Draft version of paper given at the 'Dancing with Disorder' conference,
11-13 April, 2007, Izmir, Turkey - http://fadf.ieu.edu.tr/ead07/introduction1.html

Dancing with Disorder:
Synergizing Synergies within Metadesign

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ABSTRACT
Whilst 'design for sustainability' has made enormous strides in the last forty years or so, it has failed to reduce the global, net increase in harmful modes of consumption. One reason for this is that the key forces are beyond the normal remit of the designer. In seeking to remedy this problem the paper offers an ambitious vision of 'metadesign', suggesting that metadesign teams should assist in the general task of governance. Here, 'metadesign' is defined as a cooperative, consensual, imaginative, catalysing, and self-steering process of social enterprise. 'Design thinking' is a way to orchestrate a variety of professional practices in ways that might replace orthodox bureaucratic approaches that are currently maintained at the nominal, fiscal, legislative, or planning levels. The current, two-year phase will receive funding by the UK's AHRC. This research is informed by twelve months of preliminary work that was supported by the UK's EPSRC and AHRC. In seeking a viable way to evaluate the outcomes of metadesign the paper proposes a framework that seeks to measure different modes of 'synergy' as a substitute for the concept of 'environmental sustainability'. The current work will culminate at the end of 2008 with the delivery of a benchmarking system that would enable trading bodies, governments, or corporations to evaluate many simultaneous efficacies. The final aim for this scheme would be to calibrate appropriate indicators that would summarise many orders of synergy within a single value. Theoretically speaking, the highest mark of assessment would imply that there is a full 'synergy of synergies' (Fuller, 1975).

Introduction
The 1995 World Summit on Social Development defined the notion of 'sustainable development' as "the framework for our efforts to achieve a higher quality of life for all people." A later Summit (2002) expanded this definition to identify what it called "three overarching objectives of sustainable development". These were: eradicating poverty, protecting natural resources, and changing unsustainable production and consumption patterns. Whilst these objectives sound reasonable, they may continue to elude our grasp until we can re-design their relationship to one another. It is becoming increasingly obvious that the discourse of 'sustainability' has failed to halt what Giddens (1999) calls the 'runaway world' of globalisation and economic growth. As we are now seeing, this failure is playing a significant role in the extinction of many living species, and is bringing about a troubling change in the climatic conditions that have sustained human existence so far. Part of this problem is the mindset of 'sustainable development' that was inspired by the Brundtland Report of 1987. In wanting to support the humanistic desire for a fair and dependable future, Dr. Brundtland adopted the verb 'to sustain'. Whilst she originally used it as a qualifier for the notion of 'social development' subsequent writers have increasingly tended to omit the word 'development' and to stretch meanings from the word 'sustainable'. In some cases this has created confusion, and in others it has defied semantic logic altogether.

Sustainability is Unsustainable
Confusion surrounding the term 'sustainability' is common within environmentalism and almost ubiquitous beyond it. For example, many people now speak of 'sustainable business' in a sense that ignores the earlier environmentalist sense of the word. The literal meaning of the adjective 'sustainable' may be, in the short term, appropriate for describing economic endeavour. However, because of its more common usage in environmentalism, it

also conveys an air of moral credibility, whether or not this was intended or, indeed, deserved. The term 'sustainable consumption' is also confusing. Use of the word 'consumption' originally derived from a study of the habits of a newly affluent class, by Thorsten Veblen, who coined the term 'conspicuous consumption' (1899). Although it was later adopted in a less socially critical way by the economist John Maynard Keynes, the earlier meaning of the verb 'to consume' means 'using something up' so that it cannot be retrieved. Although this sense of the meaning may have been eroded, we still use it disparagingly to describe citizens who shop without reflection or restraint. It is therefore surprising that the United Nation speaks of 'sustainable consumption'. At the literal level, this term is an oxymoron whose usage needs clarification. How helpful is it to continue to use an expression whose meaning distracts us from the truth?

Sustainability Sustains Capitalism
In seeking to deepen our understanding about the meaning of what we have now come to call 'sustainability', it is helpful to explain what preceded it. Since the 1960s, many of us have spent a great deal of time thinking about 'alternatives' to the status quo. Up until the early 1980s, the idea of 'Alternative Technology', for example, seemed totally reasonable. Today, within the mindset of 'globalisation' it makes virtually no sense. 'Alternative' to what? The idea of 'alternative possibilities' had emerged from a world in which capitalism and socialism co-existed as bitter rivals within the same world. The interest in 'alternatives' therefore carried strong political undercurrents. The Brundtland Report prepared the intellectual ground for globalisation. Published two years before the Berlin Wall was torn down, it reconciled the idea of 'sustainable development' with economic growth with a desire to bring about a fairer economic deal for the poorest nations. In this sense 'sustainability' is associated with a vision of globalisation. In order to clarify the meaning of any of the above terms it is helpful to analyse the deeper meaning of the verb 'to sustain'. The verb to 'sustain' is transitive, and implies that there is clear distinction between subject and predicate - i.e. 'that which does the sustaining', and 'that which is sustained'. It is easy to forget that it has both a temporal and a non-temporal meaning. In other words, we may sustain something over a period of time, or we may sustain it within each passing moment, in a literal sense, by 'holding it together'. If it is true that everything is reciprocally dependent, chaotic, and non-linear, then the second meaning may be wiser one.

