Kindness as a Collective Wish to
Co-Design with Communities using Physical Installation

Priscilla Chueng-Nainby, University of Edinburgh

Xu Lin, Eindhoven University of Technology

Jun Hu, Eindhoven University of Technology

Abstract

This paper reports a co-design intervention experimented with 'kindness' as a community value for social innovation during Dutch Design Week 2014. We discuss the insights gathered from the practice-based research aimed to envision and enact community's creative imagery as a shared space for co-creation. The co-design intervention visualized, enacted, connected and structured community's ideas by projecting "kindness" as an idealistic social value to inspire the community's collective wishes. The activity was instrumented by Collective Imagery framework supported by two co-design tools: Collective Imagery Weave as a physical installation using tags and threads to envision creative complexity; and Mind Weave Theatre as drama sketches to enact design solutions through narrative reasoning. Collective Imagery Weave was presented in a public space and continued to engage the community to co-design for social innovation. The physical installation's aesthetic quality evolves in its static form, the interactive process of being constructed, as well as stories resulted from this intervention, which demonstrated a structuring process possible to innovate from the abstract concept of "kindness" as the community's ideal collective wish into concrete design solutions.

Keywords

co-design; social Innovation; public Installation; collective imagery;

Envisioning Community's Collective Wishes

Design to encourage positive change for society such as community wellbeing is commonly done through large-scale activities, such as policy-making and urban planning, which design researchers often faces challenges to collaborate directly with communities (Fuad-Luke, 2013; Manzini, 2013). Difficulties lies in devising design tools to collaboratively tackling cross-disciplinary and cross-cultural social problems as often these design problems are not immediately evident and often undefined in the social contexts. In order to consolidate individual mindsets as a social collective, the participatory method designed requires a visualization of diversed cultures, values or economics of the communities.

Conventionally, design starts with a design context or problem, based on which designers can define specific user groups, stakeholders, challenges and other factors in seeking design solutions. In the context of design for social problem, designers often find themselves in a typical wicked problem's paradox of "we cannot think about solutions until we understand the problem" and "we cannot understand a problem until we think about solutions" (Wendt, 2015). While Kees Dorst (2001) identified this as the co-evolution of problem and solution, recent design strategy involves service design thinking to tackle complexity and implicitness of design context or problem brought by these difficulties (Meroni & Sangiorgi, 2011). For some, intuitive tools are employed to help communities to

achieve societal transformation by connecting abstract issues to concrete solutions (Fulton Suri, 2008).

"Kindness" as a Collective Wish

Aligning with the concept of collective dream in the field of co-design (E. B.-N. Sanders & Stappers, 2008; L. Sanders & Stappers, 2014), we describe a co-design engagement to enact and envision community's collective wishes to allow a common space to facilitate collective needs without focusing on individual differences in mindsets. In particular, we proposed that collective wishes as a projection of abstract design goals, such as human feelings or common values shared by communities. In this exploration, we shy away from the debate of epistemological tradition of designing as problem solving (Dorst, 1997), instead we experimented with the notion of "kindness" as a projected concept which abstracts ethical design value, to facilitate emotional and empathetic responses within the community that can be multi-interpretive. To do so, we carried out a co-design intervention to envision and enact community's "collective kindness". We asked to what extend the co-design framework and tangible tools can envision the abstract concept of 'kindness' and devise communities' collective wishes, for social innovation.

Co-Design with Collective Imagery

In order to visualize the abstract concept with communities, we adopted first author's work on the "Collective Imagery framework" to guide the creative activity of co-design, mediating through a physical installation as a co-design tool which envisions and enacts social innovation with the community who is not trained to be creative. (P. Chueng-Nainby & M. Gong, 2013) The Collective Imagery is a framework for co-design originated from an aim to overcome individuality in a creative process that potentially hinders design collaboration. It has evolved from practice-based research which extends creative cognitive approach to a collaborative settings, in particularly design space is collectively mediate with the concept of preinventive structure of creative imagery, which act as divergent insights that drive creativity (Finke, 1995). And the collaborative activity employed in the framework works through the externalization of individual creative imagery in sharing with others, to achieve collective creativity.

'Collective imagery' is a conceptual structure of design elements that mediated communities' shared imagination space, in which connections of ideas are made possible through spatial activities of deconstruction, construction and reconstruction (Chueng-Nainby, 2014a). Collective Imagery as co-design framework has been experimented at various cross-disciplinary products, systems, and service designs for healthcare, tourism, rural development, for both private and public sectors in the world (Chueng-Nainby, 2014a, 2014b, 2015; Chueng-Nainby, Fassi, & Xiao, 2014; P. Chueng-Nainby & M. Gong, 2013; P. Chueng-Nainby & M. S. Gong, 2013; Mulder-Nijkamp & Chueng-Nainby, 2015; Preez, Cilliers, Chueng-Nainby, & Miettinen, 2015).

The framework of Collective imagery was experimented by carry out co-design interventions as a collective activity of conceptual construction using mostly tangible and physical materials as props to engage communities to ideate collectively and to connect their ideas. The flow of the engagement has no fixed process, instead a situationist approach centred around allowing the structural connectedness of ideas to give rise to the emergence of creative concept through an activity of 'deconstruction', 'construction' or 'reconstruction', in a hermeneutical circle. The connections are forged either through association or narrative reasoning. Participants collaboratively generate design elements in keywords or drawings, and connecting them into narratives, using threads or strings, and sticks. Participants then construct these narratives into a physical structure that forms a common creative space for conceptual understanding of their collective wishes. Various tools have been created and

experimented with to facilitate community's to co-design through the construction of collective imagery. For example, wool thread as connections; paper tags, printed photos as element; bamboo sticks to link narratives; cardboard boxes as three-dimensional narrative space (Chueng-Nainby, 2015). Each tools are combined and used according to needs arise for the work.

A Mind Weave Theatre Installation for Collective Kindness

This paper reports a co-design engagement in workshop format, which we experimented with "kindness" as a concept to facilitate collective wishes, the framework works to engage local communities to collectively envision and enact the transformative possibilities in their daily lives. The workshop was commissioned for the Dutch Design Week 2014 (DDW 2014), titled "Collective Kindness: A Mind Weave Theatre Workshop Installation". Mind Weave Theatre is the co-design tool based on the Collective Imagery framework using tags and threads to envision creative complexity, and improvised theatre as narrative-forming activity (Chueng-Nainby, 2014b, 2015; Chueng-Nainby et al., 2014; P. Chueng-Nainby & M. S. Gong, 2013; Mulder-Nijkamp & Chueng-Nainby, 2015; Preez et al., 2015).

