Talk to Me

A Multilingual Installation as a boundary Object for Inclusion in Digital and Public Participation

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Introduction

In the tension field between regulation, technology development and digital literacy, design is increasingly asking how the digital transformation can be made more equitable with regards to increasing social inequalities (Allmendinger 2015). Central to this is a renewed turn in critical social theories as well as in design and arts towards the role of artifacts and built infrastructures in shaping our realities, as well as towards material cultures (e.g., Barad 2014; Deacon 2011; Stakemeyer and Witzgall 2014). Within these developments that emphasize a new interpretation of the political implications of agencies and matter, the focus on design objects as epistemic objects (Mareis 2011) is gaining renewed consideration, with inquiries in the wide range of technical, political, social and aesthetic forms of knowledge that is negotiated in the given object itself and by means of this object. Against this backdrop, we use the artifact "Talk to Me. A Multilingual Interactive Installation" to elaborate on the role of design objects as epistemic objects in transdisciplinary processes. The installation was developed in the context of the transdisciplinary research project "INTERPART

– Intercultural Spaces for Participation" (2018–2021);* INTERPART took a research through design approach (Frayling 1993; Findeli 1998). The aim of the project was 1) to design and foster spaces for intercultural participation in urban development and 2) to better understand the role of social design for more inclusive technologies within processes of analogue and digital participation.

Building on the research conducted in the project INTERPART, we will discuss the relationship between participatory design, technology development and their political and social implications within urban planning. Central to these considerations is the hypothesis that social participation significantly conditions and determines digital participation. This text is a plea for the development of hybrid artifacts and inclusive participation formats and at the same time for a turn towards facing social challenges of digital transformation processes.

"Talk to Me" was developed in order to investigate the question of how to design more inclusive modes of participation in urban development projects. Our starting point was to experiment with hybrid modes of engagement that combine physical and digital or online forms of interaction. The installation was part of a series of onsite public interventions in the German cities Berlin and Wiesbaden, conducted within the social living labs (Franz 2015; Dezuanni et al. 2018) of the research project INTERPART.

Here we first describe the design artifact in its form, function and context of use. We will offer a reflection of the design research process that led to the development of the installation and give a summary of the actual forms of use during the interventions. We mainly draw on ethnographic data to understand the forms of interaction between users and the artifact and investigate the larger context of the setup and the activities that were conducted. We will then reflect on our work in the context of the potentials and confines of digital and public participation.

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The text closes with a discussion that aims at contributing, from a design perspective, to a wider discourse on concepts of digital sovereignty that focus especially on countering inequalities. By reflecting on the practices inscribed in and observed around the installation "Talk to Me," we contextualize design practices within a broader understanding of digital sovereignty as a process constantly in the making, as a condition of the ability to critically partake in the societal digital transformation and the shaping of our digitally mediated society. We therefore frame the findings with a focus on digital competencies and critical digital literacy. One assumption our findings are built upon is that people must experience and practice digital sovereignty in order to critically partake take part in the shaping of a digital transformation oriented toward the public interest – in line with the experimental approach to concepts of democracy stated by Helen Margetts (1994; 2015), an approach that focuses on the experience of democratic involvement and political participation. As a result, we assume that one of the main goals of design practice related to inclusive collaboration and the co-production of knowledge is to foster discussion and negotiation about the ways in which digital technologies reconfigure our participatory practices.

Fig. 1 Public installation in Berlin Moabit 2019. Design Research Lab.

Fig. 2 Public installation in Berlin Moabit 2019. Design Research Lab.

Initiating intercultural dialogue

"Talk to Me" is an interactive, multilingual installation that was designed as an artifact of intervention in public space. Its aim was to initiate dialogues with city dwellers. Our two leading research questions were: How can we design analogue and digital spaces of participation that are more inclusive in the context of urban planning and development, especially in highly diverse neighborhoods? How do we promote more inclusive dialogue? What role does digital participation play for individuals who usually do not take part in conventional participatory processes?

We were part of a research team that consisted of actors from different academic disciplines and practice partners, including designers and design researchers, sociologists, urban planners as well as colleagues from the partner city administrations, from participation practice and urban research. The field research took place in the German cities of Berlin and Wiesbaden.