What is it that Sustains Sustainability?
In the West, the grammar we inherited from the ancient Greeks has given us a heightened awareness of 'purpose', and a rather linear understanding of 'cause' and 'effect'. However, we may note that the direction of causation is often unclear when we reflect upon what sustains what. What we assume to be a cause may turn out to be an effect, and vice versa, because actions are usually co-creative. We now therefore know that the world is rather less predicable than we had hoped. It is important to look beyond this notion and to get a sense of the full complexity of the world. In effect, our worldly power in is limited by our biological nature and context. We need to remind ourselves that our continued existence is sanctioned by an ecological system, of which we are only a tiny (if troublesome) part. This can be illustrated if we take the context of a given situation, then frame questions about it in a simple language of cause and effect. For example,

- What is it that sustains our lifestyle?
- What is it that sustains food, shelter, and health?
- What is it that sustains our technology?
- What is it that sustains our capital?
- What is it that sustains our society?
- What is it that sustains our culture?
- What is it that sustains our belief system?
- What is it that sustains the environment?
- What is it that sustains Nature…?
- What is it that sustains God?

Whereas the syntax of sustainability upholds the linear, causal worldview, ecology itself is emergent and manifold. Attempts to offer replace the word 'sustainability' with terms such as 'sustainment' (Fry, 2002) or 'co-sustainment' (Wood, 2000) have not yet become generally adopted. We need to consider what sustains what, and for how long. Do we

sustain technology or does technology sustain us? Where, and what is the primary source of economic exchange? Isn't money a self-organising system? At a deeper level, aren't we implying that 'green' industries can sustain Nature…? Surely, Nature sustains *us*?). As we all know, not everything can be sustained. Philosophically speaking, we would not expect to sustain, say, time itself. Temporality, and its essence within Nature, seems to be an inescapable fact. Birth and death are intrinsically part of 'time', and we perceive this as a process of flow. However, our transactional system thrives on the rhetoric of ownership and authorship. It is common for vendors to be paid for aspects of their products they did not create. Hence, they may, routinely claim them by association. This is so common that, as consumers, we half believe their claims. One reason why this is so is that we live in a 21st century belief system in which human agency is perceived to be all-powerful. Hence, for example, we may want to sustain our supply of fresh food. Technology has enabled us to achieve this, up to a point. Although the freshness itself cannot be sustained, advertisers work very hard to sustain the illusion that their product is the very source of freshness. Hundreds of years ago, when world population levels were far lower, this kind of conceit was unimportant. However, because we urgently need to develop a closer accord with Nature, it can be understood as dangerously self-deluding. It is only an example, but it is symptomatic of the belief system within which most designers are trained to operate. This is one reason why eco-design has failed.

Designers Need to Re-Design Capitalism

Up to now, every attempt to invent a mode of 'design for sustainability' has been marginalised, appropriated, and subverted within a wasteful market system in which designers must uphold the status quo. How might we develop an economy that truly 'co-sustains' the eco-system? Although this represents a massive undertaking, it is not impossible. But in order to achieve it, we would need a more 'joined-up' society. At the professional level, where specialist 'eco-design' practices are an important, but inadequate response to the whole problem we need a more collaborative, shareable discourse across the design disciplines. Designers would probably need to orchestrate many more types of knowledge within a common professional framework. Some believe that it is not their job to solve social and environmental problems. However, if, as it is claimed, 80% of the environmental impact of today's products, services, and infrastructures is determined at the design stage (Thackara, 2005) we may agree that designers have failed to live up to their full potential in regard to the above problems. Since the 1950s we have tried to create a 'sustainable' world by 'reforming the environment' (Fuller, 1969), reducing the scale of enterprise (Schumacher, 1973), or creating biodegradable, longer lasting products. However helpful they may be, attempts to inform designers about the 'best practices' of Eco-design (e.g. Datschefski, 2001; Fuad-luke, 2005) have failed to stem the growth of a global economic system that threatens our shared well-being. Despite attempts to emulate nature (Benyus, 1997), 'de-materialise' products (Diani, 1992) or make them leaner (Stahel, 1982), cleaner, slower, service-based (Manzini, 1994), designers in the 1980s became resigned to working with, rather than against market forces (Burke & Elkington, 1987; Dewberry, 2000). Global carbon emissions are rising steadily, and bio-diversity continues to fall. Unwittingly, designers have helped to create a society driven by over-consumption and waste.

