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Track 5.a Introduction: Transforming Complexities through Design in Collaborative Community-based Processes

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Introduction

Complexity is a key characteristic of many participatory and community-oriented design activities. Designers' varied roles are being transformed as they have to manage the complexities and entanglements associated with global societal, technological and environmental change. As design turns towards a social mode of operation and application, this session 'Transforming Complexities through Design in Collaborative Community-based Processes' seeks to open a discourse on the role of design in managing the complexities that affect communities and individuals, alongside their attendant processes and practices. A range of approaches, skills and competencies currently demonstrated across instances and experiences of complexity, and across a range of contexts for collaborative and community-oriented design, are mapped through the contributions in this track.

Alongside design's traditional role of creating solutions, there is evidence of a shift towards a role for design in diagnosing, facilitating and aiding deeper understandings of the challenging contexts through which complexities emerge and are experienced by individuals and among communities across a variety of situations. The role of design in creating solutions that result from understanding, interpreting and analysing multi-disciplinary processes, whilst seeking to adapt to sensitive societal and political situations, is considered. The practical solutions and outcomes that can be produced when (sensitive) social complexities are managed through design are also explored. Practitioners and academics contributed discussions through case studies, methods, theories and initiatives that deal with complexities through design research and practice. The papers in this session introduction are presented according to the order of their presentation during the conference.

Topics that are explored in this session include the roles, skills and competencies of designers in mitigating complexities, in particular, those that emerge during collaborative processes and projects of community-oriented and practice-based design. Another topic explored is the complexities associated with design interventions that are aimed at social transformation and the opportunities they deliver for designers to envision new possibilities for better futures. The papers share insights into ways in which complexities affect upon both design researchers, the communities they collaborate with, and their impact on methods used in these collaborations. Additionally, some contributions consider the methods and methodological approaches for managing complexity or supporting community-oriented initiatives and in particular, with communities at the edge or margin, in transition or in a state of precarity. The discussions attempt to frame or suggest a potential way out or around the challenges that have been identified so that concrete guidance for others becomes a key outcome.



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Complexity is often experienced locally, but common challenges exist across countries and within continents. DESIGNSCAPES is a European Commission funded project whose aim is to select a variety of promising ideas and projects across a number of European cities and provide them with the funding, support tools and mentoring to embed and implement design approaches to support their activities. Taking an approach of *emerging intervention*, the project aimed for an agility and flexibility that, given the complex scenarios, embraced change and would actively evolve in its own implementation. It was also grounded in local action between independent stakeholders thus providing its ascribed system behaviour, whilst the realities of dealing with and interacting with local contexts and agents in urban settings were carefully negotiated. These complexities unfolded by continuously documenting and analysing the stakeholders' 'change journeys' over a two-year period. This paper by Simeone, Drabble, Iacopini, van Dam, Morelli, de Götzen and Cullen presents a rigorous literature review on the significant role of Theory of Change and design in mitigating complexities and while a relatively formal strategy is presented, an argument is made for strategic flexibility and adaptability. Theory of Change was practically implemented and enabled in DESIGNSCAPES by a strategic kernel that allowed for the development of a diagnosis, thus guiding policy and actions that served as an effective logical tool for analysis. The approach stimulated agile adaptations to the intended actions when needed as it enabled the presentation of strategy in a simplified version that is easily understandable by stakeholders and external individuals. Additionally, as the strategy was not fully specified it allowed flexibility for the project partners to interpret and apply it according to their interests and needs. A critical view the paper presents towards a Theory of Change is that the approach was not necessarily reliable as a predictor for a project pathway. As the project is still ongoing, analyses of the project outcomes will enable a deeper examination of the potential of Theory of Change and the practical implications of its application in relation to a broad array of design-driven projects. This contribution is one regarding a complexity of opportunity in determining and framing, as well as of application as the contexts shift or change in response to conditions of implementation. The paper opens up discussions on human messiness and a necessary degree of flexibility and agility that are evident on the part of projects themselves, thus complexity can be perceived as something not always considerate of the more formal theoretical methods that might be used to attempt to understand and respond to it.

