

Article

The StoryMapper: Piloting a Traveling Placemaking Interface for Inclusion and Emplacement

Hanne Vrebos ^{1,*}, Paul Biedermann ^{2,†}, Andrew Vande Moere ², Koen Hermans ¹, and Karin Hannes ¹

¹ Centre for Sociological Research, KU Leuven, Belgium

² Research[x]Design, KU Leuven, Belgium

* Corresponding author (hanne.vrebos@kuleuven.be)

† These authors contributed equally to this work

Submitted: 15 December 2022 | Accepted: 18 April 2023 | Published: in press

Abstract

As a response to traditional (top-down) urban planning processes, placemaking engages local citizens in the process of shaping the form, social activity, and meaning of places around them. However, placemaking practices similarly face political challenges regarding inclusion and emplacement. These challenges relate to who participates, facilitation through linguistic discourse, and place engagement itself. Attempting to address these challenges, this article (based on a pilot study) reports on the design and deployment of the StoryMapper, a traveling placemaking interface that uses a participant-driven “chain of engagement” recruiting process to invite participants to create emplaced “morphings” (i.e., visually produced stories superimposed on public space) to spark dialogue on a digitally facilitated living map. This pilot study took place within a larger placemaking project that engages citizens to share their ideas regarding the reconversion of a community church. Plugging the StoryMapper into this larger project, we discuss preliminary findings relating to the role of placemaking facilitators in citizen-driven recruitment and the role of multimodality in placemaking processes. This pilot study suggests that inclusion should not only be evaluated based on who participates and who does not, but also on how the tool itself, in its capacity to engage participants to visualize complex emplaced ideas, may facilitate inclusion of different publics.

Keywords

citizen participation; cultural heritage; design; emplacement; inclusion; mapping; pilot study; placemaking

Issue

This article is part of the issue “Resisting a “Smartness” That Is All Over the Place: Technology as a Marker of In/Ex/Seclusion” edited by Karin Hannes (KU Leuven) and Fred Truyen (KU Leuven).

© 2023 by the author(s); licensee Cogitatio Press (Lisbon, Portugal). This article is licensed under a Creative Commons Attribution 4.0 International License (CC BY).

1. Introduction

Conceptually, placemaking attends to the ongoing social practices involved in making and remaking physical places, compared to the more physical focus of traditional spatial planning (Akbar & Edelenbos, 2021). This current notion asserts that a place is not only shaped by the built and natural environment but also emerges through ongoing social practices and meanings ascribed to them on a daily basis (Cresswell, 2005). This means that placemaking is not solely a physical action but arises through the social activity that involves citizens (Akbar & Edelenbos, 2021). As such, placemaking can promote

collective decision-making about the future appearance, organization, and use of the socio-spatial environment. Thinking with Lefebvre’s spatial triad, which recognized the intricate relationship between cultural practices, imaginations, and representations in place (Lefebvre, 1974), we acknowledge the potential of creating meaning through stories in placemaking.

Placemaking as a social practice is implemented through a variety of interventions. In a literature review of theoretical trends in placemaking, Strydom et al. (2018) categorized placemaking as a physical, social, or economic construct and identified a trend of placemaking used as a tool for empowerment. This political

dimension of placemaking relates to the transformation of place to redistribute power. Such power redistribution benefits ordinary citizens, fosters a sense of belonging, and increases participants' impact on transformation processes (Stage & Ingerslev, 2015, p. 121). While in its initial conception it held the potential to challenge the dominance of top-down planning by taking into account everyday encounters (Courage et al., 2020), recent critique claims that placemaking became a buzzword to address all urban challenges or aspire a certain metropolitan lifestyle (Platt, 2021). Like other participatory processes (Cooke & Kothari, 2001), placemaking is a complex practice that introduces various challenges related to inclusion and emplacement.

First, placemaking practices have been criticized for being insufficiently inclusive, as citizens may be excluded by choice or structural inequalities (Platt, 2021). As such, placemaking struggles to achieve diverse attendance. Research practices are faced with similar challenges, as there is a tendency to work with those people that voluntarily attend participation events, who are then taken to represent "the community" as a homogenous group (Cornwall, 2008). Furthermore, participatory researchers rarely report on bias and drop-out rates in the samples they describe or on dynamics of exclusion, self-exclusion, or peripheral participation (Cornwall & Gaventa, 2000). However, placemaking facilitators, be it practitioners or researchers, inherently impact the recruitment process and potentially reinforce existing power dynamics (Biedermann & Vande Moere, 2021). While popular definitions typically refer to inclusion as who does and does not participate, more substantive definitions refer to the recognition and valuing of differences among citizens by providing the necessary support to ensure that everyone can participate (United Nations General Assembly, 2007). Some scholars argue against binary distinctions between top-down and bottom-up facilitation and propose a more collaborative and ethical approach based on Massey's (2005) conceptualization of place as relation, a site of multiplicity and dynamic, from a positionality at the middle. This reinterprets placemaking as an always-becoming process that is never started or finished (Platt, 2021).

Second, the notion of placemaking as always-becoming directly links to emplacement, as it does not start from a tabula rasa but reshapes existing configurations in real-world environments. The spatial turn refers to the growing academic interest in the role of place, as well as the acknowledgment of the agency of place (Coemans et al., 2020). In participatory research, this is illustrated by the growing recognition of the significance of spatiality in reaching empowerment aims (Kindon et al., 2007). However, Jon (2020) points out that planning's predominant focus on discursive practices in decision-making has overlooked spatial and sensory aspects of the built environment and the environmental impact on how we think and form opinions. More recently, the dominance of linguistic discourse has

been challenged by a growing body of research proposing alternative methods that integrate material and spatial aspects to directly engage with place, such as walking methodologies (Springgay & Truman, 2018), participatory mapping (Powell, 2016), or tangible placemaking interfaces that are shared among citizens (Crivellaro et al., 2016).

Participatory mapping is a powerful process to facilitate the mapping of local knowledge and experience of a particular place by recognizing, integrating, and communicating citizen needs. It engages citizens to map their relation to place by visually representing physical and socio-cultural features of significance and has an empowering purpose. Powell (2016) argues that innovative and multimodal mapping methods help uncover what often remains unseen, not to triangulate or reach a consensus, but as a supplement. Interactive placemaking interfaces, such as mobile applications, place-based public interfaces, or social probes promise to provide swift and opportunistic engagement opportunities through diverse modalities in locations of immediate relevance. As such, they allow citizens to decide for themselves whether and how they would like to engage in placemaking at times and locations of their convenience. This study builds on the potential of participatory multimodal mapping via an interactive placemaking interface to create new opportunities for meaningful engagement with place, addressing the challenges concerning inclusion and emplacement as outlined above.

2. Objectives and Research Questions

Broadly speaking, the StoryMapper project aims to answer the research question: What potential opportunities and challenges for inclusion and emplacement are introduced by placemaking interfaces?

Using the StoryMapper as a traveling placemaking tool to facilitate participant-driven recruitment processes, we set out to explore an inclusive and emplaced mapping process. The StoryMapper builds on two core concepts: (a) a self-steering "chain of engagement" that aims to disrupt conventional recruitment processes by inviting participants to select their successor by passing a tangible frame without a central placemaking facilitator, and (b) "morphing," which we define as the creation of visual stories superimposed on the environment in response to a locally relevant question. This article reports on the conceptualization and initial deployment of the StoryMapper.