The Emergence of Synergy

In wondering how to evaluate the effectiveness of such a complex system we asked whether it could be evaluated by using 'synergy' as a performance indicator. Society would need to enhance the better-known synergies within food, or energy production. It would also need to look for new levels of synergy that might emerge from within, between, and across many social, political, ideological, economic and biological boundaries. Fritzhof Capra (2002, p. 202) depicts the ecosystem as a flexible, ever-fluctuating network. Its flexibility is a consequence of multiple feedback loops that keep the system in a state of dynamic balance. One aspect of this is what is sometimes called circular causality (Foerster, 1984). Many complex systems have no discernible single external cause. When we explore what sustains them we find the most significant 'causes' to be aspects of their own make-up. On the other hand we should remember that the idea of a closed system is dubious or limited. Probably all systems are open systems. In many social systems, poor levels of human adaptation tend to cause deterioration in relations and this creates a noticeable increase in the level of conflict (Brennan & Peter, 1995). The idea of 'feedforward' therefore becomes important. This is an anticipatory (often cognitive)

process that is important to most complex endeavours. Because, in practical terms, time is irreversible, leaping cat cannot use feedback to change direction in mid-air. It must therefore envision its journey using processes of feedforward. This process cannot be entirely precise, so we need some predictive processing. Many problems get so tangled up in the efforts we apply to solve them that we cannot be sure whether we really solved them or not. Gregory Bateson, (1972) notes that abductive thinking is rife in nature. This is another way of saying that creative guesstimation plays an important role within the communication process. It gives us an important (post-romantic) context for the future role of creativity and the imagination.

Towards a Synergy of Synergies

As if this were not complex enough, Nature works across individual systems in order to enable emergence to be coherent. James Lovelock's famous Gaia hypothesis (1979) reminds us that virtually all 'discrete' systems are embedded within – and influenced by - larger or parallel systems. Their dynamic nature means that the need to adapt is endemic in nature. Another way to put this is to describe the need to create dynamic synergies across, among, and through existing synergies. Here, Buckminster Fuller's grand, if somewhat mysterious idea of a 'synergy of synergies' (Fuller, 1975) is helpful. I would define it as a totally comprehensive equilibrium that emerges from manifold diversities and mutual adaptabilities. This exemplifies the high level of design thinking that Fuller pioneered. Although his term 'synergy of synergies' was intended as a description of Nature, it is nevertheless inspiring to apply it to the idea of metadesign. Fuller sought to consider the whole human species within its habitat. In place of 'sustainability' arguments, we believe that a lattice of mutually enhancing synergies would be more effective, and appealing to 'users'. Simple synergies are well understood. Their uses are well documented in traditional studies of metallurgy (Fuller, 2000), chemistry (Polanyi, 1969). However, applying the same principles to metadesigning is unlikely to be straightforward because social, cultural, ecological, or aesthetic synergies are less quantifiable and predictable than their mechanical counterparts. Complex systems can become sub-optimal or even self-defeating. (Fuller, 1975; Corning, 2003). Some elusive and intangible synergies may therefore hover on the edge of chaos. If so, they may even be affected by the participant's state of mind. This raises new practical, political and philosophical questions for metadesigners, who might try to 'seed' the conditions for optimism and positive consensus within the process of 'co-design'. Our research will therefore explore the practicality of methods for cultivating 'luck' (Wiseman, 2003), 'happiness' (Cziksentmihalyi, 1991), or 'beneficial memes' (Wood, 2003; Spring & Wood, 2005).

A Post-Darwinian Discourse

In order to ensure that design works at the level of lifestyle metadesign teams would need to integrate many systems. It may not only need to work at the primary levels of energy, food production and transport, but also within the creative industries, education, politics, and religion. As climate change and resource depletion kicks in, over the next few decades, our energy-dependent systems that sustain intensive farming and long-distance transportation will begin to fail. There will be a plethora of 'quick-fix solutions that try to solve these problems with technology and legislation but these will fail unless they are sufficiently comprehensive and integrated. We need a new discourse that is able to explain how things work in a more holistic and relational way. This would be needed in order to promote a more consensual, de-centralised system of governance. Whatever system of metadesign we adopt will therefore need to make individuals more creatively responsible and ecologically attuned. But, even if we could find one, how would we evaluate the efficacy of such a complex and interdependent system? One way to do this, our team concluded, would be to look for processes that fulfil the 'law of increasing returns' (e.g. Romer, 1987), and provide 'ecologies of scale'. In order to enhance the efficacy of these process, we would need to measure their synergy levels as well as we can.

