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Breaking free from the unsustainable now

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Abstract

This paper challenges the traditional concept of '*the product'* in our contemporary addictive consumer society and embarks on an interdisciplinary journey to design a way to break free from what we argue is the unsustainable now.

This may be achieved by taking the product's perspective and placing it in a wider sustainable context where deeper aspects of value, meaning and use can be explored. By utilising ecological system dynamics including; adaptability, interconnectedness, rhythm and flexibility we seek to move beyond mechanistic design approaches and embrace a deeper and more ecological view of sustainable design.

We provide initial research findings from an experimental sustainable product design project in which these concepts are embedded and explored and we conclude by speculating on forward strategies aimed at furthering change and action for designers and educators moving towards a truly sustainable society.

INTRODUCTION

> *'No Problem can be solved from the same consciousness that created it. We have to learn to see the world anew.'* - Einstein

Arguably, sustainability lies in a crisis of perception particularly in the way we see the world and relate to the things around us. A number of authors including, Capra (1983, 2002) Kajzer and Saren (2000) Sterling (2001), Walker (1998a and 1998b) promote a new way of thinking which we see as imperative if we are going to break free from what we see as the unsustainable now.

Sterling (2001) suggests that '*the fundamental tension in our current age is between a mechanistic and an organic way of viewing the world'*. The more organic view of the world reveals a language very different from the image of the machine, which we have grown to be accustomed to since the Industrial Revolution. We can already see this in many aspects of our western society, with the increasing popularity of new sciences including complexity and chaos theory and with the frequent use of terms including; integrative, holistic, systemic, connective, flexible and co-evolving. We agree with Capra (2002) when he suggests that '*The design principles of our future social institutions must be consistent with the principles of organization that nature has evolved to sustain the web of life'*.

The product design community is only beginning to understand the implications of integrating sustainability into its design practices. Its current efforts speak the language of eco-efficiency and material reduction (Charter and Tischner, 2001; Datschewski 2001; Faud-Luke, 2002; Fussler and James 1996). However, designers still deny the wider global ecological crisis and consider that issues of sustainability impinge on personal creative freedom. In the early 21st Century it is surprising to us that we still don't have truly sustainable products, services and systems in our hands. Despite eco-efficiency the current design paradigm remains deeply rooted in the mechanistic world focusing on material possession, individuality, consumption and newness; or the assumption of unlimited growth and the accumulation of waste (Shrivastava, 1995; Van Dam and Apeldorn, 1996; Kilbourne, 1998). We argue that this is an unsustainable situation and that action must be taken. The need to transform our existing perceptions, our thinking and our values of what makes up a healthy relationship between nature, mankind and the things that we use in this life is paramount.

This paper is built around initial reflections made from an exploratory journey, in which we encouraged design students to think, act and design differently in a more holistic context of sustainability and also how we, as designers and educators, may act upon this experience. In this we explore what happens when we ask young designers to:

• Embrace a more holistic and ecological view of the world.
• Move beyond recycling and reuse towards redesigning, reshaping and revalueing our relationship to products.
• Mirror essential properties of life such as adaptability, flexibility and creativity.
• Explore the potential of products as service providers within in system of activity.

We wish to note at this early stage that we, with this paper, by no means intend to provide specific answers or tools but instead seek to document an exploration into an emerging enabling philosophy for design; reflective and open-ended in which designers could take meaningful action when seeking to grasp the complex concept of sustainability.

TOWARDS AN ENABLING PHILOSOPHY

To be successful in sustainable product design will require a paradigm shift in outlook. We argue that there exists a compelling need to rethink '*the product'* in order to reach greater understanding of the design opportunities in a sustainable, holistically interdependent market place which is, in essence, led by human need. Our identity and experiences through life are strongly linked to products and they define much of our personal identity and value (Appadurai, 1986) as well as our perception of self relative to society and environment. This becomes of particular importance as future organisations will not only have to consider the flow and natural capital of resources, cradle to cradle product responsibilities and waste management but also the flexibility and volatility of a products various relationships with us over extended periods of time (Kajzer and Saren, 2001). We believe that the existence of the things we surround ourselves with must be contested and that as designers we must consider how to develop long-term relationships between user and object and how these objects grow and change with time.