We set off with a pilot study to test the qualities of the StoryMapper in a real-life setting, given the fact that we developed an innovative research tool both concerning morphing as a form of data collection and the chain of engagement as a sampling approach. As Hannes et al. (2023) have noted, pilot studies or experiments enable researchers to experiment with new ideas before entering more complex case studies while at the same time establishing terms of engagement of

newly developed methodological tools and approaches. In qualitative research, the emergent nature of how relationships unfold often determines the success or failure of participatory engagement. The different phases of qualitative inquiry processes are entangled and cannot be seen as separate (Kim, 2011; van Teijlingen & Hundley, 2002). Therefore, in this article, we use the data collected to identify patterns that can direct further research needed to evaluate the StoryMapper. In line with van Teijlingen and Hundley's (2002) argument on researchers' ethical responsibility to share methodological and practical insights gained from pilot studies, we intend to share our reflections to create learning opportunities for related interactive placemaking interfaces and mapping deployments. The research question posed for this particular pilot was: Which design features of the StoryMapper were identified during the pilot deployment as potentially relevant for inclusive and emplaced engagement?

This pilot reports on a real-life cultural heritage placemaking project within a village neighborhood—the re-conversion of a community church for social, cultural, and community-based purposes. The re-conversion of cultural heritage requires special attention to these placemaking challenges, as the physical form, the daily use, and the social meaning might significantly be remade in the process. This calls for an always-becoming approach to placemaking that includes a diverse audience, as well as special attention to the dynamic and relational emplaced aspects of the past, present, and future. We conclude with reflections on the characteristics of the StoryMapper, the application of the participant-driven recruitment approach through the chain of engagement, and the emplaced participation potential of morphing to extract insights from the process to guide future research.

3. Methodology

3.1. Conceptualizing the StoryMapper

3.1.1. The Chain of Engagement: A Self-Steering Recruitment Process

The chain of engagement builds on snowballing, a method used in qualitative research to recruit participants by inviting them to suggest other suitable participants (Charlie Parker et al., 2019). The chain of engagement additionally shifts the agency to recruit from facilitators to participants, who create a continuously growing chain by self-selecting and engaging the next participant to reach into existing social networks otherwise hard to reach. By passing a tangible frame from person to person, the approach intends to additionally spark dialogue between participants to engage those who may not typically participate in placemaking activities. As such, the frame serves as an entrance point to produce and submit data in response to placemaking concerns.

3.1.2. Morphing

Inspired by photovoice and theoretically backed by the new materialism call for sensory-spatial awareness (Jon, 2020), we define morphing as the in-situ production of place-based data superimposed on the environment. Participants produce stories or visions in the form of visuals on a transparent canvas to augment the environment (Figure 1). This augmentation may transform the surroundings by (re-)placing or (re-)moving elements and is photographed against the environment. The idea behind morphing is to visualize the multiplicity of place-based meanings found in a community.



Figure 1. Morphing as a way to communicate an idea for the use of the church façade.

3.2. Situating the StoryMapper

Interactive interfaces facilitate placemaking in relevant public spaces by offering engagement modalities such as multiple-choice polls via tangible (Coenen et al., 2019; Vlachokyriakos et al., 2014) or touch-based (Valkanova et al., 2013) interaction and open-ended feedback creation such as photo (Memarovic, Fatah Gen Schieck, et al., 2015), video (Fritsch & Brynskov, 2009), and textual submissions via situated public interfaces (Fischer et al., 2013) or personal computing devices (Jorge et al., 2013). As such, placemaking interfaces promote inclusion by enabling citizens to self-decide whether and how they would like to participate, independent of availability and preferences. For instance, it is known that public displays can motivate “borderline” engaged citizens to provide planners with short-texted idea proposals (Schroeter, 2012). Physically situated social networking

services enabled students to communicate their opinions to their local youth affairs department through playful engagement (Hosio et al., 2012), and low-tech posters proved to be efficient tools to support grassroots organizations to engage in data collection and public discussions (Vlachokyriakos et al., 2014). While design recommendations, such as closely aligning the displayed content with the location and people (Schroeter et al., 2012), are continuously enhancing the value for citizens to engage in placemaking, and therefore increasing the probability to involve more diverse subsets of citizens, placemaking interfaces have been equally criticised for their tendency to exclude certain publics. This exclusion comes not only because of the digital divide that prevents ubiquitous computing interventions from reaching the full breadth of social diversity (Le Dantec & Edwards, 2008) but also because such interface deployment sometimes still fails to upend the hierarchical dependencies between facilitators and participants (Biedermann & Vande Moere, 2021). It has therefore been argued to further democratize placemaking interface practices (Puusaar et al., 2022), such as by allowing citizens to co-determine the collected content (Callum Parker et al., 2020; Liu et al., 2019).

Holding a long tradition of engaging citizens in mapping activities to disrupt unequal power dynamics (Cochrane & Corbett, 2020), participatory mapping is increasingly used not only to understand and represent the link between people and place but to build on the affective potential of mapping for placemaking pur-

poses (Kahila-Tani et al., 2019). However, a number of power-related challenges have been identified, such as issues of trust, clarity of the goal, impact, and leadership (Brown & Kyttä, 2018). At the same time, the substantial growth in digitization has affected participatory mapping in multiple ways. Firstly, the proliferation of mapping technologies and location-capturing devices has resulted in a range of technological tools. Second, it has opened opportunities to democratize participatory mapping to a certain extent (Crampton, 2010). Kahila-Tani et al. (2019) argue that while digital mapping can broaden recruitment by engaging other participants, it also introduces new forms of exclusion due to the disparity in access, skills, and motivation to the digital sphere. Digital mapping approaches have the potential to be more dynamic and democratic compared to paper-based approaches: Real-time interactive mapping can be done at different times and places and can onboard dynamic aspects of space. Finally, research that pushes against the epistemological limits of digital technologies has triggered the introduction of qualitative and multimodal approaches for data production, creating rich, nuanced understandings (Jung et al., 2020).

3.3. Manifestation of the StoryMapper

The StoryMapper consists of a hand-held “tangible frame,” a custom “online form” to provide feedback, and an off-the-shelf online “living map,” as illustrated in Figure 2.

