

BEYOND SUSTAINABILITY: NATURAL DESIGN AND RESILIENCE

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ABSTRACT

One of the short-comings of the term sustainability is that it does not imply what it is we are trying to sustain in the first place. The author offered one possible answer in his doctoral thesis *Design for Human and Planetary Health: A Holistic Integral Approach to Complexity and Sustainability*. Three years later, he links theory to practice, exploring his work as a catalyst of integrative design thinking, educator, and bridge-builder between academic disciplines, between ecovillages and universities, between approaches to sustainability at different scales of design, and between public sector, business and civil society. Key concepts guiding his approach are: education as metadesign; temporally and spatially scale-linking design (Wahl, 2007); salutogenic (health-generating) design (Wahl, 2006a); and the natural design movement (Wahl, 2006b). Central to this participatory approach is the role of designers as transdisciplinary integrators and facilitators (Wahl & Baxter, 2008). Appropriate and responsible design in the face of converging crisis like climate change, peak oil, natural resource depletion and growing national and international inequity has to acknowledge complexity, interconnectedness, unpredictability. Awareness of multiple perspectives can positively influence innovative design thinking, resulting in more flexible and resilient design solutions. Beyond sustainability lies an attitude of designing with *and as a part of* nature, learning from natural process how to meet human needs within the limits set by the biosphere. Such design thinking is based on a metadesign (worldview) shift that transcends the Cartesian split and understands the reciprocal co-dependence of nature and culture.

Keywords: Natural Design, sustainability, metadesign, Findhorn College, CIFAL Findhorn

1 INTRODUCTION

“We will have to do something that is incredibly difficult to do: we will have to decide not just how we make ourselves sustainable, but why we should be sustained” (David Orr, 2006, personal comment). As meaning seeking creatures, human beings cannot but contextualize their aspirations, actions, and creativity within some form of belief systems, whether religious or secular, spiritual or materialistic, mythical or scientific. If we understand design in its broadest sense as human intentionality expressed through interactions and relationships, then changes in the worldviews and value systems that shape our intentions and aspirations are the kind of up-stream cultural *metadesign* that leads to the fundamental life-style and behaviour changes which have to occur in order for diverse cultures of sustainability and resilience to emerge globally, regionally, and locally.

There is a real and present danger for our current debate on ‘sustainable development’ not to go deep enough into questioning the assumptions underlying the worldviews and value systems that have shaped society and culture in their current profoundly unsustainable expressions. We are falling short of heeding Einstein’s famous (and admittedly over-cited) dictum that ‘you cannot solve a problem in the mindset that created it.’ Creating healthy and resilient communities requires a shift in consciousness.

In *The Sustainability Mirage* John Foster (2008) argues that the economic-growth focussed mindset of sustainable development perpetuates the obsession of Western culture with the notion of progress. He proposes that addressing our deeper needs of the present would change the debate about sustainability in a more fundamental way. Wright’s *Short History of Progress* calls for a deeper questioning of, as Gauguin put it: “*Where do we come from? What are we? Where are we going?*” (in Wright, 2004, p.2), if we want to avoid that our globalised civilization follows the pattern of eventual collapse set by previous civilizations like the Easter Islands, Sumer, the Mayans, or ancient Rome. Wright warns of the potential dangers of “technological progress traps” (p. 108) as “ideological pathologies” (p.124). He points out

how “every time history repeats itself, the price goes up” (p.129). This time the price might be the planet’s ability to support human life!

The author explored some of the worldview and value systems changes underlying the shift towards genuine sustainability and a resilient culture in his doctoral thesis (2006). He proposed that metadesign based on holistic and transformative education for ecological and social literacy can affect worldview and value changes that shape intentionality and thus constitute paradigmatic changes of design thinking at the upstream end of the design process. Aspects of this work were developed further in subsequent publications (see Wahl, 2006a, 2006b, 2007 and Wahl & Baxter 2008). A recent synthesis of a conference convened at Yale University published under the title *Towards a New Consciousness: Values to sustain human and natural communities* (Leiserowitz & Fernandez, 2008) agrees: “At the deepest level, if we are to address the linked environmental, social and even spiritual crisis, we must address the wellsprings of human caring, motivation, and social identity” (p.14).

