so many commons persist and flourish, even in our age of modernity, is precisely because they are rich sources of personal, social and even spiritual satisfaction. In their structure and operations, such enlivenment communities are focused not just on people-and-their-needs in a traditional economic sense – the production, distribution and allocation of physical resources – but also with people's inner needs, their relationships to each other and a basic fairness and equality. The new provisioning forms generally attempt to bring individual interests and the whole into greater alignment as part of the process of meeting needs.

The animating forces of enlivenment economics are often invisible to conventional economists because the indicia of «wealth-creation» – private property rights, legal contracts, money, market exchange – are missing. But enormous «wealth» is nonetheless being created through commons; it's just that the value generated is not usually monetised or wrapped in a legal envelope of property rights. The appeal of this hidden economy is not so strange. More and more people instinctively understand

37 See, e.g., Jonathan Rowe (2013): *Our Common Wealth: The Hidden Economy That Makes Everything Else Work*. San Francisco, Calif.: Berrett-Koehler.

38 Ruth Meinzen-Dick et al., *Securing the Commons 1* (CAPRI Policy Brief No. 4, May 2006), available at http://www.capri.cgiar.org/pdf/polbrief_04.pdf

39 In addition, «fair use» industries that rely on the copying and sharing of copyrighted work – educational institutions, manufacturers of consumer devices that enable copying, Internet search and web hosting providers, and others – account for one-sixth of the U.S. gross domestic product. Michael Bauwens et al. (2012), *Synthetic Overview of the Collaborative Economy*, P2P Foundation, available at <http://www.flickr.com/photos/postapocalyptic/sets/72157628648915115/> <http://www.flickr.com/photos/postapocalyptic/sets/72157628648915115/>

40 Arun Agarwal (2002): «Common Resources and Institutional Sustainability», in: *The Drama of the Commons*. National Research Council, Committee on the Human Dimensions of Global Change, p. 42.

that the mainstream economy is deadening, whereas the commons-based economy – by fostering participation, personal initiative, social solidarity, etc. – helps people feel alive again. As I stressed throughout this essay: The new approach to our physical and mental householding reveals that a subjective, felt and experiential perspective is at the core of a true economics.

Commoning as an exchange of plenitudes

These dimensions of the enlivenment economy raise a fundamental question that economists – by the very narrow definitions of their discourse – simply ignore. Namely, «How can the economy be shaped to meet our needs and make us feel more alive?» Those two criteria are not entirely separate, after all. We might refine this line of inquiry further to ask: «What *are* the predominant needs here?» And «How can everybody's needs be met?» As you can easily see, such questions reflecting an enlivenment perspective bring us deeply in the realm of the commons – or more accurately, *commoning*, the everyday practice of managing a commons.

Commoning is an attempt to redefine our very understanding of «the economy», which respectable opinion regards as a complicated machine driven by human automatons (*homo economicus*) and requiring constant oversight and correction by an anointed priesthood (economists). This is a dualistic, Enlightenment-style regime – one that pits business against customers, and the state against business (and business-as-state against humans). This sort of economy valorises rationality over subjectivity, material wealth over human fulfilment, and the system's abstract necessities (growth, capital accumulation) over human needs.

The commons shatters these dualisms. It reconfigures our roles so that we are not simply «producers» and «consumers» with narrow economic, material interests, but participants in a physical and meaningful exchange with multiple material, social and sense-making needs. Commoners realise that their household needs and livelihoods are entangled with the specific place and habitat where they live, and with the earth as a living being. They realise that their physical needs (hunger, thirst, health) are entangled with their search for existential meaning (a good life, joy, meaning). Finally, they realise that commoning, as an alternative system for meeting needs, is about a constant enactment and re-definition of a multitude of relationships, both material (metabolic) and psychological (symbolic).

An economic structure is alive only if all of these dimensions are satisfied. This happens to approximate the principles of the commons, in which our social and personal needs amalgamate with ecological complexities – a kind of integrated biospheric householding.

Some examples help illustrate these ideas. When villagers in India share seeds and use traditional farming practices, they are integrating their needs for food with the natural cycles and features of the local ecosystem. This stands in stark contrast to a farming «economy» that looks to global prices, genetically engineered seeds, chemical pesticides and fertilisers and monoculture crops – all of which are designed to monetise agricultural production and maximise returns to capital. The latter

economic system appears to be highly «rational» in trying to organise structural efficiencies and so forth, but it is highly deadening because it essentially turns individuals into mindless servants of a global economic machine. The system eliminates spaces for human agency and the meeting of embodied personal and social needs – the «vernacular spaces» in which humans can devise their own rules, express their own values and negotiate preferred structures for meeting particular needs. One of the great, under-reported scandals of our time is how western corporations have brought industrialised farming methods to rural India. More and more farmers fell into deep debt as they became dependent upon proprietary seeds, volatile global markets and corporate farming methods, among other factors. The result has been an epidemic of nearly 200,000 farmer suicides in India since 1997.

Maybe this is the reason that commoning practices have attracted so much interest lately: they provide a direct and personal counter-experience to the inner emptiness that the prevailing bioeconomic model systematically produces. The Newtonian, dualist bioeconomy has little room for local variation, custom, tradition and ethical principles – all of which are irrelevant and extrinsic in a strict economic sense. In this way the normal functioning of «the economy» strips away the very sense of meaning, belonging and interpersonal commitments that define us as convivial, alive organisms.

Redefining wealth as enlivenment: the life-centre model

In most regions of the world, corporate and national interests converge and both reflexively seek to maximise economic advantages by eliminating those things that stand in their way. «Economic development» is taken as equivalent to human development. But in most cases, the economic gains accrue to a small elite of investors and any human development is a secondary and transient byproduct. In the meantime, the many things that generate a sense of life and personal integration – smaller scale enterprise, community traditions and stability, environmental beauty, social exchange and belonging – are swept aside.

The point of commoning projects and the policies that support them is to restore enlivenment to the centre of any economic activity. An economically sound project must also be an enlivening project. This means that it must try to reflect the shared interests of all and honour deeper human needs and the integrity of the natural surroundings. The nations of Ecuador and Bolivia have tried to move in this direction by adopting provisions in their constitutions to protect *Buen Vivir*. As Bolivian writer Gustavo Soto Santiesteban explains, this concept, derived from the traditions of indigenous peoples, is aimed «at making visible and expressible aspects of reality that are ignored by the dominant paradigm. It is a proposal from a radical and spiritual perspective of ecology, and is logically incompatible with development and industrialisation.» Soto said that *Buen Vivir* «implies several meanings manifested in community life: the fact of animals, persons and crops living together; living with Pachamama («Mother Earth» – the water, the mountains, the biosphere) and finally, living together with the community of ancestors (*w'aka*). It is a community practice that finds organi-

sational expression in the ... rural agricultural space where reciprocity predominates. It is evident that these enunciations are made from the commons, from the community, from the first-person plural, and not from «me,» from the individual. Strictly speaking, the «individual» without community is bereft, orphaned, incomplete.»⁴¹

Buen Vivir is clearly aimed at fostering feelings that we all seek, like the feeling to be at home in a community or village or old-style-city where people know one another. Probably overcoming alienation and anonymity is the most important point in designing sustainable and common-economic projects.

It is easy to associate such aspirations with a premodern, pre-industrial society, but in fact enlivenment is the «magic ingredient» for economic revitalization even in industrialised countries such as Germany. In a recent survey for the German ministry of traffic and infrastructure,⁴² the success of economic development projects launched in the failing, depopulated rural areas of eastern Germany has been assessed. It turned out that the only truly flourishing projects could be those that gave participants close personal connections with their communities and a sense of personal satisfaction. Economic turnaround required policies that foster enlivenment. The two are synergistic. The report to the German ministry concluded that any successful economic revitalisation project must:

- build on the natural assets of the surrounding while protecting their value;
- build community by fostering social encounters, organising traffic and encouraging day-to-day livelihoods (schools, cafés, groceries, bakeries, etc.);
- promote bottom-up participation and innovation (i.e., the removal of external constraints that may prevent the community itself from deciding how to pursue change and spend monies).

Professor Elinor Ostrom, who won the Nobel Prize in Economics in 2009 for her decades of theorising and fieldwork study of commons, had investigated how lobstermen in coastal Maine, communal landholders in Ethiopia, rubber tappers in the Amazon and fishers in the Philippines could manage their shared resources sustainably, without over-exploiting them. She found that assuring maximal freedom on a local stage is a critical factor. Policymakers must not only give actors the opportunity to connect with one another and with their local environment, but give them the freedom to be creative and responsible. We can express this empirical finding in terms of the enlivenment paradigm and its more specific maxims of 1) general principles but local rules; and 2) interbeing – a balance of individuality and the whole, as discussed in the last section. Local freedom is necessary to grant cohesion to the encompassing whole.

