



DATA ECOLOGIES `09

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at **FoAM** vzw Koolmijnenkaai 30-34, B - 1080 Brussels
<http://fo.am/>



TIME'S UP
Industriezeile 33b
A-4020 Linz

<http://www.timesup.org/laboratory/DataEcologies>

Data Ecologies 09 is the fourth in a series that deals with the ways that real and abstracted systems interrelate. This year we are looking at money (as an abstraction) and value (as something real). Questions arise such as the use of money, how investments and maintenance of non-money assets work, the way that interest breaks with ideas of real value and the different ways that value can be translated into the abstraction of money. The symposium examines several perspectives, from the formal system science point of view and the ideas around Collapsonomics, investigating economic and state systems at the edge of their normal function, various approaches as to alternative forms of work and payment and the progressive field of complementary currencies.

Speakers

Dougald Hine	http://dougald.co.uk/
Dr. Karl Svozil	http://tph.tuwien.ac.at/~svozil/
Dr. Sally J. Goerner	http://www.integralscienceinstitute.org
Dr. Frithjof Bergmann	http://newworknewculture.com
Ludwig Schuster	http://livingcity.de/
Dr. Timothy Boykett	http://timesup.org

Introduction

The dominant subject on many if not everyone's lips, eyes and ears is indisputably the current commotion in the free market commonly known as the financial crisis.

Daily newspapers, weekly magazines, radio broadcasts, tv reports and discussions are interspersed with this topic. We are confronted with bursting real estate bubbles and bankrupt national budgets. We are horrified by cynical speculative (mis)deeds and agitated by crashing stock markets. We are informed about collapsing currencies, affected by declining economic growth and are sensing decreasing contracts and volumes of work. We see how states and communities of states tie up bank and economic stimulus packages in incomprehensible amounts while reduced hours and unemployment forcefully spread throughout our lives.

The media is discussing ways out of the crisis and is investigating what led us to this. Opinions are manifold and often contradictory. For some it is a devastating misery with apocalyptic dimensions, where as for others it is a veritable chance for an extensive and necessary change of course within the economy and its spheres of influence.

In certain media and circles the meaningfulness and efficiency of current financial architectures are illuminated surprisingly broad and open. Popular methods for monetary valuations are scrutinized. Economic systems that optimize and maximize profits are examined. Something seems to be moving into gear within the maybe not so glorified but still largely accepted money - capital - assets - value machinery. If there are indeed apprehensible, noticeable and certainly essential consequences entering our everyday life is anyone's guess.

It seems to be a fact that concepts, considerations and systems thought out in the background for years are finally surfacing into the media. Visionaries and experts are gladly heard, ideas looked at seriously and selected options of executions initiated.

This year's topic of the „Data Ecologies“ symposium will deliver a contribution to the ongoing dispute of money and its modified assignments of value. Money as one of the biggest abstract accomplishments of mankind stands as the central subject of the symposium and will be commented on by various participating experts and practitioners.

On the one hand the subject of discussion will be money as a quite valueless object of utility along with its real, virtual, nominal as well as emotionally constituted value. On the other hand alternative concepts, which adapt, extend and redesign the current money and value system will be outlined.

In the spirit of one of Margrit Kennedy's headlines for an article: „Money rules the world, who rules the money“ we would like to examine and see who actually rules it and if we do spot the rulers, how we can defy them?

Times's Up

Vom Wesen und Unwesen des Geldes

On Money, Value and their strange Relations

Like many things in the world, the more you look at them, the stranger, more complex and even more complicated they become. Whether it be the building blocks of the universe as we work down from grains of sand to the elementary particles with their quantum strangeness, the contradictions of personality and psychology as we dig into our subconscious minds and reptile brains or the workings of money and exchange. This workshop aims to investigate some of the ideas that are built up around money and value and to hopefully let us see that there are many other ways, often rather different from the familiar ones, of dealing these issues and mechanisms.

This introduction hopes to explain why we have decided to put this symposium into the Data Ecologies series, and then to investigate some of the many connections and contradictions, parallels and tangents that our speakers bring to the meeting, at least in our necessarily limited understanding of how all this fits together.

Let us be clear from the start: we are more than aware that the creation of value, the exchange and investment, work and pleasure, are all highly complicated themes with which we are dealing, if only because of the self-referential nature of these human endeavours.

These are the tools that make our lives valuable and interesting, that allow us to help family and friends, plan our retirements, travel the world and undertake new and old activities of all sorts. These are also the tools that can lead to environmental degradation, social breakdown, thievery, greed, heartlessness and social isolation. That something as essential and obvious as money is so hard to discuss will come as no surprise to anyone who has attempted to investigate consciousness, intelligence or any of the other things that formulate our experience of the world so completely. As a fish knows next to nothing about water, so do we know so little about the monetary flow which surrounds us so intimately.

