

# Co-designing the Affective City: Speculative Explorations of Affective Place-Based Experiences

Irina Paraschivoiu  
Center for HCI, University of  
Salzburg, Department of Artificial  
Intelligence and Human Interfaces,  
Salzburg, Austria  
Irina.paraschivoiu@plus.ac.at

Narmenn Marji  
Gamification Group, Tampere  
University, Tampere, Finland  
narmeen.marji@tuni.fi

Janset Shawash  
Gamification Group, Tampere  
University, Tampere, Finland  
janset.shawash@tuni.fi

Alexander Meschtscherjakov  
Center for HCI, University of  
Salzburg, Department of Artificial  
Intelligence and Human Interfaces,  
Salzburg, Austria  
alexander.meschtscherjakov@plus.ac.at

Marta Dziabiola  
Center for HCI, University of  
Salzburg, Department of Artificial  
Intelligence and Human Interfaces,  
Salzburg, Austria  
marta.dziabiola@plus.ac.at

Mattia Thibault  
Gamification Group, Tampere  
University, Tampere, Finland  
mattia.thibault@tuni.fi

## ABSTRACT

The built environment has the capacity to generate affective responses and elicit emotions. Spaces can be lively and cheerful, fearful or boring, and these emotions can be triggered by design elements, or by previous experience and memory. However, urban design and smart city approaches have often minimized the role of emotions in the built environment. In this workshop, we actively engage participants in co-mapping, ideating and speculating potential affective interactions in future cities. We curate a typology of urban spaces and emotional states, as well as a toolkit of strategies from urban design and HCI research and practice. We invite participants to contribute their own selection of places and emotional states, iterate on tools, and conceptualize speculations for the affective city. Our workshop will result in a more nuanced understanding of the relationships between people, places, technology and affect.

## CCS CONCEPTS

• **Human-centered computing** → Human computer interaction (HCI); HCI design and evaluation methods.

## KEYWORDS

affective interaction, urban design, future cities, speculative design, co-design

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## 1 INTRODUCTION

Affective encounters have, since long, been an interest for the study of public space [25, 42], but modern urban design has been more focused on a greater involvement of the public into development processes [24]. Participatory urban planning places emphasis on participation, transparency, and supporting the needs of disenfranchised groups. They also argue for design with the purpose of equity, wellbeing, accessibility, amenities, and sociability, while listening to community needs and aspirations [45]. Strikingly, though, the role of emotion and affect in the way individuals and communities shape relationships with their environments has received little attention in urban design research and practice. While researchers and practitioners often employ methods such as interviews or urban ethnographies to understand people’s experiences, there is little account for emotion as a factor in urban decision-making. Lyles and White [29] name this “the emotional paradox of public engagement” [29], when planners minimize and contain the influence of emotions in their work.

Urban planning often entails conflict, resulting from negotiating competing demands. As Arnstein highlights [2], the emotions of citizens are heated and volatile [29], but her further account of the participation ladder omits the challenges of emotions as a part of the process. An “emotional turn” in the built environment professions [32] has argued for a more purposeful engagement with emotion in planning practice. “Affective urbanism” [43] shares a common ethos with embodied interaction, as it views the engagement with space as a bodily experience, reflecting interpersonal encounters.

In this workshop, we address this gap by actively engaging participants in co-mapping emotional experiences in built environments, ideating and speculating potential affective interactions. To this end, we curate a typology of urban spaces, a collection of emotional states, and a toolkit with strategies from urban design and HCI research and practice. We invite participants to contribute their own selection of places and emotional states, iterate on tools, and conceptualize speculations for the affective city. Our workshop will result in an extended toolbox and a more nuanced understanding of the relationships between people, places, technology and affect.

