Changing the change
DESIGN VISIONS PROPOSALS AND TOOLS

Metadesign tools

Designing the seeds for shared processes of change

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Abstract

This paper introduces design tools and approaches developed to invite and support higher levels of synergy in collaborative practice. The tools that are introduced through three individual cases have been used to prompt a proactive and imaginative engagement with the sustainability imperative.

These individual cases challenge the very boundaries of design. The idea of 'metadesign' is adopted to advocate design that operates at systemic levels, that invites interdisciplinary collaborations and that seeds or sets up the conditions for emergent processes of change.

The cases represent the fashion industry at mass-market level in Sweden and the UK, the design, production and export of home furnishings in Indonesia, and an (AHRC) funded interdisciplinary design project in the UK entitled 'Benchmarking Synergy levels within Metadesign'.

1. Introduction

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The ultimate context of this paper is the sustainability imperative, and the potentially significant power to yield positive change that design and designers have. (See e.g. Keoleian and Menerey 1994; Thackara 2005)

Although it is gratifying that the sustainability discourse has finally reached the public domain and corporate agendas, the journey towards transcending our current collective conditioning to short-termism, immediate revenues, and a narrow context of decision-making, still lies ahead. The scope of the challenge facing humanity demands imaginative and systemic action and a creative and auspicious organisation of human potentials and natural resources. It necessitates change that not only engages with the substitution of materials and processes, but that addresses the speed and scale of a producer and consumer culture.

The sustainability imperative thus invites the designer into more strategic and systemic territories, and into a more complex set of collaborations; working with other disciplines, with users, and with representatives of wider human and environmental concerns, than what 'design as usual' implies. It suggests the need for a design that invites its participants to operate with fluidity at a wide range of cognitive levels, and to cross-fertilise ideas of different levels of complexity.

Meta-design, the design of design, offers a framework to make such a leap in mindsets and in practice. It can be described as 'a shared design endeavour aimed at sustaining emergence, evolution and adaptation', and 'open-ended and infinite interactivity capable of accommodating always-new variables'. (Giaccardi 2005)

By synergy we mean a condition where the whole is larger than the sum of its parts, where new qualities emerge that were not available from initial components before their *coming together.* The notion of synergy is therefore closely linked to emergence. This paper introduces design tools and theories that have been developed to invite and support higher levels of synergy in collaborative practice.

The tools share four aims:

- To bridge the gap between professional and personal value systems, for a more holistic and embodied engagement with the sustainability imperative;
- To set up conditions for shared learning experiences on several cognitive levels;
- To offer a framework for opportunity focused and imaginative explorations of sustainability;
- To invite engagement with more strategic and systemic designer roles.

The tools that we propose have been developed and piloted through several cases, three of which will be presented in this paper. The first case is situated in the fashion industry's mass-market segment and describes how a rich epistemological framework spurred an extended notion of design. (Tham 2008) The second case, a workshop with designers and manufacturers in Indonesia, shows how the bringing out of tacit knowledge and unspoken values can foster a new sense of community. (Tham and Jones 2008) Finally, the third case, an interdisciplinary workshop, at Pines Calyx in Kent, explores the use of story-telling within a broader framework of tools designed to guide participants through a process of team 'potential realisation' (Fairclough 2005). ('Benchmarking Synergy Levels within Metadesign' project 2007-2009 AHRC funded project at Goldsmiths, University of London.)

Lucky People Forecast, April – June, 2006

Context

Fashion, intrinsically thriving on change – and therefore, according to current modes of doing design, dependent upon a large material throughput. Fashion epitomises wider unsustainable tendencies in society such as the satisfying of needs

through surrogates, and a disassociation from the real sites and effects of production, the human and environmental conditions of making everyday artefacts. The fragmented perspective of the fashion system is carried through into the fashion company's structure. Work is highly specialised, which means that designers and buyers rarely work directly with environmental officers and sustainability not appreciated as a shared concern.

Yet, the fashion system also manifests qualities that appear compatible with a paradigm of sustainability, such as an acute in-tuneness with time and space, the sense of empowerment that can come from personal expression and a sense of belonging. At best, fashion celebrates a creativity that operates on rich tacit, visual and experiential levels.