41 Gustavo Soto Santiesteban and Silke Helfrich (2012): «*El Buen Vivir* and the Commons», in Bollier & Helfrich, eds., *The Wealth of the Commons: A World Beyond Market and State*. Amherst, Mass.: Levellers Press, p. 278.

42 Andreas Weber & Reiner Klingholz (2009): *Demografischer Wandel. Ein Politikvorschlag unter besonderer Berücksichtigung der Neuen Länder*. Im Auftrag vom Bundesministerium für Verkehr, Bau und Stadtentwicklung. Berlin: Berlin-Institut für Demografie und Entwicklung.

This local freedom is also one of the most cited advantages of markets – the unleashing of decentralised energies. But this trait is more often than not *thwarted* by the structural concentration of markets, in which large corporations and market oligopolies stifle local market participation and innovation – a fact that has been proven many times.⁴³ Large market players make it their business to erect as many barriers to competition as may be legally permitted. In any case, markets are designed to maximise private gain and to «externalise costs» (displace them onto other people and the environment) as much as possible. By contrast, commons are under no compulsion to maximise economic output or privatise gains. With no structural imperative to be acquisitive or greedy, and every incentive to keep their local ecosystem sustainable and clean, commoners are more likely to be willing to support and advise fellow commoners.

The «barefoot economy» as a model of enlivenment

Unlike market economics, commoning is not only about producing and distributing resources, but about constructing meaningful relationships to a place, to the earth and to one another. This is the hidden leverage power of commoning. Economists are not likely to see or understand these «invisible forces» because their vector of analysis is «rational» game theory and the workings of egoistic machines and selfish genes. The social, moral and spiritual worlds of human existence have no real standing in standard economics. Yet these forces are precisely what bind together a commons, enabling it to function as a provisioning paradigm that is durable, effective, socially satisfying and ecologically constructive.

For Donella Meadows, who spent her late life researching how to identify and define hidden leverage points for influencing systems that seem impervious to change, these feelings of enlivenment would be an overlooked but profoundly influential trigger for real change.⁴⁴ Economic thinking in the existing paradigm is not likely to generate sustainable solutions because it is reluctant to recognise any meaningful role for self-organised human purpose and meaning in socio-economical decision-making. The purpose is always the same and always known in advance: unfettered economic growth. Therefore, even those who are desperately looking for change will typically overlook entirely feasible solutions and fail to catalyse systemic change because they are locked into a stunted worldview. Real solutions will not emerge unless actors first reframe their vision in a different paradigm.

Enlivenment can serve as such a lever for change because it opens the door for commoners to do something «completely crazy» – that is, undertake a plan that is wholly unauthorised by a central, expert-driven model but that nevertheless makes absolute sense in human terms to real people on the ground, who reap immense

⁴³ See e. g. Joseph E. Stiglitz (1989): «Markets, Market Failures, and Development». *The American Economic Review* 79 (2). Papers and Proceedings of the Hundred and First Annual Meeting of the American Economic Association, pp. 197-203.

⁴⁴ Donella Meadows (2007), op. cit.

personal satisfactions from honouring their intuitions, feelings and firsthand knowledge.

This was precisely the origins of free software and open source software in the 1990s: programmers began to identify and solve coding problems that software companies had rejected as too trivial, ambitious or simply unlikely to make money. Businesses must generally make serious investments and anticipate large returns before they can provide certain goods and services, and so «risky» and «speculative» endeavours are avoided. But hackers operating as communities of shared practice could work on all sorts of important challenges that were deemed below the threshold of «rational» market action. They could freely «scratch their itch,» as the hacker saying went, and trigger a whole cascade of socially driven collaboration resulting in useful software programs. No one functions as a producer or consumer, and the resulting program is not a «product.» Everyone acts as «stewards» of the resource, and even the resource itself is more an element of the community itself than a separate, objective «other.» This fits in among the Enlivenment principles: The borders of «resource,» «system,» and «consumers» are blurred. There is only one encompassing commons which unfolds through the initiatives of a host of materially embodied actors.

This is particularly true for our participation in the abundance of nature. The same dynamic can be seen in countless commoners who engage with their nearby rivers, fisheries, wild game, forests, farmlands and other resources. Their relationship is one of stewardship and meaning. The poet/farmer Wendell Berry contrasts this ethos with that of market culture, saying, «We know enough of our own history by now to be aware that people exploit what they have merely concluded to be of value, but they defend what they love.»⁴⁵ Cultivating relationships with the more-than-human and with each other starts to create, as if out of thin air, new and mysterious leverage points for transforming systems in sustainable directions. But none of this is possible unless we can learn to rely on our embodied feelings as organisms and honour human communion with other humans.

It turns out that really sustainable projects – sustainable in the long term – are always projects that satisfy the participants in a multidimensional way. They are projects that satisfy a richer scope of human needs that lie beyond the material, utilitarian self-interests of Homo economicus.⁴⁶ We can get a deeper understanding of this idea by looking at the «matrix of human needs» conceived by Chilean economist Manfred Max-Neef as a pivotal argument in the concept of his «bare-foot economics». Max-Neef's goal was to design economic models that could care for the real needs for

⁴⁵ Wendell Berry (2000): *Life Is a Miracle: An Essay Against Modern Superstition*. Counterpoint Press.

⁴⁶ Charles Schweik, a leading American social scientist and commons scholar who has studied why some open source software projects succeed and others fail, finds that multidimensional engagement is the best predictor of successful projects – an idea that he calls «a theory of compound incentives.» Charles Schweik (2012). *Internet Success: A Study of Open-Source Software Commons*. Cambridge, Mass.: MIT Press.

the poor of the global South who obviously do not profit from corporate capitalism.⁴⁷ This work amounts to a novel establishment of a first-person-science (or in this case, a «first-person-economy») because it identified embodied human needs that can be objectified and put into useful relationship to one another. Max-Neef's goal was to insert and integrate human needs into an economic theory, much as the commons does so in non-economic terms.

TABLE: MATRIX OF HUMAN NEEDS⁴⁸

Need	Being (qualities)	Having (things)	Doing (actions)	Interacting (settings)
subsistence	physical and mental health	food, shelter, work	fedd, cloth, rest, work	living environment, social setting
protection	care, adaptability, autonomy	social security, health system, work	co-operate, plan, take care of, help	social environment, dwelling
affection	respect, sense of humor, generosity, sensuality	friendship, family, relationship with nature	share, take care of, make love, express emotions	privacy, intimate spaces of togetherness
understanding	critical capacity, curiosity, intuition	literatur, teachers, policies, educational	analyse, study, meditate, investigate	schools, families, universities, communities
participation	receptiveness, dedication, sense of humour	responsibilities, duties, work, rights	cooperate, dissent, express opinions	associations, parties, churches, neighbourhoods
leisure	imagination, tranquility, spontaneity	games, parties, peace of mind	day-dream, remember, relax, have fun	landscapes, intimate spaces, places to be alone
creation	imagination, boldness, inventiveness, curiosity	abilities, skills, work, techniques	invent, build, design, work, compose, interpret	spaces for expression, workshops, audiences
identity	sense of belonging, self-esteem, consistency	language, religions, work, customs, values, norms	get to know oneself, grow, commit oneself	places one belongs to, everyday settings
freedom	autonomy, passion, self-esteem, openmindedness	equal rights	dissent, choose, run risks, develop awareness	anywhere

Max-Neef's matrix of human needs is explicitly intended as a basic economic theory. His brilliant insight was to take economics at its word. It claims to be the science of allocation and distribution in order to satisfy human needs. So what are those needs? Max-Neef's framework of the economy clarifies that the range of our needs is much

⁴⁷ Manfred Max-Neef (1992): «Development and Human Needs». In: Paul Ekins, Manfred Max-Neef, Hg. *Real-Life Economics*. London und New York, 206-207.

⁴⁸ After Philip B. Smith & Manfred Max-Neef (2012): *Economics unmasked. From power and greed to compassion and the common good*. Totnes: Green Books, p. 143.

broader and richer than that set forth by bioeconomics, which explicitly eschews any substantive assessment of needs and collapses it into a single metric, «utility». In the Darwinistic/neoliberal economic model, a human being (just as a corporation) is essentially a machine programmed to win and to kill as a strategy for surviving and prospering.⁴⁹ Max-Neef's idea of the barefoot economy introduces into economic reasoning new, empirical dimensions of need, meaning and feeling in a non-trivial and non-esoteric way. These analytic categories make legible some actual dimensions of human need that should influence our understanding of the emerging commons-based economy.