Among some of the most persistent assumptions underlying the dominant worldview of our current materialist, consumerist, and scientific (rather than scientific) culture are the dualistic separation between nature and culture, consciousness and matter, and between the individualistic self and the (natural and cultural) communities in which it cannot but participate as a co-creative agent. Post-modern constructivism misses the important point that our dependence on the planet’s life support systems is not a social construct but a bio-physical reality. To address these issues we have to question the metadesign of the currently dominant Western and increasingly globalized worldview. This cannot be done without asking deeper questions about how we make meaning, how we attribute value, and how this affects the way we relate to each other and the community of life as a whole (see also Wahl, 2005 & 2006c).

Clearly it will be impossible to address such fundamental questions within the confines of this paper. At the most, it can highlight the importance of such deeper questioning as a crucial step in moving beyond techno-centric design for sustainability to a new kind of design thinking that acknowledges the integrative power of design in the face of complexity, unpredictability and interconnectedness, working with *design connexity*. Natural design for resilience (systemic health) attempts this. The remainder of this paper will offer a brief introduction to this approach and explore examples of its practical application.

2 THE NATURAL DESIGN MOVEMENT

More than 200 years ago, the poet-scientist Johan Wolfgang von Goethe wrote “Even the most unnatural is Nature; even the creation of the crudest philistines express some of Nature’s genius. Who does not see Nature everywhere, will see here nowhere in the right way” (Goethe, 1781). The recent interdisciplinary conference at Yale on the importance of a consciousness shift in the transition towards sustainability emphasized: “*The dualistic separation of humans and nature reinforces the false notion that humans are outside and above nature and natural process, instead of emergent from and inextricably interconnected to them*” (Leiserowitz & Fernandez, 2008, p.21).

Natural design aims at the reintegration of culture and nature through a scale-linking and salutogenic design approach that restores health and resilience, through promoting diversity, adaptability, flexibility and creativity at all scales of the fundamentally interconnected, complex, and constantly transforming whole of which we are all conscious and co-creative participants. *Natural design* is best understood as an umbrella term for a growing, converging movement based on similar aims (Wahl, 2005). It may thus be more useful to think of this phenomenon as the *natural design movement*.

Over the last 40 years, driven by pioneering designers, planners, and educators a greatly expanded conception of design has emerged. This view takes design far beyond the beautification of material objects, graphic design, technological inventions, and the support of a culture of consumption through fashion and marketing. A common threat that unites these design approaches is the notion of *co-creation with nature*. Such responsible design acknowledges humanity’s collective dependence on the planetary

life-support systems that sustain the health of the biosphere, ecosystems, as well as human communities and individuals. The natural design movement is characterized by *biophilia*, an innate love of life and living systems (Wilson, 1984). Responsible design nurtures biophilia as an innately human characteristic.

Here are a few examples of these diverse approaches to environmentally and socially responsible design: Ian McHarg's 'Design with Nature' (McHarg, 1969), ecological design (eg: Todd & Jack-Todd, 1993; Van der Ryn & Cowan, 1996; Orr, 2002), 'Design for Human Ecosystems' (Lyle, 1985), the work of Victor Papanek (1995); 'cradle to cradle' design (McDonough & Braungart, 2002), biomimicry (Benyus, 1997), and the diverse approaches united by the 'bioneers' (Ausubel, 2004). This list is by no means comprehensive. Many converging streams contribute to the emerging natural design movement.

The Centre for the Study of Natural Design (www.vrc.dundee.ac.uk/Research/Natural_Design.html) was created in 2002 as a postgraduate design research unit within the School of Design at the University of Dundee. Under the supervision of Prof. Seaton Baxter, a wide range of PhD and MPhil research projects have contributed to sketching out and defining 'natural design' in more detail. Natural design aims to create resilient, flexible, and adaptable solutions that elegantly respond to the specific conditions of a particular place and culture. It goes beyond the survival ethic and anthropocentrism of other approaches to sustainable design, addressing psychological, philosophical, sociological, spiritual and aesthetic aspects of the necessary shift in worldview and culture. Such metadesign can transform design thinking in ways that affect *what*, *how*, and *why* we design, and thus can transform material culture itself.