In order to establish a presence in the social living labs in the two cities in the first half of the research project period, two public interventions were organized in each city. The research approach

"social living lab" (Franz 2015) was applied during the project duration in both cities as a transdisciplinary research framework: It included stakeholders from different fields in the co-research process, such as researchers, designers, community organizers, policy makers and local civic actors. Generally, the conceptualization as a social living lab emphasizes the assumption that the increasing symbiosis of local civic engagement and research infrastructures makes way for new possibilities for collective and collaborative problem identification and subsequent action to emerge – especially when the specific social context is regarded as central.[1]

The social living lab is first and foremost a research approach that focuses on social change in real-world contexts. In a social living lab, committed people from science and practice come together driven by a common topic and focused by time and place constraints. They address problems that directly affect coexistence in social, ecological or political terms (Bergmann et al. 2021) while linking theoretical-scientific knowledge and experiential knowledge. Social living labs stress the importance of considering the local context by developing a space of encounter and collaboration that is rooted in the actual life-worlds of those partaking in these processes of transdisciplinary inquiry (Wanner et al. 2018) – and by implementing a set of co-design methods and experimental technologies that foster negotiation processes with a special focus on countering phenomena described as the digital divide and digital inequality (Herlo et al. 2020).

Against this backdrop, being on the ground in real-life contexts allowed the project team to include local stakeholders and city dwellers as co-researchers in the process. The interventions consisted of a set of experimental participatory formats, with the installation "Talk to Me" as its center piece (Figs. 1–2, intervention).

1 In German discourses and funding structures on transdisciplinary, participatory and transformative research, the term *Reallabor* (real life laboratory) is usually used. While the concept of the "living lab" first emerged theoretically from the Massachusetts Institute of Technology in 2006 (Hillgren 2013) and has since then been spreading rapidly and worldwide (The European Network of Living Labs ENOLL), the concept of real life laboratory originates from sustainability research (Schneidewind and Singer-Brodowski 2014; Gerhard and Marquardt 2017). Despite different traditions, the terms are also often used synonymously. Depending on the discourse or objective, differences in methodology or implementation are possible, but the concepts show great overlap: They are understood, especially in Europe, as instruments to achieve greater citizen participation and social cohesion.

Visually and materially, the doorbell/intercom motif of the installation's interface was meant to establish a connection to urban life and referenced a familiar form of dialogical interaction. Examining names from different cultural backgrounds on doorbell panels of big apartment buildings is one way of learning about the diversity in one street or block. We also saw the possibility of the intercom as familiar, low threshold artifact offering affordance (Gibson 1979), which has the potential to temporally create a communicative bridge between strangers. The construction design referred to the concept of spatial intervention, which in the research context of INTERPART was defined as a temporary, playful and experimental interference in public urban spaces. All public interventions within the social living labs were designed to create a degree of irritation for the participants, and to break with some expectations that are attached to formalized participatory events in urban planning. This design approach was chosen with the intent of creating situations that are open to new pathways of interaction which may eventually break out of the self-referential framework of established participatory formats. For this purpose, the intercom was attached to a human-sized gate construction big enough for a person to walk through and placed prominently as an "entrance" at the intervention sites (Figs. 1–2). At this entrance, participants were asked to select their preferred language for the dialogue to follow by pressing a bell sign and thereby initiating the interaction. Conceptually, the artifact unified different experimental and playful approaches to address challenges of language barriers in urban participation processes. Attached to the doorbell interface was a Raspberry Pi mini-computer with a mobile LTE router connected to Google's AI-based translation software *Google Translate + google speech to text and text to speech*. For the participants that were interacting with the installation, the intercom consequently became a multilingual, tangible vocal user interface: a user interface where commands to a computer are given via a physical object. By designing "Talk to Me" as a multilingual interactive installation, we intended to gain insights into how interfaces need to be designed to make digital participation accessible to people with different language backgrounds.