Urban gardening and the pattern language of the commons

A fashionable example of realising objective benefits and at the same time experiencing subjective joy (or coolness) is the global urban gardening movement.⁵⁰ Within the last decade or so in major Western cities a growing number of community gardens have arisen and started to become a non-negligible factor in many neighbourhoods. Urban gardens act as a focus of health, communication and multi-ethnic inclusion. They don't just cultivate high quality food, they cultivate a different urban ethos – the idea that the city is not owned by corporate developers and defined by cars, concrete walls and administrative orders. The city belongs to everybody.

Community gardens provide a real, physical space for people to realise new identities and to assert a modicum of autonomy over their lives and their food, through cooperation and sharing. Once again, this ethic can only arise through subjects having experiences, and in turn generates knowledge-forged-by-practice. Urban gardening is about making a livelihood but at the same time about learning the «gesture of the living» and the «pattern that connects,» as Gregory Bateson put it, because it is the way we communicate with ourselves, with other humans and with anything alive.

Commons philosopher David Bollier states: «More people are starting to realise that public spaces like parks, community gardens, farmers' markets and festivals are also important to the economic and social health of a community. There is a dawning awareness that commons-based infrastructure like wireless Internet access is a great

⁴⁹ This programmed goal is *not* a need because a need can be interpreted, negotiated, postponed or transformed with respect to other «players», which is precisely the enlivened freedom of any necessity. The goal to kill and to absolutely win and to always behave in such a way that the aim to win and to be better than others (called «one's own interests») is attained is not the behaviour of a living being, but the behaviour of a machine which is programmed in a linear fashion although the actual programming may be consisting of underlying mutually reflexive algorithms and cybernetic cascades. The machine behaviour does not have any variability in relation to a change in its own inner states and to variations in the environment or in the goals of other actors encountered. This is why in humans behaviour that mechanically clings to a certain goal or worldview and is not able to be reflected upon is called a personality disorder. This is even the defining characteristic: a disorder that makes behaviour repetitive, machine-like and unable to be influenced. We could thus say that bioeconomy leads to a narcissistic disorder of society.

⁵⁰ For an important synopsis in German, see Christa Müller, ed. (2011): *Urban Gardening. Über die Rückkehr der Gärten in die Stadt*. München: Oekom.

way to use a public resource, the airwaves, to help people connect with each other... The emerging commons sector provides benefits that corporations can't provide such as healthy ecosystems, economic security, stronger communities and a participatory culture.»⁵¹

Keeping in mind Bateson's idea of enlivened structures as expressive of «the pattern that connects,» it is useful to see urban gardens and other commons-based innovations as a type of «pattern language,» a term originated by architect and artist Christopher Alexander. His basic idea is that living reality always follows a «pattern language» expressive of embodied existential needs that cluster in «centres of life.» Anything that enhances aliveness is organised into meaningful patterns that we can readily discern and that offer satisfaction for us – for the simple reason that we are also alive.⁵² Interestingly, this is also a fundamental principle in the arts and in nature itself.

Alexander goes on to propose that any design that has living meaning – from architecture to political structure to urban design – should try to identify and embody the language of existential-aesthetic patterns. These patterns emerge as living beings experiment and consolidate their knowledge about what works and what doesn't, what is pleasing and enlivening and what isn't. The world is shot through with pattern languages that embody and express the sensual commons of the world, Alexander suggests. He more or less compiles a list of «hidden principles» of the commons, proposing, for example, that we «organise the planet as a commonwealth of independent regions.»⁵³

As the economic researcher and activist Franz Nahrada observes, the identification of patterns-for-meaningful-aliveness dissolves the separation of practice and theory because the theoretical «plan» must always be lived and felt to be understood as relevant. Commoning exchanges are not meant to be fully theorisable because much of their functioning comes from the contagious energy and feeling of one's own aliveness as it is being experienced and practised. This is fully in line with my proposal to develop a first-person-science that embraces both empirical subjectivity and poetic objectivity, as described above.

The idea that commoning follows certain patterns of enlivening entanglement among human agents and their habitat – while fulfilling material and inner needs of both – is the heart of embodied enlivenment discussed in Section III. Meeting needs, building community, experiencing aesthetic pleasure and joy – they are all combined

51 David Bollier: *The Commons*. <http://www.publicsphereproject.org/node/201>

52 See Christopher Alexander (2004): *The Nature of Order: An Essay on the Art of Building and the Nature of the Universe, Book 1 - The Phenomenon of Life*. Oxford & New York: Routledge. See also: Shierry Weber Nicholzen (2004): «Art-Making as a Process of Creating Aliveness: A review of Christopher Alexander's *The Nature of Order: An Essay on the Art of Building and the Nature of the Universe*», <http://home.earthlink.net/~snicholzen/>. For the existential and meaningful aesthetics argument, see also Andreas Weber (2001): «Cognition as expression. On the autopoietic foundations of an aesthetic theory of nature.» *Sign System Studies* 29:1, p. 153-168.

53 Quoted by Franz Nahrada (2012): «The Commoning of Patterns and the Patterns of Commoning». In: Silke Helfrich & David Bollier, eds., op. cit.

in a single paradigm of commoning. One might say that commons are universal building blocks that can be used as «centres of aliveness.»

Biospheric householding and the play of life

These examples show that the shift from a neoDarwinian/ neoliberal economy to a world of «biospheric householding» is not a utopian dream.⁵⁴ It is happening now. It is the subject of a burgeoning academic literature and activist initiatives and policy proposals.⁵⁵ The common goal of so many of these efforts is to design human exchange circles that entail new, more fully human ways for people to relate to one another and to the more-than-human-world. The goal is to foster more hospitable contexts for human sense-making so that humans can become productive participants in the nourishing cycles of the biosphere, and not mere bystanders or exploiters of it (i.e., producers and consumers). Being an active participant in the biosphere does not mean to «obey all its laws», but to enact freedom within the constraints of existential and ecological necessity.

For the German philosopher and poet Friedrich Schiller the paradox of equally fulfilling our need to belong and our need to be autonomous is the culmination point of culture. In his concept of «aesthetic education» Schiller expressed his conviction that a negotiation of these paradoxes was necessary to live a true and meaningful life, a life that fulfils its potential and at the same time reveals the aliveness of the larger whole, and in this sense is aesthetic or poetic.

To find a reconciliation to this paradox, Schiller did not choose the solution that Hegel (and in his wake, Marx and Engels) opted for a little later in history – to dissolve the contradictions in a «higher synthesis.» Hegel and his followers aspired to actualise a supposed world-spirit and by this achieve a classless society, whereby any failures to do so or any human suffering could always be blamed on failing to get the dialectics right. Schiller, however, decided to stick close to the practice of the living, and in particular to the profound lessons learned in early childhood.

For Schiller, the entanglement of individual autonomy and larger necessity could only – momentarily – be fulfilled through play. Play unfolds from a person's free choice about how to do what is necessary, and this opens up new possibilities in the process. We are fully human only in play, Schiller believed. We are natural only in play, one might add.⁵⁶ It is not entirely fanciful to suggest that the practice of an enlivened

⁵⁴ For a detailed development of applied principles how this form of commons householding could be designed see Burns H. Weston & David Bollier (2013): *Green Governance. Ecological Survival, Human Rights, and the Law of the Commons*. Cambridge, UK: Cambridge University Press. For further discussion on the principles of Biospheric Householding see also Weber (2008), op. cit., chapters 5-7.

⁵⁵ See, e.g., David Bollier and Silke Helfrich, eds. (2012): *The Wealth of the Commons: A World Beyond Market and State*. Amherst, Mass.: Levellers Press.

⁵⁶ For an extended discussion on the meaning of play see Andreas Weber (2011): *Mehr Matsch. Kinder brauchen Natur*. Berlin: Ullstein-Verlag. For a profound introduction to «original play» as deep understanding of reality see also O. Fred Donaldson (1993): *Playing by Heart: The Vision and Practice of Belonging*. Health Communications.

economy amounts to nothing less than the practice of a rich and playful life. That vision, the deep attraction and satisfaction of serious play, may be the most potent, imaginative force for helping us deal with the realities of our time.

In this sense the wisdom offered by Transition movement founder Rob Hopkins seems entirely applicable to the poetic practice of the Enlivenment: «If it's not fun, you're not doing it right.»⁵⁷

57 Quoted by Nahrada (2012), op. cit.

VI. First-Person-Science: Towards a Culture of Poetic Objectivity

For the last 400 years or so science has relied on an «objectivity» provided by rational thinking and measurements. The empirical method introduced by the British philosopher William Bacon had done away with scholastic speculation even though empiricism retained a discursive way of communicating arguments. But as the preceding chapters suggest, an «objective science» is incomplete because it fails to take into account the living human observer. If it is to be more reliable and insightful, science needs to go a step further and include shared embodied experience in its methodology. It should continue to rely on third-person «objective» methods of empirical observation and intellectual reasoning, but it must also introduce irreducible subjective meaning as a necessary element.