"Our ecological niche is now the entire planet, but cultural evolution has not yet caught up with this new fact. We must now adapt to this global scale by reconceptualizing our relationship to nature" (Leiserowitz & Fernandez, 2008, p.37). Natural design recognizes that a reconceptualization of our relationship to nature will necessarily lead to a reconceptualization of our relationship to each other, to all of humanity, and to the community of life as a whole. Albert Einstein saw humanity's task in "...widening our circle of compassion to embrace all living creatures and the whole of nature in its beauty". A Chilean doctoral student at the Centre for the Study of Natural Design, Gonzalo Salazar, is currently exploring the profundity of such cultural metadesign through the work of Humberto Maturana on the 'biology of love' (Maturana & Verden-Zoller, 2008).

As an associate researcher and research supervisor at the Centre for the Study of Natural Design, the author remains active in the theoretical development of natural design. Beyond theory as metadesign, the urgency of the current global crisis needs action on multiple levels through effective education programmes and knowledge transfer between academia and civil society, business, and the public sector, as well as, through the creation of best practice examples and the initiation of culture change, both from the bottom-up and from the top-down. The author has therefore applied the natural design approach through collaboration with a series of independent yet related organizations at the Findhorn Foundation and beyond. Working with a whole range of collaborators allows him to contribute locally, regionally, nationally and at the level of the United Nations simultaneously and in a synergistic manner.

3 THE FINDHORN FOUNDATION: SUPPORTING PERSONAL AND PLANETARY TRANSFORMATION

The Findhorn Foundation (www.findhorn.org) is an educational charity based in a non-denominational spiritual community founded in 1962 with a focus on inner listening to divine inspiration (guidance), a service ethics regarding 'work as love in action', and an ecological ethics of 'co-creation with nature' through direct contact with the inherent intelligence of the nature world.

Since the mid-eighties the Findhorn Foundation's planetary village or 'ecovillage' project (www.ecovillagefindhorn.org) has provided leadership in diverse aspects of ecological, social, and economic design. Among these are: the creation of more than seventy ecological buildings, the UK's first community supported agriculture (CSA) scheme, a community owned windpark, a community currency, and widespread applications of renewable energy solutions including solar thermal, ground-source

heat-pumps, photovoltaic systems, biomass boilers, and passive solar designs. The community is home to various innovative social enterprises and charities working for social justice and environmental restoration. It also houses a variety of international acclaimed consultants in ecological engineering, sustainable business leadership, and regional economic development. The ecovillage project gained a UN Habitat best practice award and through its membership in the Global Ecovillage Network (<http://gen.ecovillage.org>) acts as a consultative N.G.O. to the United Nations. The Findhorn Foundation's educational programmes engage people with deeper questions of cultural metadesign, meaning-making, and the psycho-spiritual and personal development aspects of the co-creation of a culture of sustainability, peace, and awareness.

The ecovillage project, as an ecological and social experiment in how to integrate the various aspects of sustainable community design, has been an effective research lab for how to facilitate the emergence of a sustainable society at a local and regional scale. Some of the lessons – from successes and failures - of this long-term and ongoing research are now beginning to be effectively transferred into the mainstream. The current surge of “Transition Town” initiatives (www.transitiontowns.org) around the UK and internationally is greatly benefiting from the lessons learned and social and ecological design tools developed within ecovillages. Forres near Findhorn launched its own transition town initiative in 2008 and a former community member has been instrumental in taking the transition culture movement (www.transitionculture.org) to his native Japan. This creative grass-roots response to peak oil and climate change offers responsible citizens to become co-designers of their own communities.

4 FINDHORN COLLEGE: EDUCATION FOR ECOLOGICAL AND SOCIAL LITERACY

The Findhorn College (www.findhorncollege.org) was established in 2000 to offer academically accredited programmes based on holistic and transformative education for sustainability and personal empowerment. Among its longest running courses is the “Human Challenge of Sustainability” a semester-long undergraduate programme accredited through the University of Massachusetts. In 2007, the author joined Findhorn College as its academic outreach and programme development director, funded largely by the Highlands and Islands Enterprise, Moray. A number of collaborative partnerships with Scottish universities and educational institutions in the UK and internationally have been established since. Among the new masters level courses currently in development are: the ‘MSc. in Integrated Sustainable Community Design’ with Heriot-Watt University; the ‘MSc in Sustainable Housing Futures’ with the Robert Gordon University, the ‘MSc. in Transition to Sustainability’ with the University of St. Andrews in partnership with the Centre for Alternative Technology (www.cat.org.uk) and Schumacher College (www.schumachercollege.org); the ‘MSc. in Natural Design’ with the University of Dundee; and the ‘MSc. in Sustainability Studies’ with the University of Highlands and Islands Millennium Institute. In addition, a range of short courses and CPD courses are being developed in collaboration with the ‘Centre for Supervision and Team Development’ (www.cstd.co.uk), the Biomimicry Institute (www.biomimicryinstitute.org) and other partners. The California Institute of Integral Studies (www.ciis.edu) is preparing regular visits of its doctoral students. The European Unions ‘Life Long Learning’ support scheme (www.grundtvig.org.uk) is funding the college’s participation in a ‘Learning Partnership for Creative Sustainability’ that will design a youth programme for sustainability leadership.