This first case formed part of a PhD thesis, *Lucky People Forecast – a systemic futures perspective on fashion and sustainability.* (Tham 2008) The aim of the study introduced here was to harness positive qualities of the fashion system for more sustainable ends. More specifically the study sought to extend the vision of fashion, beyond product level, and beyond the immediate future. To this end, eight creative workshops with mixed fashion industry stakeholders in Sweden and the UK were set up featuring a range of activities introducing the proposition 'What if fashion and sustainability were compatible or even synergistic?"

The framework for the tools and approaches used in the workshops was threefold:

a) methods and processes that further sustainability literacy – e.g. on a practical level the lifecycle concept; and on an epistemological level the holistic engagement with learning that Action Oriented Research proposes. (See e.g. Heron and Reason 2001);
b) methods and processes in design (e.g. drawing, making, visual and emotive language) and in design research (e.g. the cultural probes approach, Gaver 2001);
c) methods and processes in Futures Studies, such as futures stories and scenario work (see e.g. Slaughter 2001), and a discourse celebrating multiple perspectives on futures (see e.g. Sardar 1999).

Process

Each of the workshops constituted a three-hour session, which took the participants from an initial mapping of fashion and sustainability respectively and together to a scenario task that generated visions for fashion in the context of sustainability in the year 2026.

For the purposes of this paper two of the tools that were developed for and explored in the study are introduced. The first was designed to facilitate group cohesion, and to situate sustainability in the individuals' personal ranges of experiences and skills. The second tool was employed as an evaluative framework of the change that the workshops spurred.

Exemplar tools

- The cultural prop tool
- The four-dimensional attitudinal change framework

The cultural prop tool was inspired by the cultural probes approach, some important properties of which are that of transcending the "understood social roles of researchers and researched…" and eliciting both informative and inspirational material. (Gaver 2001) The new tool uses everyday objects to spur personal narratives on a particular theme. The embryo of this approach was first developed in the Stored Wisdom project. (Sadowska and Tham 2005) The term *Cultural Prop* was coined in the 'Benchmarking Synergy Levels within Metadesign' project, 2007-2009.

In this specific case, the participants were asked to bring into the workshop two objects, representing their personal experience of fashion and sustainability respectively. At the beginning of the session each individual drew the objects of choice and made a list of associated keywords. In a show-and-tell session, drawings and keywords were shared in the group, and all keywords entered on post-it notes that were placed on a big piece of paper. Together the group organised the keywords into themes or 'islands', which were given descriptive names. The result was two maps, or snapshots, of the group's understanding of fashion and sustainability. These documents visualised, embodied and qualified the individuals coming together and their emergent new identity as a group. The maps proved valuable reference points as the group progressed to futures scenarios of fashion in the context of sustainability.

Evidence from the study suggests that the tool can operate on several levels:-

- It can provide a diagnostic framework to quickly get a sense of a group's interests and knowledge;
- It can serve a non-intrusive 'ice-breaker' that quickly draws out the distinctive nature, richness and diversity of a group;
- It can help to situate abstract concepts in an individual and group's personal experience and to integrate new information within an existing body of knowledge;
- It can offer a bridge between personal and professional value systems and identities, and facilitate the finding of common ground between people of diverse professional roles and experiences;
- The situated story-telling approach can facilitate the verbalization of tacit knowledge and foster a shared language across disciplines, professional roles and cultures.

The second tool, the four-dimensional attitudinal change framework is an evaluative tool developed in order to qualify the changes provoked by the intervention that the workshops constituted. By representing a sprawling rather than linear model of change, the tool addresses at least a degree of the complexity that sustainability entails.

The four dimensions of the framework are:-

- Brand/perception - The subjective experience of the compatibility of fashion and sustainability, on a continuum from dichotomy to opportunity.

- Knowledge and awareness - The level of knowledge and awareness of sustainability in the fashion industry context, on a continuum from single issue focus to lifecycle perspective.

- Relationships - The location of personal and professional self in the realm of sustainability, and engagement with the intricate relationships that sustainability implies, on a continuum from partial to holistic understanding.