We must admit that every time we begin to investigate the network of ideas that this symposium attempts to look at, we recoil in fear. The tower of problems and possibilities, constructions and compromises, scams, schemes and systems wobbles above our heads and is always on the verge of toppling down upon us. However, unable to simply swallow the illusion that all is right with this system (if only we would pay attention to our jobs and places in society, work out how to twist around and make the most of the offered opportunities) we are left with no option but to attempt an investigation of a few parts of the tower and to see how they fit together and how they might be better organised to make a more stable and useful tower.

The Data Ecologies series started in 2003 as a way to spend some time thinking more abstractly about the ideas that connect the physical world with all of its systems and interdependencies and the data world with all of its abstractions and emergent properties. With an initial focus on artificial life, ecologies and the ideas of the universe as a computer, we had a cold but interesting weekend of hands-on investigation and speculation into the realms of whether or not the universe could be, at its most basic level, some kind of computational system. The connections that arose, building bridges between physical systems and data systems, has long been an area of physically applied and practically oriented activity for Time's Up. However this abstracted arena of a small symposium made the investigation more free and open. The next Data Ecologies in 2005 focussed upon the area of digital physics, investigating the way that the physical world, on a deep deep level, acts like some kind of computational device. Emergent physics, the role of perception and the ideas of a proper science of experience as formulated by the philosopher of consciousness David Chalmers as well as good gameplay formed a framework in which two days of intense discussions were possible.

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In 2007 we investigated a large array of systems for computational aspects and for physics models; the quantum nature of language, physical properties of number systems, ecology inspired perma-culture as an organising principle of human organisations, computational artificial life and meso-scale physics. This mind blowing spectrum of ideas over a hot and sunny midsummer weekend left us all sweaty and full of ideas that began to investigate the ways that emergent complex systems and abstract data systems are similar and connected, that they can be designed, investigated, engineered, perceived and manipulated in various ways and taken into interesting and vital interchanges. The abstractions of a certain type of mathematics allow us to look at language and quantum mechanics in the same light. Permaculture offers not only a way to organise a garden or farm according to ecological principles, but also offers ways to organise more abstract things such as larger or smaller organisations up to whole societies. We see the economy as an ecosystem with its flows of production and exchange and organisations as smaller systems within the larger.

Here the seeds were sown that grew into this year's Data Ecologies. Over the past fifteen years we have seen a plethora of new social and economic models thrown up for investigation, we have seen the New Economy rise and fall, and come to realise that hedge funds are not glass jars of money that Aunt Esmeralda buried under the plants in her garden. In the light of such enterprises as Enron, the idea of corporate raiders who looted undervalued companies in the 1980s has become almost innocent, a romantic image of honest plundering. Enron and similar economic players have turned this most basic and practical part of society, the economy with its places of production and consumption, the exchange of goods and services, into some abstracted data system in which it was possible to turn power stations on and off in order to generate huge flows of funds into corporate bank accounts. Somehow something happened that keeps us all quite baffled and wondering if this is actually a good way to organise our society. Adding to this the financial crisis that we have witnessed recently,

these issues seem timely not only to a radical anti-capitalist movement, but also to the general population who can no longer turn a blind eye and trust in the optimised actions of the invisible hand.

For this latest edition of Data Ecologies, we are concerned with the realness of value and its creation with its relation to the abstraction of money. The ecosystem of farmers and inventors, parents and doctors, musicians and mathematicians making, doing, producing and actively changing the world, creating something of value. The data system of abstracted value that we call money and its exchange between all these value creators. The overlaps and compounded links between these fields is the theme of Data Ecologies 09.

As we began to formulate the ideas for this year's Data Ecologies, we were repeatedly confronted by ideas that showed that, contrary to our, and we daresay, popular belief, the way that the world of money works is by no means natural or uniquely defined. A naïve view that money (entirely value-free by itself) is used simply as an exchange mechanism so that we do not need to carry chickens to a doctor's appointment seems to be widespread and wrong. The properties of money and other exchange media are many and varied.

Money has a spectrum of social functions, and these are the interests that Dougald Hine explores. Coming from the background of the School of Everything, his recent work in the field of Collapsonomics has led him to look at the ways that various social structures, e.g. money, are used in our society and investigate what happens to these structures as the social systems are pushed towards collapse. Money has, according to him, a variety of functions and properties, ranging from the simplicity of sustenance through the practicalities of security to luxurious and superfluous functions, all of which are vital for a dynamic human culture.