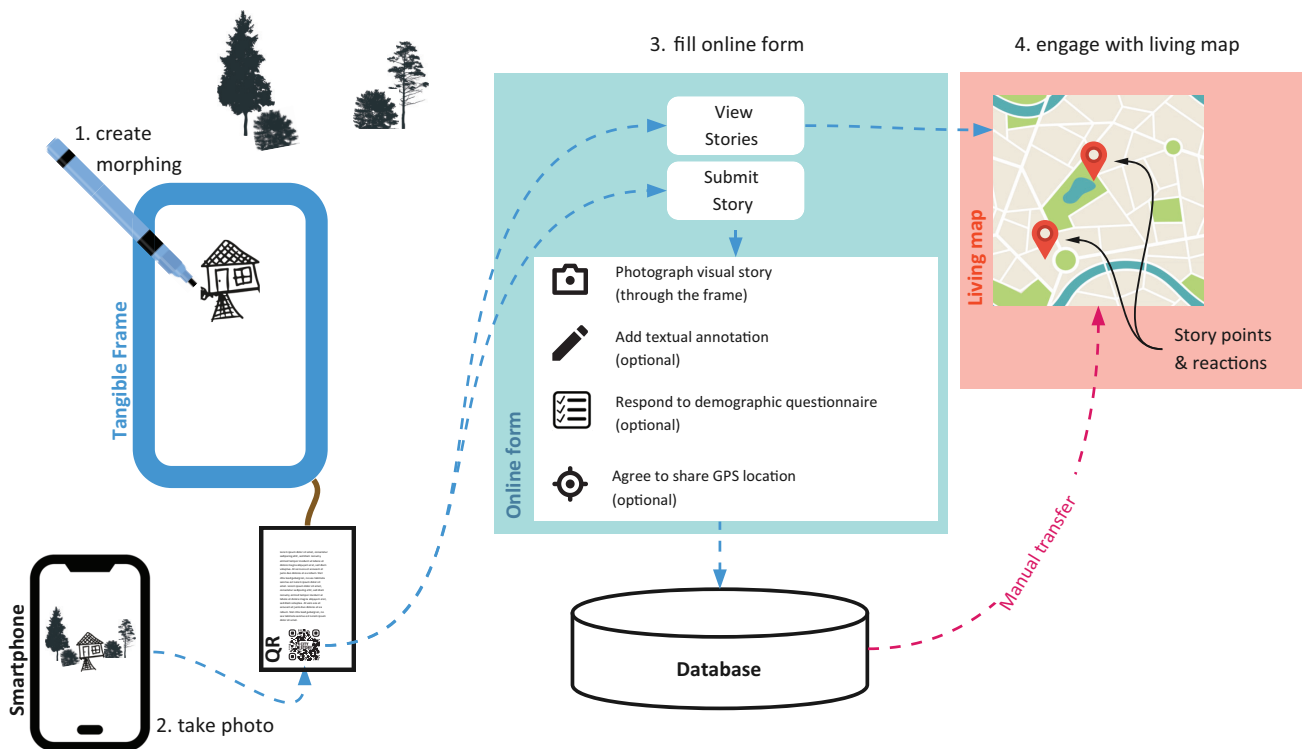


Figure 2. Experimental setup of the StoryMapper: Participants who receive a frame can access the StoryMapper online form via QR code, allowing them to either create or interact with existing contributions.

A plexiglass sheet, enclosed in the 3D-printed tangible frame forms the canvas to create morphings. A printed set of instructions attached to the frame (Supplementary File 1) posed a place-based inquiry and guides any participant in using the provided tools (i.e., markers and wipes or a set of Lego bricks) to create a morphing in response. The visual layout of the instructions used the vector elements produced for the municipality's participatory process. To submit their contribution, participants were invited to scan the QR code in the instructions, leading them to the StoryMapper online form. Finally, participants were asked to pass the frame to another person they selected to contribute to the emerging chain of engagement. This final step was not further specified and was left open to the discretionary decision of the current participant to lower the barriers to participation.

The online form serves as the digital backbone of the StoryMapper. After a detailed introduction to the placemaking context and inquiry, it provides a link to visit and engage with existing contributions on the living map and step-by-step instructions (Supplementary File 2) to contribute a new morphing. Following the latter, the online form invites participants to superimpose their morphing over the place they intend to change, photograph their composition, add a textual description, and respond to a series of demographic questions. Upon informed consent, the morphing is automatically stored together with all submitted data and the current geo-location in a free online database (Google Firebase).

To publicly render the contributions, the research team manually copied the incoming contributions to create interactive pins on a living map (Padlet) in near real-time. This format was chosen because of its open-access features that do not require the creation of a user account, as well as its interactive features, including viewing, response, and polling options. Additionally, the map allowed participants to create contributions by uploading photos and text beyond the intended StoryMapper workflow. The link to the online form and living map was further communicated via flyers and the official social media campaign of the municipality.

3.4. *Piloting the StoryMapper*

3.4.1. Context

The StoryMapper pilot study was conducted within a participatory trajectory initiated by the municipality of Herent, Belgium, aimed at the reconversion of the Sint Laurentius church in Veltem-Beisem. The church—no longer used for worship since December 2018—was earmarked for community repurposing. In collaboration with the diocese, the local church committee, and Parcum, the Flemish expertise center for religious heritage, the municipality started the formal process of deconsecrating the church and handing it over to the municipality for community use.

Given the cultural sensitivity and meaning of the building, the consortium sensed the necessity to engage citizens in this transformation. As part of this process, the municipality set up an engagement trajectory including an eight-week community inquiry phase with a survey and two community meetings, and a one-day community festival that marked the end of the participatory trajectory. We ran our pilot in two phases, parallel to the inquiry phase and the community festival. This case was chosen due to its placemaking challenge and the neighborhood's sensitivity to the transformation of a community church. The church and its surroundings materialize a symbolic and spatial meaning after centuries of cultural and social practices. It illustrates the need for a sensitive process with attention to the inclusion of community linked to and beyond the church building and sense of place.

3.4.2. Data Collection and Analysis

During the first inquiry phase, three frames circulated in the community for three weeks, starting with citizens with direct connection to the place: the former church caretaker, a shopowner on the church square, a school parent, and, after the initial chains broke, a neighbor and café visitor. The inquiry used was: What use do you see for the Sint Laurentius church in our community? After observing a certain resistance to drawing among some of the participants, we introduced Lego bricks as an additional morphing medium in the second inquiry phase. During the one-day festival, three more frames were handed out by the primary authors to visitors of the event. The inquiry used was: Can you share a story or memory about your village? For each of the two phases, a separate living map was prepared.

The data collection consisted primarily of submissions made through the StoryMapper, including participant-generated morphings, and/or textual descriptions, voluntarily provided demographic data (gender, age, and neighborhood connection), quantitative interaction logs through the online form (time, date, and location of the created contributions), and engagement with the living map, such as additional posts, comments, and reactions. To reconstruct the chains of engagement, unique IDs attached to each of the frames allowed us to track and recreate their journeys based on photo submissions. In addition, the first authors documented qualitative findings, such as field observations and informal interactions with initial participants in a shared research diary.

The visual and textual contributions from the living maps were coded and analyzed using NVIVO. The two first authors independently coded contributions following an iterative bottom-up approach. In the first cycle, each coder reviewed every photo and textual contribution and assigned a series of codes to each of them. The emerging code books were subsequently compared and discussed. In the second cycle, all codes were further refined and combined into categories.

To categorize our results we followed the analytical framework developed by Rose (2016). Her work established four sites of interpretation for images, which we adopted as sensitizing concepts into our analytical framework: Within the site of production, we look at how a contribution was made, where, by whom, and when. Within the site of image, we were interested in spatial aspects, particularly how the morphing was embedded in the environment. In the site of circulation, we analyzed the chain of engagement, including how often and in which intervals the frame has been passed. For the site of audienceing, where contributions were made publicly available and the dialogue could continue, we analyzed the interactions on the living map, focusing on how participants responded to others' contributions.

3.4.3. Positionality and Ethics

As some of the authors live or have relatives in the neighborhood, we positioned ourselves as insiders within the community. To gain a better understanding of the StoryMapper in placemaking processes, we collaborated with both community and municipality as allies rather than external researchers. Becoming part of the context and social processes we study, we acknowledge the reciprocity of benefits gained from this research project. Participants could share their ideas and stories through a different, playful modality. The outcomes were presented during the community workshops which lead us to become involved in the broader participatory process. One of the authors facilitated multiple round table discussions during the two workshops and became involved in the temporary neighborhood management board of the building. Where possible, we aligned this allyship with what Dierckx et al. (2020) conceptualize as a "third sphere" that builds on principles of equal intelligence, shared control, and multiplicity of ideas. This, ultimately, was challenging on the level of ethics. The data on the living map is openly accessible to a wider public. While self-mediated as a platform, we took a medi-

ating role to keep an eye on potentially inappropriate content. Moreover, to ensure anonymity, contributions were disconnected from any personal information of the participants.

4. Results

4.1. Sample

In this pilot, a total of 17 participants received a frame and successfully contributed at least one morphing to the living map. Table 1 details how the StoryMapper reached a relatively diverse subset of residents with an overrepresentation of women and the age groups 20–39 and 40–59.

4.2. Site of Production

In total, both living maps gathered 28 contributions, including 22 morphings and six additional contributions: Four images and two text-only contributions were directly uploaded to the living map. Four of the morphings were added as examples by the authors to illustrate the idea of morphing. While we consider these exemplary morphings as part of the data collection because they generated further dialogue on the living maps, the authors are not considered part of the sample in Table 1. The remaining 18 morphings were created by the participants, including one sent in via email, emphasizing that the online form did not work on the participant's phone. Eighteen morphings were created using markers, three using Lego, and one combined both methods.