A Cross-Disciplinary Team

Throughout 2005, working with funding from the UK's AHRC and EPSRC, we worked with a cross disciplinary team of fourteen researchers to ask whether some form of 'metadesign' practice might be useful. In 2007 we were awarded a far larger grant from AHRC that will enable us to explore different orders of synergy that might emerge from the complex practice of metadesign. What do we mean by 'metadesign'? This was one of our first questions. We began our answer by adopting Ascott's (1994) idea that 'design as planning'

could be replaced with 'design as a seeding process'. In consultation with metadesign expert Dr. Lisa Giaccardi, of Boulder University we envisaged a unified, consensual, systemic practice that would act as a 'systems integrator' (Galloway & Rabinowitz, 1983). The team of researchers we invited included both theorists and practitioners. For example, Bill Dunster's work entailed managing the efficiencies of energy conservation and generation. This aspect of his work dovetailed with the findings of two other of our researchers, a building scientist and a practising architect. Professor Philip Jones, a buildings scientist, uses laboratory methods to improve the conservation and management of energy in very large buildings around the world. His work is closely integrated with the designs of architects and planners, to ensure that synergies at one level can be maintained by synergies at another. A disadvantage of discrete, specialist design practice is that it offers incomplete solutions. Hence, the advantages of living in a low-energy house would easily be cancelled out by driving long distances to work, even in a 'low energy' car. Jan-Marc Petroschka, our expert in social housing is also an innovator in the design of live-work dwellings in London. Under his guidance we discussed the feasibility of 'scaling-up' the suburban BedZed agenda to become a fully interdependent urban 'living style'. This is because greater economies of scale can be achieved within cities, rather than in rural areas. Some of Jan-Marc's ideas on space-saving 'live-work' architecture are shown in his critically acclaimed housing project (Astra House, MacDonald Egan & Partners), recently completed in the Deptford area of London. Whilst neither the BedZed, nor Astra House projects have required significant technical innovation we were interested to know why pioneering initiatives like these often take a great deal of time to gain acceptance, or even to inspire imitations.

Designing a Metadesign Profession

Some researchers have tried to work with the really 'big picture', as this seems to be the most sensible approach. One attempt became fashionable in the 1960s and 1970s as a number of ideologically-driven attempts to build 'alternative' communities that would reduce consumption and focus attention onto sustaining local wellbeing, rather than upon maximising corporate profits. This approach implied a new design agenda, based upon ecological lifestyles, rather than economic products or services. However, for this reason it became increasingly marginalised within a political order that made economic growth its primary goal. Where the quest for 'alternative', or modest lifestyles the larger economic context has driven up the necessary scale of operation. One of the more fitting strategies is the idea of reframing 'consumption' as a repetitive, unbroken cycle of opportunities for sustainable business (Hawken, Lovins and Lovins, 2000). As I have suggested, industry has so far found it hard to think too far outside the economic status quo. Attempts to design industrial systems as a 'zero-waste' process (Murray, 2002) or as a system of production that can be orchestrated from 'cradle-to-cradle' (MacDonagh, 2002) look promising, but have yet to be perfected. It is likely that this type of system will take a long to perfect, but it is important to identify a vision and aims that will help to rally support. What if metadesign teams were to run governments, farms, and banks? This is a highly ambitious, entrepreneurial and, perhaps, even subversive idea. Nevertheless, it is worthy of consideration. Whilst we would not want to erode existing traditions of professional practice, society needs to change very rapidly if we are to avoid the impending environmental calamity that is looming.

A Four-fold System

We developed several mapping methods that facilitate close inquiry into such a question. In one example (figure 1), the early difficulties in gaining acceptance for a novel scheme can be grasped by monitoring the actions of four 'players' and the six relations that co-sustain them.