Frithjof Bergmann's ,s main focus, based upon his developments with the

retrenched steel workers in the factories of Detroit and Flint, is upon the most central of values for a person; what they do. One of his central interests is the 80 % of the human population who are not served by the current economic and monetary systems, which acts most effectively as a money pump system from the peripheries into the financial centres. It has become apparent that the economic system that rules the west is destroying peripheral cultures, economies and communities by devaluing the work that they do, their local production. He claims that our actions, our work (in the widest sense) is the essential part of what you do and who you are. "Sex must be very good to be as good as good work" is one of the provocative slogans that he lays before us and, as anyone who has witnessed how difficult it is to drag someone away from something that they are immersed within, whether work or writing or a computer game, it is not easy to reject as a thesis. Bergmann's developments has led to his concept of "New Work, New Culture" which has been implemented in a plethora of projects around the world, developed and developing. One should correctly also use the term "New Economy" here but this was unfortunately hijacked in the late 1990s to describe the immaterial economy of brands that emerged from the dotcom boom. An outline of Bergmann's technique is to work around the idea of a job, to restructure our employment-based economy to accommodate the breakdown of wage labour and to allow and even encourage a fair, dynamic and living lifestyle with High Tech Self Production and other techniques. This spectrum between the collapsing social structures and the suggested solution of New Work is a wide field and will give us a very strong basis upon which the economies and ecologies of production and social structure are distributed.

On the other side of the equation we have the abstraction of money. Karl Svozil, working from his interest in complex systems and his work in theoretical physics looks at the creation of money and how this fits together with the creation of wealth. The contradiction between the creation of wealth through the expenditure of effort and the creation of Fiat Money ("Let there be money!") by banks is a strange and unusual system. It might even

be an unfair system; as Henry Ford said, "It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning."

Sally Jane Goerner with her interest in complex systems investigates ecosystems and ecological stability and how these ideas apply in social and economic systems. Her work with Bernhard Lietaer, Robert Ulanowicz and others has looked at the spectrum between robust, hard systems and highly efficient systems and they have found that there is an optimal area of sustainability with enough resilience and efficiency to be able to react to various external effects, most interestingly shocks that will break less flexible or less efficient systems. Applying these ideas to the recent developments in our economic system, with its high levels of efficiency where massive profits are possible, is, as we have seen by the domino effect between the various economic players resulting from the recent home market collapse in the USA, urgent and necessary. She localises many positive and negative possibilities for further development.

Such developments might not be global solutions, rather a lot of the suggestions from Goerner as well as from Bergmann and others demand local solutions developed with one eye on the global situation and the network effects that human economies have with one another. Ludwig Schuster's work with the Living City fits in strongly here and has led to considerable interest in the possibilities and effects of local complementary currencies; time dollars, carbon credits, regional automatically devaluing "full" money and many other systems. These complementary currencies, some active such as the Swiss WIR and the Brazilian Palmas, others such as the Wörgl currency (Wörgler Arbeitswertscheine) implemented in 1932/33 and shut down forcefully by the central bank in the light of their success, offer several ways out of large scale crises, support of local trade and development as well as allowing an exchange of things that we do not wish to monetize. We see the necessity of such tools in the experiments that Dan Areily has undertaken where people treat money and objects of equal value differently (in violation of the principle of "homo economicus"),

or Lietaer's anecdote about the introduction of money to the Kung people of Namibia and the social destruction it brought to them within a decade. Schuster and other complementary currency proponents such as Margrit Kennedy point out that the positive effects of multiple currencies lead to an ecosystem of complementary effects that increase stability and give society better and more appropriate tools for economic sustainability.

There are many concepts that we feel belong in this symposium that were, for various reasons, not able to be included. Perhaps the most radical is the idea of a basic income, that every citizen receives a fixed income, touted by many from free market fundamentalists to bleeding heart Catholic activists. Such a system could radically change the balance of monetary power. Without the threat of unemployment forcing wages down, workers are open to follow up on the work that they want to do without having to be forced into certain jobs. Unattractive jobs would become naturally well paid, employment would be by choice and not necessity, escape from workplace problems would become less difficult. If this basic income were to be paid in an alternative currency, such as a share of the national carbon emissions, then we reach a stage of parallel intermeshed currencies that could significantly impact upon the economic and climate status quo.