Twelve out of 22 morphing submissions did not include geo-coordinates. Morphings and observations, however, showed that six photos were made in the church (e.g., morphing 2.2), three against the façade of the church (e.g., morphing 4.3), three in the park or town square (e.g., morphing 2.4), four in or around the wooden churches that were part of the municipal project (e.g., morphing 3.1), and seven at unknown locations

Table 1. Demographic overview of participants reached by the StoryMapper.

		Phase 1	Phase 2
Gender	F	5	4
	M	4	2
	Unknown or other	2	—
Age	0–19	1	—
	20–39	4	2
	40–59	3	2
	60–79	1	1
	>80	—	—
	Unknown	2	1
Connection to place	Living	10	4
	Working	—	—
	Unknown	1	2

(e.g., morphing 1.4). This suggests that our approach to traveling placemaking interfaces motivated people to use the StoryMapper on-site and engage with place.

Observations were made at the initiation phase that some participants felt uncomfortable drawing and preferred to share their ideas orally, or felt unsure about being able to explain the process to other participants in the chain of engagement. Moreover, the authors recovered three abandoned frames in public spaces that contained morphings not submitted through the online form.

4.3. Site of Image

Our data collection reveals diverse forms of engagement with the environment through morphing. Twelve morphings interacted in some way with the environment, including the four exemplary ones. Of these twelve, four morphings used the environment as a passive background without embedding it (e.g., morphing 3.1). The other eight actively augmented the environment, for example, drawing a slackline attached to existing trees. Two morphings showed the same sketch of a skate ramp uploaded twice with different backgrounds (morphings 3.2 and 3.3). Ten morphings were photographed against a neutral background, for instance, a table (morphing 2.5). This data could illustrate how the task of creating morphings was sometimes unclear or irrelevant to participants.

In addition, four contributions showcased multiple 2D angles into one frame, like 2.6, which combines a frontal view of a glass with a plan view of a plate. This hints at practical difficulties in capturing the morphing in front of the environment or potential challenges in using drawing to express ideas using the same 3D perspective as the background (e.g., morphing 3.1). Interestingly, two participants aligned the frame with the environment by tracing elements, such as trees (e.g., morphing 2.4) to overcome this challenge. Other strategies ($n = 12$) used to clarify ideas included the integration of text in the morphings (morphings 1.3, 1.4, 2.1, 2.3, 2.5, 2.6, 2.7, 3.1, 3.4, 5.1, 5.3, 6.1), the use of different colors ($n = 4$; morphings 1.1, 1.3, 2.6, 2.7, 5.2), or the inclusion of people as stick figures or Lego figurines ($n = 15$; morphings 1.1, 1.2, 1.3, 2.3, 2.5, 2.7, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 5.3, 6.1).

We identified six categories among the ideas with a strong focus on youth and social activities, as detailed in Table 2.

4.4. Site of Circulation

Figures 4 and 5 re-construct the six initiated chains of engagement with a total of 22 morphings. Each dot represents one link in the chain (i.e., a morphing contributed using the StoryMapper), including the age and gender of its author, the date and time of submission, and a unique identifier that links to the corresponding morphing in Figure 3.

Of the 22 morphings, four were created by the researchers, eight were invited by the researchers to initiate (six) or reinstate (two) a chain, and ten were invited by previous participants as intended. Twice, participants requested help from the researchers in producing or uploading a morphing (i.e., researcher-aided submission). In total, 11 morphings were submitted within 20 minutes or less, suggesting that they were likely created by participants as part of a collaborative activity or the same participant (morphing 3.2 and 3.3). The remaining morphings showed longer intervals between each other, which indicates a perceived lack of priority in the recruitment of follow-up participants. In addition to the contributed morphings, six contributions were directly added to the living map without the use of the StoryMapper (see Figure 6).

4.5. Site of Audiencing

To anonymize locations (some participants morphed at their homes), the locations for the pins on the living map were located in public spaces around the church. A total of 28 reactions in the form of likes were given to various posts. Moreover, there were two comments on posts, one on the main pin on the church, and one as a direct reaction to a morphing, with an additional idea.

5. Discussion and Conclusion

This study examined the design and pilot deployment of the StoryMapper as a traveling placemaking interface to foster inclusion and emplacement. The deployment

Table 2. Overview of the identified categories of living map contributions.

Category	Includes	Total	Numerical identifier (see Figure 3)
Social/cultural	group activities, meeting places, relations, and social care	7	1.3, 2.1, 2.2, 2.6, 4.1, 5.2, 5.3
Sports	outdoor and indoor sports	7	1.1, 1.2, 2.3, 2.4, 3.2, 3.3, A7.4
Children/youth	daycare, youth facilities, and child-related memories	5	3.4, 4.2, 5.1, 6.1, A7.3
Multifunctional		3	1.4, 2.5, 2.7
Learning	knowledge and skill-based learning facilities	2	3.1, A7.2
Religion	worship and ceremony	2	4.3, A7.1



Figure 3. Overview of the visual contributions on both living maps. Each number corresponds to an independent chain of engagement and “additional living map contributions” represent direct contributions to the living map without the use of the tangible frame and online form.