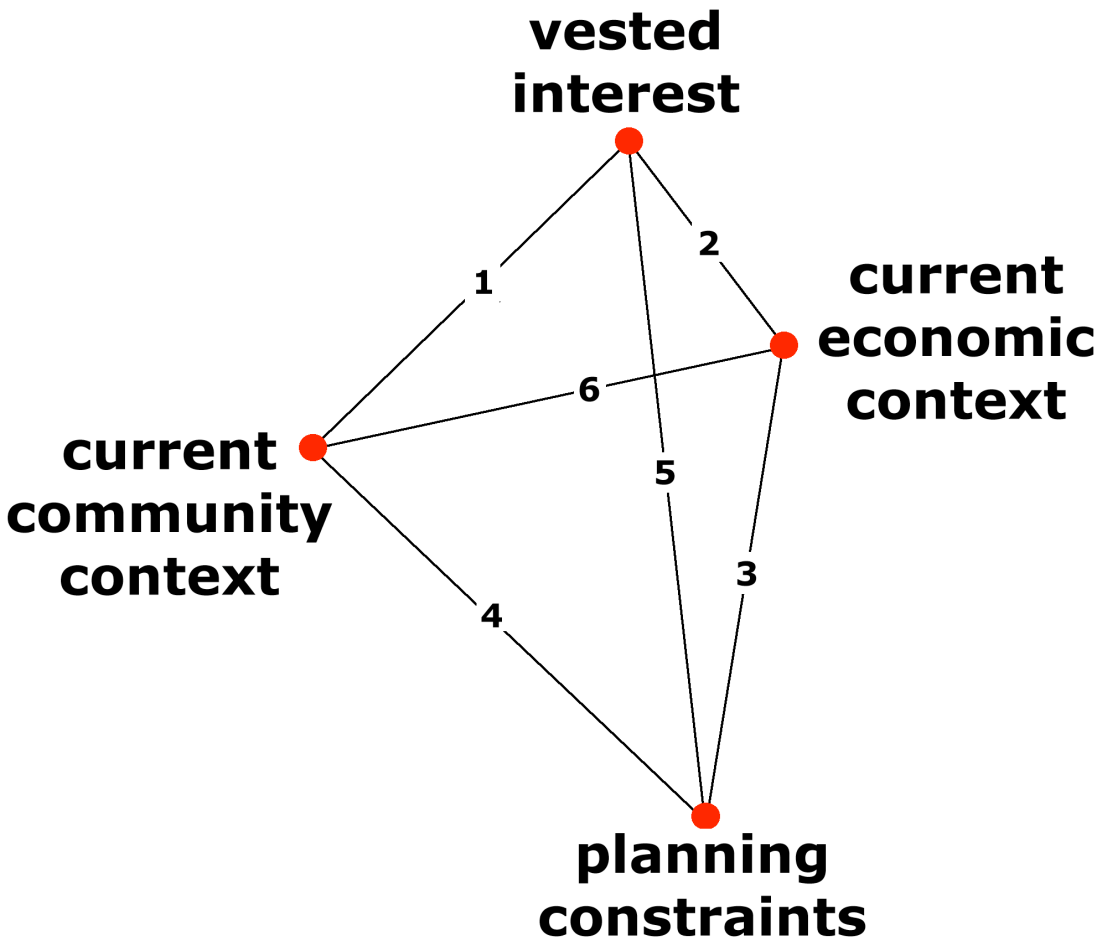

Figure 1 - Simplified (four-fold) model of the challenges in housing innovation

Whilst useful, this is inadequate way to represent the vast number of tiny, but significant factors that are, to a significant extent, reciprocally self-creating. In short, it may not contain enough information to be effective. Complexity must therefore be apprehended as a whole entity. In this case, for example, BedZed needed to gain the support of a cluster of interested parties, each of whom may have a different 'vested interest'. The support of a given individual is usually, also, influenced by the perceived views and likely actions of others within the cluster. Figure 2 shows all of the above 8 players (the dots on the diagram) linked together (by lines) in a minimum set of 28 links. If we are to represent all of the possible relations within the system, it would be wise to explore each link in turn, using a positively creative, opportunistic, and open-minded approach. This may mean that the 28 links can also be represented as 56 relational viewpoints. By using this map opportunistically and creatively it is possible to design points of critical intervention, and to devise new solutions to this kind of complex problem. We believe that this mapping system can enable complex 'vicious circles' to become transformable into more 'virtuous circles'. As such, it is a useful tool for metadesigners.