This may sound oxymoronic – how can science be both objective and subjective? – but in fact subjective experience can be developed in a systematic way. Unhindered by conventions, fears, and jargon we can train our empiricism and communication to access those parts of ourselves and others to study and report on the living self. Poetic language allows us to systematically express our relationship with the world and with one another.

But is this truly possible? Is there a way to share felt experiences that are based on our common nature as bodies in a more-than-human world? If we follow the dualist view with its emphasis on the principle that we cannot know ourselves, then my proposal does not seem to be very promising. But if we rely on the finding that we all share lived experiences that are not hidden from the mind but rather constitute its foundation, connecting on that deep level seems entirely possible. The «ground of being» arguably becomes the prerequisite for communication. In principle there is no methodology problem. The major obstacle here is the fact that humans have too little access to their embodied needs.⁵⁸ These needs are nothing than the species-specific manifestations of our existential necessities as organic beings. They are individual, but also to a very high degree shared. We all need bonding, food, shelter, health, and freedom – not only humans but also animals.

Enlivenment means to profoundly rethink our relationship to the world, to the whole – and to other individuals who are selves like us. It means to overcome the dualistic gap that stands at the base of so many annoying, unnecessary dichotomies of thought and feeling that are deeply engrained in our epoch. Dualistic thinking

⁵⁸ This is the basic assumption in «*Nonviolent Communication*». See Marshall B. Rosenberg (2003): *Nonviolent Communication: A Language of Life: Create Your Life, Your Relationships, and Your World in Harmony with Your Values*. Encinitas, CA: Puddle Dancer Press.

prevents us from coming into contact with reality and understanding it – on both the empirical and semiotic side of our existence. Enlivenment, by contrast, puts the life into the centre. It begins with the foundational premise that we are embodied selves and therefore we know what it means to be animated parts of a living world. We know how it feels to be in the *world* and to be an *individual*. This is the deepest knowledge that we can access. Why should such inquiries be off-limits to science and banished from economics and public policy?

Poetic science means sharing the «*conditio vitae*» between all beings

The real challenge to such a vision of science, however, is to learn how we might systematically approach this kind of felt experience and generalise it into knowledge and practice. Such an approach will require not only theoretical shifts but also practical changes. The goal must be to re-embodiment thinking and re-connect it with the corporeal-meaningful rationality of our body-mind and of all other living systems which have been flourishing on our planet for some six billion years now. Enlivenment is about trying to establish a logic of sentience beyond the limited logic of «objective» reason. It relies on another type of verifiable objectivity – the logic of our shared experiences as living beings. Pain and joy are objective facts for all living beings because we all feel them. Living agency is an objective fact that unites and transcends all disciplines. The idea of *enlivenment* means that we can – and that we even have to – find a complement of lived practice for any theory – in biology, ecology, economy, sociology, psychology, physics and also the arts. This lived practice might be able to provide a basis for generalisable principles and transdisciplinary inquiry.

But what guidelines can lead us to find a suitable lived practice for this new type of science? Does a model already exist, in any spiritual tradition, in the arts, in science? And how can we justify a universal validity for the practical framework once we have found it?

In the history of ideas, proposals like mine have until now been viewed as impossible. Lived practice has been considered as outside of any (scientific) objectivity because it is seen as too situational, contingent and particular. This attitude forms one of the cornerstones of our Western civilisation, which dismisses any deductions about values from the observation of natural facts, living beings included, as a «naturalistic fallacy». (It is interesting to note that this dogma is not usually applied to Darwinistic/neoliberal economics, which invokes biological patterns and metaphors to validate its principles.)

But a serious consideration of lived practice forces us to reckon with a stubborn, objective reality: Living beings are those natural «facts» that produce value and meaning from within. They are manifest in their desire to stay alive and unfold. Any living being intentionally – if mostly unconsciously – strives to exist, grow and give and receive. The (original) theoretical premises of biological sciences should not allow such observable realities to be marginalised or ignored.

To be living is to be full of being

The way out of this impasse in the theory and practice of science is to search for a new *poetic objectivity* that can re-integrate individuals on both a corporeal and existential level. We need a science that goes beyond an abstract objectivity of the mind to embrace, as well, an objectivity of the living organism. *Poetic objectivity* is that kind of objectivity. It refers to our shared condition of embodied beings – the *conditio vitae*. Poetic objectivity is possible because of empirical *subjectivity*. Being a body as an irreducible fact *and* experience – as opposed to «*having* a body», which implies that our body is an «other», separate from the self – subverts the old dogma of Descartes' that we can only be sure about our mind («*Cogito ergo sum*», I think, therefore I am). It is possible to assert a subjective, first-person certainty about our body and experience to which even Descartes' famous phrase can be traced back. This is exactly the switch from the *Enlightenment* to the *Enlivenment*. Being a body and having feelings and socially expressed, nonverbal interactions, are empirical facts. They are also dimensions of living that are shared with all other animate beings. Poetic objectivity is about this subjective core self: the existential meaning that any organic being produces from its centre of concern that is its self.

The crucial point is that we all – and I mean all of us living beings, from the most modest bacterial cell in our guts to you, the reader – share the experience of a meaningful core self that is concerned with what happens to it and strives to keep itself alive. As living beings, we all have a genuine interest in continuing to live, and we know the joy and light-footed exuberance of just being. Poetic objectivity seeks to understand how expressiveness-in-our-body feels and can be communicated, and elaborated upon.⁵⁹

Poetic objectivity deals with the embodiment of existential sense and meaning in its many non-rational guises. These may be pictorial, gestural or palpable in other ways, such as poems, sculptures and music. Feeling in the sense discussed in section III – as subjective experience of meaning and concern (not necessarily consciousness) – is not only a category that is universal among all species, but is also a strong, even defining aspect of poetic experience. We could say that the poetic gesture is the natural expression of the experiences of a poetic-embodied existence. A great work of art seizes us emotionally and by this shows something profound about aliveness. This emotional understanding is a kind of shared existential experience – a poetic objectivity. Such feelings are also evoked by nature itself as countless naturalists, artists, musicians and ordinary people can attest. Natural beings themselves are poetic expressions about aliveness.

I hasten to add that this is not the objectivity of a scientist's proof. Poetic objectivity is weak. We cannot «prove» it with quantification or controlled, reproducible

⁵⁹ See J. M. Coetzee's opposition to Thomas Nagel's essay «What it is like to be a bat?»: «To be a living bat is to be full of being. Bat-being in the first case, human-being in the second, maybe; but those are secondary considerations. To be full of being is to live as a body-soul. One name for the experience of full being is joy.» J. M. Coetzee (1999): *The lives of animals*. Princeton, New Jersey: Princeton University Press, p. 33.

experiments. We can only try to bring it to the observer and let it do its work. On the other hand, poetic objectivity is stronger than any scientific reasoning because we can feel it and because it can transform our actions even before our conscious minds can recognise it. Great literature is able to transform a personal life. Insights can be won not only through one's own experience, but also through experiencing artistic meaning – because that meaning is about aliveness. The philosopher Ivy Campbell-Fisher observed: «If I could be as sad as some passages in Mozart, my glory would be greater as it is... My grasp of the essence of sadness comes not from moments I have been sad, but from moments when I have seen sadness before me released from entanglements with contingency... in the works of our great artists...»⁶⁰ Poetic objectivity provides something that we might call an embodied-empirical proof.

«Thinking like a mountain»

Poetic objectivity thus means that we can submit any practice to the question: Is it a poetic accomplishment? Is it gracious? Does it enhance life? Does it bring more life? Does it convey an experience of aliveness? Does it make life fuller? These are obviously not the same questions utilitarians ask when they are looking for maximal benefit (a proxy metric for the common good). From an enlivenment aspect, questions about the common good point in a different direction and rely upon qualitative judgments. They take individual experience, freedom, growth and health into account, for example, and frankly recognise that any life-enhancing improvement can be grasped only by poetic imagination. It cannot be analysed or directly measured. It can be known solely through experience – in the same manner as the truth of a poem can only be understood from within the core self of a sentient being that uses language as a means of understanding the self of another being. In other words: Poetic objectivity is objectivity from a «shared first-person perspective.»

