



Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

## **Languaging Change from Within; Can We Metadesign Biodiversity?**

John Wood

Department of Design, Goldsmiths University of London, UK

### **ABSTRACT**

In reflecting upon the serious and ongoing depletions in biological diversity, this paper calls upon world leaders to collaborate with 'design thinkers' [1][2][3], and other innovators, in addressing major environmental issues. This might mean intervening in new ways to change social paradigms, by tackling the issue on many levels, simultaneously. However, as designers are not trained to work with issues of such complexity the paper discusses the development of a more self-reflexive, comprehensive and integrated mode of design that it refers to as 'metadesign'[4]. By reflecting upon design, biodiversity and evolution we hope to develop metadesign techniques that are more in accord with ecological principles. The paper describes a process called 'languaging' (verb) that enables metadesigners to find hitherto unnoticed opportunities whilst contributing to the team-building process.

**Keywords:** synergy, metadesign, paradigm change, formalism, biodiversity, languaging

### **1. Introduction**

In order to confront major environmental issues facing us, the world needs a paradigm change. However, Donella Meadows has argued that, of all the possible methods available to world leaders, the ones they choose - i.e. setting targets, fiscal policies and legislation - are the least effective[5]. Could design methods augment the ones used by governments? Like politicians, designers are trained to appeal to hearts and minds but they also work in a more direct way. By working to change lifestyles, they must appeal to the senses. Since 2005 we have been working to make design more comprehensive and integrated[6]. We call our augmented version 'metadesign' and have developed many tools for addressing complex problems. How might this approach address the complex issue of biodiversity, where the hourly decline in species numbers is worse than it has been at any time in the last 63 million years? Until now, government methods included listening to scientists and setting appropriate targets. In the Year of International Biological Diversity, the 2010 Nagoya World Biodiversity Summit was successful in setting targets but is unlikely to meet them[7]. Missing targets is a common occurrence that tends to discourage continuing support. But even the framing of policies based on sound evidence seems unlikely when 86% of land species and 91% of sea species remain undiscovered or unclassified[8]. In order to encourage an increase in biodiversity the Nagoya agreement designated large areas



Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

of land and sea as regions of wilderness. While this goes further than the largely bureaucratic requirements of the 1992 Convention on Biological Diversity, i.e. making targets, inventories, taxonomies, budgets, timelines etc., it would not work because the natural replenishment of species in the areas chosen is too low[9].

This paper argues that much more radical approaches are urgently needed. Even if designers were to fail to reduce biodiversity losses, they would, at least, learn a great deal from the process of enquiring deeply into questions of how diversity originates and is sustained. They might start by looking for parallels between design innovation and innovation within evolution. One approach might be to compare the need for new ideas with the need for new species. For example, Arthur Koestler's 'bisociation' method[10], is designed to elicit a new idea when two things are combined [11]. This resembles sexual recombination in that disparate 'parent' factors merge together to create a new hybrid outcome. Perhaps it is not surprising that, in both cases, successful innovation is difficult. Nevertheless, once an unprecedented event takes place it is more likely to be repeated [12]. What our research reminded us is that the unprecedented is not synonymous with the impossible. As in science - where radical innovations are rarely the result of meticulous, conscious, pre-definitive thought - in evolution they derive from the 'unthinkable' or unpredictable, literally speaking[13]

## 2. Experimental terms of reference

Just as we need more species to create greater opportunities, we need more languages. Without the ability to 're-language' new thoughts we will fail to transcend the current paradigm. Bureaucracy is an obstacle to this process. Applying thought processes within a ready-made epistemological framework discourages people from sensory immersion in the task at hand. Hence, bureaucratic language may dumb-down, displace, or divert the desired outcome of the action. This is an example of 'formalism'[14], or the tendency to dwell more on the agreed protocols for action, rather than on the actions themselves. Design, as we know it, is also 'formalistic' when it emphasizes a particular aesthetic 'look' while ignoring its adverse social, or environmental impact. In both cases, the task at hand may need 're-linguaging', perhaps by reminding oneself of its original purpose. We use this principle in our metadesign approaches, to encourage teams of designers and stakeholders to change themselves. This is based on the old theory that, if language sets the boundaries for thought[15], it co-creates our 'reality'. Jakob von Uexküll's (1864-1944) term 'umwelt'[16] is an ecological version of this idea that offers a pragmatic and phenomenological view of what living creatures experience. However, while each individual has a distinct 'umwelt', humans may be more versatile, on some levels, than other creatures. For example, by changing the metaphorical[17] and syntactical structures[18] of language they can attune their senses and aptitudes to new situations. This is a way to change attitudes, relationships and habits of behaviour. Motivationally and procedurally, languaging is therefore an essential element within the way that living systems co-create themselves[19]. We have found some ecological concepts useful. Alan Rayner's terms 'natural inclusion' (as an evolutionary process) and 'natural inclusionality' (as a receptive, dynamic relational comprehension of actual space and boundaries) [20][21] arise from a radical idea that challenges and turns outside-in many received assumptions about space and number. Humberto Maturana & Francisco Varela's application of the word 'languaging'[22] (used as a verb) is helpful to metadesigners, who must confront the practical and psychological aspects of the task (e.g. denial, procrastination, cynicism, etc.). Some pragmatic philosophers also inform these ideas in a practical way. Where Wittgenstein's idea of 'language games'[23] illustrates how some entities (words, or beliefs) flourish at the expense of others, Austin's notion of speech acts[24] reminds us that the definitive boundary between theory and practice is a mental construct. We are



Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

developing co-authorship approaches[25] that make no distinction between the need for knowledge, and team-building. Some of our methods incorporate what I call 'auspicious reasoning'[14]. This offers a discursive framework without critical or oppositional statements that focuses on actions, opportunities and outcomes, rather than on explanations, consistencies, truths or taxonomies.

### 3. Results and Discussion

The fact that the human imagination is constrained by particular beliefs about what is, or is not, possible suggests that we can re-direct behaviour using appropriate strategies. While language serves to sustain consensual actions, a consensus of doubt within a cultural context that requires certainty as a pre-condition for action can render change almost impossible. This is well understood by the fossil fuel industries. By systematically provoking uncertainty about the scientific evidence for climate change they have stopped many people from taking precautionary actions[26]. On the other hand, as metadesigners, we can also create new prospects by adding auspicious terms to the existing language. Raphael Lemkin demonstrated this principle in 1947, after years of failed attempts to draw the world's attention to a certain category of military aggression. Only after he invented the word 'genocide' did he manage to convince the United Nations to institute appropriate legislation. Hypothetically we could use this approach to design 'miracles', assuming that we are talking about rare, or unprecedented events[27], rather than supernatural interventions. Provocative questions may be a start. By asking, "what is the carbon footprint of rain?" we might realize that, when it rains, many people drive their car to the local shops instead of walking. How would designers address this realization? Like many human habits perpetuated by subjective beliefs, it is sustained by a network of products, services and myths of language. All can be re-linguaged or re-designed within the metadesign process. Where some cultures regard the rain as a blessing or a pleasure, in Northern Europe there seems to be a shared belief that rain is disgusting. This is spread by infectious greetings that malign the weather. But the Scandinavians have an antidote. They say: "There is no such thing as bad weather, only bad clothing". This idea re-linguages the assumptions sustaining the current paradigm of consumption. Why do we design 'greener' cars for future traffic jams and invest in badly-made umbrellas and fashion garments? In recent times, the clothing and textiles industry has accounted for up to 10% of Europe's adverse environmental impact [28]. Yet, despite their creativity, fashion designers have been slow to reduce this figure. This is because senior managers do not want innovation that threatens established commercial practices. As one of our researchers put it, the fashion industry 'thrives on innovation' but 'resists change'[29]. Here, what Barthes called the 'fashion system'[30] may also be thought of as a 'paradigm', in the sense that it consists of a network of agents whose ability to co-sustain one another is what creates resilience within the system pre-defined as a 'whole'. It may be useful here to inspect some of the assumptions that underlie the definition of the word 'paradigm'. In linguistics, Ferdinand de Saussure's use of the term referred to a cluster of adjacent meanings and signs that, together, constitute a very large epistemological category[20]. This meaning was later expanded by Thomas Kuhn to describe cultures of belief in science that are so well established that they are hard to change[32]. Kuhn accounted for the durability of scientific paradigms by showing how they consist of clusters of agencies, each with some interest/s in maintaining the status quo. He therefore argued that paradigms only change as a result of a 'revolution', in which the belief system in question is defeated by one that is perceived to be overwhelmingly 'better', or where the new beliefs coincide with a consensus of the incoming generation. While Kuhn showed how paradigms are incommensurate with one another, Paul Feyerabend noted that the observational methods associated with them are also incommensurate[33]. As Albert Einstein put it, "we can't solve problems by using the same kind of thinking we used when we created them".