Another area of interest is ethical investing, ways in which we can deal with investment money in an intelligent and ethical manner. Whether green investing, the avoidance of certain industries or whole techniques of investing, the area looks at the capacity of an investment system to accommodate the desires and imperatives of an investor outside the simple realm of return on capital. One surprising example is the field of Islamic banking, where the formerly widespread ban on "usury," the charging and paying of interest, is upheld. Some of the techniques developed by Islamic bankers to deal with this restriction without falling into a zero returns situation lead to a form of co-investing, Sukuk, where the investor and the investee share their interest in a business. Rather than a given fixed interest rate which must be paid at all costs, the investor removes this abstraction

and actually investigates and co-owns the business and shares in profits fairly. As a result, Islamic banks have weathered the recent financial storms quite well. Many examples of ethical investing exist, essentially looking past the abstraction of percentage return and looking into more complex but useful evaluations such as the triple bottom line to reflect social and environmental effects as well as economic effects of business operation. The ways in which some complementary currencies, in particular full money, work against interest and inflation meshes interestingly with this interest free investment concept, as does the impossibility of inflation or interest on time money.

Our attempts to diagram the connections between these areas leads to a large piece of paper covered in notes and arcs joining one area to another in a dense mesh. Attempting to gain an overview is possibly as difficult as any other attempt to understand the way the world works, made even more difficult by the fact that as soon as we begin to understand the way that the economic world can work, these self-aware humans carry on and change what they are doing in that self-reflexive fashion and make the whole science a greased piglet scared of being caught.

Economics might be the "dismal science," but that is no excuse for letting those currently abusing the monetary system continue to get away with it, or to carry on abusing ourselves by insisting that this system is anything but the creation of our society. As such it can, and perhaps should or even must, be re-engineered so as to better serve the ecosystem that is our real economy with real people enjoying real lives.

We are looking forward to an exciting symposium, bringing together some highly interesting and even radical thinkers and practitioners for what we hope will be the beginning of an ongoing development towards a better understanding of and implementation of how the world could and should be.

“A business that makes nothing but money is a poor business.”
- Henry Ford

„5:..the present forms of greed lose out in the end because they turn out to be not greedy enough.“ 19: Ultimately wealth is nothing but society itself.”
- For Ourselves, in “The Right to be Greedy: These on the Practical Necessity of demanding Everthing” 1974

Program

Saturday 31st October

11:00 Welcome and Introduction

11:30 Dougald Hine

12:10 Lunch

13:20 Dr. Karl Svozil

14:00 Dr. Sally J. Goerner

14:40 Break

15:10 Dr. Frithjof Bergmann

15:50 Ludwig Schuster

16:30 Wrap Up & Discussion

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Dougald Hine
Ways of Spending

"If we are indeed teetering on the edge of a massive change in how we live, in how human society itself is constructed, and in how we relate to the rest of the world, then we were led to this point by the stories we have told ourselves..."
(Uncivilisation: The Dark Mountain Manifesto')

The presentation of data is a form of storytelling – and, for as long as newspapers have been printing them, economic statistics have told a story of occasionally-interrupted growth, of people tending – in the long run – to become "better off". Can that story continue? How well does it reflect the realities of our experience, anyway? And which other stories go untold in the usual presentations of economic data?

These questions have run through much of my work this year: in the Institute for Collapsonomics, the Dark Mountain Project, 'The Long Doom?' and other collaborations. At Data Ecologies 09, I want to share some work in progress, exploring ways of thinking about money, how we use it and the effects it has on us, as individuals and together.

In conversations over the last few months, I have been playing with a simple model of the personal and social functions of money:

- subsistence: money used as a means to stay alive
- security: money used as a means to predict and control one's future
- luxury: money used as a means to bring "unnecessary joy" into the world
- status: money used as a means to define our relative worth
- accumulation: money used as a means to define our absolute worth

As individuals, the extent to which we rely on money for each of these varies – from person to person, and over the course of our lives. At the same time, our ability to choose different combinations tends to be constrained by the times and places in which we find ourselves.

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For example, in rich countries, it tends to be difficult to meet one's subsistence needs without relying on money. In fact, we might tell the story of the industrial age as beginning with a trade-off, in which massively increased material production was gained at the cost of dependence on money for survival. We might then ask whether that trade-off can be renegotiated in our own time – a question explored by my IfC colleague, Vinay Gupta, in his speculative fiction, 'The Unplugged'.

The purpose of this five-fold model is to start conversations about the different social and psychological effects, histories and possible futures which surround each of these uses of money. In reflecting on this, I want to draw on Ivan Illich's writings on the principle of counterproductivity and the vernacular economy, Karl Polanyi's concept of 'disembedding' and Anthony McCann's work on the dynamics of enclosure.

I will try to connect this theoretical material to the discussions provoked by 'Uncivilisation: The Dark Mountain Manifesto' – and by "collapsitarian" writers such as Dmitry Orlov, John Michael Greer and Ran Prieur. I will also look at practical examples of projects which rely on unconventional relationships to money, including the Pick Me Up email-zine, the Freeconomy Community and the current "slack space" movement in the UK.