The idea of poetic objectivity, which complements «the view from the outside» (objectivity) with the experience from within (subjectivity), calls for a first-person-science to generalise this richer kind of knowledge. To be clear: «first-person» does not encompass the human ego perspective alone. It also means to give voice to non-egoistical human feelings – as well as to other «first persons» of experience. A first-person science would take account of the inner dimensions of foxes and fish, rivers and forests, oceans and shores. To take such a perspective means, as the pioneering eco-philosopher Aldo Leopold described it, to «think like a mountain.»⁶¹

One of the deep limitations of conventional scientific objectivity is its inability to advance social justice, or a fairer economy, or a sustainable climate, because it definitionally excludes the first-person perspective of other beings. Poetic objectivity helps us overcome this problem by enabling us to rethink our relationship to earth. It lets us

⁶⁰ Ivy G. Campbell-Fisher (1950): «Aesthetics and the Logic of Sense». *Journal of General Psychology* 43:245-273.

⁶¹ Aldo Leopold (1949): *A Sand County Almanac*. Oxford: Oxford University Press.

properly recognise human life as a matter of embodied living-within-the-biosphere, blending materiality and meaning in the same commons-based system.

Finally, using this lens to see, we can begin to re-integrate the material, or third-person aspect of reality with the felt, first-person side that is otherwise «hidden within.» Both are equally valid and cannot exist alone without distorting our understanding of the full context. This relation is nicely expressed by the American poet and eco-philosopher Gary Snyder in a short, koan-like poem: «As the crickets' soft autumn hum / is to us / so are we to the trees / as are they / to the rocks and the hills.»⁶²

In this respect, any careful poetic description of a phenomenon of life becomes a scientific observation. A beautiful example of ecological research in the first-person therefore is the poetic genre of «nature writing» represented by John Muir, Barry Lopez, Gary Snyder, David Abram and others.⁶³ In the fine arts world, the eco-arts movement has been experimenting with first-person scientific perspectives on our aliveness for decades, producing a host of highly interesting insights.⁶⁴ From the standpoint of this essay they all are scientific explorations in a shared living world.

Learning the practice of first-person-science

The idea of poetic objectivity acknowledges that our sentience, our aliveness, is a scientific instrument. Many people may object that such an idea stretches the definition of «science» to a breaking point because science has traditionally held to the notion of measurement, reproducibility and falsifiability as key elements of the scientific method. The idea of poetic objectivity makes the case – boldly and frankly – for a broader, more reliable scientific methodology that can acknowledge the inner dimensions of living.

A first-person-science should attempt to corroborate those theoretical findings with methods which make the felt existence accessible and that also enable the sharing of these experiences. First-person-science considers feeling, expressiveness and meaning to be another important engine of scientific inquiry. Experiential methods are not the only tools, of course, but together with empirical observation and reasoning they are means to refine and share our experiences. They can become objective with regard to the body, which is the common ground of experience in all organisms.

This type of science is not new. Most cultures from diverse epochs have developed techniques for providing a first-person-account of what we are within the world. We thus should be able to draw guidance from these traditions, many of which are still used today or being rediscovered.

⁶² See: Gary Snyder (1992): *No Nature: New and Selected Poems*. New York: Pantheon, 1992.

⁶³ Some interesting attempts to generalise a first-person ecology in a more systematic way include work by the French physicist and philosopher Michel Bitbol. Id. (2010): «Introduction». *Ecology in the first person*. Colloque, 6. April 2010, Paris.

⁶⁴ Sacha Kagan (2012): *Toward Global Environmental Change. Transformative Art and Cultures of Sustainability*. Berlin: Heinrich-Böll-Stiftung (available as download at www.boell.de).

The neurobiologist Francisco Varela explicitly tried to unite empirical brain research, Buddhist meditation and phenomenological insight into a first-person-science.⁶⁵ In his late work Varela routinely complemented brain-imaging techniques with a careful questioning of how the research subject felt and what he or she experienced. Varela regarded meditation as a scientific method of understanding the self in the world, and the self as a world, which cannot simply be marginalised as personal, subjective experience.⁶⁶ He found that the feelings of serene emptiness elicited by meditation complements the scientific finding that organisms exist without a fixed anchor of identity, but rather as living beings implicated in a «meshwork of selfless selves.»⁶⁷

Another traditional example of a first-person-method to share embodied insight is the Native American «medicine wheel» methodology of putting oneself into contact with the surrounding nature and one's own feelings at the same time. The US nature philosopher and wilderness educator Jon Young has developed a rich, modern methodology to cultivate a «coyote mentoring» style of awareness. The goal is to enable practitioners to develop their feelings through contact with the presence of other feeling beings.⁶⁸

Romanticism 2.0

Romanticism has been a perennial stronghold for the research of a «meaningful science.» Romantic thinkers have sketched several explicit programs of poetic objectivity: particularly amongst others in the German speaking world, Novalis and Johann Gottfried Herder; in the British «Northern Renaissance,» Samuel Taylor Coleridge; and, later, in the US, Ralph Waldo Emerson and Henry David Thoreau. In Germany, at the end of the 18th century, young romantics, among them presumably Friedrich Hölderlin and Friedrich Schelling, formulated a research program that culminated in the idea that a precise description of the world could possibly only be done «in a language of poetry, in a language of love.»⁶⁹ This language automatically includes other beings as referents for emotions and metaphorical self-understanding.

We can also find first-person natural history in the works of Alexander von Humboldt and Johann Wolfgang von Goethe. The major aesthetic theories of Goethe and Schiller both follow the notion of this romantic approach. Goethe's position is

65 Francisco J. Varela; et al., eds. (1999): *Naturalizing Phenomenology: Issues in Contemporary Phenomenology and Cognitive Science*. Stanford: Stanford UP.

66 Varela, Thompson & Rosch (1991), op. cit., Andreas Weber (2011): «Die wiedergefundene Welt». In: Bernhard Pörksen, ed., *Schlüsselwerke des Konstruktivismus*. Bielefeld: VS-Verlag.

67 Francisco J. Varela (1991): «Organism: a meshwork of selfless selves.» In: Tauber, A.I., ed., *Organism and the origins of self*. Dordrecht: Kluwer.

68 Jon Young, Ellen Haas, Evan McGown (2008): *Coyote's Guide to Connecting with Nature*. Shelton (WA): OWLink Media.

69 Christoph Quarch (2013): «Die Versöhnung von Geist und Leben in der Poesie» [«The reconciliation of mind and life through poesy»]. Talk at the conference *Lebendigkeit neu denken. Für die Wiederentdeckung einer zentralen Dimension in Gesellschaft, Politik und Nachhaltigkeit*. Böll-Foundation, Berlin, 14. November 2012, unpublished.

exceptionally interesting: He mainly succeeded as a poet but explicitly considered his activities as science, and he did not reject scientific method at all. Goethe thought about nature as a grand process of artistic revelation – and, vice versa: he believed that a successful work of art somewhat represented nature’s creative forces. The British literary scholar Elizabeth Sewell has termed this school of thinking «the orphic voice.»⁷⁰ It has left us with a host of findings still not even touched upon.

In some respect therefore we could call the Enlivenment approach a «Romanticism 2.0». Romanticism was the search to understand the character of the world through its appearances, the claim that the appearances are not to be shoved aside as mere illusions but that they have a poetic way of speaking about the world. In my eyes, this task has not been made obsolete by scientific progress, but has rather been shunted aside without a due regard for the profound epistemological errors that science introduced. Many of our current difficulties stem from the fact that we rejected the romantic notion of the world as inherently creative and alive – and then proceeded to build an entire civilisation upon a flawed foundation.

We should realise that Romanticism was not about (or at least not only about) the elevation of emotions, subjective feelings, gruesome experiences and personal suffering to attain artistic dignity. It was first and foremost a scientific way of exploring the world as a subjective phenomenon. It was also a historical attempt to build a first-person-science. Hölderlin understood this endeavour as the «need for a new mythology». Unlike 18th century thinkers, however, we can re-evaluate this idea in light of the extensive findings of advanced biology, systems research, biosemiotics and quantum physics. All of these sciences now validate the original romantic claim that the living world’s principles can be clearly seen in the appearances of living bodies and meadows, streams and forests.

Aliveness as artistic transformation

Contemporary German artist Joseph Beuys has been reviving the romantic heritage in his art. He relies heavily on Goethe and his integrative understanding of creative processes, leading to an entanglement of life and art that is evident in the creativity, productivity and sense of both. Beuys has also spent his life trying to expand art into the general sphere of everyday life. From here comes the (often-trivialised) notion that «everybody is an artist.» For Beuys, life processes can be understood and emulated only if they are perceived as part of the unfolding creativity of a living self in contact with others. This attitude clearly brings to mind the notion of «poetic objectivity» developed here.