The process of intervention was designed by the first author and implemented in collaboration with the second and third authors. The intervention was held in an open space at the lobby of the main building of Eindhoven University of Technology, which welcomed DDW 2014 participants who signed up for the workshop through a social media page. The diverse background of participants, such as industrial design, information management and nursery, made the activity into an interdisciplinary cooperation. The four hours intervention was divided loosely into two creative sessions followed by a feedback discussion session. Each session consisted of iterative and occasionally parallel activities of deconstruction, construction and reconstruction (Fig. 1), instrumented by a physical installation, which externalized individual creative imagery to share with others.

| (a) Deconstruction | (b) Construction | (c) Reconstruction |
| Write down keywords | Build narrative sticks | Connect stories into structures |

Fig 1. Process of deconstruction, construction and reconstruction

First session started with a generative activity to explore the concept of "kindness" in relation to contexts (deconstruction): 1) general concept of kindness; 2) kindness in the world; 3) kindness in the city; and 4) kindness in yourself (Fig. 2 and Fig. 3). Participant populated their tables with as many keywords as they could, using texts and doodles on colourful tags. When their tables were saturated or when participants stopped generating, we intervened by rotating participants to other tables. Working on others' tables inspired participants to generate more design elements, which resulted a larger collection of design elements in words and visuals than the first round, ready for construction in next session.

During construction participants began to work in groups of three or four to construct the populated tags into narratives which represented their concept of "kindness". They were free to select tags from any of the tables. Each narrative was made of four or five tags, connected and displayed on a bamboo stick - namely narrative stick (Fig. 4a). Each participant was asked to construct at least two narrative sticks, and when done, to share their stories to each other firstly within their group. They were later to move around spreading their stories to as many participants as possible to discover any similarities and connections in their narratives to combine them into stories. Stories were constructed by linking related narrative sticks with rubber bands into a collective structure (Fig. 4b). Each group selected these stories in the form of an interconnected structure to perform as a two minutes long drama sketch by acting out the stories in front of an audience of other participants and passers-by (Fig. 4c).

Fig 2. Materials for the intervention   Fig 3. Colourful tags for "Kindness"

(a) Create narrative sticks   (b) Co-construct the installation   (c) Act out the stories
                                    by connecting narratives

Fig 4. Co-construction of narrative structures and performative storytelling

Drama sketch is a performative form of story co-constructed by acting out stories on the connected narrative sticks, often done intuitively and embodiedly while interacting with the physical installation. The process of interpreting and acting allowed participants to empathetically synthesize social design solutions through narrative reasoning in the form of drama sketches, in which their roles were users within a context or scenario. By describing their interactions with the potential products and services, conceptual solutions were holistically presented in plausible stories easily understood by the audience. The stories

inspired by the generated keywords and drawings, can be considered as a collective imagery of "kindness", gradually enriched with focus and details over two performances of drama sketches.

Second session resembled a similar process of activities as the first session. We zoomed out and in on the concept so the stories would become more realistic than the conceptual ones resulted from the first session, though we didn't insist on continuity from previous stories. An interesting phenomenon observed during this session was that the participants tried to improve the connected structures by visually redesigning or restyling the structures to be related to their design solutions. Props were added to the structures in order to change the shapes (Fig 5). Some groups even used these structures as props to help convey their stories during the drama performance.

The feedback session was mainly a discussion on participants' understandings and considerations on the usage of the methods and the future possibilities in improvement and application. At the end of the intervention, all stories, solutions and feedbacks were grouped and connected into small structures, which finally made up a collective installation as a physical and opened-up representative of the co-design process (Fig 6 and Fig 7).
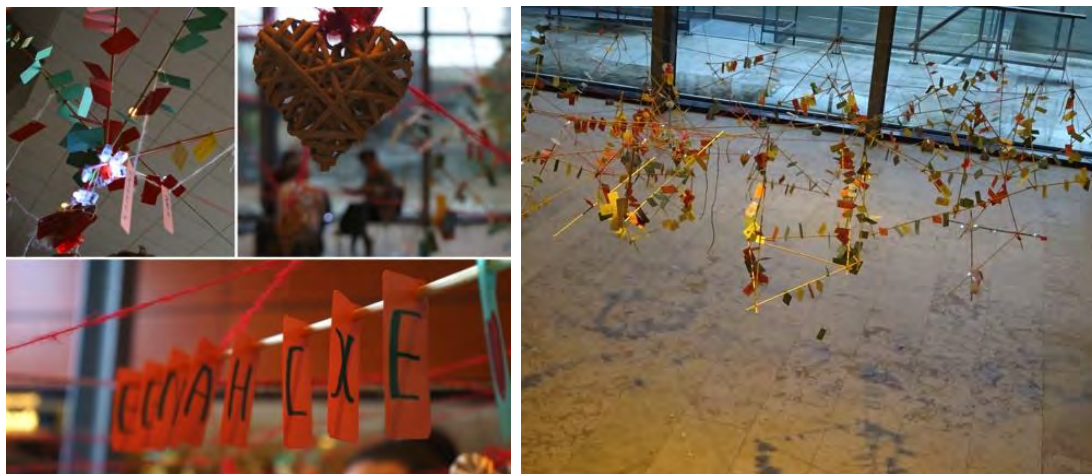