The complexities of local contexts, as we have seen, are often particularly challenging and such contexts are often relatively under-researched, in particular when they challenge researchers' own knowledges and experiences. The paper by Corsini, Aranda-Jan, Henderson and Moultrie describes a project which applies a participatory design approach in the context of design-for-development in the Global South and, more specifically, what they articulate as 'low-resource' settings (LRS). The paper presents the outcome of their initial systematic literature review that identifies a series of key challenges for such an application which they then map against an analysis of Simprints fieldwork data and interviews with three of the company's employees. Each of these activities looks to frame key challenges in the participatory design (PD) process and how it might have been addressed via a practical or tangible instance or experience. The results of this are a set of eleven key insights, which are discussed in some detail, making reference to both interview data and relevant literature. The authors outline what they feel is a theoretical gap they seek to address - that while there are PD approaches practiced in the Global North and models for methodological application in the Global South, little is available which illustrates or demonstrates an application within technologically-led design for development. The authors make use of a case study (Simprints) which allows for an overview of practical challenges and recommendations as to the use of PD in the complex contexts of LRS, where designer's lack of experience and unpreparedness is clear. Simprints develop biometric identification solutions for organisations developing mobile solutions for wicked problems: integrating fingerprint recognition into development projects, developed initially for patient identification in healthcare in Bangladesh and is being applied into other contexts in the Global South. Taking a PD approach from the outset, the founders quickly realised that there was little practically to help navigate the complex challenges of applying them within LRS. Thus, they set out to bring together research to develop a framework of insights, which act as guidance for future work and as a lens through which scenarios of complexity can be observed and understood. This contribution investigates how researchers may engage with the complexities under discussion. Complexities emerge at the limits of a designers' own experiences, thus they may consider the potential of what they do other than via direct participation in the context of application. As a result, opportunities to consider characteristics of complexity and systems for mitigating challenges or managing them, may emerge. The potential for developing the eleven insights into a workable toolkit or functional project-planning tool is clear - there is good evidence of synthesising a set of challenges that proactively and practically assist in these

complex and challenging scenarios. Research is important not only to address or manage complexity, but to reveal it given the 'unfinished' nature of much PD activities.

As we have seen, a discussion of complex scenarios can (and perhaps must) allow for a focus on the local and lived experiences of those whose needs might only be met by an engagement with, and exploration of, the potential of PD actions. The paper by Woo, Kim and Nam argues for the neighbourhood as a context for challenging designers in unique ways as local knowledge is the key to successful neighbourhood regeneration. The complex heterogeneity of stakeholders, multiple roles, new power relations and the role of residents as local experts with their own expertise can make it particularly difficult for designers to collect and coordinate local knowledge alongside any attempt to turn it into practical solutions. The paper is based on a thorough ethnographic study, and presents evidence that local businesses can have a major role in negotiating the complexities of regeneration projects, thus complementing designers' knowledge as well as helping to ease the challenges that they might face. Based on literature review, the paper presents three key roles of local businesses in participatory neighbourhood regeneration processes. Local knowledge is handled by a: 1) Possessor, 2) Processor and 3) Implementer. Possessors reveal undetermined and flexible local knowledge and inspire others by voluntarily providing their local knowledge for the use of the project. Processors conceive possible solutions, enable collaboration and set up spaces or conditions for cooperation. Implementers deliver and sustain the outcomes of a project. Local businesses can play important roles in discovering local community knowledge, processing it into useful design resources and incorporating it into participatory neighbourhood regeneration. The authors propose that: 1) Local businesses are reservoirs of local knowledge that can assist designers to collect diverse local knowledge, and 2) Local businesses are synergetic partners that can assist designers to mediate cooperation by using their social skills and human networks. A key theme emerging in this paper is of a complexity of the local, a necessity to identify and acknowledge power as it is situated and experienced, but also the potential to excavate knowledge within communities by drawing on local knowledge. The paper presents details concerning a modelling of how local knowledge might be positively mobilised and that co-operation is in itself a complex event.

Shifting perspective from the micro to the macro, Sedini argues for the strategic role of design to influence policy making alongside support from authorities and institutions to sustain the creation of social environments. This collaborative study that is situated within the Sister Cities Policy Programme, was developed by the School of Design of Politecnico di Milano, Institute of Design of Illinois and Institute of Technology of Chicago. The research investigates the complex relationships between design, manufacturing and social inclusion, with a specific focus on the maker's movement, (and again) ideas of locality and spaces within marginalised urban areas in Milan. This first stage of the research concludes that both making and design activities can be perceived as more inclusive and accessible, thus able to facilitate dialogue between different people and stakeholders. Additionally, making and design can stimulate social revitalisation due to the opportunities that emerge for marginal population groups with a positive impact on the creation of socially sustainable working environments. The contribution this paper makes to a discussion on how complexities can be transformed through design in collaborative community-based processes, is that being and acting from the local can activate partnership and dialogue. The need to develop methods to achieve these goals is the primary impact and well-considered in this contribution.

Developing these ideas of design having a role to play in the mitigation of complexities may foster innovation, entrepreneurship and collaboration amongst small-scale producers and designers. Working within and between communities at differing scale, the paper by Hertz presents research conducted with small and medium-sized footwear factories and organisations in Israel. The aim of the research is to identify challenges in the value chains of small and medium footwear factories. A significant insight in terms of a complexity developed by changes in scale of operations is that larger factories, who are more focused on production chains, become distanced from their users with the result that information from the users does not readily flow back to the company. The paper also looks to address how the roles, skills and competencies of designers, and design as such, can mitigate the complexities that emerge during collaborative processes. The proposed design solution aims to minimise the distance between the manufacturers by introducing suitable digital operations, access to digital marketing functions, including customer services and online selling sites. The suggested use of a digital platform that may offer new knowledge sharing and exchange regarding products and consumers, hopefully leads to a competitive advantage for the Israeli footwear industry. Additionally, the platform will serve as a joint R&D system with the potential to develop strategies, production methods, and innovative products, thus minimising the risks associated with investing in innovation by creating a co-production and co-R&D network for manufacturers. This paper's practical contribution to problem solving and

mitigating complexities within and amongst product producing communities is to draw on digital means to achieve a close-ness as opposed to more research-focused approaches found in other papers. This contribution is important for understanding why maintaining links with the local and with a user-derived context are paramount to success in small and medium-scale producer communities.