If economic charts are a form of storytelling, storytelling is also a form of mapmaking. Stories are, among other things, navigational tools by which we make our way in the world. Maps are ambiguous: they are closely bound up with the colonial carving up of the world, itself linked to the history of econometrics; yet there is also an attractive modesty to the epistemological attitude implicit in cartography. As a practical tool for crossing a particular territory, a map makes certain claims about its relationship to reality, but it does not do so to the exclusion of those of other, different maps.

By telling new stories about the ways we use and think about money – and the ways it can affect us – perhaps we can enlarge the map of possibilities for our relationship to "value", and thus our ability to navigate the times ahead.

Dr. Karl Svozil

**On money allocation, with emphasis on creation,
annihilation and appropriation**

The creation of money as well as its appropriation in various setups is discussed. We identify private banks as the main source of money through monetization. Thereby, banks absorb (debt related to) assets of value and in return issue fiat money in the form of quantity information as units of money in giro accounts. The asset value is inevitably determined by subjective beliefs and fantasies loosely bound by market constraints, which may sometimes be certified by rating agencies. One may imagine such a monetary system as being „suspended in free thought;“ its continuity, floating and benign evolution being guaranteed by common faith.

Any such system is vulnerable to crises and business cycles. For instance, as asset values are subject to disinformation, fraudulent manipulation or hype in anticipation of future profits or losses, there may be positive and negative feedbacks resulting in price settlements pushing certain equity segments far beyond a stable equilibrium with respect to the rest of the markets. Also, the interest levied by banks in return for money created via monetizing debt systematically reallocates resources towards the financial institutions, and away from industrial and manual production, farming and labor.

Unfortunately, the alternatives appear to be even more troublesome than the present state of affairs. Any system based on interest-free fiat money creation, in order to avoid hyperinflation through excessive borrowing of „free“ debt, has either to rely on unjustifiable privileges or chance. And any system based on commodity money such as the gold or silver standard instead of fiat money creation is heavily depending on the quantity of commodities, and also incapable of waging or defending against war through the effective monetization of future loot or loss.

Dr. Sally J. Goerner
The Physics of Justice:

**Beyond Dismal Science to a More Accurate and Hopeful Vision of the Values
and Monetary Design We Need to Achieve Durable Prosperity for All**

It doesn't take a rocket scientist to see that the dominant economic orthodoxy of the last 30 years (Thatcher/Reagan/Chicago School libertarianism), has failed along with the global economy. Hopefully its disastrous value system and monetary design will soon go too. It does, however, take the new integral stage of science to see why our most cherished values - justice, community, diversity, balance and learning - combined with a more effective monetary design can allow us to achieve the durable prosperity and societal resilience that the old model promised but never delivered.

The contrast in vision is clear. Today's economics is the dismal science because the value system it promotes - every man for himself; greed is good, amorality is good, monetary success indicates superiority and legitimizes license - is both hideous and dysfunctional. The debt-based, interest-bearing, unchecked monetary system that went with it fueled the rush to ruin with huge pressures for short term, cutthroat, profit-maximizing returns for owners regardless of the damage done to the rest of the economy or world. Few people would have embraced this value system, but it cleverly cloaked itself in the original, common-man, freedom from oppression, fair enterprise, Enlightenment value system that actually does aid prosperity.

Based on new understandings of how nature creates durably vibrant growth and development, the physics of justice supports a new synthesis that retains the main touchstones of traditional free-enterprise theory, such as the importance of diversity and freedom, while neatly integrating social justice concerns, outsourcing unease, and the well-documented dangers of excess concentration into a more balanced unity. Balance is the key. Here, for example, efficiency, GDP growth and other mainstays of current thought remain valid concerns, but excessive, single-minded pursuit of them

is tempered by the realization that they are neither always good, nor a sure route to economic health.

Here too, economic health requires a value system and monetary design that also supports the natural laws of vitality, including:

- Exchange networks that exhibit the same balance of hardy weave, diverse alternatives, and efficient throughput performance that produces long term vitality in all flow-systems.
- Small is beautiful, diversity is desirable, and community is crucial because long-term health requires a particular balance of big and small, streamlined and intricate, flexible and structured, resilient and efficient. Too much or too little of any of these elements leads to stagnation or brittleness and potential collapse.
- Growth is only good when it rests on a well-woven real-economy network
- Anti-trust laws and other restraints on concentration are necessary because excess size and pull can be deadly to the economic whole upon which we all depend.
- Justice and fairness are crucial to effective cross-level circulation and nourishment

The narrative that emerges focuses our common concerns about jobs, education, healthcare and prosperity on a new understanding of why “it is not how big you grow, but how you grow big” that matters. It also arms us with quantitative measures that allow us to assess our state of health more precisely than currently dreamed possible.