#### 3. Context

In the fifteenth century, Nicholas of Cusa (1401-1464) conceived the universe as infinite, de-centred or



Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

omni-centric whole[34]. It follows from this idea that individual perspectives convey only a partial truth, and that each viewpoint should be seen in relation to other parts in the whole. If we had taken this idea more seriously we might not have developed the analytical, taxonomic and, ultimately, alienating approach that derives from Aristotle's 'logic of categories'. The Aristotelian legacy has been useful in many ways, but it has also been harmful in leading to a mistrust of the imagination[35], in favour of a formalist approach to science. Categorizing species by name is not the same as using languaging actions to recognize their unique character in ecological and evolutionary relationship with others. Whether formal classification follows Linnaean, Darwinian, or other approaches[36] it need not obscure dynamic relationship. This is because the fluidity of relations among living creatures is an important aspect of how biodiversity arises and evolves through 'natural inclusion' as the 'fluid-dynamic, co-creative transformation of all through all in receptive spatial context' [20][21]. One of the reasons why the Gaia hypothesis[37][38] has been important to biodiversity thinking is that it cut through the convenient dualistic habit of putting living and non-living things into definitively discrete categories. A precursor to Gaia is Vladimir Vernadsky's 1926 idea of the 'noosphere'[39], which depicts the biosphere as a geological entity shaped by life. Within this notion is the important implication that the noosphere is also shaped by the collective effects of human cognition and reasoning. This is what inspired the idea of an emerging 'global consciousness', as popularized by Pierre Teilhard de Chardin[40] in 1959. While this may seem fanciful, or even quasi-mystical, we can understand it by noting the strong element of co-dependency and co-creativity in the world. New words may inspire new beliefs or, even better, new 'understandings' rooted in sound observation and sense-making rather than pre-supposition. Belief influences action, which changes relationships and creates new habits. When these patterns become established we may see them as paradigms that resist external change. In order to make a paradigm change we must orchestrate more comprehensive and integrated outcomes. This will require simultaneous intervention at many locations within complex systems.

#### **4. Conclusion**

Our 'languaging' approach emerged from work we did with synergistic systems. Like the process of 'symbiosis', the presence of synergy often depends on factors that cannot easily be classified into 'nouns' or 'verbs', but might better be represented by 'participles', including the term 'languaging' itself. In our metadesign approach, these factors emerge, and are sustained, as collective capabilities and memories within non-hierarchical teams. Unless there is synergy within the team it is difficult to find synergies outside it. Synergies may be subtle, fugitive and unnamed, hence the importance of 'languaging'. This is why it may be necessary to use shared team-thinking as a primary catalyst for paradigmatic change. We plan to apply some of these metadesign tools to a range of practical projects, some of which will create synergistic 'start-up' industries that require no new resources. One of these might be to look for ways to enhance global biological diversity.

---



Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

Since 2005, our research into metadesign was generously supported by the UK's Arts & Humanities Research Council and the Engineering and Physical Sciences Research Council Research Funds. This enabled us to launch the Metadesigners Network. The author is grateful to Dr. Alan Rayner for his generous advice and to Mrs Ann Schlachter, the project's administrator, for her advice and support throughout the writing of this paper.

Website: <http://metadesigners.org>

Twitter: <http://twitter.com/#!/metadesigners>

## References

- [1] Simon, **The Sciences of the Artificial**, 3rd Edition, Cambridge USA, MIT Press, (1969)
- [2] P.G. Rowe, **Design Thinking**, MIT Press, Cambridge, Mass., (1987).
- [3] T. Brown, **Design Thinking**, Harvard Business Review, 2008
- [4] See <http://metadesigners.org/tiki/Metadesign-Introduction>
- [5] D. Meadows, **Leverage Points; places to intervene in a system**, The Sustainability Institute, [http://www.sustainer.org/pubs/Leverage\\_Points.pdf](http://www.sustainer.org/pubs/Leverage_Points.pdf) (downloaded - 14th August, 2009) (1999)
- [6] J. Wood, Metadesign, (Chapter 9), **Designing for Micro-utopias; thinking beyond the possible**, Gower, UK, ISBN 0-7546-4608-4 (2007)
- [7] M. Gross & N. Williams, **Missed targets**, Current Biology, Volume 20, Issue 12, 22 June (2010) R496-R497
- [8] C. Mora, D. Tittensor, S. Adl, A. Simpson, B. Worm, **How Many Species Are There on Earth and in the Ocean?** PLoS Biology, (2011) 8  
<http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001127> (accessed September 2011)
- [9] S. Harrop, **Living In Harmony With Nature? Outcomes of the 2010 Nagoya Conference of the Convention on Biological Diversity**, Journal of Environmental Law, Volume 23, Issue 1, (2011) 117-128
- [10] A. Koestler, **The Ghost in the Machine**. London, Penguin reprint 1990: ISBN 0-14-019192-5 (1967)
- [11] H., Jones, **Bisociation within Keyword-Mapping; An Aid to Writing Purposefully in Design'**, Journal of Writing in Creative practice, Intellect Journals, Art and Design. Volume 1, Issue 1. ISSN 1753-5190. (2007) 19-31
- [12] R. Sheldrake, **A New Science of Life; The hypothesis of morphic resonance**, Park Street Press, Vermont, USA, (1981)
- [13] A.D.M. Rayner (1997) **Degrees of Freedom - Living in Dynamic Boundaries**. Imperial College Press, London
- [14] J. Wood, **Auspicious Reasoning; can metadesign become a mode of governance?** Journal of Postcolonial Studies, Volume 12, Issue 3 September (2009) 315 - 327
- [15] Bhartrihari, 450-510AD - **Encyclopaedia of Philosophy**
- [16] J.J. von Uexküll, in T. Ingold, **Being Alive; essays on movement and description**, Routledge ISBN: 978-0-415-57684-0 (2011)
- [17] G. Lakoff & M. Johnson, **Metaphors We Live By**, Chicago: University of Chicago (1980)
- [18] B.L. Whorf, **Language, Thought and Reality: Selected Writings of Benjamin Lee Whorf**. Cambridge, MA., MIT Press, (1956)
- [19] H. Maturana, & F. Varela, **Autopoiesis and Cognition**, Boston Studies in Philosophy of Science, Boston, Reidel, 1980
- [20] A. Rayner, **NaturesScope**, O Books ISBN-13: 1846949807 (2012)
- [21] A. Rayner, Space Cannot Be Cut—Why Self-Identity Naturally Includes Neighbourhood, Integrative Psychological and Behavioural Science, Vol. 45, Number 2, 161-184, DOI: 10.1007/s12124-011-915-y <http://www.springerlink.com/content/047836234523771v/>
- [22] H. Maturana & F. Varela, **The Tree of Knowledge; biological roots of understanding**, Shambhala (1992)
- [23] L. Wittgenstein, **Tractatus Logico Philosophicus**, Routledge and Kegan Paul, (1961)