Fig 5. Structures mixed with props   Fig 6. Physical style of the collective installation
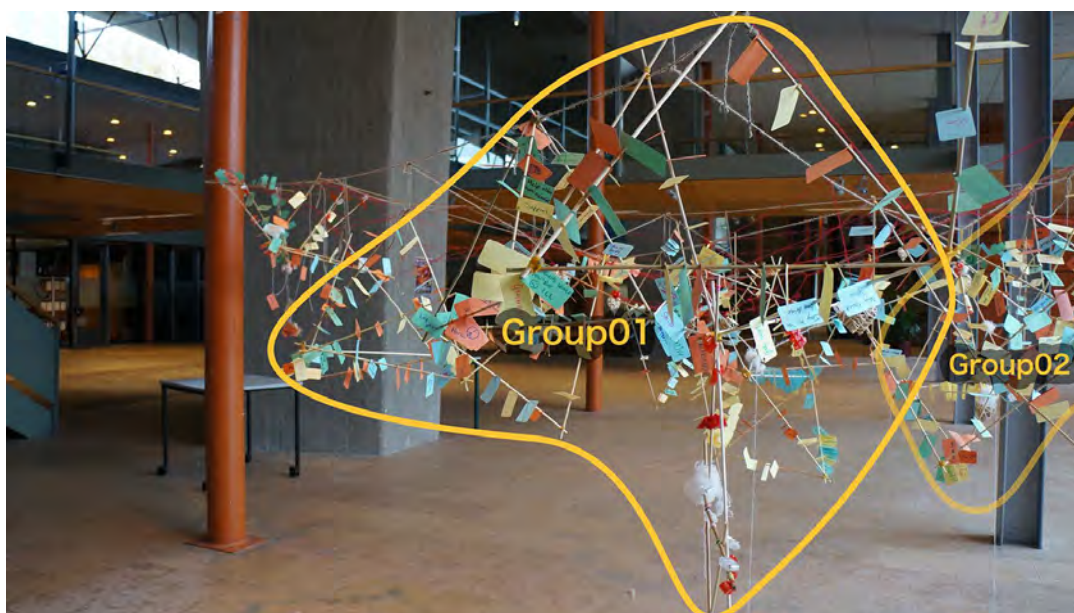

Fig 7. Grouped structures of narrative sticks

The collective installation, constructed with connected bamboo sticks and colourful keyword tags, not only showed the final results of the co-design intervention, but also put the design process in display. Colours suggested the 4 contexts of "kindness" (Fig 3) where the keywords came from, the sticks showed how they were connected into narratives, and the grouped structures (Fig 7) presented which and how stories were related to each other. The installation indicated aesthetic qualities both in its hierarchical structure and in its dynamic process of being constructed.

The inviting form (Fig 6) of the physical installation shaped through the co-construction process allowed visitors a space to walk in and out, reading the narratives, even adding new tags or sticks. It became a social research instrument and continued to gather input from other people after the event for two months. The collective installation, as a result of this co-design process, became a visual externalization of the community's collective understanding on "kindness". The presence and the constructing process of the installation together formed the basis of design for social innovation in this intervention.

Intuitive co-construction with imagery in embodiment

Concept exploration was guided step-by-step for participants to get used to the intuitive approach. They were given very limited time to perform each step to prevent thinking too much on the their thoughts which come into their minds. The process is resemblance of brainstorming as such that the participants would not be able to think too much on the large amount of elements coming into their minds. They had to write down all the things coming out as imagery as quickly as possible, which means that most of the elements were created intuitively based on participants' life experiences and knowledge.

The embodied cooperation for construction supported the participants to dig deeply for potentials. The interactive process of ideation, involved the participants not only in thinking, but also in doing, is especially valuable for interaction design: "interaction, is ungraspable in more than one way. It only 'exists' when it happens." (Overbeeke, 2007). Designing for interaction shall happen in the process of interacting with the forming concept, and the aesthetics in interaction shall be experienced and possibly, 'graspable'. This embodied cooperation process together with its tangible instruments, provides a platform for discovering, experiencing and shaping the aesthetics in interaction.

When connecting narrative sticks into grouped structures, participants' thinking reached a shift by linking the structures physically. The complex shapes and the mass of contents led to a lack of time for people to make a so-called perfect choice after browsing all the elements. Thus, the participants had to think of as many alternative options as possible, which made it into a creative space for more possibilities. The narrative sticks not only displayed the keywords and different understandings of people on "kindness", but also mediated physical affordances (Overbeeke, 2007) to facilitate the participants to find new relationships between elements when they browsed the content and built the structure. When people walked in and out through the structures, the features that could be seen kept changing with their perspectives and moves, and the affordance thus changed. They thought and connected things rationally as well as intuitively, using forms and shapes to express their considerations on the relationship between narratives, which finally led to co-constructed structures both literally meaningful and physically harmonious, representing as an interconnected embodiment of ideation.

Empower creativity through co-construction

The co-constructed installation represented a shared understanding and a collective narrative about "kindness". As the construction work could not be completed individually, collaboration happened throughout the whole design intervention, including the process of

deconstruction, construction and reconstruction. By co-constructing the installation, the general and abstract concept was deconstructed into detailed elements, between which people could find or create concrete connections easily. When generating keywords as design elements, the participants switched between different tables to get inspired from others' ideas, which finally helped them to continuously come up with new keywords and visuals. Individually created key elements and stories were joined into conceptual structures.

Narratives based on the structures were made into stories and dramas through the cooperation. The collaborative nature of this co-constructing process drove participants to explore the contexts and possibilities more creatively through discussing with and learning from each other, instead of isolated thinking in their own minds. When they walked around to browse and search for more appropriate keywords, the participants kept finding new relationships between tags and narratives through others' comments. The performative story co-construction also allowed participants who generated the keywords to experience the stories developed by the others, and get inspired by the new understanding and the enriched contexts interpreted in the performance.

Embody solutions from life experience through story co-construction

"Collaborative storytelling is a research approach, which facilitates communicating, interpreting and giving meaning to people's lived experiences" (Bishop, 1999). Commonly, people gained their subjective and objective thoughts and findings from deeply looking into their lived experience (Bengtsson, 2013). Collaborative stories allow people to select, recollect and reflect on stories according to their own understandings from life and culture, instead of being defined by researchers after study (Bishop, 1999).

During the intervention, this method was employed to lower the threshold of design and help deal with the complexity and abstractness of the theme. Since not all the participants knew service design methods or held the design background, making stories became an acceptable and adoptable approach to help them define design factors for their solutions before they were aware of it. The participants considered important factors when telling their stories to others, including who were the hero(ine)s, what happened and how it was developed, which props were used and how they were used, who could be considered as target users and in which contexts and scenarios, with which products and related interaction. The performative way to act out the stories helped them embody the imagined situation and refine the concept intuitively in this structuring process. During the telling and acting process, the general concepts gradually became concrete, so was design focuses and solutions.

Engaging with physical affordance

The collective installation was one of the most important deliverables of this co-design intervention, providing us a new perspective to explore the impact of this design framework and its tangible instruments. An installation is usually considered as a static or interactive structure, completely designed and prototyped before it is placed or implemented into a public space, for public show, or for engaging the public in social interaction (Hu, Frens, Funk, Wang, & Zhang, 2014; Hu, Funk, Zhang, & Wang, 2014). However, the installation introduced in this paper, presented as a result of the intervention, was more than a last pose of the co-design practice. It was co-constructed utilizing Collective Imagery framework which facilitated the process of design activity and provided possibilities to involve new elements after the events.