Beuys called his approach to an imaginative change of reality the «warmth process» or «warmth work.»⁷¹ He believed that every gesture resulting from life

⁷⁰ Elizabeth Sewell (1961): *The Orphic Voice. Poetry and Natural History*. Washington D.C.: Routledge.

⁷¹ Quoted by Joan Rothfuss, Walker Art Center curator, «Energy,» www.walkerart.org

processes is inherently creative and productive. Conversely, this also means that only enlivening processes can truly transform society and one's own consciousness.

This notion brings us from the idea of first-person-ecology to the broader practice of what we might call «*first-person-sustainability*». If a new individual practice is going to enhance sustainability, it must also enhance life. It must increase the generativity and the felt authenticity of the agents involved.

Two Beuys scholars, performance artist Shelley Sacks and cultural researcher Hildegard Kurt, have developed this notion of sustainability as enlivening process. To catalyse this process, both artists are collaboratively developing methods to engage in and express first-person-experiences of aliveness. One of them is the «Earth forum» created by Sacks, which is a process of meditation about a real item «of the earth» that participants choose. There is then a collective emotional sharing, intended to create a presence of authentic feeling that itself is treated as material of artistic imagination.⁷² Sacks and Kurt consider these methods and techniques forms of artistic expression and awareness-building. They see their activities in Beuys' tradition of «Social Sculpture», which can be understood as encompassing those human actions which explicitly envision and empower our creative self, and open up a poetic space in which «being alive» itself becomes a malleable, highly creative artistic material.⁷³

Toward a culture of poetic precision and paradoxical interbeing

«There is no wealth but life,» wrote the British 19th century artist and philosopher John Ruskin. But what is the standard for assessing the wealth of life? Just as enlightenment thinking has had its conspicuous shortcomings, so the proposed first-person science must be approached with a healthy caution. Where objective science renders the world more and more lifeless through its tendency to dissect, analyse and state half-truths, subjective science could easily degenerate into a system of unchecked irrationality and manipulations of the gullible.

The mere sense of «feeling alive» has no explanatory content whatsoever. A nice sounding poem might be full of clichés. In group processes seeking to cultivate mindfulness, charismatic leaders may easily dominate and mislead others, a phenomenon referred to in the literature as «expanded ego». There is also the danger of seduction into emotional states that might feel quite poetic but which have no objectivity, and which cannot be truly shared.

We easily confound the overwhelming feeling of closeness and the experience of «being really alive» with psychological fusion and projection, which always carry with them some sorts of emotional abuse. «Coming to oneself» *per se*, then, is not a reliable basis for a first-person-science. A mass murderer can feel alive when committing his

⁷² See <http://www.universityofthetrees.org/>

⁷³ Hildegard Kurt (2010): *Wachsen! Über das Geistige in der Nachhaltigkeit*. Stuttgart: Meyer 2010; Shelley Sacks (2011): «Social Sculpture and New Organs of Perception. New practices and new pedagogy for a humane and ecologically viable future». In: Victory Walters; Christa-Maria Lerm-Hayes; eds., *Beuysian Legacies in Ireland and Beyond: Art, Culture and Politics*. Münster: LIT-Verlag.

crime; he probably does, and that is the reason for his behaviour: His personality disorder makes him feel dead and disconnected at all other times. A fetish for «feeling alive» can in this way become totalitarian. This is the main reason why Western civilisation has developed its scientific method in the first place: To safeguard against seduction and superstition by requiring testable, reproducible results.

It is therefore necessary to negotiate the antagonistic tendencies of lived reality. This idea of «life» is the opposite of the esoteric cliché. If we accept nature as the epitome of freedom-in-necessity, we can no longer regard it as a haven of morally elevated, beautiful and healthy behaviour. Ecological thinking often tries to substitute a nostalgic, mother-earth version of redemption for the deadening, rational dystopia of modern times. But both of these choices represent an evasion. To be really alive means to be embedded in a mess that must constantly be negotiated. This is the species-specific way *Homo sapiens* realises its contradictions. It is the only way that culture can arise.

More than anything we need to carefully nurture a «culture of poetic precision» – to be observant of felt life while accepting the material, natural processes in the world. We must develop freedom within this framework of necessity. We must know the passions, but make decisions in an informed manner. We must cultivate an empathetic attitude, but recognise that some suffering cannot be avoided. We must acknowledge death as the ultimate transformative power.

Above all, our science, economics and law must honour the feeling core in each one of us – but at the same time must constantly evaluate our passions with the maturity of the adult personality. We must know that existence is paradoxical; that every light casts a shadow; that every indulgence comes at a natural cost; that closeness, but not fusion, is possible; that death is to be faced on a personal and on a civilisational scale; and that only by coping with these calamities is real transformation possible.

«Enlarged vision»

The most convincing guideline for a culture of poetic precision, to my mind, is to always put the other's needs first. To understand the other – streams and forests, bees and birds, children and lovers – as the source of one's own aliveness. This poetic generalisability means to remain open to experience the differences exhibited by other living beings and their communicative processes. It means to accept the «thou» as something unfathomable that cannot be subject to judgment. As we have seen, this idea of an irreducible other or whole that allows the individual to thrive through a process of continuous exchange, is also a key aspects of a philosophy of the commons.

This perspective is attained when the observer is able to see herself and others as embodied subjects with their own needs, and not just as objects to fulfill self-serving desires. Opening up oneself to the other's aliveness makes possible the experience of «embodied interbeing.» We realise that only through the mirror of the other can we become aware of ourselves. Empirically, this «other first» is just how the world works: On ecological grounds, we all come to be solely through the others who feed us and

upon whom we feed, and with whom we exchange oxygen and carbon, water, energy, shelter and mutual bonds.⁷⁴ «The other» is the indispensable partner who enables a human infant grows into his humanity. Only if the caregiver really «sees» the baby with its needs and deeply welcomes these needs can an infant develop a healthy, socially adjusted personality.

Iranian-German artist Pantea Lachin coined the term «enlarged vision» for this creative reciprocity.⁷⁵ «Enlarged vision» builds on the wisdom that to exist always requires to be perceived. Self and other co-exist in a mutually inclusive manner. Neither of them is possible alone. A self that is unsure of itself will fail to welcome the other. Failing to relate to the other self is not a viable strategy for maintaining life. The aliveness of the self is possible only because there already exists a separate «thou» that is able to give life, always feeding the network of reciprocal interdependence.

74 This view has been beautifully set forth by David Abram, op. cit., and id. (2011): *Becoming Animal: An Earthly Cosmology*. New York: Vintage.

75 Pantea Lachin (2012): *Enlarged Vision: Coming to Oneself as Coming to the Other*. Postgraduate Research Application, Oxford Brookes University, unpublished. See also: Andreas Weber (2013): «There is a crack in everything.» Preface to Frank Darius: *Das Paradies ist hier*. Heidelberg: Kehrer-Verlag, p. 2-7.

VII. Basic principles of enlivenment: working with paradoxes

In the poem «Like a countless bird,» the late French Caribbean author and political philosopher Edouard Glissant wrote about a new poetic epistemology that «attunes to the odyssey of the world... it is possible to approach this diverse chaos and to grow by the unforeseeable occasions it contains... to pulsate with the pulsation of the world which finally is to be discovered.»⁷⁶ Glissant argues that we have to think in creative paradoxes that embrace their own opposites. This resonates quite strongly with the ecological poetics proposed in this essay: We can only embrace the paradoxes of lived existence if we allow ourselves to think in an embodied fashion, as consciousness in physical form. This is the language of a first-person-science: «Imagine a flight of birds above a lake in Africa, in North or South America...» So starts the poem.

Glissant calls his philosophy the «Thinking of Tremor». The thinking of Tremor is *Enlivenment*-in-action. I refer here to this concept because of the rare connection between thought and feeling, experience and politics, local and global that it points to. Glissant's poetics is an illustration of the power of inviting contradictions to exist and even flourish in our view of the world. It celebrates the richness of an existence which does not define itself by *identities*, but by *relationships* (Here, one does not speak of «my race» vs. the others, or «culture vs. natural resources,» but of my particular biography that relates to a particular place that is a particular habitat for particular species – yet which nonetheless has universal resonances.) We must not fight these contradictions or flatten them out. They are the material life's creativity and the raw stuff upon which improvisation draws.

The ecologisation of thought

Glissant's thinking shows how the natural history of «dependent-freedom-in-incompatibility» can be integrated into a poetics of the world, and how this poetics lends itself to a political view of things. In the centre of this stands the certainty that all lived reality, be it physiological, ecological, emotional, sociological, political, economical or artistic, is paradox. Glissant therefore strongly argues for a «poetics of diversity».⁷⁷ Drawing on his African-Caribbean background, he calls this search for productive

⁷⁶ Edouard Glissant (2005): «Comme l'oiseau innumérable». In: *La cohée du Lamentin*. Poétique V, Paris: Gallimard.