Creative Commons Attribution-ShareAlike 3.0 Unported License.  
Please cite Metadesigners Open Network <http://metadesigners.org/>

draft paper for the Journal of Journal of Cultural and Creative Industries Research ISSN 2078-5453  
[accepted in October 2011]

- [24] J.L.Austin, **How to do things with words**, Clarendon, (1962)
- [25] O. Nieuwenhuijze, & J. Wood, **Synergy and Sympoiesis in the Writing of Joint Papers; anticipation with/in imagination**, International Journal of Computing Anticipatory Systems, edited by Daniel M. Dubois, published by the Centre for Hyperincursive Anticipation in Ordered Systems, Liège, Belgium, Volume 10, pp. 87-102, ISSN: 1373-541 (2006)
- [26] R. E. Dunlap and A.M. McRight, Climate Change Denial: Sources, actors, and strategies, in Constance Lever-Tracy. Routledge **Handbook of Climate Change and Society**, Taylor & Francis ISBN: 0415544785 (2011)
- [27] J.E. Littlewood, **Littlewood's Miscellany**, Cambridge University Press, (1953)
- [28] **Environmental Impact of Products (EIPRO) Analysis of the life cycle environmental impacts related to the final consumption of the EU-25** [http://ec.europa.eu/environment/ipp/pdf/eipro\\_report.pdf](http://ec.europa.eu/environment/ipp/pdf/eipro_report.pdf) (2006)
- [29] M. Tham, **Systems for Sustainable Fashion Moments**. Mode, Tid och Ekologi: System för hållbara modeögonblick. In Grön Design, edited by C. Bertilsson and M. Hellmark. Stockholm: Naturskyddsföreningen (2008)
- [30] R. Barthes, R., **The Fashion System**, trans. Ward, M. & Howard, R., New York: Hill & Wang (1983)
- [31] F. de Saussure, **A Course in General Linguistics**, Fontana (1974)
- [32] T. Kuhn, **The Structure of Scientific Revolutions**, University of Chicago Press, Chicago, (1962)
- [33] P. Feyerabend, **Against Method**, Verso, (1975).
- [34] R. Tarnas, **The Passion of the Western Mind**, Pimlico (1991)
- [35] A. de Nicholas, **Powers of Imagining; Ignatius de Loyola**, State University of New York Press, Albany, USA Payne (1985)
- [36] C. Eastman, **Indian Boyhood**, Dover Publications, ISBN 978-1-4264-7352-4 (1971)
- [37] L. Margulis, **The Symbiotic Planet: a New look at Evolution**, Science Masters, New York (1998)
- [38] J. Lovelock, **Gaia: A New Look at Life on Earth**", Oxford University Press, (1979)
- [39] Vernadsky, V., (1998) **The Biosphere**, tr. David B. Langmuir, New York, Copernicus, ISBN 0-387-98268-X, (1926)
- [40] P.T. De Chardin, **L'Avenir de l'Homme**, essays written 1920–52 (1959)

John Wood  
September 17<sup>th</sup> 2011  
Emeritus Professor of Design,  
Goldsmiths, University of London  
New Cross,  
London SE14 6NW  
[maxripple@gmail.com](mailto:maxripple@gmail.com)