Designers also need a clear understanding that all actions have broad ecological consequences*.* Future outcomes should be developed in a holistic way with a full knowledge of these consequences. Designers need to develop the creative skills to work across disciplines and this shift of how and where we design should produce products, services and systems of real value, which, in turn, can affect real and positive change to our environment. The development of an innovative design paradigm which allows an exploration of products as '*service providers within any given activity'* could be an evolving enabling philosophy for designers in making accurate, knowledge driven value judgements relative to the demands of designing objects, systems or services sustainably.

If the image of the machine inspired us in the industrial age, the image of living systems may inspire a truly creative post-industrial age (Senge and Carstedt, 2001). What would happen if the product was to be regarded as a living entity as part of a living system? What happens if designers look at products as living? These questions were asked in a multidisciplinary doctoral research project where the idea and theoretical implications of the '*living product'* is under development (Kajzer 2003). It is suggested that the application of the living product philosophy focusing on non-linear interconnectedness, co-evolution, cyclical patterns and flexibility might lead to a different approach to design, allowing us to place it in a context where it may no longer be viewed as a transaction between buyer and seller, but becomes part of a much greater and more complex system.

Maybe these views would encourage designers to move beyond eco-efficiency and resource minimisation strategies which are more about doing more of the same towards seeing and doing things differently. To this end we wanted to find out what would happen if we brought these views together within a design project, with a view to explore dealing with compromise as we move from theory into action:

• Would it add to an expanded idea of sustainable design?
• Would the project in itself produce broader sustainable opportunities and understanding?
• Could and would the students think and act differently?
• Would this way of working be beneficial and transferable in to further studies?

THE EXPERIMENTAL PROJECT

The 17 students who participated in the project were both gender balanced and international. 7 were Glasgow School of Art students at the beginning of their 3rd Year of a 4 year Bdes (hons) course in Product Design and the remaining 10 were visiting students from partner institutions in Germany, North America, Sweden and Italy. The project was primarily studio based and ran for 6 weeks, 3 days per week and followed the normal design school educational structure of studio-based activity, regular reflective reviews and individual tuition. It is important to note that apart from some visiting students having had basic seminars in sustainable design none of the project participants had a deep immersion prior to this project. In effect we were working from ground zero.

What we asked the students to do was to see how far they could push the idea of a '*product'* in a sustainability context. As designers generally like to work with '*things'* in any new speculation we encouraged them to take as their starting point – an existing product - something domestic and everyday and use this to kick start a broad and explorative investigation. We asked them to challenge themselves and to think wide, think deep and, think free and use the enabling philosophy of '*the living product'* coupled to the idea of '*products as service providers in a system of activity'* to formulate a strategy to break free from the unsustainable now. Furthermore we asked them to interrogate, orientate and rationalise their findings and move a clear concept forwards to a manifest conclusion which, in an open forum of experts, would provoke a discussion.

We wished from the outset to create an educational ethos for the project, which was centred in the explorative journey. We wanted to move from a subjective deliverable view of valuing the outcomes where there is a tendency to label and rank 'good' against 'bad' to a more objective and inclusive view. A view considering qualities, which focused in and were resonant with human centred experience and need; lively, playful, creative, extended, connected, integrative, transformative, democratic, participatory and inclusive.

Workshop/Creative Techniques: Nature and Purpose

The project and its workshops were designed to encourage students to move from what is familiar and may restrict exploration towards what could be and what happens if. Specifically we sought to use design methodologies that challenged the students in the way they looked at things, objects, the environment and

themselves. The various stages and creative activities taking place in this project are illustrated below:

Time	Stages	Activities	Purpose
Week 1	Workshop I: Current state of sustainable design	Brainstorming Object stimulation Discussions	To inform and increase awareness of sustainability To capture students pre-understanding of sustainability
Week 1	Workshop II: Living Product and breaking free	Metaphors Provocations Picture stimulation Design on the spot	To stretch and break free from existing thought patterns and paradigms To widen sustainability understanding
Week 2, 3, 4, 6	Design activity, review sessions and individual mentoring	Design development Group reviews	To enhance collective understanding through action and reflection To encourage the sharing of thoughts and ideas
Week 6	Open Forum with invited 'experts' in the field	Presentation and open discussions	To stimulate wider discussion and critical reflection rather than assessment To encourage a sense of participation and collaboration
Week 6	Final Review Session	Group discussions	To allow students to reflect on the value of process applications for future studies To encourage inclusiveness and responsibility of ownership

Notes: To enhance the individual educational experience reflexive learning diaries were utilised. The reflective diary was seen as an opportunity to '*see*' differently and to develop skills and knowledge as designers in a reflective manner. The studio was arranged to open up space for ideas and thinking. Open and community areas as opposed to individual workstations were encouraged so as to remove physical barriers between the students. The evolution of the project was captured through video and digital cameras.