⁷⁷ Edouard Glissant (1996): *Introduction à une poétique du divers*. Paris: Gallimard.

contradictions a «creolisation of thought.» We have to accept the absoluteness of the total and the individual at the same time; we have to see that identities are existential but only brought upon momentarily, through the interbeing of relations.

On the basis of the argument of this essay we could say that Glissant's concept of a «creolisation of thought,» which so much relies on the admission of contradictions, is in its deep current also an «ecologisation of thought.» Ecology understood as the description of a relational whole composed of individuals thrives on incompatibilities. Living reality is established through the unforeseeable actions of individuals, who are not only independent agents, but also parts of a whole. Glissant's «thinking of tremor» therefore is also the «thinking of life.» It is the «thinking-action-of-the-embodied-living in relation with the other.» Ecological systems – with humankind in their midst – are sliding from catastrophe to catastrophe as part of their normal process of transformation and self-creation.

Already the mere living cell is self-contradictory. Its existence results from the interplay of two entirely different forms of coding in our bodies, the abstract-genetic-binary and the felt-somatic-analogous one. But only by being *incompatible* these two code systems together generate meaning-in-translation and hence coherence.⁷⁸ Lived reality is self-contradictory – and every culture managing to enliven this reality must be contradictory to some extent too. A grazing commons in some remote highland is an ecological and economic paradox, because only by strictly forbidding to use the pasture for certain times, can this resource be preserved and available in the future.

From this viewpoint, the inner ecology of the cell and the social ecology of humans seem to be mere levels in a continuous interplay of freedom and necessities. The living world is self-contradictory because it is «a world where all human beings and animals and landscapes and cultures and spiritualities illuminate each other. But illumination is not dilution.»⁷⁹

The worldview based on these creative contradictions could be called «biopoetics» – in contrast to the prevailing perspective of «bioeconomics».⁸⁰

Anti-Utopia: We should take death seriously

The essential stance of a biopoetic point of view is to cultivate living contradictions as essential. This is important not only to recognise paradoxes as paradoxes, but to find in their presence the deep root of an enlivened spirit. That also means that we have to accept death as an integral part of life, and even a decisive moving force of life. Death is a prerequisite for development.

It is necessary to take a closer look at the dialectics of life-through-death. Above I have observed that by reducing the living world to nonliving building blocks the

⁷⁸ Kull (2012), op. cit.

⁷⁹ Edouard Glissant (2002): «The Poetics of the World: Global Thinking and Unforeseeable Events». *Chancellor's distinguished lecture*, Louisiana State Univ., Baton Rouge, April, 19.

⁸⁰ Andreas Weber (forthcoming): *Biopoetics. Towards a biological theory of Life-as-Meaning*. Heidelberg, Amsterdam & New York: Springer. See also: Andreas Weber (2003): *Natur als Bedeutung*. Würzburg: Königshausen. Download at: www.autor-andreas-weber.de.

prevailing scientific approach has turned into a «ideology of non-living.» Its underlying assumption is that «in truth» the world is non-living, and so the experience of lived reality has no value. This attitude is paradoxically fed by the attempt to control the world and to improve on its flaws, motivated by the desire to make human life better. Emphatically striving for life, bioeconomics does not accept death as a reality within life and therefore becomes a practice focused on the nonliving.

The Enlivenment position, on the other hand, claims that non-being is a central aspect of life. Any organism is a constant struggle from its centre of concern against the forces of dead matter tearing it down. In such a perspective, death is an integral part of life, and only through it can life flourish. Only by accepting non-being, failure, temporal limitation and the fact that every process will end, can we empower the creativity to bring forth growth and newness. «Coda», a beautiful poem of Rainer Maria Rilke, illustrates this necessary entanglement of being and non-being within life: «Death is great. / We are in his keep / Laughing galore. / When we deem ourselves deep / In life he dares weep / Deep in our core».⁸¹

This means rejecting the promise of any world that purports to come to be free of contradictions and proclaim its absolute consistency. A poetics of nature is wary of utopian thinking because it doubts that further «evolution» of hitherto unknown human capacities will somehow resolve our global dilemmas. All life processes are necessarily a mess of some sort.

Seen from this angle, life is «a complete disaster,» as the author and scholar Natalie Knapp puts it.⁸² Mindfulness pioneer Jon Kabat-Zinn talks about «full catastrophe living».⁸³ No concept, philosophy or ideology will change this situation, because the precarious and disastrous nature of any living organisation results from its «precise relativity» – from the fact that any process in the living world is a bridging between two incompatible but mutually translatable realms. The world is not subjective, it is not objective – it is *relative*. «Reality,» says Knapp, «on the most basic natural level is *precisely indeterminate*.» The disconcerting implication of this insight is that *we must systematically include this indeterminacy in our search for truth*. This search therefore might have the gestalt of analogical reasoning – as in the abductive logic of «men are grass» (see section III). It needs to cope with indeterminacy and «emotional disaster.»

A culture of enlivenment thus is emphatically anti-utopian. But to be anti-utopian does not mean to give up the quest for an enlivened reality. It only means that this quest is, by its very nature, endless, ever without total achievement, though not without effect and reward.

81 Translated by A.Z. Foreman, <http://poemsintranslation.blogspot.de/>

82 Natalie Knapp (2013): «Die Welt als Analogie» [«World as Analogy»]. Talk at the conference *Lebendigkeit neu denken. Für die Wiederentdeckung einer zentralen Dimension in Gesellschaft, Politik und Nachhaltigkeit*. Heinrich Böll-Foundation, Berlin, 14. November 2012, unpublished. Natalie Knapp (2013): *Kompass neues Denken: Wie wir uns in einer unübersichtlichen Welt orientieren können*. Reinbek: Rowohlt.

83 Jon Kabat-Zinn (1990): *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*. Delta Press.

This is what Vaclav Havel meant when, during his life as a dissident and Samizdat writer in former socialist Czechoslovakia, he noted: «Hope is definitely not the same thing as optimism. It is not the conviction that something will turn out well, but the certainty that something makes sense, regardless of how it turns out.»⁸⁴ The quest for Enlivenment is only possible if we are aware that we will never achieve a complete «victory» against imperfect but improvable conditions.

Cultivating contradictions

In the last pages of this essay I wish to give a provisional overview of some elements of a culture of *enlivenment*:

■ First-person and third-person thinking and acting intertwined

We should explicitly establish practices, structures and institutions that can provide a «first-person-complement» to existing ones. In science, we discussed the possibility of admitting poetic ways of expression and of experience into the pantheon of serious inquiry. In economics, the commons approach incorporates the principle of diverse interests negotiating mutually acceptable outcomes, and individual actors coming to respectful terms with their habitat. This concept transcends the idea of a mere exchange of resources and covers many areas of human-human and human-nature interactions. The commons therefore is not only a name for an economic or ecological regime, but also a political way of re-organising relationships.⁸⁵

■ Paradox and complementarity

If living beings necessarily exist in a world of paradox, it means that we must come to see the contradictory dimensions of life as complementary and not try to resolve them. It means that we must use nature and at the same time protect it through the way we use it (as large herbivores protect savannas by grazing on it, for example). It means that we see economic exchange as suffused with emotional bonds. It means accepting pain and death as necessary complements of any enlivening growth process, and not trying to deny or repress them as our hedonistic culture usually does. Enlivenment means accepting that to remain the same, we may need constant, often painful transformation. It means, finally, that feeling enlivened does not necessarily mean feeling nice.

■ Sustainability is a poetic process

Sustainable actions mean actions that over the long run make the continuity of life processes possible. Sustainability is not just about assuring the simple replen-

⁸⁴ Václav Havel (1986): *Disturbing the Peace: A conversation with Karel Hvizdala*. New York: Knopf, p. 181.

⁸⁵ For political representation, we should consider a deepened discussion on models of a «third chamber» or «workshop» of embodied practices. The project of a «World Future Council», inaugurated by Jakob von Uexküll, is probably closest to this idea. See www.worldfuturecouncil.org. For some inspiration concerning a «third chamber» see Andreas Weber, Bettina Jarasch, Jascha Rohr (2011): «Lasst uns die Krise feiern!». OYA 07/2011. Online at www.oya-online.de/article/read/338-lasst_uns_die_krise_feiern.html

ishment of supply; it is about generating more life, creating new possibilities of development and meeting needs in novel ways. Manfred Max-Neef has shown that basic needs are non-hierarchical and that neglecting only one of them can have pathological consequences.⁸⁶ Hence, «more life» cannot be defined in either material or psychological terms only. It means a life that produces more meaning and participatory experience, and even more beauty – and is able to grant material supply of needed resources. A full life is a beautiful life – although it can also be a difficult, even tragic life.