- Action and activism - The perceived power, and manifested inclination to act and affect change, on a continuum from passive reliance on other stakeholders to personal action and activism.

The four dimensions were translated into axes on a visual map. When an individual or group's statements (in this case data generated through semi-structured interviews) as regards engagement with sustainability are indicated on the map, it is possible to elicit a shape of the particular attitudinal profile. The resulting shape is a

blueprint of what we can draw out of this individual or group's metaphorical walk around the particular territory. The shapes can be overlaid with other shapes and comparisons made.

In the figure below the data from all individuals, across the eight workshops, has been collated and formatted into profiles representing the engagement with sustainability before and after the intervention of the workshop. (See Figure. 1) While the profile has expanded in all dimensions, this is particularly pronounced in the dimension that represents *agency*. The least change is evidenced in the factual dimension. While an extensive account of the study results is outside the scope of this paper, a comparison of the profiles shows that the intervention fostered a more rounded, as opposed to deeper engagement with sustainability. The comparison between all participants' before and after profiles also showed that an increased experience of *agency* – however small – was the singular most important factor in achieving a high general change score. Such insights can inform pedagogical approaches in the implementation of more sustainable strategies with students or organisations.

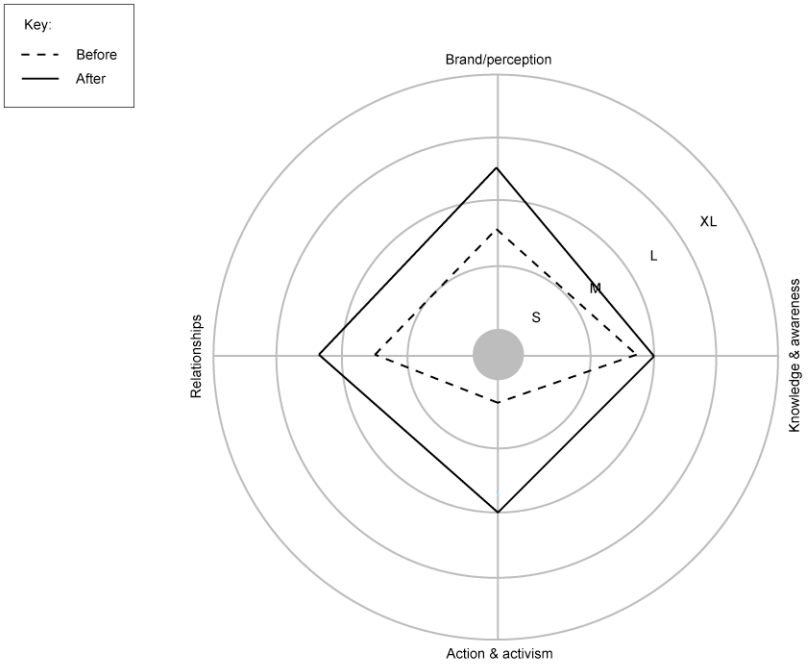

Figure 1. Distribution of responses across the evaluative framework

Seeds of Change

Fashion and sustainability are often perceived as anathema, as while the former popularly implies speed, egocentricity, and wastefulness, the latter implies a slower pace, resource-efficiency and even altruism. In the case introduced above, from the PhD thesis *Lucky People Forecast*, the researcher sought to set up conditions for a more nuanced fashion and sustainability discourse, focusing on opportunities instead of dichotomies. The series of creative workshops with mixed stakeholders groups from the fashion industry served a forum for the proposition "what if fashion and sustainability were compatible or even synergistic?"

The results of the study showed that participants had indeed been able to transcend stereotypes of both fashion and sustainability, and the perception of designer role as mainly operational, and product focused. The approaches also fostered a sense of community in an otherwise highly competitive and secretive arena, and brought a shared sense of purpose and agency to the participants. The

study also illustrated that research can constitute activism, as the message of the study spread far beyond the remits of the workshops.