The presented structure of the installation was a physical record of its design process and a collective understanding of "kindness", visualizing what local people were concerned about. The constructing process of the installation could be treated as an embodied approach for

people to explore concepts, as well as a physical affordance for people to create new connections beyond rational thinking when they walked through the installation to browse the keywords. Based on relativity of the content, the participants were also inspired by its layouts and structures, and created ideas intuitively for an expectation of beauty or harmony in shape and structure.

The approach of using bamboo sticks to link paper tags contributed to the preservation of details in each step, so that people could to some extent read and understand the narratives, as well as analyze how they were connected together. The installation told people the design thinking process from the beginning, instead of only showing the final answers found by the participants. In addition, the opened-up structure of the installation resulted from the way it was constructed, as well as the colourful appearance and natural feelings gained from its materials – resemblance of traditional architectures or installations such as those wishing tree with people's wishes on display for blessing. It was inviting for passers-by to get closer, reading and touching it. It was possible for them to go through the installation, browse the keywords and drawings on the tags, and even change some parts of the structures. The openness of the installation showed its potential of attracting extra attention and participation as a developing project to evolve even after the intervention.

Discussion on future work

This paper introduced a co-design method with tangible tools for people to deal with the abstractness in design concepts for social innovation. The embodiment of collective understanding through the design intervention provided a new perspective of viewing the installation as a physical medium to facilitate co-creation during and after the design process. The intuitive interaction and experiential knowledge of the participants played important roles throughout the co-constructing process. Future work is needed to improve the process and the instruments employed in this design intervention, in order to help facilitate intuitive interaction more easily and provide better outputs for data analysis.

Improve the intervention tools and process for smooth construction

The main suggestions received from the feedback session focused on the improvement of the tangible design tools and the relation between two intervention sessions.

Currently the colourful paper tags were linked by the bamboo sticks which were connected with each other by rubber bands. Although these materials were flexible for making joints and helpful to trigger intuitive creation, it was still not easy to change certain part of the content (a tag or a stick) when the narrative sticks were already connected to others. There is a need to improve the way of making these joints so that participants' thinking pace would not be interrupted too often by the limitation of the physical tools.

The two sessions of the intervention focused on concept creation and solution design respectively. However, as the two sessions used the same materials and a similar iterating process, some of the participants felt confused when distinguishing them and figuring out the goal of the second session, which suggests a space for improvement in the intervention guidance and process, in order to clarify the progressive relation between the two sessions.

Explore data analysis and evaluation methods

The Collective Imagery framework is based on the use of tangible instruments to engage the community and empower the intuitive creation, which at the same time is relatively difficult for data collection and analysis. Currently data is recorded and kept as photos, videos and text by the organizers, while there is a need for a more efficient and suitable way to digitalize

the content for making further use of the concepts and enhancing the continuous impact of the collective creation.

Furthermore, while there exists subjective measures of the aesthetic quality of the installation as a final product (Hu, Le, Funk, Wang, & Rauterberg, 2013), it would be challenging to evaluate the experience and the aesthetic quality of the dynamic and interactive process of the Collective Imagery framework with retrospective subjective measures. Digitalization could help provide objective measures and insights into this process. It would provide a possibility for designers to combine virtual and physical content together with real-time interaction, so that people may create content physically while having a transformed online version at the same time, or making changes to the installation and receiving real-time feedback. This will also be helpful for the analysis and evaluation of a dynamic process.

Refine the visual guidance and support

The collective installation created through design intervention provides the researchers with new perspectives in the use of the framework, considering the physical presence as a dynamic process. According to the observation on the installation after the intervention, there were people showing interests in the installation. They walked into it, read the tags, tried to understand it and even helped to repair some broken joints, while it was difficult for them to take more actions due to the lack of proper guidance and support.

There is a need to enhance the visual guidance and add necessary instruction to the installation, since the organizers and participants couldn't be always there to interpret the concepts. A clearer physical hierarchy of different sessions in the installation would be needed to help catch up with the design process, which can be implemented through the difference in the structure, material, and colour. Simple but clear instructions are also needed to provide basic background information for visitors, not for constraining their imagination, but for understanding the theme and finding a starting point.

Current method to create narrative sticks is suitable for intervention events, while the passing-by situation may require an easier and faster way, which requires the design iteration to lower the threshold of adding contents on to the installation, the appropriate choice of location and the space design on surroundings, considering the protection of the installation, and the spatial influence on people's behaviour.

In this practical study, the Collective Imagery framework is suitable for defining design focuses for complex and abstract social problems, while the co-design process employed in the intervention is more helpful when creating and refining conceptual solutions, rather than tackling the final feasibility in implementation. The improvement of design instruments and process is also needed to enhance the content quality of the output.

Conclusion

This paper presents a design intervention deployed during Dutch Design Week 2014, considering the general and abstract concept of "kindness" as a community's collective wish. Through this practical study, we explored the impacts of Collective Imagery framework as a co-design method for complex social innovation contexts, analyzed the potentials of using tangible tools and physical spaces as mediation to facilitate co-creation, and highlighted some future directions to improve the design instruments and process.

The design intervention focused on exploring concepts exploration and solutions for the social value of "kindness", in which Collective Imagery Weave and performative story co-construction showed their potential in facilitating co-creation within communities with different knowledge backgrounds. Tangible tools and performative approach contributed to

dealing with the complexity and abstractness of the social innovation context by helping the participants think and design intuitively through their life experience. Through the intervention process of generating keywords, co-constructing stories and physically architecting narrative structures, the participants were inspired by embodied co-creation and reached a shift in conceptual design beyond individual thinking.

Furthermore, the co-constructed installation showed externalized the participants' collective understanding and presented the dynamic design process through its physical structure. The inviting form shaped through the co-creation work and the natural aesthetic in the material triggered passers-by to walk into or through it, browsing and exploring the contents. The interaction between people and the installation during and after the design intervention suggests the potential of using physical materials as co-design mediation. The approach also needs further experiments and explorations in its design, data analysis and evaluation.

Reference

Bengtsson, J. (2013). Embodied experience in educational practice and research. Studies in Philosophy and Education, 32(1), 39-53.