Design's power to encourage positive and meaningful connections and action is further discussed in the context of its potential for transitioning and transformation in the complex domains of organisational and social change. The authors Mysore and Gady argue for design as a social practice and it is in these complex contexts and dynamic environments that designers can play important roles as facilitators where the embeddedness of practices of facilitation in social design become a vehicle for transformative change. Drawing on a case study of an international design facilitation project managed by the UN Women's Fund for Gender Equality, the authors shed light on some of the critical features of a design-led facilitation process. These features include mediation, the navigation of systems of power and hierarchy within organisations, and important pre- and post-intervention activities during which designers also need to draw on their designerly abilities. The potential for a further development of design facilitation as a critical component in contemporary design practice is explored with the suggestion that it needs more and varied critical approaches together with robust models that are based on mediation and participatory processes. A design facilitation model is proposed as a means of 'working-with', a key need defined by complexities of the social and of how designers can identify and navigate power (as it is situated within pre-determined hierarchies of work and life). Designers have the skills necessary to manage instances and experiences of complexity - they are particularly suited to helping others with this. The contribution of this paper is that a specific context of complexity is addressed, relating to entrepreneurship with a key behavioural outcome (enabling) where methods of design thinking seem particularly suited to help manage this context.

Holierhoek and Price discuss complexity at the logical level of policy making and proposes some reflections on the role and contribution design can offer. The paper conducts a literature review looking at two fronts: 1) Proposing a wicked problems perspective to understand a possible approach to the solution of complex societal problems, and 2) Analysing the design activity as a non-linear problem solving process, which may prove to be more effective in dealing with the complexity of wicked problems. In the second part of the paper the authors analyse two case studies of public design labs, Helsinki Design Lab and MindLab (Copenhagen), to clarify the contribution design can provide to the definition of a new approach to policy making. Design, on the other hand, has been dealing with increasingly complex problems and are now moving to a level of complexity that is also common to policy making. Yet, there is no unified view of how design could contribute to policy making, which role this discipline can have and what specific design competences can contribute to a new way of working. The approaches considered in the two design labs were quite different: In Helsinki complexity was faced by reproducing a similar level of complexity in multidisciplinary teams, whereas the focus of MindLab was to introduce aspects and tools of design to policy makers in order to promote actions that cut across the traditional silo structure of public administration. The analysis of the two cases suggests some common characteristics of design action, namely to be user-centred, iterative, interdisciplinary, and to facilitate collaboration and participation. Additional aspects emerged from the specific cases: The multidisciplinary collaboration in Helsinki highlighted the role of designers in breaking through knowledge and policy domain silos. This was also possible through the designers' typical exploration strategy that is non-linear, and based on the creation of provisional solutions. The user-centred approach in Copenhagen instead, put the civil servant in a better position to develop empathy with the subjects of the policies. Although the focus of design action is moving towards more complex problems - and thus tends to meet the instances of policy makers - the specific contribution that design can provide to policy making, in terms of competences and tools, has not been clearly defined. This is where this paper offers a significant contribution. Competences and strategies considered in the two cases analysed in this paper offer fertile ground for clarifying the contributions that designers can offer to policy makers and the role design can have when working at this level of complexity.

By bringing together the experiences of researchers and practitioners, and the suggestions made by literature, the insights reflect on the complex nature of participatory approaches that are relevant for engaging with participants in and through the design process. Being able to identify and respond to stakeholder needs, including the designers themselves, enables the mapping of expectations against project and work objectives. The necessary ambiguity of participatory work, such as imagining, responding to unfinished ideas, and needs for visualization, generating an understanding of local contexts and culture, in addition to sensitive time-management strategies, relationship-building and the uncovering of issues of where power resides (between designers and stakeholders and within the stakeholder communities) inform the responses to stakeholder

needs. Thus, planning for user-testing and evaluation underscores the importance of risk awareness. Often opportunities can be identified for applying designerly ways of thinking and problem-solving in complex situations (although the contribution of design often reaches significantly further). The contributions in this conference session opens a process of offering suggestions, models, methodologies and tools through which complex problems (and their equally complex scenarios and contexts) can begin to be addressed and the processes for managing and gaining insights and new knowledge are able to emerge.