2. Sustainable Indonesia

Context

'Given that most of the poor are heavily dependent on eco-systems for maintaining sustainable livelihoods, strengthened environmental management is imperative for poverty reduction.' (UN Development Programme, Country Programme for Indonesia, 2006-2010)

The sustainable imperative in Indonesia has particular poignancy, as anticipated changes in legislation will jeopardise restrictions on natural resources, thus challenging the unique basis and competitive advantage of Indonesian crafts production. Tackling problems at the level of a whole country is not usually the role of designers but for sustainability to work in countries that are rapidly developing, then designers need to be brought in to bring about a step change in negative trends that threaten the country's self-sufficiency.

During a three-day workshop with designers and manufacturers in Yogyakarta, Indonesia, the opportunities for more sustainable practices were explored, building upon the participants' own experiences and understanding of both the challenges they faced and their potential solutions.

The workshop was co-funded by the British Council and co-funded and organised by Senada, a non-governmental organisation run by US AID and hosted by Warwick Purser, a creative entrepreneur and founder of Out of Asia, Indonesia's largest exporter of handcrafted goods. The workshop brought together Indonesian manufactures, academics; local handcrafts people, designers, politicians and exporters, all connected to the home furnishings industry. The workshop was, written and facilitated by Mathilda Tham, Hannah Jones from the Department of Design, Goldsmiths, University of London.

This was the first time to bring together different stakeholders in the home furnishings industry into the same room, working together, discussing their work and how sustainability could improve the marketability of their products and motivate the Indonesian design community.

Process

The purpose of this intensive three-day workshop was to present a general background to sustainability and introduce examples of best practice from the design culture in the UK and Europe. The workshops began by grouping the participants in teams and getting each team to produce a shared definition of both sustainability and design. This exercise helped to create a common ground and participants began to realise that they had shared concerns and aspirations for their work. The participants also took part in future scenario mapping in teams and individually interrogated their individual practice with a 'life cycle' based evaluation, helping them to rework more sustainable solutions. Although the participants already had some knowledge of sustainability, the process experienced at the workshop enabled them to actively apply sustainable principles to they own work, whilst generating a collective understanding of what qualities and resources where available for sustainable design and what qualities and resources were need to create more sustainable solutions.

Exemplar Tool

- Parameters for Sustainability Potential Tool

This tool has been chosen from the selection of tools and approaches employed in the workshops to illustrate the awareness of sustainability generated at

the level of the whole group. The design thinker John Thackara believes 'We need to design macroscopes, as well as microscopes, to help us to understand where things come from and why'. (Thackara c2005, 6) The Parameters for sustainability potential is a 'macroscopic tool' aimed to harness a collective awareness and evoke a sense of ownership of a culture of sustainability for this community context.

The 'resistance to' and 'support for' sustainability, as pinpointed by the tool are as follows:-

Resistance	**Support**
Communications/ marketing	New market demand
Resource management - materials	Trend (in the media)
Resource management – human	Buyers and users understanding
Cost of eco-production	Education and training
Price of goods	Indigenous knowledge
Access and supply of eco-processes (e.g. finishes for products)	More value and more profit
Lack of education	Natural materials and resources
Lack of political will	The fear of nature degradation
Constraint of economy	Creativity
Individual will	Technology
	Individual will
	Spirituality

To elicit a set of qualities and resources vital for this community's sustainable design practice, the group was first asked to shout out key examples of resistance to sustainability that they experienced in their context and then key examples of support. These keywords were listed on a large piece of paper at the front of the room. Next, the facilitators asked the group to prioritise the key indicators that had been identified. This was done by drawing a line underneath each word and asking the group to bang their pencils against their tables until they felt like stopping. The longest lines were the highest priorities on the list. This was a highly spirited exercise! The participants shared an agreement for a strong need for management of natural resources and their design community and more education in sustainable practices. Most positively the group celebrated their creative and spiritual interpretation of sustainability and an indigenous knowledge of working with materials that needs to be re-valued and better communicated to their markets.

Seeds of Change

Here sustainability came to serve as a strange attractor drawing together a greater empathy between stakeholders to create a new sense of community. Not only did the participants emerge from the workshop with stronger and more focused visions of the direction of their future practice, but also a new sense of pride and a clearer way of communicating those practices that were already environmentally and ethically sound.