WHAT HAPPENED AND WHY

As we launched the project our assumption was that the living product idea would clearly give a new dimension to explorative designing. We also expected that these young designers would naturally grasp the idea of products as service providers in a system of activity in re-designing and re-shaping an existing every day object.

Starting from ground zero with young designers who's minds had potentially fewer ingrained assumptions about the world and who would be relying on their intuitive intellectual and visual abilities, we anticipated no major difficulties in them taking action. It was thought that the students would be positive about the project and use their creative skills to explore breaking free in an uninhibited manner.

Initial Difficulties

The first barrier came as a surprise. When we launched the project the immediate response was; '*I don't understand what we have to do next', 'What are we doing?' 'What is the outcome?' 'What are the deliverables?'* The students expressed considerable insecurity, a strong need to be given direction and their goals clearly defined for them. As the project started to progress most students tried to remain firmly object fixated, some continued to express a need for permission to explore; '*Is it ok if I do that*?' '*Should we go in this direction, or that direction?' 'I am doing this right aren't I'* and some were still looking for acceptable answers and pre-determined goals; *'This is scary I can't see the end'. 'How are we going to assessed?'*.

Whilst this paper does not permit the scope to go into this in any considerable depth we would consider that one possible reason for this behaviour may in part be due to the prevailing educational culture in Britain which favours the quantifiable deliverable outcome above the qualitative process paradigm incorporating elements of playfulness, freedom and fun. This issue may well relate to what Sterling (2001) calls a *'crisis of education, its limited present ability to contribute to a better world'*.

Initial Perception and Understanding of the 'living product'

Capra (2002) suggests that by understanding the processes that are embedded in living systems '*we can begin to design processes of change and human organisations that mirror life's adaptability, diversity and creativity'*. This may in turn help us to deal with complexity in sustainable design environments and to challenge the division we see between material and social structures. Integrating some of the fundamental ideas of living systems into the way we view and relate to products could be seen as a foundation for change and may possibly improve our capacity to implement sustainability (Kajzer and Saren, 2000).

This is an attractive notion. But questioning the essence of products and our relationship with them is a daunting task. The students' initial responses were more of confusion and uncertainty and this can't solely be explained by the existing educational paradigm. The '*living product'* concept is a controversial idea that promotes a radical shift in thinking of how we view ourselves, the things we use and the environment that surrounds us. As a consequence we found that the literal meaning became a barrier or caused controversy. In some students minds it was seen; '*as kind of silly'* and '*still sounds absurd'*. *"How can products be living"?* Not understanding the proposition became an initial barrier especially as the students were not given a clear goal to work towards but encouraged to make their own exploration and experience.

By the end of the project we found that all the students appeared to have become aware of, understood or owned the concept of the '*living product'* and its relationship to extending ability to design more sustainably. The following students quote illustrates this; '*At the beginning I had no idea what a living product was and now I think I have some understanding. Unfortunately, I feel I lost some that 'living-ness' in my product and could have pushed it further. I think in the future all my designs should have a living element because everything I design fits into a greater system of some sort and life gives it greater existence within that system. Living can be so much more abstract then I originally thought'*.

This demonstrates how difficult it is to actually grasp and take action with abstract and descriptive words and ideas taken from an intellectual ecological way of thinking.

ACTION MANIFESTATIONS

Following the initial workshops and before embarking on the deeper explorative design aspects of the project we asked the students to define their '*perfect living product'* This exercise was intended to give a quick rough cut of their new found perspective, to act as a further discussion point and as a trigger to further design development. These were the outcomes:

A perfect living product:

'Communicates with you, evoking an emotive response, leaving you with a personal attachment (to itself) which will remain with you for its lifetime'

'Responds to the diversity of the users holistic need by progressing in a flexible and energetic way'

'Would re-instil the idea that man cannot be separated from his environment, a concept that has been lost somewhere in our history'

'Can be reborn with a new purpose and appearance, while reflecting new desires, it is trusted and essential, also surprising and regenerates new life'

'Is a raw intimate product that moves with your needs, will withstand change and still retain its appeal and satisfy for longer'

'Is something which you have such an attachment to or need for that you never need or want to dispose of it. It is something that when your need for it has run out it could be transferred and become a product that will live for someone else'

When looking at the analysis of the project's design outcomes and reflections we were interested in seeing if we could find evidence of students:

- Staying within their previous existing framework of action
- Working beyond the linear design and marketing paradigm
- Moving beyond designing the physical object in isolation
- Showing signs of system/service designing and its wider social connectivity

Mapping the students Journey's
When we came to reviewing the resultant body of work we found that it could be put into the three main groups shown below.