The language selection for the installation was based on the knowledge of local partners about most of the spoken languages in the respective neighborhoods. However, at the same time it was also

determined by the limited availability of certain languages as speech-to-text or text-to-speech modules of the Google Cloud API. The service provided by Google was chosen due to it's relatively low-level technical accessibility and the large number of languages available. Our time and financial framework did not allow for alternatives requiring further developer work or an extensive research and development process in this field. Being aware of the inherent biases (Prates et al. 2020), and since no direct personal data was transferred, we decided to still work with the Google API but focus on the limits of AI based translation, rather than seeing it as a problem solver.

Conversations with the square

Urban planning projects are often concerned with the design of public social spaces such as parks and squares. "Talk to Me" ties in with this practice and involves participants in a multilingual dialogue with "the square," connecting them to the urban space they are part of while they interact with the installation. A conversation with the square is initiated by a visitor pressing one of the bell signs. Each sign is assigned a language. Visitors make a choice by pressing the plate featuring the term "the square" in their preferred language.

The intercom (computer) then starts to speak as a personification of the square by greeting the person and initiating a dialogue about people's past activities according to a query logic:

> **Computer:** "Hello, what's your name?"
>
> **Visitor:** "(name)."
>
> **Computer:** "Hello (name), nice to see you. Tell me in two or three sentences what you used to like to do outside?"
>
> **Visitor:** "I used to meet friends and play ball at the roadside." (Example)
>
> **Computer:** "Thank you, (name). Your answer will now be printed out to share with others. See if I understood you correctly."

Afterward, the person was asked to pick-up their answer at the other side of the gate, where it was printed in their original language, supplemented by a selection of four of the following languages: German, English, French, Turkish and Arabic.

In the development of the installation, it very soon became apparent that the Google Cloud API would not provide very accurate translations. Furthermore, ambient noise or speaking in a soft voice would lead to more errors in the speech recognition, which were passed on in the transcription into text and the subsequent process of translation. Because these errors could not be prevented within the scope of the project, it was decided to use these potential errors as an asset to engage people in dialogue with each other by suggesting to them to make corrections by hand and to ask for help with languages they didn't speak themselves (Fig. 3). The printouts were meant to act as a visual display of the dialogues and as an artifact to start conversations over ramifications of communicative misunderstandings. Those conversations could then lead to in-depth discussions about the neighborhood, to exchange of individual stories and experiences and, in purpose-built narrative spaces, to interviews and conversations about intercultural dialogue in the neighborhood or in urban planning (Seydel et al. 2021).

Fig. 3 Correcting the printouts. Design Research Lab.

What are we talking about?

When conducting participatory processes in urban planning, citizens are usually approached with a specific subject or question, to which city representatives expect to receive concrete answers. However, based on interviews conducted with local initiatives in the beginning of the project, the research team decided to take a step back and use the first interventions on the ground to establish contact and initiate a conversation with city dwellers.

For this purpose, a narrative approach was applied: "Tell me in two or three sentences what you used to like to do outside." The question posed by the computer, on the one hand, tied into the past of the user, to gain insights into their different backgrounds. On the other hand, people were asked to share personal stories, which established awareness and acknowledgement for the importance of their experiential knowledge in urban planning processes.

Another aspect was the assumption that asking visitors a direct planning question – like "What changes would you like for this square?" – would lead to a very limited range of practical answers. Such a disappointing result would neither give credit to the complexity of developmental interventions into urban spaces nor would it leave visitors with a sense of social interaction. They would not feel woven into the social fabric on site with such a simple query. In all of the participatory formats created in the research project INTERPART, therefore, the intention was to signal an opening up towards citizens and neighbors, towards their implicit and tacit knowledge as experts of every-day life, towards different forms of communication, knowledge and people from different backgrounds, those who usually do not otherwise join in formalized participatory planning processes. An open mindset for direct and digital participation had to be communicated, transported and inscribed by means of all elements of the public intervention.

It is important to mention that, as design researchers, we were very well aware that participatory forms of design and research are not in and of themselves an efficient act in the quest for socially robust and more equitable outcomes. The question of participation in design has been at times overlooked or oversimplified (Pierri 2018). In our research over the last decade, we refer to the practice of participatory design as defined within the Scandinavian tradition of social movements during the 1970s. This differs from other traditional

practice of collaborative design in many ways: It has a clear interest in issues of equality, social justice and participation, and exhibits a particular sensibility towards problems and complexities, rather than being primarily oriented towards (often oversimplified) solutions. The forms of participatory design and research we applied aim at reframing the role of expertise within knowledge production, and while not being against expertise in itself, they challenge experts as a source of power and authority (Schuler and Namioka 1993). In our project, we were particularly aware of questions of power relations in participatory research and how these questions are transformed during transdisciplinary research work.