The participants commented after the workshop that this was the first time that people were working together as a community without feeling like they were looking over each other's shoulders. An aspect of the handcraft industry approach is copying popular trends in the west to successfully export designs and so there is a lot of secrecy to secure a competitive edge. The notion of a creative community that emerged moves away from this aspect enabling participants to take ownership over their own trends, taking pride in design.

3. Metadesign Tools at Pines Calyx

The Context

The ‘Metadesign Tools at Pines Calyx’ case is part of a three-year, government funded (AHRC) research project entitled ‘Benchmarking Synergy levels within Metadesign’, run from the Department of Design at Goldsmiths, University of London. Over the course of the project we have developed over eighty tools for nurturing, fostering, and harnessing synergy in collaborative practice. The purpose of this two-day workshop was to provide a test bed to evaluate some of our current tools and approaches.

We have defined Metadesign as a comprehensive, inclusive, non-hierarchical, or ‘holarchic’ (Koestler c1964) design process that also designs itself. This approach transcends the limitations of existing design specialisms by working at a systemic level. This means thinking more deeply about designing for every day life than would be possible in a commercial context. Metadesign works towards attuning political, ecological, economical, socio-cultural, sensual and emotional patterns of living, to create less fragmented and more sustainable cities, services, organisations, etc. This is a highly complex and ambitious task.

Our research aims to go beyond current notions of 'sustainability' by aiming to achieve the more positive idea of a 'synergy-of-synergies'. (Buckminster Fuller 1975) This requires that designers find new ways to work together more proactively to create more affirmative design solutions. The design theorist John Chris Jones, identified at an early stage that the design field has ‘become less concerned with the product itself’ and ‘more concerned with the changes that manufacturers, distributors, users, and society as a whole, are expected to make in order to adapt to, and benefit from, the new design.’ (Jones 1970, 6) More recently, John Chris Jones has developed this thinking into the notion of a ‘creative democracy’ where design becomes a bottom up, co-authored and participative process. (http://www.softopia.demon.co.uk/2.2/creative_democracy.html) This understanding of the evolution of design also shares its collaborative qualities with the emerging culture of metadesign and is at the heart of the research conducted at the metadesign tools workshop.

The workshop was staged at Pines Calyx, in Kent, the UK’s most sustainable conference and events venue. The participants were given ‘currency and exchange’ as a loose theme to catalyse their design activities. Pines Calyx provided an inspirational local context and reference point for the design teams.

The Process

Twenty-five participants attended the workshop. We employed nine members of the metadesign research team to assume the role of facilitators, scribes and raconteurs. We invited six special advisors from the fields of anthropology and money, design history and philosophy, creative arts, ecology and business and environmental strategy. Finally, we enlisted the expertise of ten designers, drawn from five different design disciplines and cast them individually for one of two metadesign teams.

The metadesign teams were engaged in parallel workshop sessions over the course of the two days. The workshop sessions utilized seven metadesign tools, one of which was the framework of the workshop itself. There were also workshop sessions held by the special advisors to provide vital information about, for example, currency and ecological models used by business. The workshop tools and methods were intended to integrate different specialist design knowledge at various levels (e.g. speculative, intuitive, discursive, practical, etc.). At the end of the first day, the two design groups started working on creating a metadesign brief or designing seeds

for the basis of practical designs, for example, re-thinking the idea of currency in a playful, or radical way, these 'seeds' were developed further on day two and presented at the end of the workshop to the whole group for discussion.

Exemplar Tool

- The four-fold integrative framework (Wood, Nieuwenhuijze, Jones, et al 2008)
- The five-levels of processing storytelling tool (Tham, Lockheart, et al 2008)

To highlight the process of change that took place over the course of the workshop it is helpful to introduce the tool employed to provide an architecture for the workshop and one of the tools deployed from within this framework.

The four-fold integrative framework was developed to deploy the other six metadesign tools at opportune moments in the collaborative process. The framework guides the design participants from a 'me' perspective on their involvement in the team to a 'we' perspective on the whole team's involvement in the process, thus, strengthening the team's inter-personal dynamics. The framework also arranges the tools so that they foster and harness both convergent and divergent design thinking to optimise creative synergies in the team's solution finding activities.

