ENVISIONING FUTURE PUBLIC SPACES: EXPERIMENTS IN CO-CREATION AND EVALUATION OF URBAN VISIONS

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The Research

For several decades in continental Europe and also in the United Kingdom there has been a common interest both from architects, urban designers, and researchers in the relationships between public spaces and urban regeneration (Hall 2014). At the same time, cities are becoming increasingly computable, and this is leading to a disconnection between social processes and the physical form of the city (Batty 2017), particularly disrupting services and built environment. In this way, the scope of this Ph.D. research is to study how urban visions have been and could be created, defined, and measured by architects, urban designers, and other visionaries in the twentieth and twenty-first centuries.

Although the modern visionaries of the twentieth century, such as Ebenezer Howard, Le Corbusier, and Frank Lloyd Wright, foresaw new cities while promoting *social change,* those urban visions were essentially projected from a top-down perspective and mostly remained only in texts, drawings, books, and models (Hall 1998; Fishman 1977), and perhaps even in our collective memory. During the 1960s and 1970s, the development of the postmodern critique started to question the lack of success of the social agenda of those modern visionaries and their followers, while creating a pluralist period for new thoughts, discourses, publications, exhibitions, and grassroots movements (Nesbit 1996; see also Frampton 2007).

For example, since the 1968 'People and Planning: Report of the committee on public participation in planning', often referred to as the 'Skeffington Report', several public consultation processes were introduced in the British planning system, in order to incorporate citizen views on the urban plan development and encourage their active participation (Tewdwr-Jones 2012:199). In the following decades, a new paradigm of collaborative planning (Healey 2006) has influenced design theory, while searching for innovation in forms of communication for public engagement in the planning process, with distinct variations that include the promotion of neighbourhood planning through government policies in the beginning of the 2010s (Tewdwr-Jones 2012:182-205; see also Allmendinger and Tewdwr-Jones 2002). More recently, new methodologies are being proposed in order to develop long term strategies for UK cities (Government Office for Science 2016; Tewdwr-Jones and Goddard 2014; see also Verbeke 2017), which are also focused on innovating different communication media and co-creation processes to engage multi-

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disciplinary stakeholders, for example in the city of Newcastle upon Tyne (NCF 2017).

Following this evolution in civic engagement manifestations with a *social impact* at a local scale, it is also relevant to examine whether the global computable city can allow innovative measuring systems of the social impact of future visions, and specifically addressing public space. As such, interdisciplinary research between the fields of psychology and Human Computer Interaction (HCI) into the fields of architecture and urban design might provide innovative processes for this measurement of future visions.

How can we measure the social impact of a future urban vision? Which user experience measuring systems, from such fields as psychology and HCI, could advance co-creation processes for public spaces in local contexts? Could the exploration of the relationships between co-creation in urban design and mathematics enable new collective visions for the public spaces of tomorrow?

In this presentation, we describe a part of our Ph.D. research in progress that aims to explore measuring systems of public participation and co-creation for future urban visions. We present the description of an adaption of psychology and HCI methods and provisional results with Ph.D. students from distinct disciplinary backgrounds at Northumbria University, in order to measure urban visions for the future. These envisioning experiments were applied to the city of Newcastle upon Tyne in the North East of the UK, though potentially transferable to other cities in Europe.

As such, three moderated/in-person subject experiments in user experience with card sorting were conducted with participant observation and a 'think aloud' protocol, applying techniques from the fields of psychology and HCI. To test interdisciplinary co-creation, these subject experiments were conducted with Ph.D. students from different nationalities, reflecting the global community at Northumbria University, and disciplinary backgrounds of the four faculties of: Business and Law; Engineering and Environment; Health and Life Sciences; and Arts, Design and Social Sciences. These experiments were conducted iteratively, in order to allow a generalisation of the method:

1. a 'card sorting' by individual participants, divided in three similar tasks, in order to categorise a pre-determined 24 knowledge card set;
2. a 'card sorting' by groups of 4 individuals; divided in three similar tasks, in order to categorise the same card set with and without a map of a public space of the city of Newcastle upon Tyne;
3. a 'card sorting' by individual participants, divided in three similar tasks, in order to categorise the card set after seeing the video "Envisioning Futures: Visualising Newcastle City Futures 2065" about the past, present, and future of the city of Newcastle upon Tyne.

Following participant observation and a 'think aloud protocol', the quantitative and qualitative data was then collected through analogue notes and digital photographs, in order to be examined utilising card sorting techniques of evaluation, such as cluster analysis, sum of cards matrices, proximity matrices with and without quality of fit,

surface maps, and other original visualisations showing the relationships between co-creation in urban design and mathematics (Figs. 1 and 2).

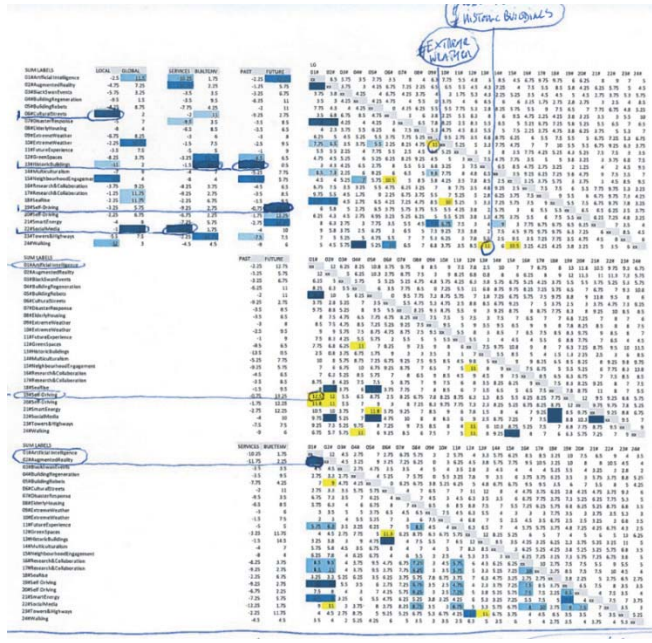

Fig. 1. Sketched and provisional analysis through proximity matrices with quality of fit, for the first envisioning experiment of individual ‘card sorting’

Fig. 2. Cards and map of public space in Newcastle upon Tyne (UK), in process for the second envisioning experiment of collective ‘card sorting’

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