Bishop, R. (1999). Collaborative Storytelling: Meeting Indigenous Peoples' Desires for Self-Determination in Research.

Chueng-Nainby, P. (2014a). Collective Imagery Weave: Visualising knowledge to co-design with a community of research practitioners. Paper presented at the 19th DMI: Academic Design Management Conference Design Management in an Era of Disruption., London, UK.

Chueng-Nainby, P. (2014b). Collective Imagery Weave: Visualising knowledge to co-design with a community of research practitioners. Paper presented at the 19th DMI: Academic Design Management Conference Design Management in an Era of Disruption, London. http://www.scribd.com/doc/238251719/The-19th-DMI-International-Design-Management-Research-Conference

Chueng-Nainby, P. (2015). Co-Design in the Wild. from http://www.priscilla.me.uk

Chueng-Nainby, P., Fassi, D., & Xiao, D. J. (2014). Collective Envisioning With Local Community For Village Regeneration at Inner Mongolia. Paper presented at the Emerging Practices: Design Research and Education Conference 2014, Shanghai, China.

Chueng-Nainby, P., & Gong, M. (2013). Collective Imagery: A Framework for Co-Design. Paper presented at the IASDR 2013, Tokyo, Japan.

Chueng-Nainby, P., & Gong, M. S. (2013). Collective Imagery: A Framework for Co-Design. Paper presented at the Consilience and Innovation in Design, 5th International Congress of International Association of Societies of Design Research, Tokyo. http://design-cu.jp/iasdr2013/papers/1647-1b.pdf

Dorst, K. (1997). Describing Design: A Comparison of Paradigms. (PhD Dissertation), TU Delft.

Dorst K, C. N. (2001). Creativity in the design process: co-evolution of problem solution. Design Studies, 22.

Finke, R. A. (1995). Creative Realism Ronald A. Finke. The creative cognition approach, 303.

Fuad-Luke, A. (2013). Design activism: beautiful strangeness for a sustainable world: Routledge.

Fulton Suri, J. (2008). Informing our intuition: Design research for radical innovation. Rotman Magazine, 52-57.

Hu, J., Frens, J., Funk, M., Wang, F., & Zhang, Y. (2014). Design for Social Interaction in Public Spaces. In P. L. P. Rau (Ed.), Cross-Cultural Design (Vol. 8528, pp. 287-298): Springer International Publishing.

Hu, J., Funk, M., Zhang, Y., & Wang, F. (2014). Designing Interactive Public Art Installations: New Material Therefore New Challenges. In Y. Pisan, N. Sgouros, & T. Marsh (Eds.), Entertainment Computing – ICEC 2014 (Vol. 8770, pp. 199-206): Springer Berlin Heidelberg.

Hu, J., Le, D., Funk, M., Wang, F., & Rauterberg, M. (2013). Attractiveness of an Interactive Public Art Installation. In N. Streitz & C. Stephanidis (Eds.), Distributed, Ambient, and Pervasive Interactions (Vol. 8028, pp. 430-438): Springer Berlin Heidelberg.

Manzini, E. (2013). Making Things Happen: Social Innovation and Design. Design Issues, 30(1), 57-66. doi: 10.1162/DESI_a_00248

Meroni, A., & Sangiorgi, D. (2011). Design for services: Gower Publishing, Ltd.

Mulder-Nijkamp, M., & Chueng-Nainby, P. (2015). Collective Brand Imagery Weave: Connecting Brand Values to Product Characteristics with Physical Complexity. Paper presented at the International Conference on Engineering Design 2015, Milan, Italy.

Overbeeke, K. (2007). The Aesthetics of the Impossible. Eindhoven: Eindhoven University of Technology.

Preez, V. d., Cilliers, R., Chueng-Nainby, P., & Miettinen, S. (2015). Envisioning Dreams with the youth in Southern Africa. Paper presented at the Nordes 2015, Stockolm, Sweden.

Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. Co-design, 4(1), 5-18.

Sanders, L., & Stappers, P. J. (2014). From designing to co-designing to collective dreaming: three slices in time. interactions, 21(6), 24-33.

Wendt, T. (2015). Design for Dasein: Understanding the Design of Experiences: CreateSpace Independent Publishing Platform

Priscilla Chueng-Nainby

Dr. Priscilla Chueng-Nainby is design activist, cross-disciplinary research and poet based at the University of Edinburgh. Her research investigates the complex structure of collective imagery embodied between co-designers to allow communities to co-design during social innovation. She has led engagements such as village regeneration at Inner Mongolia and Turkey, diabetes prevention in Scotland, Youth awareness for the Scottish Referendum. She has worked with leading design institutes in Europe such as TU Delft, the University of the Arts London, the Glasgow School of Art. The Collective Imagery Weave installation was exhibited at the Dutch Design Week and Hong Kong Social Innovation Festival. www.priscilla.me.uk

Miss Xu Lin

Miss Xu Lin is a PhD candidate at Department of Industrial Design, Eindhoven University of Technology. She gained master degree in information art and design in Tsinghua University, and continues her research on design for social interaction in public space in TU/e. Her current study looks into interaction design in public context for long-term engaging experience.

Jun Hu

Dr. Jun Hu is a Senior Member of ACM, currently an Associate Professor in Design Research on Social Computing at Department of Industrial Design, Eindhoven University of Technology (TU/e), an Adjunct Professor at School of Digital Media, Jiangnan University. He is currently the co-chair of the working group "Art and Entertainment" of IFIP (International Federation for Information Processing) TC14 (Technical Committee on Entertainment Computing). His research interests are in the field of HCI, industrial design, computer science and design education.

Tangible Means

EXPERIENTIAL KNOWLEDGE THROUGH MATERIALS

EKSIG 2015 – KOLDING

―――――

Contents
Tangible Means

———

Welcome
ESKIG 2015 – Tangible Means

––––––

Welcome to EKSIG 2015: Tangible Means!

EKSIG2015: Tangible Means, International Conference 2015 of the DRS Special Interest Group on Experiential Knowledge (EKSIG) is hosted by Design School Kolding and the University of Southern Denmark.

EKSIG2015: Tangible Means – Experiential Knowledge Through Materials aims to provide a forum for debate about materials as a means for knowledge generation by professionals and academic researchers, exploring the role and relationship of generating and evaluating new and existing knowledge in the creative disciplines and beyond.