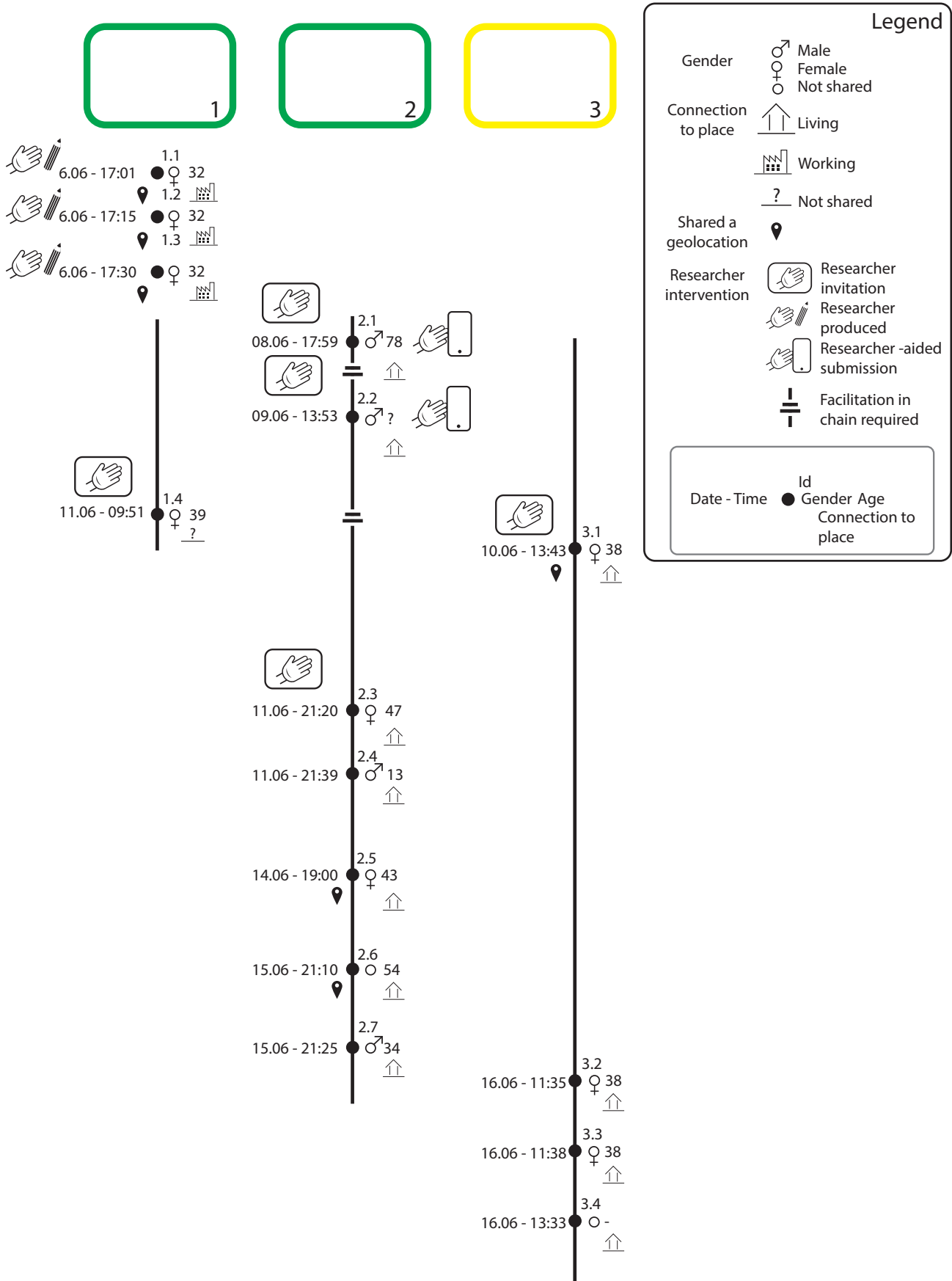


Figure 4. Visual reconstruction of the three chains of engagement during Phase 1.

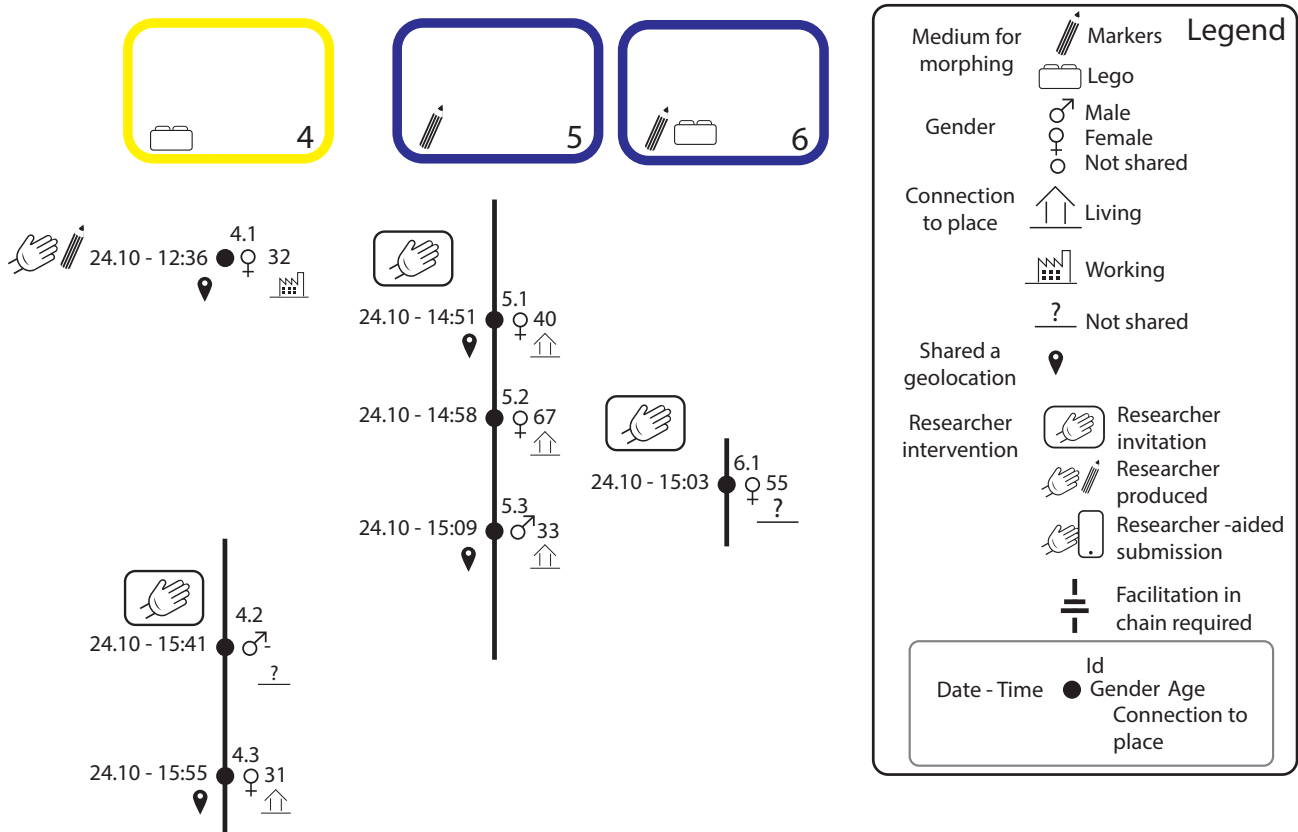


Figure 5. Visual reconstruction of the three chains of engagement during Phase 2.

was facilitated via a chain of engagement recruitment approach where participants select the next participant by passing the physical StoryMapper frame. In addition, the StoryMapper aimed to promote direct engagement with the environment through “morphing,” the augmentation of the environment through the frame. Both concepts were tested as part of an ongoing placemaking project related to the repurposing of a community church, with the purpose to identify design features that should be considered in the deployment of the StoryMapper as an interactive placemak-

ing interface to promote inclusive and emplaced engagement. Our preliminary results illustrate how the invitation of the StoryMapper into an attentive engagement with the physical neighborhood environment, achieved mixed results. Simultaneously, it steered engagement with other community members through the maps. The design features that this pilot taught us about concern (a) the role of facilitation within participant-driven recruitment, (b) the role of simplicity within the deployment of interactive placemaking interfaces, (c) the potential of multimodality as a marker of inclusion, (d) the

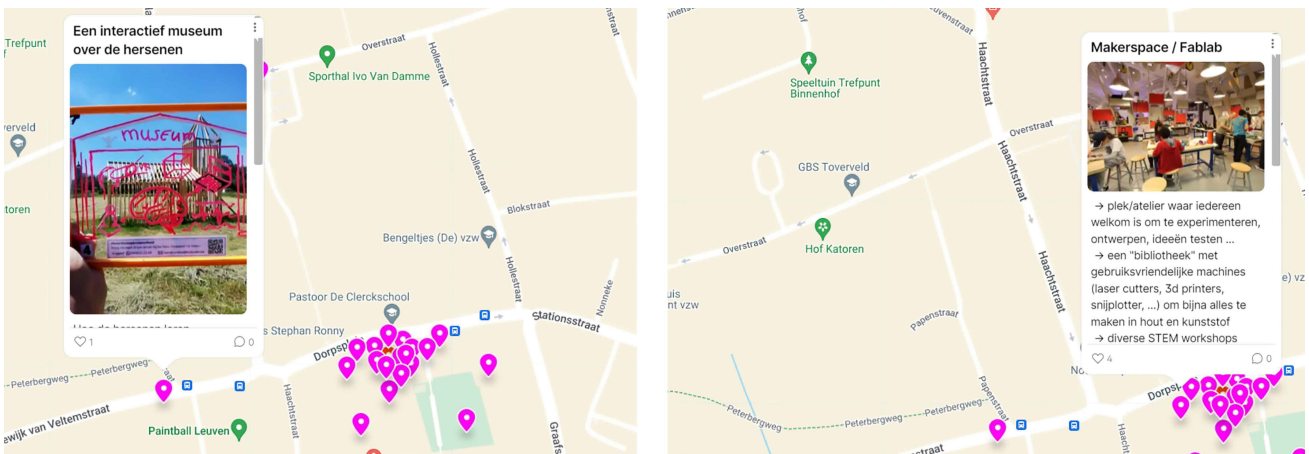


Figure 6. Example of a morphing contributed through the StoryMapper (left) next to an additional contribution (right) on the living map which generated engagement from other users through four “likes.”

accessibility of different modalities, and (e) the challenge of evaluating inclusion. We also note that while our approach to morphing created an opportunity to share placemaking stories through direct engagement with the environment, it requires clearer instructions. In the following paragraphs, we discuss how the chain of engagement unfolded and how the morphings and living maps affected interaction with physical and digital places.