Emotional involvement through a multilingual conversation

The installation, as an experimental and also poetical object for public intervention, attracted curious glances and motivated passers-by to inquire with interest what was going on in the squares. Different visitors emphasized the fact that their own language could be found on the interface as very positive. Listening to the digital voice in their mother tongue (often not the local language) in this unconventional setting had a deep impact: They felt valued and emotionally addressed and were touched by the fact that they could converse with a "machine" in their primary language. According to our fieldnotes, the installation was described as an "inspiring, playful format for dealing with language" (Participant observation Moabit, F. Schüffler, 4.6./p. 3).

Numerous visitors smiled at errors that occurred in communication with the machine, due to time delays or background noises. However, moments of frustration also occurred, especially when the speech recognition could not detect specific Arabic dialects. In one case, this led to a direct controversy between one participant and us. A young man was pretty annoyed because his name was just not correctly recognized by the machine. Others were amused by the wrong name recognition. What was planned as a playful interaction became a situation that stressed how very sensitive lingual misunderstandings can be. In this case it probably opened the floodgates to emotions of feeling marginalized and not recognized. In most cases, these comprehension and translation errors nevertheless led to an engagement with the tool and became (unplanned) occasions for conversations about personal experiences, and ultimately about exchanging ideas on neighborhood topics. The installation thus became the first

point of contact for many participants in the interventions, a point of attraction and a conversation starter.

Just as on a regular intercom, most visitors did not leave long messages but answered rather briefly in short sentences. This was in many cases due to the unexpected interaction and the type of the initial question posed by the computer voice, but clearly also because of the lively situation on the square generally. The installation with the gate was more of a passage point than a place to linger. And yet, the short answers and notes were often rather personal and did start conversations, although they certainly were not usable for an in-depth analysis or have any representative implications. However, the installation drew participants into more focused co-research formats, such as our purpose-built narrative spaces on the square and workshop.

With the move from the open public space into inside do-research formats in the second part of the research project, "Talk to Me" was then further developed and detached from the gate construction. We transformed it into a smaller, more mobile object (Fig. 4). This second iteration of the installation, which could be held in two hands, allowed for a more intimate engagement with the artifact. Complexity was reduced by making the technology and the process behind the bells visible to users. While the technology remained largely invisible in the first version of the installation (during the public interventions), the second, small version of "Talk to Me" was meant to allow an integration of the artifact as an independent agent and co-equal participant within workshop settings – but also as a critical device (Raby 2001). Making the technology of the device transparent aimed at addressing questions of data security and the implications posed by using Google APIs, ultimately as means to politicize technology. Unfortunately, due to the COVID-19 pandemic, we were not yet able to implement and work with the later version of the artifact. However, the core idea of the installation remained the same: to create a hybrid, experimental participatory setting in which users could experience and engage with different aspects of technology while being situated in a research-specific, physical space.

Fig. 4 Photo: Katrin Greiner.

Digital participation and the problem with the digital divide

The late 1990s were the pioneering times of digitized participation. Märker (2017) describes a back then new development project from 1998 in Bonn as the first approach to e-participation in Germany. Urban development plans were published on the internet in a "digital gallery," and an online forum was installed for citizens to comment on these plans. Simultaneously, discussion forums were held, and people were introduced to the new technology during public assemblies. While only three logins to the e-participation platform were registered back in 1998, hopes for participation were still high in these pioneering years. It is important to consider that this was the year Google introduced its search engine and the internet only had begun to become a mass phenomenon. In 2002, still less than 50% of German households had and used an internet connection, but numbers increased rapidly: Ten years later the share was up to 72% and grew up to 93% in 2017 (Eurostat 2017). Interestingly, the basic setup of the 1998 e-participation project in Bonn is still in use today.