5 CIFAL FINDHORN: EFFECTIVE KNOWLEDGE TRANSFER ACROSS SECTORS AND DISCIPLINES

CIFAL Findhorn (www.cifalfindhorn.org) is an international training centre for local authorities and stakeholders, affiliated with the United Nations Institute of Training and Research (UNITAR), funded by the Scottish Government, the Moray Council, Highlands and Islands Enterprise, and the Findhorn Foundation. Since CIFAL Findhorn was established in 2006, it has offered a whole range of one, two and three-day seminars on topics such as ‘The Renewable Energy Revolution’, ‘Biofuels for Sustainable Transport’, ‘Urban Planning and Regeneration’, ‘Industrial Ecology and Eco-Industrial Parks’, ‘Low and Zero Carbon Housing’, ‘Micro-hydro’, ‘Wood-fuels’, ‘Solar Energy’, and ‘Food Security and Bioregional Food Economies’. An important distinction of these seminars is that they bring together public servants, business representatives, community groups and experts from academia and industry to engage in human-

scale, participatory knowledge-transfer. Practical design projects, 'open space technology', and 'world café' methodologies are employed to maximize the way participants can learn from each other and network to effectively initiate new projects or affect policy at the local and national scale.

6 GAIA EDUCATION: INDIVIDUAL AND COMMUNITY EMPOWERMENT THROUGH DESIGN SKILLS

Gaia Education (www.gaiaeducation.org) is an international consortium of educators, many of them based in ecovillages on five continents. Over eight years a curriculum offering a holistic and participatory approach to sustainable community design was developed and launched in 2006. The initiative has been endorsed by UNESCO and is an official contribution to the 'UN Decade of Education of Sustainable Development' (2005-2014). So far more than a thousand people have been certified after participating in the EDE (Ecovillage Design Education) programme. The intensive 120 hour training has been held on five continents, in locations as varied as the Findhorn Foundation (Scotland), Auroville (India), Crystal Waters (Australia), Sao Paulo (Brazil), Kibutz Lothan (Israel) and the Middle Eastern Technical University (Turkey). The curriculum is organized into five modules in four dimensions: ecological design, social design, economic design, and worldview. It can be downloaded on the website above. In November 2008, Gaia Education and the Open University of Catalonia - Europe's second largest online learning provider - launched a virtual version of this curriculum under the title 'Design for Sustainability'. Participants so far included designers, community organizers, public servants, planning and architecture professionals, entrepreneurs, activists, educators, academics, consultants, and more. Former course participants have initiated wide range of projects as a result of this empowering programme. It enables and inspires individuals to move beyond the politics of protest or an economic growth and techno-fix focussed sustainable development agenda and to take the creation of a more ecological, socially just, equitable, and spiritually meaningful society into their own hands.

7 CONCLUDING REMARKS

We are facing immanent and worldwide change of unprecedented magnitude. Humanity is undergoing a 'rite of passage.' Will we be mature enough to take the dialogue about sustainability beyond sustainable development to affect a shift in human consciousness? Design beyond sustainability will have to be a creative expression of the fundamental co-dependence of nature and culture through healthy, diverse, and resilient communities at local, regional and global scales. This is the promise of the natural design movement. To contribute to the rapid transition beyond sustainability, designers have to act as transdisciplinary integrators, facilitating knowledge exchange and collaboration across a wide variety of stakeholders. The times of 'them-versus-us-thinking' are over. The long-term survival of our species is at stake! The above-mentioned organizations effectively communicate to a wide range of different stakeholders through a series of education and training initiatives. Their design-based approach offers not only practical solutions through example, but also invites metadesign changes in worldview.

"If we don't change our direction, we're likely to end up where we're headed." - Chinese Proverb

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