5.1. Chains of Engagement

The chain of engagement process required more facilitation than initially anticipated, as the chains broke off whenever a participant did not pass the frame. Potential obstacles included a reluctance to draw, the complexity of combining new concepts such as morphing and the chain of engagement, and preferences for more established interaction modalities, such as speech or text. Finally, to some participants, the technical challenges of the StoryMapper were too hard to overcome, as illustrated by the e-mail contribution and the recovered frames with unsubmitted morphings. This suggests that the online form was insufficiently intuitive, incompatible with some phones, or that the motivation to complete a contribution was too low. Follow-up research could therefore focus on determining the factors that influence the breaking of chains. This resonates with Platt's (2021) argument that inclusion is a complex ideal and that fully removing the facilitator in the deployments of placemaking tools is not always feasible.

While our participant sample was relatively diverse in terms of age and gender, the chain of engagement approach might have introduced a certain bias, as people tend to engage with like-minded individuals. For instance, the longest chain (Figure 4, frame 2), touched upon interrelated categories, such as sport, multifunctionality, and social/cultural matters. This potentially indicates that they circulated among people with similar interests while people with other (unrelated) concerns were potentially excluded. However, it is worth noting that the agency of selecting follow-up participants changes every time the frame changes owners, which potentially increases the likelihood of a more balanced recruitment process overall. This is further illustrated by how the same chain reached citizens from a variety of age groups.

5.2. Morphing and Living Maps

The pilot results allude that our morphing methodology shifted place engagement from a tabula rasa approach to active engagement with the physical environment to a limited extent. Participants chose their own "framing" of the environment or other background, yet the results suggest that this was rather a circumstantial than a conscious decision. The use of neutral backgrounds could indicate that the idea of morphing was insufficiently clear or challenging to carry out due to, e.g., light

reflections on the plexiglass. Given the initial concerns regarding sketching, we tested Lego as an alternative in the second phase, while being aware of the potential restraints posed on participants. An interesting pattern we noticed with the Lego morphings is that participants created more coherent scenes that were slightly more disconnected from the background (e.g., morphings 4.2 and 4.3). Potentially linked to the challenge of finding the right perspective, this requires further evaluation in upcoming research.

The morphing invited participants to contextualize their ideas within their surroundings, with the aim to integrate the agency of place. In this regard, place itself served as an elicitation, opening up place registries of material and non-material meanings. By plugging the StoryMapper into a larger placemaking process, the morphing provided a visual supplement to the linguistic methods deployed by the municipality because the morphing process triggered different ways of seeing and thinking (Arnheim, 1969). Morphings can offer an entry point for individuals to select a communication approach that aligns with their communication preferences and sensibilities. A range of options for this morphing process may move towards a more inclusive placemaking practice.

The act of morphing presents participants with the opportunity to envision and shape the future of a particular place. Moreover, the morphings can offer an embodied experience of different "situated knowledges" (Hamilton & Kelemen, 2015), with the potential to challenge existing power structures by visualizing what (or who) is not there. This potential is in line with the idea that every image embodies a way of seeing (Berger et al., 1973) and the potential of participant-produced visuals to offer insights into the perception of place (Pauwels, 2015).

Participants started using the living map as a way to add additional ideas without the frame. As such, the dialogue continued beyond the StoryMapper as the map was appropriated by citizens. This indicates that citizens found their way to the living map quicker than they could lay hands on a frame, therefore creating an additional participatory space of engagement, asynchronous and open. Additionally, the living map flattens traditional power dynamics of co-located events that benefit the "louder voices," insofar as each contribution receives an equal place on the map without hierarchical order. However, although we did not encounter such a case, participants might overshadow the mapping process by contributing multiple similar ideas to enhance their impact.

5.3. Implications and Lessons Learned

If we accept the agency of place in research (Coemans et al., 2020) and Massey's (2005) conceptualization of place—as marked by the potential of multiplicity, relations, and change—research methods, as well as

placemaking approaches, should adapt to this agency and characteristics accordingly. The morphings are related to emplaced cultural heritage elements from the past as well as the future, linked through the present physical environment. This stance requires understanding that every placemaking intervention is part of a larger ongoing process of place without a clear end or beginning, or what Platt (2021) frames as placemaking in the middle.

The pilot findings regarding the challenges in emplacement via morphing highlight a need for simplicity in the design of interactive placemaking interfaces. Although the StoryMapper became a facilitating entity through the chain of engagement, it did not always succeed in guiding participants through the creation of emplaced contributions. However, similar to the uncertainty of feedback in the praxis of cultural probes (Gaver et al., 2004), we would like to acknowledge the insightful potential of contributions that emerge through the ambiguity of following a method, even when it is conceptualized in a different way. Some participants overcame the difficulty of conveying an idea through the intended morphing method by—incidental or conscious—(mis-)appropriation of the interface, for instance by drawing an idea using a frontal view against a neutral background (e.g., morphing 5.1). Such brief technology-driven engagements without human facilitation, therefore, require engagement flows based on simple instructions (e.g., through an explanatory video) that leave open space for interpretation and different forms of engagement. We further argue that placemaking interfaces should be adapted to the community in question, such as the use of recognizable visual elements. Further, each interruption in the chain reduced the chance for other residents to contribute an idea. This suggests that our chain-of-engagement approach to placemaking interfaces suffered from a perceived lack of urgency, similar to how stationary public interfaces are affected by interaction blindness (Memarovic, Clinch et al., 2015). We recognize a need for affordances that continuously promote engagement, such as by enticing curiosity through objects (Houben & Weichel, 2013).

Facilitators interested in implementing a chain of engagement for placemaking could take measures to increase chances for a balanced engagement. First, placemaking facilitators should ensure diverse starting points, based on an in-depth understanding of the social structure of a place, acknowledging relevant (and/or underrepresented) citizens or groups, by selecting representative individuals to initiate the process. In this pilot, we selected initial participants during the first phase based on in-depth knowledge of the community and the participatory process itself, with attention to a potential interest in the new function of the church. In addition, new chains could be iteratively introduced by benchmarking against incoming demographic data and specifically recruiting underrepresented publics for balanced engagement.

Although the StoryMapper extended the larger placemaking project by providing an additional interaction modality to citizens, the placemaking interface itself provided only one or two modalities to express emplaced ideas, potentially hindering those uncomfortable with morphing. In combination with the chain of engagement, this might hinder their ideas from receiving public attention on the living maps. On the other hand, the living maps formed a digital space for engagement that provided additional modalities, such as viewing, liking, or providing textual or visual responses, that potentially attracted a more inclusive citizen cohort. This implies that it remains challenging to operationalize placemaking through morphing—or any other single-modality method—alone. For placemaking facilitators, we suggest providing citizens with the agency to participate on their own terms, so that multimodality becomes a marker for inclusion. Finally, this suggests that inclusion should not only be evaluated based on who participates but also on how participants can engage in the process.