More than 20 years after the first attempts on digital participation, digital communication is ubiquitous and considered one of the

key driving forces of societal change. This mediatization of society and the ubiquitous digital transformation builds on the quantitative increase of global connectivity, but it has also brought massive qualitative changes to social and cultural life. The general modes of engagement with people and their surroundings have undergone radical changes in this development (Couldry and Hepp 2013; Hepp 2020). For a long time, the digital transformation was dominated by technological optimism, with promises of access, information, participation and of overcoming global inequalities. Experimental realms, co-operations and project-based interventions are clearly benefiting from the expansion of globalized ICT. But considerable research shows that individuals, communities and regions that are culturally, socially and economically marginalized benefit less from the digital transformation and often hardly participate digitally. This potentially leads to greater disadvantages and inequalities (Alam and Imran 2015; Ragnedda 2018; Eubanks 2018; Sloane 2019).

Despite the increasing application of digital participation in urban planning and development, many of the challenges generally faced in participation projects remain the same: Just like offline participation, online participation is socially selective. One major problem that has received little attention in the discussion on formalized digital participation is the digital divide (Cooper and Weaver 2003) which manifests itself on three levels:

- in access and equipment (internet connection, computer, smartphone),
- in knowledge regarding the use of and navigation through the digital,
- in the material and sociocultural advantages that occur to people with appropriate skills. (van Deursen and van Dijk 2018, 2)

One of the most important challenges to be addressed on different levels of design, policy and governance is to understand the digital divide, also on a global level, with its inherent structures of inequality and its severe social implications – as the current pandemic and the accelerated remote work have made more than obvious (van Deursen 2020). As summarized by Massimo Ragnedda (2018), a critical digital

literacy is needed to adequately tackle key issues of participation and to address the growing digital divide at all levels.

Designing for digital participation and inclusion also means fostering discussion and negotiation about the ways in which digital technologies reconfigure our collaborative and working infrastructures. These public and multi-stakeholder debates are crucial to achieving a balanced view of the effects of digitalization in collaborative practices and urban planning – as a key factor for advancing digital literacy, democratic self-determination and empowerment within these areas. We understand digital literacy to not only stress competent navigation through the digital world but embrace the dimension of steering and designing processes of digitalization – as a form of critical, socio-politically embedded digital literacy. The skills required to achieve digital literacy are regarded here as an expanded concept towards more digital equality, with the focus on what people are effectively able to do – as an expression of their freedom and agency.

Holistic approaches to intercultural participation

The digital divide is closely linked to other socio-cultural and socio-economic factors – particularly with regards to household income. Age, gender, political interest and educational attainment also affect the use of digital media and with it digital participation in urban development (Hoffmann and Lutz 2019). When developing digital formats, therefore, consideration must be given to the advancement digital competencies and critical digital literacies through direct and personal interaction. The importance of participation in the context of designing physical *and* virtual public spaces is increasing, because digital participation is negotiated as a crucial factor for co-designing modern democracies. Thus, integrative approaches that combine offline events with digital platforms and online tools are now more often being implemented (de Jong et al. 2019).

When it comes to intercultural participation, the communicative and performative aspects of analogue and digital participation become even more important. This became especially apparent when in 2020, facing the pandemic, various areas of life had to be moved into the digital space within a short period of time. A few months into the pandemic, our research group talked to representatives of local initiatives and organization in Berlin Moabit who work with refugees and immigrant communities. These intermediaries' actions,

their engagement and political role have been reconfigured by digital technologies. The possibilities of self-organization and participation have changed over the last decades, expanding the range and effectiveness of project makers and civil society initiatives, fueled by digital technologies that are almost ubiquitous in post-industrial societies. But still, their work usually involves a great deal of face-to-face encounters and personal engagement. Because these organizations depend largely on volunteer work and government funding, the sudden transition of all of their participatory formats into the digital space was particularly difficult. They described language barriers, limited access to digital technology and limited digital literacies (especially in the education sector) as the main challenges that prevent people from taking part in (virtual) public life. One representative reported that most educational information on infection risks and restrictions imposed by the government was only made available in German, and the language used was rather complex. This created a lot of uncertainty for the would-be immigrants he is working with. Others observed the limited capacity of parents to support their children created by the lack of access to technology and by language barriers faced in the context of homeschooling. Many of the housing facilities for refugees, for example, do not have internet access.