These proceedings contain the papers accepted through double blind review for the EKSIG2015: Tangible Means held on 25th and 26th November 2015 at Design School Kolding and University of Southern Denmark.

Conference theme

In recent years many creative disciplines have shifted focus from what is produced to why it is produced and how it is used. This includes a growing interest for combining craft traditions with design and other related issues such as sustainability.

As early as 1983 Schön defined designing "as a conversation with the materials of a situation" (Schön 1983: 78) and the designer as a maker of things even though it is acknowledged that the concept of design can be broader than 'making things'. Also in the 1980s Manzini (1989: 17) pointed out a need for further development of cognitive tools and cultural references in order to catch up with the technical and scientific development of materials. Recently Karana et al. (2014) have expressed a need to study not only the functional but also the experiential side of materials. Thus, material knowledge is not only about 'scientific' facts such as functional and technical properties. It also encompasses personal, experiential, cultural, emotional, environmental and social aspects. In many disciplines, materials pervade all parts of practice, from the processes to the creation of artefacts and/or other kinds of physical manifestations and the interpretation through other professionals, such as curators, critics, historians etc.

With this conference, we wish to explore different ways in which experiential knowledge through materials can be given more appropriate consideration within the framework of research. This may include for example investigations into the nature, aims, validity, evaluation and/or necessity of different modes of communication and exchange.

References

- Karana, E., Pedgley, O., & Rognoli, V. (2014) (eds.). *Materials Experience: Fundamentals of Materials and Design.* Oxford: Butterworth-Heinemann.
- Manzini, E. (1989). *The Material of Invention: Material and Design.* Cambridge, MA: The MIT Press.
- Schön, D. (1983). *The Reflective Practitioner. How Professionals Think in Action.* London: Ashgate.

Questions of interest are for example:

- What do we mean when we say 'material knowledge'?
- What are the current understandings of material as a knowledge generator?
- Why might materials be important for any research conduct?
- How can materials be utilised within the framework of research?
- How can we articulate material knowledge, which might be tacit and embodied within the process of research?
- What frameworks are there to guide the communication of material knowledge?
- What differences are there between the pure sensing of materials and sensing of materials in a context?
- What means and methods can be utilised to transfer and replicate material knowledge?
- How can knowledge about materials be integrated and used within the framework of research?
- How can we articulate and/or communicate material knowledge within the process of research?
- What contribution can the use of creative practices make to the understanding and communication of material knowledge in research?
- What means and methods do we have to transfer and iterate material knowledge?
- What and how can we know from materials through research regarding the aspects of personal, experiential, cultural, emotional environmental and social issues?

Responses

As in previous years, the conference call received a great international response with submissions from 20 countries including Australia, Belgium, Brazil, China, Denmark, Finland, Greece, Indonesia, The Republic of Korea, Italy, The Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, UK and USA.

Submissions were interdisciplinary and stem from a variety of disciplines and discipline areas including design, fine art, applied art/craft, architecture, design engineering, museology, film making, knowledge management, education, philosophy and social sciences.

For the conference, contributions were selected in a one-stage process, comprising full paper selection, through a double blind review process by the conference's international review panel of 52 reviewers. From the contributions, the following eight sessions emerged: Means, Touch, Elements, Hands-on, Materials, Building, Patina and Oxymorons. Each

session deals with one aspect of material knowledge and in total the sessions cover the widest possible understanding of experiential knowledge through materials.

EKSIG

EKSIG is part of a program of Special Interest Groups set up by the Design Research Society (DRS) to facilitate international exchange and advance in relevant areas of design. EKSIG is concerned with the understanding and management of knowledge in research and professional practice in design and design related disciplines in order to clarify fundamental principles and practices of using practice within research, both with regard to research regulations and requirements, and research methodology. The EKSIG conferences are part of a regular programme of the EKSIG group. They serve to bring together researchers and practitioners from different disciplines and to promote understanding and best practice concerning the integration of different forms of knowledge within design research and practice.

The EKSIG conferences are part of a regular programme of the EKSIG group. They serve to bring together researchers and practitioners from different disciplines and to promote understanding and best practice concerning the integration of different forms of knowledge within design research and practice. EKSIG promotes a multidisciplinary approach to engender multi-vocal debates and cross-fertilisation between the creative disciplines and other practice-led disciplines, including contributions from the design disciplines (design, engineering, craft, media etc.), philosophy, education, health and knowledge management that are concerned with methods and methodology in research and in creative and professional practice; with the nature, role, and management of knowledge within research; and with the role and use of creative practice (both as process and outcome) as a means by which to develop and manage experiential/tacit knowledge within research.

———

Kolding, November 2015
Anne Louise Bang, Jacob Buur, Irene Alma Lønne & Nithikul Nimkulrat

Organisation
Organisers and review team

———

Conference Organisation

EKSIG 2015 is organised by members of the DRS Special Interest Group on Experiential Knowledge, and supported by the Design Research Society. The conference is hosted by Design School Kolding and University of Southern Denmark. Estonian Academy of Arts and University of Wolverhampton co-organised the conference. The conference is further supported by the Cumulus Association.

Conference Organisers

Dr Anne Louise Bang, Design School Kolding, DK
Prof Nithikul Nimkulrat, Estonian Academy of Arts, EE
Prof Kristina Niedderer, University of Wolverhampton, UK

Programme Committee

Dr Anne Louise Bang, Design School Kolding, Denmark
Prof Jacob Buur, University of Southern Denmark, Denmark
Dr Irene Alma Lønne, Design School Kolding, Denmark
Dr Anders Haug, University of Southern Denmark, Denmark

Review Team

Dr Laurens Boer, IT University of Copenhagen, Denmark
Dr Anne Boultwood, Birmingham City University, UK
Dr Amanda Briggs-Goode, Nottingham Trent University, UK
Prof Poul Rind Christensen, University of Southern Denmark, Denmark
Dr Kathrina Dankl, Design School Kolding, Denmark
Prof Stephen Boyd Davis, Royal College of Art, UK
Dr Delia Dumitrescu, University of Borås, Sweden
Dr Mette Agger Eriksen, Malmø University, Sweden
Prof Tom Fisher, Nottingham Trent University, UK
Dr Carsten Friberg, Independent Researcher, Denmark
Dr Michail Galanakis, University of Helsinki, Finland
Dr Sune Godiksen, Aalborg University, Denmark
Prof Lisa Grocott, Parsons the New School for Design, USA