5.4. Limitations and Future Work

The findings of this pilot have to be situated in relation to an important study limitation: the tension between the usability of the placemaking tool and the data we as researchers consider necessary for evaluating inclusion. This tension is even more explicit within innovative technology-based methods. The shared ethical concern regarding privacy issues in relation to the small sample size could have been overcome by engaging more participants in the project over a longer period. Moreover, the introduction of two unfamiliar elements (the chain of engagement and the morphing) could be a challenge that would require a more focused approach on each separately to develop a richer understanding of each element. Using a more familiar tool to test the chain of engagement approach could provide insights into how the chain unfolds without technological barriers. Alternatively, exploring various approaches to utilize the visual-spatial opportunities of morphing could offer valuable insights into the communication and interaction styles of different users with their surroundings.

The purpose of this pilot study was to explore insights and understanding of how the StoryMapper works rather than producing empirical generalizations. Future research could therefore investigate the impact of the StoryMapper on participants and its ability to break through community barriers and reach publics hard to reach compared to traditional recruitment approaches. This could be done by querying previous participation in placemaking activities or additional efforts in terms of data acquisition, including ethnicity, mother tongue, disability, educational level, and economic status. Additional qualitative data can help to understand drivers of recruitment to draw inferences regarding inclusion. The relative numbers of hard-to-reach members of a community engaged through a chain of engagement would further

become comparable to those of related studies. Finally, further research can also evaluate the impact of the morphings on participants and placemaking projects in comparison to other placemaking practices.

Acknowledgments

We are grateful to the participants who took the time to explore and engage with the StoryMapper. Special thanks to the municipality of Herent, and in particular to Jan Ieven, who has actively promoted the project and welcomed us in the larger participatory project around the desecration of the church. We would also like to thank the church community council and in particular Nele Vicca for her practical support and enthusiasm. Conversations with Professor Kim Powell helped expand the analytical work during her visit to KU Leuven. We also thank Angie Hostetler for the meticulous proofreading. Finally, we would like to acknowledge Henrik Kingerske for his input and active help in developing the online form. This work is part of CityStory, an ITEA3-funded project of call 4 (reference: 17006).

Conflict of Interests

The authors declare no conflict of interest.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

References

- Akbar, P. N. G., & Edelenbos, J. (2021). Positioning placemaking as a social process: A systematic literature review. *Cogent Social Sciences*, 7(1). <https://doi.org/10.1080/23311886.2021.1905920>
- Arnheim, R. (1969). *Visual thinking*. University of California Press.
- Berger, J., Blomberg, S., & Fox, C. (1973). *Ways of seeing: Based on the television series with John Berger*. Viking Press.
- Biedermann, P., & Vande Moere, A. (2021). A critical review of how public display interfaces facilitate placemaking. In M. de Waal, F. Suurenbroek, M. de Lange, N. Verhoeff, D. Colangelo, A. F. g. Schieck, G. Caldwell, J. Fredericks, L. Hespagnol, M. Hoggenmüller, G. Tscherteu, J. C. Carvajal Bermúdez, K. Willis, A. Aurigi, A. Vande Moere, M. Tomitsch, A. Wiethoff, C. Parker, H. Haeusler, . . . E. Shearman (Eds.), *MAB20: Media architecture biennale 20* (pp. 170–181). Association for Computing Machinery. <https://doi.org/10.1145/3469410.3469427>
- Brown, G., & Kytä, M. (2018). Key issues and priorities in participatory mapping: Toward integration or increased specialization? *Applied Geography*, 95, 1–8.
- Cochrane, L., & Corbett, J. (2020). Participatory mapping. In J. Servaes (Ed.), *Handbook of communication for development and social change* (pp. 705–713). Springer. https://doi.org/10.1007/978-981-15-2014-3_6
- Coemans, S., Vrebos, H., & Hannes, K. (2020). Emplacement. In P. Adkinson, S. Delamont, M. Hardy, & M. Williams (Eds.), *SAGE research methods foundation* (pp. 1–11). SAGE. <https://doi.org/10.4135/9781526421036>
- Coenen, J., Houben, M., & Vande Moere, A. (2019). Citizen dialogue kit: Public polling and data visualization displays for bottom-up citizen participation. In *DIS '19 companion: Companion publication of the 2019 on designing interactive systems conference* (pp. 9–12). Association for Computing Machinery. <https://doi.org/10.1145/3301019.3325160>
- Cooke, B., & Kothari, U. (2001). *Participation: The new tyranny?* Zed.
- Cornwall, A. (2008). Unpacking “Participation”: Models, meanings and practices. *Community Development Journal*, 43(3), 269–283. <https://doi.org/10.1093/cdj/bsn010>
- Cornwall, A., & Gaventa, J. (2000). From users and choosers to makers and shapers: repositioning participation in social policy. *IDS Bulletin*, 31(4), 50–62. <https://doi.org/10.1111/j.1759-5436.2000.mp31004006.x>
- Courage, C., Borrup, T., Jackson, M.-R., Legge, K., McKewon, A., Platt, L., & Schupbach, J. (2020). *The Routledge handbook of placemaking*. Routledge.
- Crampton, J. W. (2010). *Mapping: A critical introduction to cartography and GIS*. Wiley.
- Cresswell, T. (2005). *Place: A short introduction*. Wiley.
- Crivellaro, C., Taylor, A., Vlachokyriakos, V., Comber, R., Nissen, B., & Wright, P. (2016). Re-making places: HCI, “community building” and change. In *CHI '16: Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 2958–2969). Association for Computing Machinery. <https://doi.org/10.1145/2858036.2858332>
- Dierckx, C., Hendricks, L., Coemans, S., & Hannes, K. (2020). The third sphere: Reconceptualising allyship in community-based participatory research praxis. *Qualitative Research in Psychology*, 18(4), 1–25. <https://doi.org/10.1080/14780887.2020.1854402>
- Fischer, P. T., Hornecker, E., & Zoellner, C. (2013). SMSlingshot. In *TEI '13: Proceedings of the 7th international conference on tangible, embedded and embodied interaction* (pp. 9–16). Association for Computing Machinery. <https://doi.org/10.1145/2460625.2460627>
- Fritsch, J., & Brynskov, M. (2009, June 29). Between engagement and information: Experimental urban media in the climate change debate [Workshop paper]. 4th International Conference on Communities and Technologies, State College, PA, United States.