■ Enlarging the idea of the «Anthropocene»

In talking about the gap between humans and nature, people often invoke the «Anthropocene Hypothesis,» the idea described in Section I that holds that since humans have become a driving force influencing nearly every geo-biophysical process on earth, humans themselves equal nature («Anthropocene» means «age of man.»).⁸⁷

Anthropocene proponents believe that the human species, through technology, has finally bridged the gap between itself and the remainder of nature. Anthropocenes think that «nature as we know it is a concept that belongs to the past. No longer a force separate from and contrary to human purpose, nature is neither an obstacle nor a harmonious other. Humanity forms nature, and so humanity and nature are one.»⁸⁸ In Anthropocene thinking, the gap between nature and culture has dissolved, not because humans have come to a different understanding of life and their role in it, but because their technology has swallowed nature.

It might seem that my proposal for an «Enlivenment era» is a biocentric version of the Anthropocene hypothesis. But there are differences. The Anthropocene approach tries to unite man and nature, but starts from the opposite side of the Enlivenment idea. If the proponents of the Anthropocene say that finally «man and nature are one,» they do so only because man and nature have been thought as different in the first place. But humanity *is* a part of nature. And nature is a part of *us*. It is the crucial form of reality that unfolds in our lives. Man, after all, is an animal species. Therefore, it is logically impossible to pose «man» and «nature» as equal counterparts. Nature is the sum of all forces bringing forth creative life. It is only possible to say that «Humanity forms nature» in the sense of a rapidly multiplying species that directly or indirectly influences every aspect of its ecosystem. The emergence of the Anthropocene idea is a necessary step in leaving behind the old Enlightenment thinking of man vs. nature. But it is only a step and must be developed further to a full new view of nature as a generating force inside of us. The only reason that we can posit a more unified view of a creative biosphere is because we have become able to re-evaluate dualistic and static notions in

⁸⁶ http://en.wikipedia.org/wiki/Fundamental_human_needs

⁸⁷ Paul J. Crutzen, P. J., and E. Stoermer (2000). «The 'Anthropocene.'» *Global Change Newsletter* 41: 17–18.

⁸⁸ Akeel Bilgrami et al. (2013): «Das Anthropozän-Projekt. Eine Eröffnung», *program flyer*. Haus der Kulturen der Welt, Berlin, 10.-13 January, 2013.

our description of reality, eclipsing such dualistic categories as «humanity» and «nature.»

To me, the Anthropocene idea is the philosophical equivalent to globalisation: the whole earth now is conflated with humans, and more precisely, with (Western) technological man. Anthropocene might be useful as a classification of geological eras, but it has no analytical content. We should rather realise that we are living in the *Zoocene* era, a term that I propose to use instead. This word derives from the Greek word *zoë*, meaning life in its felt sense, and including the whole animate earth. The Anthropocene view and ecological thinking in the first-person, multipolar «creole poetics» of enlivenment, might be mutually incompatible. It is not a coincidence that the first term has been coined by a «white male Protestant Western scientist,» and the other, creole poetics, by an Afro-French poet and thinker from the Caribbean.

■ **The world is a physical resource and a three-dimensional space, but also an emotional reality – an «inside» as well as an «outside.»**

Individuals and the biosphere encompasses both material processes and meaning relations. Together they constitute lived experience, which from inside of organisms is subjectively «felt» and from outside of organisms exhibits itself as «sensuous» and «expressive.» This poetic space is not to be confused with «spirit» (inside) and «body» (outside), but is rather both conjoined as metamorphic material that is always meaningful.

This idea breaks with any notion of primacy of either matter or symbolic relationships, and so in this radical way is non-dualistic. There is no outside to poetic space because the poetic space encompasses both organic and non-organic matter. At the same time it becomes clear that the imaginary scene of this poetic space can be subject to transformation from both «sides»: through material manipulation but also through imaginative creation. The poetic space is open to new interpretations, new utterances of self-expression and can be transformed in such a way that real change in the world takes place. It follows from these ideas that any process of imagining and transforming reality has its greatest potential to be alive if it is a poetic – or artistic – process.

■ **The biosphere is a process, not a state.**

We can quickly escape the habit of thinking in identities if we accept that everything is in continuous change – as the body that exchanges all its atoms with the environment every a few years through the process of metabolism. Any process goes through «good» and «bad» states. Process is not stable, but rather a constant fluctuation. So history has no clear direction towards the «good,» as is taught in monotheistic religions and practically attempted in neoliberal economics. Rather, we can see that the only quality that really grows over time is the amount of different experiences – felt depth – in biosphere over time. Life is making more and more experiences about itself. It is enlivening itself. The interesting fact is that we do have an inborn instinct for it, a drive just to do the same as the world does: to deepen our experiences, to extend our knowledge of ourselves and others, to

unfold new capacities, to strengthen bonds, and so on. One might say that this process is about learning to respect and learning to love.⁸⁹

Finding ourselves in the others

Let me, as a final thought, repeat that this shared equality extends beyond humanity into the whole biosphere of the more-than-human world. This is the last of the striking paradoxes we shall embrace. To become fully human we need the relationship to that which is emphatically non-human: the interbeing with other living beings. We have to become animal to be human.

In the republic of innumerable species and existential relational processes, all contradictions are embedded without being flattened out. We could even say that through the beauty, through the searing emotion that natural settings are able to provoke in their human participants, we feel the balanced existence of all those complementarities: That life is a gift and a burden; that necessity must be obeyed to be free; that death is unavoidable. All this is written nowhere, but enacted through the unknowing wisdom of commoning among myriad feeling bodies, plants and organisms.

Plants and animals are not just abstract models for relations. They are the relations in their very enactment. These are the mediation of their paradoxes in the same moment. They are closed unto themselves, as any living being is, and at the same time they are open and touchable. Something rests in the middle of their being that is accessible and yet absolutely unfathomable. It is not alien, but it is without limits. This is exactly what Goethe referred to as «Urphänomen,» – «primordial phenomenon»: a pattern of life that is inscrutable yet which at the same time is its own explication – but only as a phenomenon, not as an explication or algorithm, both of which are reductive.

In wild nature's presence, be it as taxonomically close to us as an ape or as seemingly infinitely distant as a tadpole, we find ourselves amongst speechless yet eloquent creation. The animal's gaze upon us is woven from the entanglement of the most intimately known with the most alien. It is the most enlivening gaze imaginable.

The distinctness of many of our experiential categories might only be possible because in wild nature, in *natura naturans*, there is this form of embodied and hence objectified subjectivity. Could it be that this embodied subjectivity has brought us forth and still dwells within us, guiding our responses on how to confront our own

⁸⁹ Glissant states accordingly: «In the same way, the Tout-Monde is obscurely the Place of a process... we don't need to establish structures, we have to explore processes. Exploring processes means that you accept something unacceptable: to think about and to learn to think about what is unpredictable. Processes float in spaces in the same way that they float in times. I don't mean to imply that we are all birds in flight over an African lake, but that we are perhaps noble, wild and grandiose enough to consider that our relation to the other is a continuous tremor. In this tremor we can find true equality. Edouard Glissant (2002): «The Poetics of the World: Global Thinking and Unforeseeable Events». *Chancellor's distinguished lecture*, Louisiana State Univ., Baton Rouge, April, 19.

embodied existence? Here seems to lie a path where dualism can be healed. The deep cleft which has opened up between us and other beings, between the world as we experience it and the world as we describe it, closes and re-integrates itself again. For the first time for a long period, in this space, we are welcome. The deep cleft closes, but not to beckon us toward a utopian dream, but to allow us to experience a moment of praise and awareness.

Plato had suggested that for every term, be it as abstract as can be, there is an *eidos*, an archetype in the empire of ideas. Certainly, Plato was not completely clear at this point. The empire of ideas does not lie beyond, in an ideal world, but is anchored here, in the bodies of plants and animals, in the buzz of the bees and the shape of the circling raven.



Our mono-cultural worldview is literally preventing us from understanding the deeper causes of our multiple crises. The author Andreas Weber gives us a glimpse of the different scientific paradigm now coming into focus. He calls it «Enlivenment,» because the new sciences are revealing organisms to be sentient, more-than-physical creatures that have subjective experiences and produce sense. Weber sees Enli-

venment as an upgrade of the deficient categories of Enlightenment thought – a way to move beyond our modern metaphysics of dead matter and acknowledge the deeply creative processes embodied in all living organisms. The framework of Enlivenment that Weber outlines is a promising beginning for all those who stand ready to search for real solutions to the challenges of our future.

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