## 2 BACKGROUND

### 2.1 Places and non-places. Affective experiences in built environments

Space was not always regarded as a vehicle of meaning or emotions. Up until the 1970s, human geographers considered space as a homogenous and neutral container filled by independent directional and quantifiable human activity. The “quantitative revolution” of the time sought to restyle geography as a positivist social science geared towards statistical testing and theory building to construct predictive spatial models [18]. However, with the advent of post-modernity, space was understood as a social construct, and when serving as a vehicle of meaning and affect, it became known as “place”. Place represented a distinctive type of space that was defined by the lived experiences of people and was viewed as fundamental in expressing a sense of belonging and providing a locus of identity [42]. Humanist geographers challenged the abstract approach to the analysis of place, and conceptualized it as subjectively defined [26, 31, 42].

From the 21st century, the spatial dynamics of meaning and affect underwent shifts in global socio-political as well as technological paradigms. Globalization gave way to neoliberalism, while the post-structuralist ontologies for conceptualizing space as complex and subjective were superseded by digitally driven smart cities concepts, which emphasize connectivity, energy, and ubiquitous computing. The associated erosion of meaning and emergence of new typologies of non-place has long been critiqued by theorists such as Marc Augé [4]. The rise of the importance of social virtual worlds in cyberspace also presents uncharted challenges for socio-spatial constructions.

Recently, psycho-physiological measurements in urban space have been used to map emotional experiences in cities, relying on parameters such as heart rate, breathing rate, skin conductance and environmental changes [20, 27, 37]. However, the accuracy of emotional tracking and its ability to accurately portray the diversity of human experience remains open for debate. As a result, some researchers have complemented sensing approaches with surveys, crowdsourcing data from social media platforms such as Twitter, or location-based services [23, 37]. These approaches, however, do not consider the role of emotions as constructed within interaction, or the representability of emotions and affect. Some theorists, for example, distinguish between affect as pre-cognitive, as opposed to feelings, which are tacit and intuitive or emotion, which is conscious and experienced [35]. In short, emotional entanglement with spaces requires an understanding of rich and situated experiences. It also implies that, in the context of interlacing cities with sensors and of the blurring boundaries between physical and digital, emotion is constructed in interaction with places, technology and other human and non-human entities [11, 17].

### 2.2 Speculative co-design for future cities

Speculative design has grown as a practice and methodology adopted in HCI for the envisioning of future scenarios [7, 8, 10, 21]. Having close ties with critical design, discursive design and future studies, the ethos of speculative design has been to challenge the inherent optimism and solutionism specific to the design profession(s).

Instead, speculative design reframes discussions about possible futures, by looking deeper at causes and consequences related to wicked problems [14]. Speculative design is by nature conceptual [14]. It can take on many different tones, such as uncanny, alternatives and counterfactuals, magical realism or scientific [5, 10] designs. At its best, it effectively blends science fact and science fiction, constructing a bridge between current reality and the fictional elements of the concept [5].

Speculative design is particularly well suited for critical thinking related to the built environment, not least due to the timescale necessary for the implementation of technologies in the urban realm. Urban development is time- and resource-intensive, and master plans are often drafted decades ahead. That is also the case for more recent “smart city” strategies adopted across municipalities and regions. The deployment of technologies sometimes requires passing several policy stages, before reaching use in public spaces: for example, the use and testing of autonomous vehicles in cities is highly regulated to ensure traffic safety. Speculation has been used in relation to the built environment before, for example to envision the interactions of transhumans in future smart cities [41], to highlight tensions in public participation and public space [9], or to engage communities on the topic of local identity [6].

Speculation enables urban designers, researchers and interested audiences to engage with the limits and possibilities of current technologies, and their implications. The process of designing fictions becomes a tool for initiating dialogue with stakeholders, such as researchers, designers and engineers, as well as the wider public [5]. Many design fictions are constructed by experts [13, 44], but often researchers also involve study participants in the design of the fiction, by curating a process of world building. Participants are firstly engaged with one or more topics [6], receive a brief or story prompts [30], go through a process of ideation [19, 30], and finally prototype. “Diegetic prototypes” can include stories [12], vignettes [28], enactments and role plays [1], cutouts and comics [15], magic machines [1], videos [40] and more. In our workshop, we build on this previous work, by taking a co-design approach to speculation of future affective interactions in the built environment.