Prof Marte Sørebø Gulliksen, Telemark University College, Norway
Dr Wendy Gunn, University of Southern Denmark, Denmark
Prof Lars Hallnäs, University of Borås, Sweden
Dr Anders Haug, University of Southern Denmark, Denmark
Dr Arnaud Hendrickx, Sint-Lucas School of Architecture, Belgium
Dr Richard Herriot, Design School Kolding, Denmark
Dr Monika Hestad, Oslo School of Architecture, Norway
Prof Ann Heylighen, University of Leuven, Belgium
Prof Bob Jerrard, Birmingham City University, UK
Dr Faith Kane, Loughborough University, UK
Dr Sarah Kettley, Nottingham Trent University, UK
Dr Hanna Landin, University of Borås, Sweden
Dr Louise Buch Løgstrup, University of Southern Denmark, Denmark
Prof Maarit Mäkelä, Aalto University, Finland
Prof Ramia Mazé, Aalto University, Finland
Dr Timothy Merrit, Aarhus School of Architecture, Denmark
Prof Judith Mottram, Coventry University, UK
Prof Nithikul Nimkulrat, Estonian Arts Academy, Estonia
Prof Claire Pajaczkowska, Royal College of Art, UK
Dr Trine Brun Petersen, University of Southern Denmark, Denmark
Dr Rachel Philpott, Loughborough University, UK
Prof Tiiu Poldma, Université de Montréal, Canada
Prof Lubomir Popov, Bowling Green State University, USA
Prof Vesna Popovic, Queensland University of Technology, Australia
Prof Debra Satterfield, Iowa State University, USA
Dr James Self, UNIST, Republic of Korea
Dr Tania Splawa-Neyman, RMIT University, Australia
Dr Dagmar Steffen, Luzerne University, Switzerland
Dr Else Skjold, Design School Kolding, Denmark
Dr Oscar Tomico, Eindhoven University of Technology, NL
Dr Katherine Townsend, Nottingham Trent University, UK
Prof Johan Verbeke, Sint-Lucas School of Architecture, Belgium
Prof Susann Vihma, Aalto University, Finland
Prof Johannes Wagner, University of Southern Denmark, Denmark
Dr Stephan Wensveen, Eindhoven University of Technology, NL
Dr Danielle Wilde, University of Southern Denmark, Denmark
Dr Linda Worbin, University of Borås, Sweden
Dr Joyce Yee, Northumbria University, UK
Dr Salu Ylirisku, University of Southern Denmark, Denmark

Keynote Index
Hyperlinks to biographies and abstracts

———

KEYNOTE SPEAKERS

The Socio-materiality of Creativity
Prof Lene Tanggaard
University of Aalborg, Denmark

Desig for Material Experiences
Dr Elvin Karana
Delft University of Technology, The Netherlands

Harvested and Grown: The Rise of a New Bio-materiality
Prof Carole Collet
Central Saint Martins, University of the Arts, UK

The Socio-materiality of Creativity

Prof Lene Tanggaard
University of Aalborg, Denmark

Biography

Lene Tanggaard is Professor of Psychology in the Department of Communication and Psychology at the University of Aalborg, Denmark, where she serves as co-director of The International Centre for the Cultural Psychology of Creativity (ICCPC), and co-director of the Center for Qualitative Studies. She has published several books and papers in the field of creativity and learning. Recent publications include Tanggaard, L. & Stadil, C. (2014). Showering with Picasso – how to spark your creativity and imagination. London: LIU Publishing and Tanggaard, L. (2014). Fooling around: Creative learning pathways. Charlotte: Information Age Publishers.

Abstract

This keynote takes its point of departure in an investigation of the potentials of looking at creativity from a socio-material analytical point of view. A socio-material perspective underlines that creativity is much more social and everyday like than has hitherto been acknowledged; materiality and arte-facts are to be seen as substantial components of creativity in itself (Tanggaard, 2013). In relation to current research on creativity within psychology and beyond, this is a rare point. It is still very common to state that "creativity is assumed to be present within every individual, although geniuses are rare" (Zeng, Proctor & Salvendy, 2011, p. 25). The source of creativity is time and again seen as residing within individuals. Furthermore, the result of creativity is often celebrated as a more or less individual achievement and creativity is still closely aligned with the exceptional and the genius (McDermott, 2006). As recently stated by Moghaddam, much psychological science, and I would claim psychological research on creativity, suffers from the 'embryonic fallacy' meaning that the independent individual is seen as the source and center of psychological experience (Moghaddam, 2010). This presentation aims at developing the socio-material perspective in more detail, which requires that theoretical elaborations and empirical studies go hand in hand. Examples from a recent study of a designer's work will be presented as part of the keynote. —

Design for Material Experiences

Dr Elvin Karana

Delft University of Technology, The Netherlands

Biography

Elvin Karana is an Assistant Professor in the Faculty of Industrial Design Engineering (IDE) at Delft University of Technology (DUT), The Netherlands. She undertook her PhD research at DUT, where she developed a 'Meaning Driven Materials Selection Tool' to support designers in their materials selection activities. Since then, she has been leading a number of research projects focusing on design for material experiences. In her work, she proved the notion of 'materials experience' to be actionable in design thinking and applicable to both in design practice and design research. Elvin is the main editor of "Materials Experience: Fundamentals of Materials and Design" (2014, Elsevier).

Abstract

Materials research constantly evolves to offer novel, superior materials as 'better' alternatives to convention (e.g. bio-based plastics, piezoelectric textiles, temperature sensitive polymers, advanced ceramics). As a priority, the pursuit of 'better' in newly developed materials should make sense from the perspective of bringing a utilitarian and environmental advantage. Yet, when embodied in daily products, a new material also brings the possibility of new sensations, thoughts, feelings, and behaviors. In search of a proper application through such an understanding, designers may arrive at an embodiment that as far as possible not only meets the practical demands of the design but also offers intangible sparks (Karana, Pedgley, & Rognoli, 2015)* that captivate people's appreciation and affect the ultimate experience of a product in and beyond its utilitarian assessment. I propose that designing with emerging materials through the lens of 'materials experience' is a powerful strategy to introduce those materials to societies through applications that make sense and give sense, and hence possibly shorten the gestation time of a materials innovation. However, this is far from straightforward. The potential experiences of the unfamiliar, the unusual and the rare emerging materials are often challenging to envision and to design for. In my presentation, I will introduce a method we have recently developed to facilitate 'designing for material experiences' when a particular material is the point of departure in the design process. I will illustrate how the method is applied in practice through a number of material driven design cases conducted within our research group over the last couple of years. —

* Karana, E., Pedgley, O., & Rognoli, V. (2015). On materials experience. Design Issues, 31(3). 16-27.

