

9 TURMOIL ALLEY | LARMGRÄND

Maria Engberg, Per Linde, Doris.tech



Maria Engberg, Per Linde,
Johannes Karlsson, Sebastian Bengtsgård
Interactive Exhibition, 2017
<https://app.larmgrand.se>
Mobile Device (iPhone), Argon 4 App,
Headphones (optional)



Turmoil Alley | Larmgränd is an interactive exhibition that uses mixed media as a storytelling vehicle. The work consists of two large-scale posters depicting photographs of houses from Malmö, Sweden. In a patchwork fashion, the houses form a street: Larmgränd (in English Turmoil Alley) which once existed but has long since disappeared from Malmö's cityscape. The houses on the posters function as a canvas for story fragments about people in Malmö between 1900 and 1925. While the stories are truthful—in the sense that they could have happened in the way we tell them—the characters who inhabit “Larmgränd” are fictive amalgams of real events and people. To access these stories, the visitor uses Argon, a mobile Augmented Reality application for iPhone and Android smartphones. Argon was created by the Augmented Environments Lab at Georgia Institute of Technology with whom we have collaborated.

Turmoil Alley is part of an artistic research project that reflects on the role of fiction in participatory engagement and how the remediation of historical events can provide input for public debates that address the relationship of everyday life to larger political and cultural events. Our

approach takes seriously the potential of fictionalization, narratives, and possible worlds explorations through methods of what we in our artistic and design work have called “fableing”. In *Turmoil Alley* the fableing is performed upon historical material from Malmö, 1900-1925.

Turmoil Alley's characters become a mirror of life in Malmö during years of social, political and cultural changes in Sweden. That time—the first decades of the 20th century—has much in common with Malmö today, in the first decades of the 21st century. The stories in “*Turmoil Alley*” echo the cyclical nature of time and history's peculiar insistence on repeating itself, with slight differences in scale and tempo. Then and now, the changing nature of the social contract in a society marked by urbanism and increasingly precarious work situations are impacting Malmöites' everyday life. New opportunities for activism and civic engagement appear. New media forms emerge. In the midst of these changes, we find resonances between their lives and our own in questions of work and leisure, love and friendships, in the stories of human life that we hear and the stories that we tell.

TURMOIL ALLEY & THE FABLEING OF CITIES

Maria Engberg, Per Linde

As digital media increasingly become entangled with urban culture, new cultural practices emerge and affect how we understand and experience contemporary cities (Mattern, 2017). The experience of place alongside digitally mediated content has been a particular focal point for media artists and researchers working in the field of locative media in the past decade. The term locative media refers to how interactive media is bound to a specific location, or in McCullough's words how digital media moves into "sites and situations of everyday urban life" (2006). McCullough's definition moves beyond the common understanding of locative media as bound to geographical site-specificity, and takes us into a realm of experience. Locative media, then, is understood from a specific location but can also gravitate towards the ways in which everyday life is permeated with stories, media, objects and historical facts. Departing from this notion of urban media questions arise around how city narratives are made and mediated. How is a city mediated through city walks, blogs, films and exhibitions, for example? How do we understand the multiple layers of architectural, geological, social and media-delivered experiences and impressions that we encounter in our everyday lives? These challenges form the starting point for the project Turmoil Alley (Larmgränd, in Swedish), which in turn grew out of a three-year research project, City Fables, funded by an artistic research grant from the Swedish Research council (2013-2016). The City Fables project explored how stories about urban life in contemporary cities are negotiated, remediated and circulated, in both contemporary and historical contexts.

The larger backdrop for our project on urban narratives has been the ongoing processes of urbanization, digitalization and mediatisation (Couldry & Hepp, 2013). Cities and Megacities across the globe continue to grow. The urban trend has since the industrial revolution been constant. Globally, more people live in cities than rural areas today. The harbor city Malmö has grown more than any other city in Sweden since the end of the 1990s after a time which is referred to as a long period of post-industrial depression. Like many harbor cities, the city of Malmö had to reinvent itself. The metamorphosis was not unique. While it did have its local flavor, the change followed a typical pattern seen in many post-industrial cities, many of them not seldom harbor cities. This reinvention of cities produces and highlights an abundance of contested and relationally conflicting narratives. Dalia Mukhtar-Landgren (2005:122) has shown how the city of Malmö through its policy and marketing produces a dual city. Referring to Massey (2005), Mukhtar-Landgren argues that "political processes and descriptions of reality do not happen in the city – they produce the city" (Mukhtar-Landgren, 2005:122). These productions, however, are not to be understood as singular or unified productions. Rather, this narration of cities involves a series of iterative productions and reproductions, some incompatible with each other. Furthermore, the role of history is often either underappreciated or misunderstood. In City Fables, and particularly in Turmoil Alley, our starting point was, what is happening today has in some shape happened before and will most likely recur in the future.