Dr. Frithjof Bergmann
Center for New Work: Detroit

The Detroit Center for New Work will synthesize three integrated components to form the foundation of a comprehensive, sustainable urban village that will serve as a catalyst for innovation-based entrepreneurialism, community-providing base economy, and an attractive cultural life. Organized around a community center, advanced technologies are utilized to create a platform for new businesses, knowledge and resources for economic independence through community self-reliance, and awakening of what individuals authentically want to pursue to develop and express serious desires, interests, and talents. The Center for New Work offers pathways for economic, community, and individual development by employing advanced technologies in a community organization that self-provides the lion's share of life's needs while creating entrepreneurial businesses for economic growth and offering opportunities to develop individual talents, interests, and desires for self-affirmation and cultural enhancement.

Community Providing Base Economy. In addition to manufacturing single units and small runs of speciality products for niche markets as a business activity using the technologies of 3-D printers / Fabricators, the technologies within the Center for New Work also support an dramatic base economy for the community making it possible to increase economic independence and selfreliance by enabling the community to make for its members much of what is needed for a modern rewarding life. This community providing base economy is organized through the Center which applies technological solutions to the problems and costs associated with modern life. This extends not only to the manufacture of needed consumer products, but also to urban gardening, fish farms, greenhouse operations, animal husbandry, and other life-sustaining, cost-reducing community economic activities. Numerous examples illustrate how much of what is needed for community economic life can be provided through incorporating New Work organization and technologies through the Center.

New Culture.

In addition to creating new business activity and establishing a community base economy, the core of New Work's approach to economic life is the focus on discovering and developing individual talent, interests, and desires. The cardinal New Work question posed to both the community as a whole as well as its individual members is: what is it that you seriously and authentically want? The process of eliciting community participation at this level in all of the New Work activities, from the nature of the businesses to be created to the elements of a modern life to be provided by the base economy to even the kinds, styles, and functionality of community buildings is essential to the New Work approach to sustainable, community-rooted initiatives. At the level of individuals, this takes the form of identifying talents and genuine desires while developing the knowledge and skills needed for their effective pursuit. New Work excels in its ability to organize communities around the development and expression of individual talent and interests, to stimulate innovation in their pursuit, and to provide the cultural support needed to turn these into life-enhancing contributions to economic and community development. The Center for New Work delivers the counseling, education, resources, and opportunity for individual to pursue authentic interests and desires and to, in turn, press them into the service of larger economic and community goals. The enhancement of life quality, cultural activities, and community life attracts and motivates talent, provides opportunities for innovation, and makes indelible marks on the region's culture regarding learning, work, and enterprise.

New Work.

New Work has a long track record of success in developing technology-based small business enterprises, enhancing the self-reliance and economic independence of community economies, and creating the kind of cultural change that supports individual development, talent, and innovative pursuits. Its founder and chief architect, Dr. Frithjof Bergmann, has established Centers for New Work in many countries worldwide, tackling both urban

and rural economic development challenges. Its core group of consultants includes leaders in technology, business development, civic life, and the arts. New Work employs advanced technologies to empower communities to start, grow, and sustain small businesses, to develop self-reliant base economies to provide much of what is needed for modern life, and to help individuals discover and pursue their most authentic interests and talents. It is in these ways that New Work helps communities create New Cultures that support entrepreneurialism, technologically-innovative solutions for economic sustainability, and a fuller development of talented individuals contributing to a richer, more robust, colourful cultural life.

Ludwig Schuster

**World currency or a world of currencies?
Data Ecology and the role of money.**

Money is a funny thing. People usually learn to use it at an early age of 4 to 6 years, simply by experiencing how it works. However, until the end of their lives, only a fragment really understands what money really is and how it works.

"Data Ecology", the title of this conference, throws the ball into the court of monetary economics: One of the most popular fallacies on earth is the belief in the *reliable value of money*. The consequences for society, the environment and the economy are as far ranging as the possible solution strategies.

The non-neutrality of money

In conventional economic theory money is considered to be neutral. In one of the first lectures, students of economics learn that the three main functions of money are: medium of exchange, store of value, and *value measure*. And economists therefore learn that, in the end, it is all about exchange, whereby money can be cancelled down in any macro- and microeconomic calculation.

I argue that *Money*, in its current and singular shape, does not suit as a measure of value, for two reasons: First, continuous inflation, and second, continuously fluctuating exchange rates to other currencies.

Money is a medium. It acts as a mirror to the real world. Most people take what they see in this mirror for granted, considering it to be plain and stiff, clean and evenly reflecting – in short: objective. Imagine measuring a metric ruler with an inch rule, but both were continuously changing their length. How useful would this information be to you?