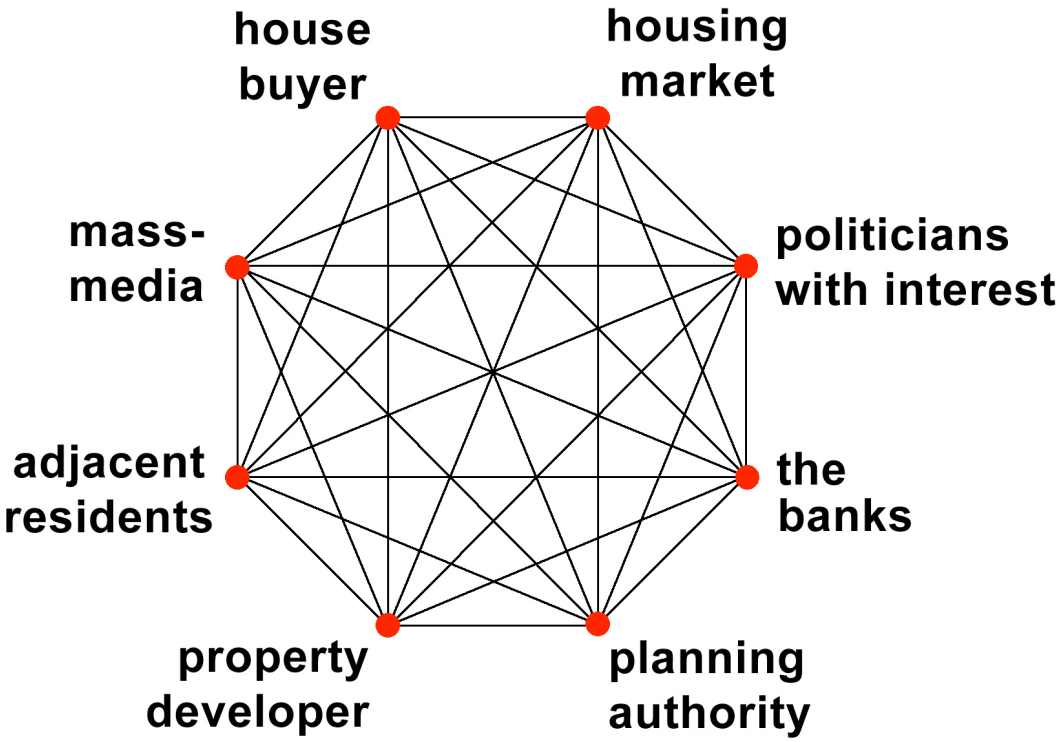

Figure 2. The 28 possible relationships in an 8-player system

Working with super-complex systems

The relational mapping method we used in fig. 2 was inspired by some original research by another of our researchers, (Dr. Vadim Kvitash). Vadim holds many patents on a comprehensive system for evaluating something that is akin to the 'equilibrium', or 'balance' of whole systems within a medical context. His system of 'Relonics' (Kvitash, 1983 & 2002) offers a powerful, systemic language of complex, interdependent relations. In one application he finds a use for the otherwise discarded data taken from laboratory analysis of the blood samples. Arguably, in orthodox medicine, if the experts only look for 'abnormal' levels of particular chemicals associated with a given illness most of this data is ignored. In Vadim's system, we are also interested in the total set of relations between each individual factor, and each other factor. As the number of factors increases the resulting number of relations rises exponentially. This means that when we use a reduced set of isolated indicators to make a judgement, we are overlooking some of the information. Mathematically, the number of factors in a given set determines, with 100% accuracy, the finite number of relations implied. At this level of logic, we can therefore know exactly how many relations are possible. How we interpret them is another matter, but Dr. Kvitash can forecast, with 95% accuracy, whether a patient will live or die within three years of a heart operation. Where more discrete, analytical methods tend to look for single, identifiable parameters, his system plots relations against a non-statistically derived set of self-balancing norms (he calls 'relons'). We have evaluated his system using urban planning situations, rather than medical data, concluding that it is likely to be just as useful.

Transforming Vicious Circles into Virtuous Circles

Another of our researchers, Hannah Jones, looks at the potential for sustainable urban planning by seeing the spaces between buildings as possible sites of unintended potential. By describing these unconsidered zones as 'awkward spaces', she acknowledges the inescapable ambivalence between that which is planned and that which inevitably follows as a by-product of the logic of form and flow. At a time when the public rhetoric of 'iconic buildings' is used to totalise an ethics of grace and power, Hannah prefers to celebrate the maladroit, the uncanny, the chaotic, and the dissipative. In working to establish a comprehensive language of urban incompleteness, she opens up unforeseen possibilities

for the metadesigner. One of the aims of her project is the prospect of transforming 'vicious circles' into 'virtuous circles'. (See figure 3)