Harvested and Grown: The Rise of a New Bio-materiality

Prof Carole Collet

Central Saint Martins, University of the Arts, UK

Biography

Carole Collet is Professor of Design for Sustainable Futures and Director of the Design & Living Systems Lab at Central saint Martins, University of the Arts, UK. She has dedicated her career to develop a new vision for design, and pioneered the discipline of Textile Futures at Central Saint Martins fifteen years ago. She is now a full time Professor and her current research work is focused on biodesign, biofacturing and high-tech sustainability. Collet operates within a long-term framework and her research targets the year 2050 and beyond. By anticipating on future key socio-economic factors and technological time-lines, she aims at impacting today's design directions so as to enable a more resilient and sustainable future. Her design vision fosters an integration of the design process in scientific arenas so as to develop meaningful sustainable future products and services. Collet's ambition is to elevate the status of design to become a powerful tool that contributes to developing innovative paths to achieve the 'one planet lifestyle'. Her recent curation of 'Alive, New Design Frontiers' (www.thisisalive.com) questions the emerging role of the designer when working with living materials and technologies such as synthetic biology and clearly establishes a new original framework for designing with the living. It is in this key area that her contribution to new knowledge is recognized at international level. One of Collet's characteristics is that she straddles different research roles, from designer, to curator and educator. This enables her to develop an informed critique of both the design outputs and the design contexts, from making knowledge to framing knowledge. Her work has been featured in international exhibitions and she regularly contributes to conferences on the subject of textile futures, biodesign, biomimicry, synthetic biology, future manufacturing, sustainable design and climate change. Collet is a prolific design researcher and works at local, national and international levels.

Abstract

We are in the midst of a transition from the industrial revolution to a biological revolution and this will have a great impact on what and how we design in the future. Not only we can acknowledge the advantage of biological systems in terms of zero waste, minimum use of energy and materials, but with synthetic biology, we can now 'biofabricate' like Nature does. Leather grown in a lab, yeast reprogrammed to produce silk, bacteria that grow a shoe, are but a few examples of current biotechnological breakthroughs. This keynote will map out the current landscape of biodesign and examine the rise of this new bio-materiality and its implication on design research. From botanical experiments to synthetic biology propositions, this paper will present a series of design case studies that question the notion of 'knowledge making' in the context of working with living systems. What becomes of the design process when working with living materials? If we can turn a yeast into a living factory, what language will designers need to learn? Could the intersection of design and biology lead to novel sustainable fabrication processes? What are the ethical implications of biofabrication? —

Paper Index
Hyperlinks to full papers

―――――

PLENARY SESSION – MEANS

Paper Index
Hyperlinks to full papers

———

PARALLEL SESSION – TOUCH

Why Making Matters: An Exploration of Neuro-biological Perspectives on Woodcarving

Marte S. Gulliksen, *Telemark University College, Norway*

Materials in Footwear: An Empirical Study of Hands-on Textile Approaches to Sandal Design

Jenny Gordon, *Loughborough University, UK*
Faith Kane, *Loughborough University, UK*
Mark Evans, *Loughborough University, UK*

Context Construction through Material Perceptions: Experiences from an Explorative Workshop

Townsend Riikka, *Aalto University, Finland*
Ylirisku Salu, *University of Southern Denmark, Denmark*

Epistemic Mutations: Material Object Engagement in Exhibition Making

Ane Pilegaard, *Medical Museion, University of Copenhagen &
The Royal Danish Academy of Fine Arts, Denmark*

Paper Index
Hyperlinks to full papers

_____

Paper Index
Hyperlinks to full papers

_____

PARALLEL SESSION – HANDS-ON

Paper Index
Hyperlinks to full papers

——————

PARALLEL SESSION – MATERIALS

Counterculture, Ju-jitsu and Emancipation of Wood
Marcin Wójcik, *The Oslo School of Architecture and Design, Norway*

Materials Driven Architectural Design and Representation
Anders Kruse Aagaard, *Aarhus School of Architecture, Denmark*

Material Knowledge: Unlocking the Research Potential of the 'Micro' Architectural Practice
Ewen McLachlan, *E&F McLachlan Architects, Edinburgh, UK*

Paper Index
Hyperlinks to full papers

——————

PARALLEL SESSION – BUILDING

Digital Crafting in the Field of Ceramics
Flemming Tvede Hansen, *The Royal Danish Academy of Fine Arts, Denmark*
Henrik Leander Evers, *The Royal Danish Academy of Fine Arts, Denmark*
Martin Tamke, *The Royal Danish Academy of Fine Arts, Denmark*

A Framework for Materials Knowledge Acquisition for Designers
Anders Haug, *University of Southern Denmark, Denmark*

MADEC: Exploring New Methodologies to Transfer Material Knowledge into Design Disciplines
Chiara Lecce, *Politecnico di Milano, Italy*

Making sense of dress: On Sensory Perspectives of Wardrobe Research
Else Skjold, *Design School Kolding, Denmark*

Paper Index
Hyperlinks to full papers

_____

PARALLEL SESSION – PATINA

Materia Prima: The Rough Guide
Megan Walch, *University of Tasmania, Australia*

Choreography of Surface Materiality from Nature, Culture, and Time
Yandi Andri Yatmo, *Universitas Indonesia, Indonesia*
Paramita Atmodiwirjo, *Universitas Indonesia, Indonesia*
Ghofar Rozaq Nazila, *Relife Property, Indonesia*

Exploring the Relationship Between Material and Textile Structure in Creating Changing Textile Expressions
Riikka Talman, *University of Borås, Sweden*

Materials, Time and Emotion: How Materials Change in Time?
Eline Nobels, *Ghent University, Belgium*
Francesca Ostuzzi, *Ghent University, Belgium & Politecnico di Milano, Italy*
Marinella Levi, *Politecnico di Milano, Italy*
Valentina Rognoli, *Politecnico di Milano, Italy*
Jan Detand, *Ghent University, Belgium*

Paper Index
Hyperlinks to full papers