Group 1: Lateral and progressive approach
Only 2 projects exhibited an extensive lateral and progressive approach to designing. Closer examination of these students design approach revealed that they were:

• Always defining and breaking through barriers
• Aware of broad social influences and human need
• Self-motivated and self challenging; *wanting to do something really worthwhile and meaningful*
• Continuously moving between thinking and action through open and explorative dialogue
• Willing to take risks and learn from the experience
• Not daunted by unknown destinations
• Constructing their own meaning rather then being given it
• Self critical as to their own role as a designer
• Taking ownership and responsibility

These developed design manifestations are clearly founded in sustainability and seeking to address real human need. They are very '***proactive'*** in their nature e.g. the designed objects seek to provoke thought and encourage peoples' behaviour and attitudes to be more sustainable. Through designing, the students managed to not only

make us more aware of our relationship to products but also stretch our relationships, opening them up, encouraging us to share, let go and explore something new. Rather then being punitive and demotivating for the user these designs recognise our emotional attachment to things and capitalise on it and encourage people to change. The students explain:

>*'…I hope that living products are not about being punitive but about understanding real emotional issues in people's lives, nurturing this and treating it with care in a sustainable way. I think if it is living it will be appealing to some core essence (hard to describe any other way) within people; will consider the important issues and so will then be sustainable'*

These students have taken a systemic approach to design, recognising that the object is connected to a greater whole which needs to be accounted for. The final objects have an extended, long lasting cycle and when they eventually '*die'* they are given a new '*life opportunity'*. For them sustainable design creates products, services and systems that are '*growing and living'* with us.

>*'I like the idea that a living product does not last forever. I am not sure if people want things forever. I like the idea that when its "life" has ended though that it goes back into something else, in some way helps to regenerate earth'*.

Group 2: Linear and defensive approach /Periodically breaking free
The majority of the students belonged to this category. They were exhibiting a narrow to medium linear and occasionally a lateral approach to designing. In short, they found it harder to let go of existing design paradigms and this might have inhibited them from stretching their designing beyond current norms. A closer examination of the students work provide us with the following insights:

• Requiring significant support in taking risks
• Comfortable with open-ended development only when supported and encouraged
• Limited personal growth through experience
• Maintaining a focus within defined boundaries
• Highly likely to create safe uninspired proposals
• Seeking permission before taking risk
• Occasionally stretching own experience
• Strong defence of linear trajectory

Some students in this group however started to break free, showing signs of:

• Greater tendency to move between thinking and action
• On / off confidence, breaking free then running back for cover
• Occasional inability to see success and opportunity when working (can't see the wood for the trees)
• Flashes of creative insight
• Ability to work independently except when blocked
• Proactive engagement when seeking support and advice

Similarly to group 1 the designed objects are focusing on enabling the user to have a closer and longer relationship with the product. This is expressed by this student quote;

>*'Would you throw away a pet? No, of course not. So if this object becomes valuable and potentially like a pet, if you never throw it away, if you look after it and it is constructed well, it will go on and on and on!'*

This group had a tendency to rely on technology to a large extent to enable the product concept to come '*alive'*. These resulting objects were promoted as '*intelligent'* and with time would learn our habits and desires.

These students also attempted to take a more systemic approach, recognising that their objects are part of a greater system. Whilst considering the connectedness between objects they tended to forget to account for people's behaviour. Their solutions did not question existing life styles, preferring objects to fit in with existing systems.