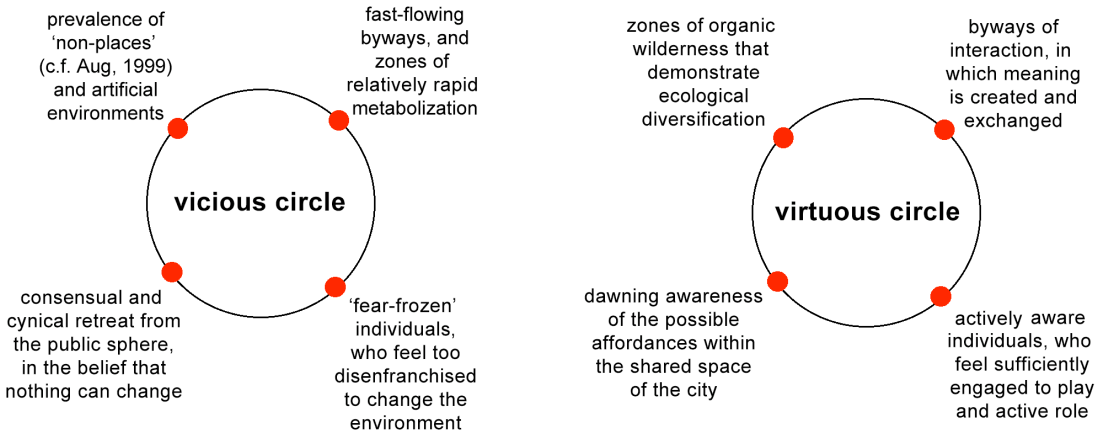

Figure 3. Transforming a 'vicious circle' into a 'virtuous circle'

Mapping Synergy

Although the concept of 'synergy' appears to be well understood in management, and elsewhere, its definition is surprisingly vague. This is partly because synergy itself is elusive and changeable. Indeed, all of the definitions we found were too generic to be useful. In seeking measurable outcomes, we therefore defined four fundamental 'orders' of synergy that would help us to map, and to manage the complexity of a practical system. This scheme regards Peter Corning's (1983) observation that some bioeconomic synergies include 'information-sharing' capabilities. I adopted this as our 'second order' synergy, the added 'data-storing synergy' (first order), 'knowledge-sharing synergy' (third order), and 'knowledge-sharing synergy' (fourth order). This tool makes it possible to 'metadesign' for complex conditions by mapping them as manageable task domains that can subsequently by re-integrated within the whole.

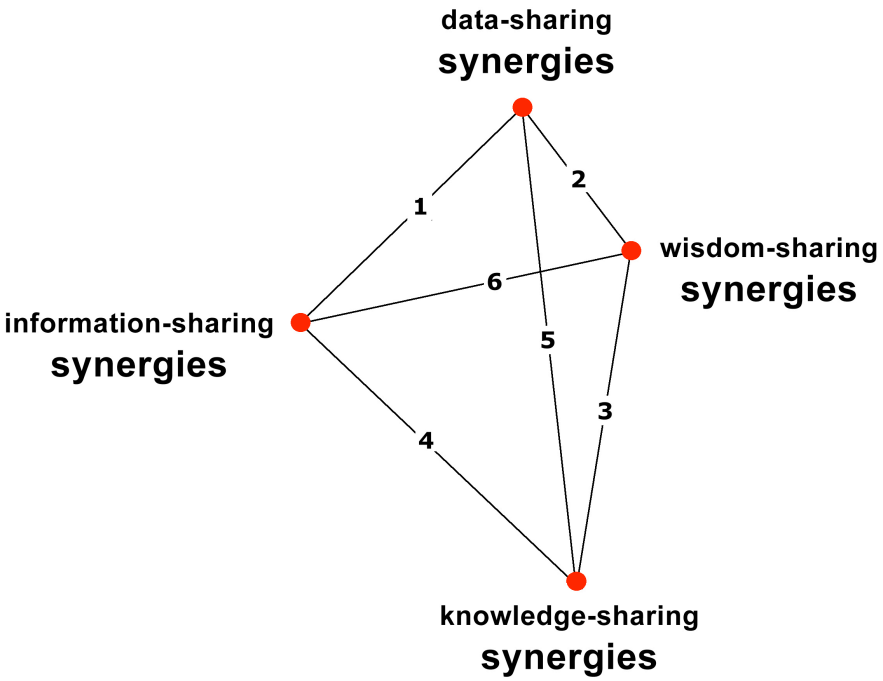

Figure 6 – Using our 4 Orders of Synergy to map a 'Synergy-of-Synergies'

Figure 6 shows a crude mapping of our four Orders of Synergy. It reflects four levels of complexity intended to encompass, and 'synergise' a wide range of other synergies. Where, for example, the 'data-sharing' level might include, say, smart metallurgical synergies, the 'information-sharing' level might facilitate sophisticated energy management systems. Where the 'knowledge sharing' level might be used to guide the cultivation of shared social benefits, the 'wisdom-sharing' level would probably include highly ephemeral and emergent phenomena, perhaps at the eudemonic, or spiritual level.