## 3 WORKSHOP STRUCTURE AND OBJECTIVES

The purpose of this workshop is to actively engage participants in co-designing speculations and critically reflect about affective experiences in built environments. To this end, we will ask participants to submit a selection of photos representing places they are familiar with, as well as emotional states connected to them. This requirement will be included in the workshop registration process, to give participants a chance for reflection and preparation. We will suggest including a variety of places and non-places. Each photo will be accompanied by a short caption, containing emotional states, memories or an explanation why the particular place was chosen.

We aim for a full day workshop: the first part will focus on mapping place-based experiences; the second on co-designing speculative artifacts. We will start with an introduction to the workshop topic and invite participants to reflect and co-map places and emotions, based on the submitted photos. They will also define affective goals for interaction using 2D or 3D representations of spaces pre-curated by workshop organizers. The spatial typology will be based

on processing the photographs submitted by participants, as well as an additional selection. In the second half, we will introduce a toolkit of interventions, including digital, hybrid and physical design strategies. We will include futuristic and speculative design approaches and examples from the HCI community. In groups, participants will be invited to choose methods and designs from the presented toolkit, or come up with their own, as well as define their speculative affective technologies and interventions in the form of collages, stories, sketches, and maps. We will wrap-up the workshop with a critical discussion on understanding and representing lived urban experiences, as well as challenges and opportunities in designing for the “affective city”.

### 3.1 Affect and emotional states

In addition to inviting participants to reflect about their place-based memories and emotions, we will curate a selection of affective states. We will avoid an oversimplification of emotions, while still providing participants with a vocabulary which they can alter and extend based on their own experience. Our selection will include the basic emotions as portrayed in the emotion wheel [36], but also mixed feelings (e.g., bittersweetness) and moods (e.g., hope). We will avoid a portrayal of emotions as “positive” or “negative”, as their interpretation is highly dependent on culture and context, as well as highlight differences between affect, feelings and emotions [35].

### 3.2 Spatial typology

As most of us step out from the comfort of our homes, we experience the city through its spaces. These differ in scale and function, degree of openness, historicity, greenery, integration of natural elements, as well as sociability. Some spaces invite us to linger, such as public parks, while others rush us, such as bus stations. Some spaces invite people to come together, such as a café seating on a wide street pavement, while others disperse them, such as narrow street pavements adjoining a blind wall. However, all these spaces share the capacity to generate affective responses and entice emotions. Plazas in contemporary business districts could be boring, while in old city centers could be lively and cheerful. In this workshop, we consider the specificities of public spaces to be important design constraints. They help imagine interactions in a specific context. Our typology will address different types of spaces, primarily those that exemplify the categories discussed above, and those that punctuate the urban lives of workshop participants.

### 3.3 Toolkit

The toolbox of urban designers and urban planners contains a diversity of interventions, which are meant to improve livability, emotional connection to places and community belonging. Urban planning usually targets larger areas, for example, by redesigning entire plazas or mixing the use of land. Urban design, on the other hand, operates at a human scale. Some strategies aim to entice positive feelings such as awe, curiosity and harmony. In cases of colonialism and imbalanced power dominance, spaces have also been designed to inspire fear, despair and powerlessness. With the integration of digital interfaces in the physical realm, the possibilities of enriching the urban experience have grown exponentially.

This has led to two, divergent approaches [39]: a closed and prescriptive one, where every outcome is predetermined and pre-designed; and an open one, which seeks coordination and collaboration. The latter prioritizes problem finding and can be viewed as ultimately democratic. In this workshop, we take an open approach to the design of city spaces by engaging in a critical assessment of their affective affordances, and in speculative and imaginary explorations using smart interfaces. We curate a set of tools inspired by collaborative urban planning, tactical urbanism and placemaking [3], such as enhancing urban furniture or appropriating micro-spaces. We are also inspired by urban interaction design and media architecture examples dealing with storytelling, urban playfulness [33], mixed reality applications [34], responsive built environments [38] and tangible interaction through novel and smart materials [16, 22].

