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Where Art, Technology and Design Meet

Editorial: Where Art, Technology and Design Meet

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With a foundation in artistic practice, the Ambience'11 conference was organised as a meeting place where researchers from digital architecture, smart textiles, new media art and interaction design communities could come together to discuss and share ideas on the new expressional crossroads of art and technology and to take new ideas back to their own communities.

As post modernism slowly fades away, a new interest in the expressional possibilities of constructions, techniques and materials, as well as the craftsmanship of artistic work, is becoming more and more visible in artistic practices. It is like revisiting “free” modernistic experimentation not bound by the utopian systems and dogmas targeted by post modernistic critique.

The papers in this volume articulate a turn towards craft, materials, techniques and constructions with a focus on expressional possibilities, in a broad sense, and the material foundations of art and design as experience. Interest in the new performativity and responsiveness of materials is evident. The papers we have included display artistic research as experimental research aiming for the development of artistic practice. In that sense, it is rather different from the idea of art as research in itself and connects with the ever-present tradition of artistic development work.

Perhaps this is a significant turn and a sign of a broader shift under way – from the post modernistic negotiations with Dionysios to the teachings of Apollo – but the picture is still somewhat foggy and unclear. Going back and forth between the teachings of Apollo and Dionysios has been a constantly recurring theme in artistic practice and there is, of course, always a distinction to be made between expression and experience in the areas of art and design; between artistic practice and art as experience.

Material thinking in this context can be described as a (re)turn to the experimentation in, and future promises of, expressional craft – and we see signs of this in the common grounds of such areas as digital architecture, new media art, smart textiles and interaction design.

The research creation reports in this volume reveal a connection with contemporary traditions of artistic and craft development, closely allied with design activity as a central part of the experimentation. Design is the dominant human activity operating in the space between technology and society, and the projects in this volume showcase artistic designers demonstrating concern for both the technology and the impact on society through their understanding and criticality of this relationship. While materials and their processes feature prominently in these accounts of experimental practice, the notion of material thinking that emerges is one that encompasses more than the impact of materiality on creative work. It is a broader concept that takes account of our active, lived-in world of politics, economics and culture: an environment in which we face all manner of issues affecting our physical wellbeing, our health, happiness and behaviour.

One key theme across many papers in this volume is an interest in the new performativity and responsiveness of materials. Ramsgard Thomsen and Karmon investigate the implications of technological change in relation to a new performative understanding of materials. They expose the thinking and making behind the architectural research probe Listener, a project investigating how textile design can be understood as a model for architectural production, opening up a new, strategic way of thinking about the performativity of materials. In an era of digital fabrication, they identify ways in which the potential of new graded materials can shift their performance, becoming stronger, lighter or more flexible in response to their implementation.



Righetto et al explore an experimental device that allows highly emotional and evocative interactions between an expectant mother and her partner, while Rossi et al report on the experimental testing of prototype interactive dolls for assisting hospitalised children to overcome emotional difficulties triggered by isolation and fear, and designed to improve the relationships they have with doctors, psychologists and other hospitalised children.

Lamontagne's paper deals with the topical notions of performance and performativity, methodological ideas that are stimulating the research design of contemporary visual and media arts practice. She traces the terms performance and performativity — historically and conceptually — and locates these theoretical ideas in relation to the materiality of the wearable object, its social practice and experimental technology. Lamontagne's ideas are examined through a case study of how a wearable lab and wearable garment experiments combine human and material performative enunciations.

Lindström and Ståhl engage with the idea of patchwork as both an object and a practice. They investigate and 'stitch together' accounts of *Threads - A Mobile Sewing Circle*, a travelling exhibition, into a patchwork of texts and images. Their paper includes a concern for accountability in academic and artistic writing using the narrative position of the patchwork to tell stories from the exhibition. This method of creating a performative installation and examining it critically has enabled them, in a complex process of handling temporary and fragmentary participation, to reflect multiple voices and a diverse range of creative perspectives in the project. *Threads* was conceptualised by the authors for the 2007 exhibition *Digitally Yours* in Turku, Finland.

Questions of malleability inform a number of the papers in this volume. In particular, the report by Russo and Mueller-Russo on their experimentation using digital tools, in parallel with membranes and textiles, as a means to examine form finding, geometric variation, and plasticity. Their work involves the development of structural volumes and surfaces and demonstrates how the simulation of textile behaviour remains a difficult computational problem for researchers investigating the plastic qualities and potential of membranes - particularly for applications in architectural form. Yet, this same variability, unpredictability and lack of control, is valued in craft applications where expression and unique qualities of materiality are appreciated. Russo and Mueller-Russo examine new options for combining material and digital experimentation in the development of structural volumes, surfaces and prototypes.

Notions of malleability also feature in the Dumitrescu, Landin and Vallgård report on work in progress of an experimental process they set up to explore and test different expressive and interactive qualities of textile hangings in various physical locations. The collaborating researchers acknowledge the rich dialogical process of integrating material interventions with technology and allowing the inherent materiality of processes and results to feed back into their design thinking. Their critical analysis engages across different perspectives, including expressive potential, possibilities for interaction and observations of how expression and interaction are coupled together. Their work adds to the field of textile research as a design language of movement, interaction and expressive potential.

Carole Collet's research *BioLace* is a speculative design-led project investigating the intersection of synthetic biology and textile design to propose future fabrication processes for both textile products and architecture. Her research design is a clear example of material thinking in the formulation of research questions combined with an ethical concern for the values and risks of 'Living Technology' as a potential means of developing truly sustainable textile manufacturing. Her methodological orientation is based on three adapted models: the 'Bio-Muse' approach, inspired by nature's mechanics; the 'Bio-Harnessing' approach, harnessing biological functions to fit specific design purposes; and, the 'Bio-Hacking' or synthetic biology approach of re-engineering biological processes and using the principles of self-assembly and self-replication to create new living organisms.

Mossé, Gauthier and Kofod introduce the *Reef* project, a design-led investigation into the conceptualisation and materialisation of a self-actuated ceiling surface. This paper examines the way in which the design of shape-changing structures can lead to highly poetic and complex adaptive structures. It reports on the conceptualisation, design and realisation of an



experimental installation, and explores future possibilities for responsive, architectural technologies for interconnectivity with surrounding environments.

Advanced understanding of material properties and material responses to environmental conditions is another theme running through many papers in this volume. Jane Scott's experimental work with transformable textiles is based on the use of biomimetic design principles in the research. Biomimetics is an emergent methodological approach in design research and Scott's experiments contribute to the knowledge base for the development of environmentally responsive textiles through manipulation of inherent properties in natural fibres. The work is located in an architectural context and is concerned with the ability of low-impact, passive systems to automatically respond to changing environmental conditions. Scott's speculative, applied ideas include the potentiality of passive ventilation systems and multi-functioning exterior awnings.

The research trial by Righetto et al took an alternative material thinking approach, using digital and communication technologies, normally applied for efficiency and precision, in the design of a system to enhance the emotional experience of a couple expecting a baby. This work goes beyond the current contexts for these technologies (mainly medicine and sport) to explore potential aesthetic experiences and alternative applications to biometric monitoring.

Rossi et al designed a family of three interactive dolls to enable non-intrusive, palliative interaction for sick children, in order to improve their relationships in a hospital environment, through specific, intimate interactions. Their material thinking approach is seen in the innovative way they have introduced physical, material artifacts in an institutional context where the conventional approach for this purpose is usually screen-based applications that offer fun interactions and colourful interfaces.



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