The four-fold integrative framework nurtures four different levels of awareness:-

Phase one	Awareness at the level of the self, the designer (my personal involvement, I present MY self, what I am bringing to the table)
Phase two	Awareness at the relational level, 'being with' (reflection on my personal view, 'sympoesis' or creating with the other)
Phase three	Awareness at the level of the team (Each individual identifies with the team as a whole, a team 'potential realisation' (Fairclough, 2005) occurs)
Phase four	Awareness at the level of the wider context (the team as a whole identifies with its wider context/s, potential realisation becomes transferable)

This tool was developed in collaboration with Dr. Otto van Nieuwenhuijze, an expert in living systems and an external consultant for the metadesign project. Dr. van Nieuwenhuijze calls for designers to develop more 'integrative modes of design thinking', believing that when designers act as representatives of a team they need to become 'transpersonal', embodying the values, dreams and concerns of the other members of the team to communicate with external bodies. Arguably, the four-fold integrative framework for metadesigning encourages a more self-reflexive, empathetic, context dependent, inclusive and highly collaborative process than more conventional fragmented and hierarchical design processes.

The second tool to be presented is the five-levels of processing storytelling tool. This tool was deployed in phase three of the four-fold integrative framework. The tool is aimed at enabling individuals to identify with the functioning team as a whole to encourage synergies to emerge. The team participants were asked to recount their experience of a guided walk around the Pines Calyx grounds.

At each level of storytelling, each of the five participants took their turn to speak, whilst simultaneously drawing on a big piece of paper at the centre of the table. Each of the five levels of processing required a different colour pen or pencil to code a chronological, as well as qualitative trace of the team's discussion.

The five levels of processing storytelling tool operates as follows:-

Level 1. The sensual – for 7 minutes
Prompt: What did you see, what did you smell, what did it feel like, what were the sounds?

Level 2. The factual – for 7 minutes
Prompt: What did you learn, what facts did you find interesting?

Level 3. The systemic – for 7 minutes
Prompt: How did what you learnt connect to the outside world, to other contexts, what are the relations between the talks on the guided walk?

Level 4. The futures – what ifs – for 7 minutes
Prompt: How might we build on these sensations, facts and connections, projecting 10 years ahead or more?

Level 5. The synthesis – for 7 minutes
Prompt: How can we summarise the discussion?
Continue drawing. Everybody has to take part.

People at this phase would hopefully fully identify themselves and the others as members of their team. They would also be able to objectively listen to the others whilst being a part of the group. As the session progressed the accounts shifted from the personal to the interpersonal and shared, and a map emerged that encompassed both individual observations, and a new identity of the experience that was co-owned by all participants of the group. (See Figure.2) As the workshop subsequently continued in a more task-oriented mode – with the design of seeds for alternative means of exchange – the map formed a complex fabric to refer to.

Figure 2. Visual example from the story-telling activity, team one, 2008

The Seeds of Change

To really create a step change in the way people live we need to radically rethink the way people work together; to encourage more sustainable possibilities in the everyday, will undoubtedly require pushing collaborative practice beyond ‘interdisciplinarity’ to a new culture of ‘metadesigning’. In the near future, designers might even be required to set aside their specialist identities to enter into co-authored processes where their role will be as emergent a solution as the actual process itself.

At Pines Calyx the Metadesign tools tested helped to generate a 'seeding process' (Ascott 1995, cited in Giaccardi 2005), marking out a territory to be explored by each of the design teams. The four-fold integrative framework guided the journey from individual contributions to collective endeavors, enabling the ppotential realisation of the whole group.

One month after the workshop, each of the ten design participants were interviewed for 15 minutes on the telephone by an external interviewer. In relation to the overall process that the teams went through, one participant commented how

'…the process and the people in terms of forming the group and how we worked together, were phenomenal… you go from creative to rational very quickly, I don't think we ever got to fully rational in this case, it would be the willingness to live with uncertainty and to enjoy the journey, rather than thinking just about the destination and I think that was fantastically empowering.'

In the case of this workshop 'metadesign allows a sort of creative and unplanned opportunism' (Wood 2000) to take place within the two design teams. Another of the workshop's participants when asked about how they experienced moments of synergy replied

'I think the moments when I understood more about what my role was and how I could facilitate the group further.'