## 4 CALL FOR PARTICIPATION

We will disseminate the call for participation through our institutional and individual networks and platforms, including social media, websites, mailing lists and blogs. We are targeting the participants of the Mindtrek conference, as well as other interested students, researchers and professionals. Therefore, the call is open to academics and practitioners interested in the topic, coming from varied backgrounds. Interested applicants will be required to fill in a registration form, as well as submit pictures of a selection of places and non-places from their current location or from other cities which are meaningful to them. We will ask participants to reflect on and name the way they experienced these spaces, and detail memories or emotions associated with them.

## 5 ORGANISERS

**Irina Paraschivoiu** is a research fellow at the Center for Human-Computer Interaction, University of Salzburg and a Senior Strategist at the AR/VR company Polycular. Her research is focused on understanding and enhancing the lived urban experience through augmentation, playfulness and embodied interaction.

**Janset Shawash** is an architect, urban designer and planner, as well as a researcher at the Gamification Group and a doctoral candidate of Human-Technology Interaction at Tampere University. Her research focuses on implementing extended reality in contexts of urban heritage, creating engaging urban experiences, and reconceptualizing the creation of the built environment in the virtual realm.

**Marta Dziabiola** is a Junior Researcher at the Center for Human-Computer Interaction at the University of Salzburg and a UX/UI designer at an NLP startup KNOWRON. Her research focuses on inclusive design in urban environments, technology-mediated communication, and the practices of co-designing.

**Narmeen Marji** is an architect and urban planner and designer, specialized in Augmented Reality development and cross-platform application building for Architecture, Urban Planning, and Design. She is currently pursuing her PhD at Tampere University, where her current research focuses on the design of virtual space in urban contexts.

**Alexander Meschtscherjakov** is Associate Professor at the Center for Human-Computer Interaction and Computer Science Department of Salzburg University. He is deputy director of the

**Table 1: Workshop schedule**

Stage	Activity	Outcome
Introduction	Critical introduction to smart cities and urban technology implementation in built environments. Introduction to affective experiences in built environments.	Participants have a clear understanding of workshop goals. Participants are familiar with the main concepts and themes of the workshop.
Co-mapping	Co-mapping of the emotions and places submitted by participants through sign-up.	A co-created map of types and examples of places. A profile of affective attributes for each space.
Ideation	Using a 2D or 3D representation of different typologies of spaces, participants: create an emotive map of spaces set affective goals.	A wish-list of affective goals for each space on the map.
LUNCH BREAK		
Co-design: warm-up	Participants are introduced to a toolkit of interventions and technologies. In groups, participants choose which types of tools they want to use or propose new ones.	A toolbox of affective interventions in city spaces, expanded by the participants' contributions. A selection of tools that the participants aim to implement.
Speculative design	Participants define their speculations as collages, stories, sketches and maps.	Speculative designs to achieve the affective states according to the selected tools.
Discussion and wrap-up	Participants reflect on and discuss the diverse interpretations of affect, co-designed meaning of emotions in interaction, positive and critical aspects of the speculations.	Critiques and commentaries for each proposal. Organizers and participants reach a deeper and more nuanced understanding of the potentials of affect in city spaces.

Center for HCI, leading the Car Interaction Lab and member of the senate of Salzburg University.

**Mattia Thibault** is an Assistant Professor in the Creative Industries at Tampere University. He is a member of the Language Unit and collaborates with the Gamification Group, the Centre of Excellence in Game Culture Studies and the Flagship project UNITE. His work revolves around the synergies between media and communication, playfulness and the built environment.

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