While the transition to online formats still helped intermediaries to stay in touch with their members, all the representatives stressed the importance of the design of these digital spaces: The design premises should be needs-oriented, based on trust and openness, or in other words, a fundamental intercultural sensitivity. In this context, intercultural sensitivity was described as a sensitivity to the specific realities of life and of different people living together in our society. The ability to put oneself in another's position in order to recognize specific conditions, prerequisites and acknowledge and appreciate differences. This requires a certain degree of flexibility, a quality that often positively distinguishes nonprofit organizations from state or other administrative institutions.

The experiences encountered by these organizations during the pandemic make the conceptual linking of different communication formats and channels all the more important. If digital participation is used as a democratic tool to involve cities' inhabitants in their development and thus in the shaping of their lives, the inequalities and

exclusions created by participatory formats need to be considered when physical and digital spaces of participation are designed.

Creating interculturally sensitivity spaces can mean providing information in several languages and in language simple enough to ensure that everyone can reach the same level of understanding. In the same way, it means dropping ideas and projects if they do not address the needs and interests of the people for whom they are intended. All representatives of the four organizations the research group talked to emphasized that the basis of their work is always the interpersonal relationship. Fabian Thomsmeier of the organization Karame sums this up as follows: "Our core work here is the work on site, with the people" (F. Thomsmeier, Interview, June 24, 2020).

Cross-mediality as a conceptual approach plays a decisive role here. It combines on- and offline media and formats of exchange and dialogue. Both virtual and physical spaces of participation come with their own specific challenges, however, a combination of online and offline realms that build on and complement each other has the potential to promote intercultural participation: a bundle of activities that take into account different needs, individual resources and communication styles.

Conclusion

The social complexity in our post-migrant and post-digital society particularly challenges the lack of diversity in urban participation. Countering inequalities as well as deterministic technology-driven perspectives on societal challenges, especially in times of crisis, is one main task within participatory design and research. As a result of our endeavors, we can say that the interactive artifact presented here and the designed situations around it triggered learning and thinking processes among both the researchers and the participants. Our experience with the chosen formats of a hybrid artifact and broadly inclusive participation shows how important the design of such participatory situations can be. With the help of a design that is open to conversation, previously marginalized groups can better engage in participation situations in which they find room to formulate their perceptions, opinions and needs. This is primarily about the attitude that goes hand in hand with the design of participation spaces and situations.

The design of physical objects, reference systems and processes has a significant influence on whether and how individuals or groups can exchange information, engage and trigger an intercultural dialogue. The socio-material and socio-technical arrangements (Latour 1999; Ehn 2013), i.e., the composition and interplay between people and their material and digital environments, influence real-world contexts and thus the way people act and interact. It is thus all the more important to advance public debate on who is taking part in shaping our digitally mediated societies and how the participation processes are designed, e.g., to foster discussion and negotiation about the ways in which (digital) technologies reconfigure our realities. Through the lens of digital sovereignty, in fact, questions of critical digital literacies as well as the skillsets that people need in order to understand, navigate and shape digital realms become a main aspect of concern. While digital technologies support individuals and communities in organizing, networking and bolstering commonality – and thus promote participation generally –, it has become certain that both local governments and civil society actors must face up to the challenges of the digital divide and digital literacy to adequately address important questions of equity and participation. The question of the impact digital technologies have in fostering diverse participation, inclusion and engagement by more marginalized groups emerged as a critical one for our project, wherein the role of design can be considered ambivalent. The discipline of design has a key role to play in revealing the negative impacts of technology. It can also address what shape technologies may take, what is made explicit and what is not, what is possible and what is not, who has access and benefits from them and who is left out. For all these reasons, we recommend that the questions of how to grasp these issues should be addressed jointly by academic researchers from different fields of knowledge, as well as practitioners and activists within the fields of urban planning and digital participation – as practiced in transdisciplinary social living labs. The opening arguments on a wider notion of sovereignty stress the importance of design for digital participation and inclusion. A design approach that frames digital sovereignty as a performative practice and which requires constant deliberation, re-negotiation of rights, assessments of risks, opportunities and capabilities (Pierri and Herlo 2021).

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