This indicates that the roles assumed by the team participants emerged as the team experienced moments of synergy.

4. Conclusions

The Ring of Fire model below (See Figure. 3) constitutes a tentative framework for evaluating auspicious and shared learning conditions. It was developed for the 'Benchmarking Synergy Levels within Meta-Design' project and builds upon the study of synergistic moments and processes in the respective cases and beyond. Here the tools form one axis of several 'resources' that we can – to a degree – control or at least plan. Such resources also include casting – the setting up of a group with appropriate dynamics, and facilitation. The other category of axes represents such qualities that are beyond our control, but that we can seek to foster and nurture by fine-tuning the application of resources. All axes constitute continuums between two states, the middle of which signifies the ultimate condition for synergy to take place – The Ring of Fire.

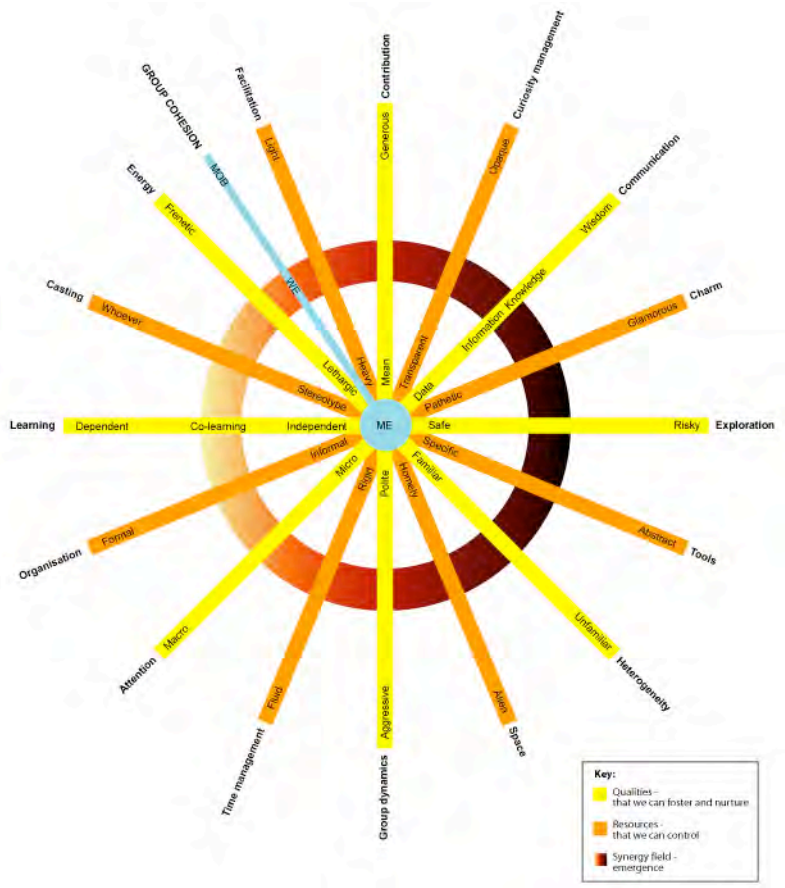

Figure 3. Ring of fire – framework for the evaluation of shared and auspicious learning conditions.

The cases introduced in this paper represent three distinctly different contexts of shared learning. While in the first case the researcher brought into a group of fashion industry stakeholders a distinct agenda, to situate fashion in a sustainability context, in the second case, the workshop in Indonesia, the participants had actively asked for help to address the sustainability imperative. Finally, both the participant base and the aims of the third case were broader, as it served a test bed for design as seeding, or meta-design.

Yet, in all three cases the shared and emergent learning process was in focus, as the expanded notion of design and the designer role, and the auspicious cross-fertilisation of personal and professional experiences and value systems, factual knowing and imagination, and explicit and tacit skills. The tools and the approaches that have been introduced here all seek to foster conditions for such learning, and learning that is contextual. To this end, the tools and approaches that we propose are *partial*; only in situ, with a particular group and a particular focus will they be complete, wherefore the process and the outcomes of the cases have both shared and different identities.