All national currencies that exist today lack a reliable, objective correlation to the real world. The increasingly unequal distribution of income, useless

and partly perverted economic activities in the name of growth and a rising risk of systemic instability in the financial sector can be regarded as serious side effects of that lost touch with reality.

Nonetheless, the monetary dimension is being used as the indicator for economic valuation of whatever kind, be it the development of a country (GDP) or the individual wealth, a basic income or the margin of subsistence, the price of crude oil and the price of land, the costs of saving the banking system and the costs of preventing climate change.

There seem to be at least four ways to get out of that dilemma: One is to search for *alternative measures of value*, like the economist Paul Krugman and some of his colleagues proposed lately. Another way could be to offer a widely accepted *global reference currency*, so that people can compare prices and exchange rates objectively anywhere and at any time. A third way might be a *global agreement to revise the rules of money creation* in a way that money reliably reflects the real values occurring in the economic sphere.

And, last but not least, an imaginable scenario could be to *design new currencies which explicitly reflect upon real values* right from the start – additionally to the conventional money. The pluralistic perspective on money will form the keynote of this speech.

A pluralistic perspective on money

“Money can buy everything.” This is because of the inherent character of money as “value of values”, stated Georg Simmel more than a hundred years ago. At first sight it seems to be historic evidence that economics fol-

lows a one-way-street towards “monetary monoculture”, towards “the one and only perfect money”. As revealed above, money like we use it today is far from reaching this ideal state (and, in a babylonian meaning, it can be doubted if it will ever get there).

However, (conventional) economists are still running on the monistic track: exponential growth is their ever repeated mantra, requiring more market efficiency – bigger markets, bigger market players and fewer currencies. Neither do they offer any answer on the urgent questions of sustainability, nor do their strategies turn money into a more reliable measure of value.

They might well be up a blind alley. Various parallel and concurrent economic systems are already in place – and working, contradicting the linearity of history. Apart from business currencies and loyalty schemes, the variety is ranging from bio-regional currencies to education currencies, from resource or energy backed currencies to carbon emission rights, from time banks to business barter clubs.

The paradigm shift is clear: The singularity of money gets to its limitations. In a world of rising complexity, monetary systems need further differentiation. Special currencies arise for particular purposes, in the same way like a hand-axe may have served as a universal tool for centuries, but it is not the most suitable artefact to tighten a screw or to cut a piece of paper.

Speakers Biographies

Dougald Hine

<http://dougald.co.uk/>

Dougald Hine is a professional amateur.

In the past, he has made a living as a busker, a door-to-door salesman and a BBC journalist.

In 2006, he co-founded School of Everything, an internet startup inspired by Ivan Illich's ‚Deschooling Society‘. He is also the founder or co-founder of the Institute for Collapsonomics, the Dark Mountain Project, Space Makers Agency, Signpostr.com – and, most recently, Monkey Tree Projects (with the artist Sara Haq).

In July 2009, he published ‚Uncivilisation: The Dark Mountain Manifesto‘, co-written with Paul Kingsnorth – and was named by The Independent newspaper in its annual list of the most influential figures in the UK creative industries.

Right now, he is working on the UK's largest empty shops project, in an indoor market in Brixton, ‚DIWO at the Dark Mountain‘ – a mail art project with Furtherfield.org – and the Nomadic Infrastructure project, a collaboration between Space Makers and the Temporary School of Thought.

He lives in London and writes a blog called ‚Changing the World (and other excuses for not getting a proper job)‘.

Dr. Karl Svozil

<http://tph.tuwien.ac.at/~svozil>

Born in 1956 in Vienna, Austria, EU.

Study of Physics at the Universities of Vienna (Austria) and Heidelberg (Germany) starting in 1975. Ph.D. in Physics from the University of Vienna 1981. „Dozentur“ at the Technische Universität Wien 1988.

Visiting scholar at the University of California at Berkeley and at the Lawrence Berkeley Laboratory (USA) in 1982/83. Officer (scientific data bases and library automation) with the Ministry for Science and Research (Austria) in 1983-1990

Visiting scholar at the Moscow State University and the Lebedev Institute (Russia) in fall 1996.

Permanent position at the Institute for Theoretical Physics of the Vienna University

of Technology since 1990. Professor of Physics at the Vienna University of Technology (Ao. Univ. Prof.) since 1998. External faculty member, Centre for Discrete Mathematics and Theoretical Computer Sciences, University of Auckland, New Zealand since 1996.

Author of two scientific monographs and over 130 scientific articles and contributions in research journals. Associate Editor of the journal "Journal of Universal Computer Science" (Springer) and Associate Editor (Complexity) of the journal "Chaos, Solitons & Fractals" (Elsevier) since 1997.