- Gaver, W., Boucher, A., Pennington, S., & Walker, B. (2004). Cultural probes and the value of uncertainty. *Interactions*, 11, 53–56. <https://doi.org/10.1145/1015530.1015555>
- Hamilton, L., & Kelemen, M. (2015). *The role of creative methods in re-defining the impact agenda* (Working Paper). CASIC.
- Hannes, K., Hendricks, L., & Dierckx, C. (2023). *Doing fieldwork in challenging circumstances: Summoning participatory methods*. Centrum voor Sociologisch Onderzoek, KU Leuven.
- Hosio, S., Kostakos, V., Kukka, H., Jurmu, M., Riekkki, J., & Ojala, T. (2012). From school food to skate parks in a few clicks: Using public displays to bootstrap civic engagement of the young. In J. Kay, P. Lukowicz, H. Tokuda, P. Olivier, & A. Krüger (Eds.), *Pervasive computing* (pp. 425–442). Springer. https://doi.org/10.1007/978-3-642-31205-2_26
- Houben, S., & Weichel, C. (2013). Overcoming interaction blindness through curiosity objects. In *CHI EA '13: CHI '13 extended abstracts on human factors in computing systems* (pp. 1539–1544). Association for Computing Machinery. <https://doi.org/10.1145/2468356.2468631>
- Jon, I. (2020). Deciphering posthumanism: Why and how it matters to urban planning in the Anthropocene. *Planning Theory*, 19(4), 392–420. <https://doi.org/10.1177/1473095220912770>
- Jorge, C., Hanna, J., Nisi, V., Nunes, N., Caldeira, M., & Innella, G. (2013). Fostering ambiguity. In *CHIItaly '13: Proceedings of the biannual conference of the italian chapter of SIGCHI* (pp. 1–10). Association for Computing Machinery. <https://doi.org/10.1145/2499149.2499166>
- Jung, J.-K., Elwood, S., Atkinson, P., Delamont, S., Cernat, A., Sakshaug, J. W., & Williams, R. A. (2020). *Qualitative GIS and spatial research*. SAGE.
- Kahila-Tani, M., Kytta, M., & Geertman, S. (2019). Does mapping improve public participation? Exploring the pros and cons of using public participation GIS in urban planning practices. *Landscape and Urban Planning*, 186, 45–55.
- Kim, Y. (2011). The pilot study in qualitative inquiry: Identifying issues and learning lessons for culturally competent research. *QSW: Research and Practice*, 10(2), 190–206. <https://doi.org/10.1177/1473325010362001>
- Kindon, S., Pain, R., & Kesby, M. (2007). Introduction: Connecting people, participation and place. In S. Kindon, R. Pain, & M. Kesby (Eds.), *Participatory action research approaches and methods* (pp. 1–5). Routledge.
- Le Dantec, C. A., & Edwards, W. K. (2008). Designs on dignity. In *CHI '08: Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 627–636). Association for Computing Machinery. <https://doi.org/10.1145/1357054.1357155>
- Lefebvre, H. (1974). *La production de l'espace* [The production of space]. Anthropos.
- Liu, C., Balestrini, M., & Vilaza, G. N. (2019). From social to civic: Public engagement with IoT in places and communities. In A. Soro, M. Brereton, & P. Roe (Eds.), *Internet of things* (pp. 185–210). Springer. https://doi.org/10.1007/978-3-319-94659-7_10
- Massey, D. (2005). *For space*. SAGE.
- Memarovic, N., Clinch, S., & Alt, F. (2015). Understanding display blindness in future display deployments. In *PerDis '15: Proceedings of the 4th international symposium on pervasive displays* (pp. 7–14). Association for Computing Machinery. <https://doi.org/10.1145/2757710.2757719>
- Memarovic, N., Fatah Gen Schieck, A., Schnädelbach, H. M., Kostopoulou, E., North, S., & Ye, L. (2015). Capture the moment. In *CSCW '15: Proceedings of the 18th ACM conference on computer supported cooperative work & social computing* (pp. 242–253). Association for Computing Machinery. <https://doi.org/10.1145/2675133.2675165>
- Parker, C. [Charlie], Scott, S., & Geddes, A. (2019). *Snowball sampling*. SAGE Research Methods Foundations.
- Parker, C. [Callum], Tomitsch, M., Davies, N., Valkanova, N., & Kay, J. (2020). Foundations for designing public interactive displays that provide value to users. In *CHI '20: Proceedings of the 2020 CHI conference on human factors in computing systems* (pp. 1–12). Association for Computing Machinery. <https://doi.org/10.1145/3313831.3376532>
- Pauwels, L. (2015). “Participatory” visual research revisited: A critical-constructive assessment of epistemological, methodological and social activist tenets. *Ethnography*, 16(1), 95–117. <https://doi.org/10.1177/1466138113505023>
- Platt, L. (2021). Preface: The problem with placemaking. In C. Courage, T. Borrup, M.-R. Jackson, K. Legge, A. McKeown, L. Platt, & J. Schupbach (Eds.), *The Routledge handbook of placemaking* (pp. 143–147). Routledge.
- Powell, K. (2016). Multimodal mapmaking: Working toward an entangled methodology of place. *Anthropology & Education Quarterly*, 47(4), 402–420. <https://doi.org/10.1111/aeq.12168>
- Puussaar, A., Montague, K., Peacock, S., Nappey, T., Anderson, R., Jonczyk, J., Wright, P., & James, P. (2022). SenseMyStreet: Sensor Commissioning Toolkit for Communities. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW2), 1–26. <https://doi.org/10.1145/3555215>
- Rose, G. (2016). *Visual methodologies: An introduction to researching with visual materials* (4th ed.). SAGE.
- Schroeter, R. (2012). Engaging new digital locals with interactive urban screens to collaboratively improve the city. In *CSCW '12: Proceedings of the ACM 2012 conference on computer supported cooperative work* (pp. 227–236). Association for Computing Machinery. <https://doi.org/10.1145/2145204.2145239>
- Schroeter, R., Foth, M., & Satchell, C. (2012). People, content, location. In *DIS '12: Proceedings of the design-*

- ing interactive systems conference (pp. 146–155). Association for Computing Machinery. <https://doi.org/10.1145/2317956.2317980>
- Springgay, S., & Truman, S. E. (2018). *Walking methodologies in a more-than-human world: WalkingLab*. Routledge.
- Stage, C., & Ingerslev, K. (2015). Participation as assemblage. *Conjunctions*, 2(2), 117–136. <https://doi.org/10.7146/tjcp.v2i2.22923>
- Strydom, W., Puren, K., & Drewes, E. (2018). Exploring theoretical trends in placemaking: Towards new perspectives in spatial planning. *Journal of Place Management and Development*, 11(2), 165–180. <https://doi.org/10.1108/JPMD-11-2017-0113>
- United Nations General Assembly. (2007). *Convention on the rights of persons with disabilities and optional protocol*.
- Valkanova, N., Jorda, S., Tomitsch, M., & Vande Moere, A. (2013). Reveal-it! The impact of a social visualization projection on public awareness and discourse. In *CHI '13: Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 3461–3470). Association for Computing Machinery. <https://doi.org/10.1145/2470654.2466476>
- van Teijlingen, E., & Hundley, V. (2002). The importance of pilot studies. *Nursing Standard*, 16(40), 33–36. <https://doi.org/10.7748/ns2002.06.16.40.33.c3214>
- Vlachokyriakos, V., Comber, R., Ladha, K., Taylor, N., Dunphy, P., Mccorry, P., & Olivier, P. (2014). PosterVote: Expanding the action repertoire for local political activism. In *DIS '14: Proceedings of the 2014 conference on designing interactive systems* (pp. 795–804). Association for Computing Machinery. <https://doi.org/10.1145/2598510.2598523>

About the Authors



Hanne Vrebos is a PhD candidate at the Centre for Sociological Research. She explores place-based methods that entangle socio-spatial aspects of urban transformation to positively influence neighborhoods and nurture a sense of belonging. Her research focuses on participatory mapping approaches to connect a wide range of stakeholders in placemaking initiatives, linking digital and tangible spheres.



Paul Biedermann is a doctoral student at the Department of Architecture of KU Leuven. His work focuses on empowering communities to facilitate placemaking initiatives through storytelling via situated public interfaces. Following a research-through-design approach, Paul seeks to challenge power dynamics between citizens and decision-makers, through which he explores the potential of participatory and socially responsible urban interaction designs. He aspires to create meaningful processes that improve urban experiences for everyone.



Andrew Vande Moere is a professor of design informatics within the Department of Architecture, KU Leuven University, Belgium, where he co-directs the Research[x]Design group. He is particularly interested in investigating the designerly opportunities of emerging technologies and practices, which include human-data, human-robotic and human-computing types of interaction.



Koen Hermans is an associate professor in social work and social policy at the Centre for Sociological Research and is also project leader at LUCAS, the Centre for Care Research and Consultancy. His research focuses on homelessness, social work theories, and social work evaluation research.



Karin Hannes is a professor in transdisciplinary studies and coordinator of the research group Social, Methodological and Theoretical Innovation/Kreative (SoMeTHin'K). She specializes in the development of innovative qualitative, mixed, and multi-research methods, with a particular focus on arts-based, place-based, multisensory, and futuring research designs as well as qualitative evidence synthesis as a meta-review technique as applied to social welfare, urban and international development, the arts and design sector, community-based practice and public health.