1) Data-sharing synergies
Working with one of our research consultants, the buildings engineer Professor Phil Jones, of Cardiff Welsh University we have tried to map data-sharing synergies.
Examples include:

a) Harnessing some of the properties of smart materials, or nano-scale metallurgy, (e.g. Toyota's 'gum metal')
b) Harnessing some of the properties of self-regulating materials within autonomous systems (e.g. Buckminster Fuller's floating geodesic city).
c) Utilising the innate properties of thermal mass of buildings
d) Utilising the innate properties of passive air circulation within certain forms
e) Harnessing the climatic properties of local vegetation
f) Accommodating the yearly balance of wind to sunshine ratio
g) Passively harnessing the daytime changes in shading from direct sunshine
h) The use of self-cleaning surface technologies

2) Information-sharing synergies
These are synergies that emerge from the sharing of information. Some of these will include mechanical or electronic systems that integrate human decision-making with data-sharing synergies (e.g. energy regulation from thermostats that work within human environments). Many biological systems will also fall into this category (e.g. Emperor Penguins huddling together to keep warm)

3) Knowledge-sharing synergies
These are synergies that emerge from the sharing of knowledge. This process may occur at a rudimentary social level in which skills emerge alongside the affordances of a changing system (e.g. flying geese). Other modes of collaboration may include new orders of cooperation (e.g. communication using tag-based web media such as Web2)

4) Wisdom-sharing synergies
These are synergies that emerge from the sharing of wisdom. Buckminster Fuller claims that '…only mutual behaviour is synergy. Synergy is the only word in any language having this meaning' (Fuller, 1997). James Lovelock's Gaia hypothesis speaks of the earth as an emergent whole that acts in a concerted way. This would resemble what Buckminster Fuller called Nature's 'synergy-of-synergies' (Fuller, 1975).

Much of our theory behind the management of our mission was underpinned by the multi-facetted research of another of our research team, Dr. Otto van Nieuwenhuijze. Otto's work includes some of the topological insights that informed communication issues, including co-authorship (Nieuwenhuijze & Wood, 2006). Some of the methods, or tools we used emerged partly as a response to difficulties of interpersonal relations that, for a short time, threatened our momentum when conducting practical workshops. Here, we used a corresponding, but different mapping system. Assigning each researcher to one of four levels reduced unhelpful conflict, thereby enabling her/him to play an optimum role. We created four levels of collaboration, each represented by a 'group' for holding the identity of one of the four roles.

Complexity	Role / Group	Approach / Mode of Inquiry
HIGHER ↕ LOWER	① *NEW KNOWING*	intuitive / spontaneous / anticipatory
	② *ENVISIONING*	imaginative / critical / self-reflexive / tactical
	③ *LANGUAGING*	discursive / interpretive / adaptive / facilitating
	④ *PUSHING/DOING*	hands-on / decisive / resourceful / managerial

Figure 7 - The Four Groups and Their Roles

Where the 'New Knowing' group acted as a kind of unconscious mind for the whole team, the 'Languaging' group was able to create new meanings that would promote better communication. Where the 'Pushing & Doing' group focused on the delivery of specified outcomes, the 'Visioning' group's role was to anticipate possibilities, and to present options.

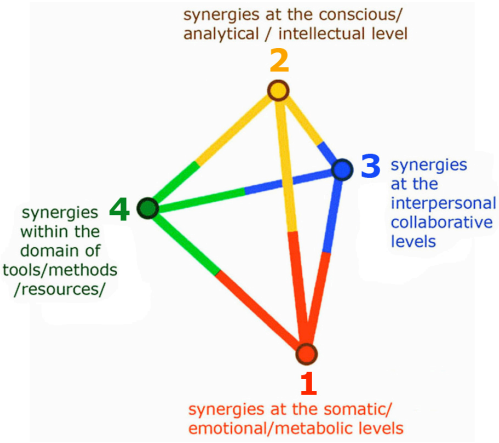

Fig. 8 – The Four Collaborative Roles

On March 21st, 2006 we gave the system a final test in the presence of a stakeholder, Andrew Carmichael, of the Creative Lewisham Agency. The workshop was extremely successful. During the 5-hour workshop we used the above tool to deliver several innovative solutions to Andrew's practical problem.

THANKS: I am are grateful to Professor Tom Inns and Vicky Hale for initiating and managing the Design in the 21st century project, and to the EPSRC and AHRC for their support. I am also indebted to our researchers: *John Backwell, Professor Karen Blincoe, Andrew Carmichael, Dr. Caroline Davey, Richard Douthwaite, Bill Dunster, Professor Naomi Gornick, Hannah Jones, Prof. Phil Jones, Prof. Milan Jaros, Dr. Vadim I. Kvitash, Anette Lundebye, Dr. Otto van Nieuwenhuijze, Jan- Marc Petroshka, Mathilda Tham, Professor Martin Woolley.*

FURTHER READING
(See our m21 web-site - http://attainable-utopias.org/m21*)*

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