The key difference with group 1 was that when designing their products these students did not make sustainability the starting point preferring to attach it afterwards. They had a tendency to see sustainability and living as separate. One student in this group reaches some insight at the end of the project and explains:

> *'I found it hard to relate living products with sustainability at first but now I understand they co-exist. I could go on and on forever about my views on the connection but basically I feel that with a living product you establish more of a responsibility for it and a harmony with it, thus a more sustainable existence grows from that'*

Group 3: Linear and non-directional approach
Only a few students belonged to this group who were exhibiting a broken and stuttering non-directional approach to designing:
• Had to be led / provoked into action
• Preserving / clinging to previous experience and knowledge
• Very unwilling to take risk
• Unlikely to be provocative or contentious in action or thought
• Over controlled and demonstrating inability to make action without clearly defined and easily achievable goals
• Work pattern defined by leaping from one concept to another with no synthesis of development; shorter exploratory and questioning cycles
• Insecure with open-ended development
• Rarely capable of independent thought and action
• Lack of reflection on the design process

These physical design manifestations had a tendency to be more about '*doing more of the same*' rather than '*doing it better'*. Sustainability is only temporary and appears forced onto the object and is not designed in the context of any sustainable need, it's simply an added on thing. The final outcomes barely move beyond the recycling of materials. They do not fully look at the relationship that we are going to have with the product or what feelings that this should evoke. The students do not mention how their products will '*grow in time'*. In addition, the products relationship with nature is very literal, more of an aesthetic feature that makes it '*look nice'* rather than taking the opportunity to explore the product's deeper relationship with nature. One student explains:

> *'I had a hard time combining the two ideas (living products and sustainability) while working on the project. Maybe my idea of 'living' holds some boundaries or maybe I need to warm up to the idea of sustainability some more. It probably provides us with an insight, but at this moment I am not sure how'*

FORWARD STRATEGIES
Systemic Change in Education
> *'What we need is a radical change in perspective within educational institutions to deal with the magnitude of the problem that we are currently facing at a planetary level'* O, Sullivan (cited in Sterling 2001 p.34)

The experience from this project brought to our attention the need for systemic change in education. Overall the student experience stretches understanding and ability and does in 2 cases clearly break free. Interestingly, and also quite by chance, the groupings above mirror the British undergraduate academic assessment system: 1st, 2:1/2:2 and 3rd Class Honours and the natural positioning of the work reflects the normal bell curve of degree achievement. This may support the supposition that this project is working within a mechanistic design education paradigm where students position themselves to known norms and that what is happening here is that the students are really just breaking free within a straight jacket. In this are we still, to paraphrase Einstein, *'trying to solve the problem from the same consciousness that created it?'* or are we just at the beginning of learning to, '*see the world anew?'* Can we expect students to really break free unless there is wider support from all forms of their education and also our society and its views of a holistic sustainable ecology? We can create projects such as these which in our opinion do have value, that's evident in the work and responses of the students, but unless they are situated within a wider supporting network then the risk is that their effect and value will be diminish over time when competing for attention with the other pressures of education and living. In a sense it's like leading horses to water and then just when they are starting to drink taking the water away.

A Manifesto

When setting out on this project we had anticipated that we would be reporting on a straight forward development, resulting in a clear philosophical direction which would smoothly move us towards a better way of designing sustainably. What we found, however, was that the journey was much more complex than this and that the barriers and inhibitions experienced by our students in taking action are, we believe, reflected in our society in general when approaching issues of sustainability. In this respect alone this has been an educational and valuable journey for us, and one that has opened up a wider avenue for further exploration. In this we would wish to encourage designers to:

• Develop a more holistic perspective embracing a wider design context when considering the relationship between product and environment.
• Revisit the boundary between real and perceived need in our overtly consumerist society
• Resist producing ever more products which fuel addictive desire for the sole purpose of profit and greed.

In this activity we have made some small steps, we have enabled students to experience a new way of thinking and doing and the results are clear – our students are asking *'why isn't this in everything we do?'* We in turn ask the same question but of a wider nature. In our work here we subscribe to the need to start anywhere, now and with what you already have. This is of value as, also, is the learning experience and confidence that comes from just doing that small thing. However, if we are to move to a more sustainable future, as it is clear to us that we must, we need to become more radical, courageous, outspoken and demanding not only of ourselves but also of those that we share our educational, cultural, business, economic, political and physical environment with; we must transform it. Above all we must take more action and action is a difficult thing. We cannot in the long term reside in the intellectual, if we do we will run the risk of falling short of a truly global sustainable society. If we stay within a mechanistic view of sustainability we may possibly convince ourselves that we can solve these issues solely by recycling, reuse and disassembly. One of our students puts it this way, *'I do not want to design just more gimmicky products for the eco-design handbook, I want it to mean more than this'.* For it to mean more we must pursue change vigorously and that is also difficult. But as Kosko reflects*, 'You cannot learn without changing, or change without learning'.* So with regard to sustainability we are only beginning to comprehend the full extent of what this all means and what we could creatively do with it.

'We have to be the change we want to see' - Gandhi

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