Dr. Sally J. Goerner

Director, The Integral Science Institute

<http://theintegralscienceinstitute.org/>

With advanced degrees in computer engineering, psychology, and nonlinear dynamics/Systems Science, Dr. Sally Goerner is an Integral Systems theorist who lectures worldwide on how the new scientific framework can unify our understanding of how to achieve social and economic sustainability. Her latest book, *The New Science of Sustainability*, explains precisely why we must replace today's disastrous „trickledown“ economic beliefs with a solid, common sense understanding of how to create long-term economic and social vitality by restoring fair enterprise and authentic democracy.

Her current work with theoretical ecologist Robert Ulanowicz and Belgian financier Bernard Lietaer uses new methods for differentiating healthy development from mere growth to create a precise empirical measure of economic sustainability. This measure explains why traditional development policies have contributed to today's crisis by eroding local economic webs while fueling the high-level banking and financial bubble which is now collapsing before our eyes. The only way to counter this collapse is to restore the necessary balance between big and small, streamlined and diverse so essential to healthy development. This is best accomplished by rebuilding our people, our communities and our fair enterprise networks in a way that diversifies, empowers and distributes processing and the robust flow of exchange locally and across scales.

Frithjof Bergmann

<http://newworknewculture.com/>

Frithjof Bergmann founded the Center for New Work in Flint, Michigan in 1981 and has developed a number of suggestions about work as a calling and a vehicle of self-realization, in rotation with mainstream employment, and involving a self-sufficiency that technology itself makes possible. He has worked with individuals and communities in the U.S., Canada, Germany, South Africa, India, and Saudi Arabia on developing positive strategies for dealing with the changing nature of work.

Professor Bergmann's interests include continental philosophy – especially Hegel, Nietzsche, Sartre, and Existentialism generally – and also social and political philosophy, philosophical anthropology, and philosophy of culture. His seminal work, *On Being Free* (1977), was issued in a paperback edition in 1978 and had twelve printings.

He resides in Ann Arbor, Michigan and continues to write and lecture on the practical, social, and cultural implications of philosophical thought.

Ludwig Schuster

<http://livingcity.de/>

Ludwig Schuster studied architecture and urban planning at the Bauhaus University in Weimar. He was the founding member and co-director of the regional development agency REGIOprojekt and organised the first international conference on „monetary regionalisation“. Living in Berlin, he currently works as a consultant and researcher with a focus on monetary tools for sustainable (regional) development. His scientific research as a „currency architect“ concentrates on complementary currencies, primarily currency design issues, energy backed currencies and applications for financing renewables and preventing climate change. Lobbying for „monetary pluralism“ at federal level, Ludwig Schuster is collaborating intensely with the MonNetA Foundation Steyerberg, the German Regiogeld association and a great number of complementary currency initiatives in Germany and in Europe.

Time's Up - Laboratory for the Construction of Experimental Situations
<http://timesup.org/>

Grounded in 1996, Time's Up undertakes applied research in the behaviour of the public individual. From its basis in the harbour of Linz, Austria, where the offices and workshops are found, the group organises situations that perturb the nature of a given everyday situation, allowing and encouraging altered and enhanced interactions between the public individuals that visit the situations.

The choice of the term situation to describe the main field of endeavour relates to the completeness of the environments that are assembled. The spaces in which Time's Up acts are spaces in which the visitor, acting in a public space and thus referred to as the public individual, finds environments that are intrinsically everyday yet subtly and distinctly perturbed. The process of removing the person from the realm of the everyday, in theatrical work known as the suspension of disbelief, and segueing them into these environments that are real yet unreal, allows the investigation of personal and interpersonal behaviour. The situations can be referred to as „real virtuality“ as the visitor is taken into the space physically, yet the dynamics of the space are removed from those of reality, they are somehow virtual.

This concentration upon the body of the visitor is fundamental. That perception is based within the physical body as been a thread through many situations implemented since 1997. The loop of control and perception through the biomechanics of the body is one of the main arms of research.

Time's Up has a necessarily cross-disciplinary nature. Its research is dedicated neither to pure science or any other field, although aspects will occasionally fall squarely in one field or another. The creation of convincing and immersive situations requires not only theoretical investigation, but also aesthetic and constructional work. People working with Time's Up come from the fields of acoustics, graphics, mathematics, sculpture, video, electronics and many others. The group is connective rather than collective.

In brief, Time's Up's areas of development are based upon the integration of the public individual as an embodied person in environments to extend their possibilities and investigate the limits of the perception and control. A series of developments and situations over 5 years has given them a unique insight into techniques for the planning and implementation of experimental situations for the general public.

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<http://grig.info>



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