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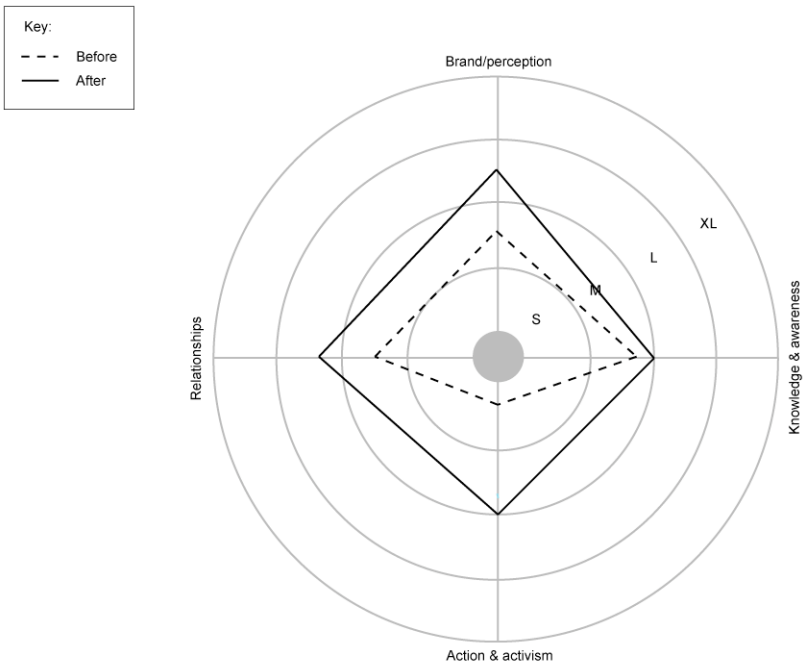

Figure 1. Distribution of responses across the evaluative framework

Figure 2. Visual example from the story-telling activity, team one, 2008

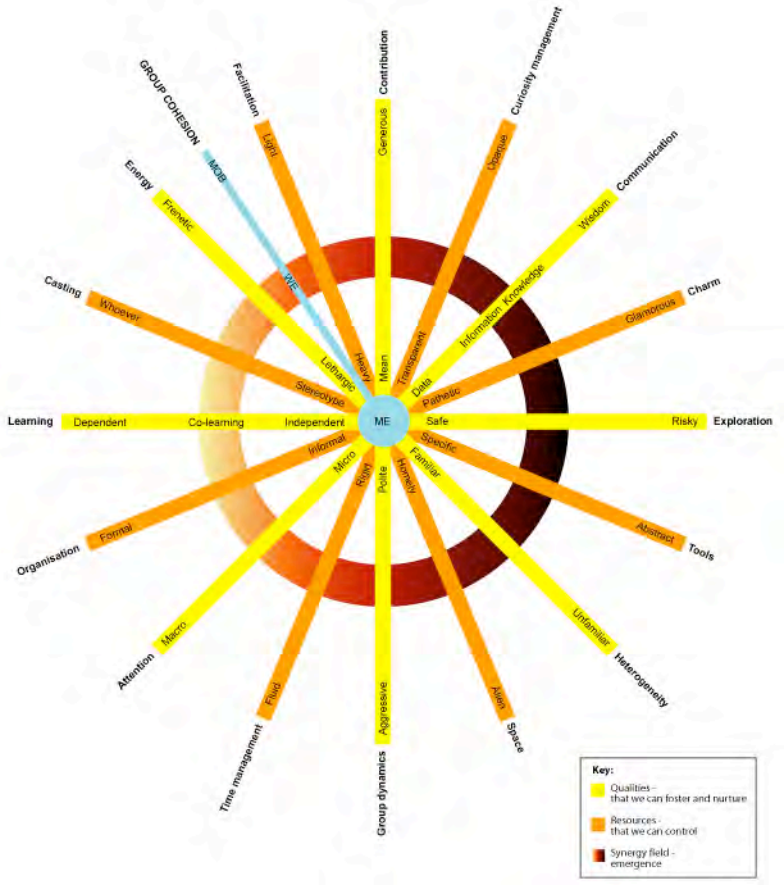

Figure 3. Ring of fire – framework for the evaluation of shared and auspicious learning conditions.