Fableing: A strategy for the reuse of digitized cultural heritage material

The City Fables project's methodological stance was related to design research: how collaborative design and art processes are activated and how questions, interventions and productions are negotiated through these processes. The focus of City Fables, as the name suggests, was fictionalised storytelling as a vehicle of representation and as a possible agent for awareness. The activities in City Fables centered around the notion of site-specific or locative narratives (Raley 2010; Engberg 2011). The sites for most of our productions were placed in Malmö as one example of urban spaces that are persistently negotiated and re-negotiated through public debate, historiographically constructed pasts and the multiple and conflicting stories of the present. We asked: what are the stories told about a city, and who gets to tell them?

Using the "fable" as organizing metaphor, we have aimed at inhabiting the shadowlands between fiction and documentary as the site of mapping strategies and counter-strategies for highlighting critical phenomena in the contemporary computerized, digitized, and quantified proceduralized city. The fable as fiction, from the latin *fabula*, story, discourse, narrative (Fable, 2018) is central. But rather than a fiction intended to deceive or fool, it is meant to convey a lesson, share a short story, give insight into a person or a place. The fables of cities are made up of layers of stories—truthful and false. We suggest that the city can be understood as a heteroglossia (Bakhtin 1981), made up of hybrid utterances, traces and influences. These became our canvas for the observations and interventions we wished to make throughout the City Fables project. Fableing, as a process of understanding and using historical and contemporary material as well as a design process, allowed us to ponder the role of fiction in participatory engagement and how the remediation of historical events can provide input

for public debates that address the relationship of everyday life to larger political and cultural events. Our approach takes seriously the potential of fictionalization, narratives, and possible worlds explorations through cultural heritage material, personal archives, and other historical sources. In particular, historical moments have the potential to serve as a counterpoint to the stories and realities of contemporary cities, and works with fictionalizing characters and events as a way of nourishing public debate. We especially stress how constituting publics foregrounds an engagement with authority structures (Le Dantec & DiSalvo, 2013). From this perspective, official archives can be seen as one such authority structure, providing specific facts and viewpoints. By contrast, remediating and fictionalizing in public settings creates an experimental zone, one which does not rely on one actor, such as the formal archive's structure, but integrates the translations of a multitude of structures. This understanding of publics highlights knowledge creation, knowledge sharing and agency in a similar way as design labs (Smördahl & Stuedahl, 2015).

Convinced that the first decades of the 21st century in Malmö—and elsewhere—share many features with the first decades of the 20th century, we applied our "fableing" concept to historical Malmö and began exploring the city archives of Malmö in search of human stories, images, facts and artefacts of Malmö then. Our aim was to create a more general, slightly fictionalized story that could resonate with a contemporary audience while keeping larger historical facts intact. Malmö, Sweden in the early decades of the 20th century was in many ways a very different city from Malmö today. As the rest of Sweden, Malmö was transforming radically during these years. Malmö grew to become an industrial city, and between 1860 and 1920 the inhabitants grew from 19,000 to an astounding 113, 500 (Nyzell, 2005). As people moved into Malmö from the agricultural countryside, Malmö became a city of industry workers: men and women who fought to find work, a place to stay, food and a sense of

security in a city that grew exponentially as new areas were built to accommodate the growing population. These years, 1900-1930, saw other advancements and innovations: these are the years when newspapers grow strong and become important vehicles for information and debate, cinema houses with the new moving pictures are built and going to the movies become a popular pastime. Practically, the process of using fableing as a creative principle required us to spend time searching through physical and digitized archives to learn more about that time, and learn more about people's lives, individual citizens' histories, events, streets, social and political life and so on (figure 1). Not constrained by weaving a historically accurate and complete picture, we approached the archives as an incomplete but intriguing mosaic out of which we could borrow elements that later became the characters and vignettes that made up the life of "our" Turmoil Alley.

Denizens of Turmoil Alley: amalgam characters and events

While the stories of *Turmoil Alley | Larmgränd* are truthful—in the sense that they could have happened in the way we tell them—the characters who inhabit *Turmoil Alley | Larmgränd* are fictive amalgamations of real events and people.

The overall truthfulness of *Turmoil Alley* as a narrative experience was of utmost concern to us; truthful as in the fact of being realistic or true to life, but not "unqualifiedly stateable truth" (Williams 2002: 1). From this point of departure, we created, over time and as we learned more from archives and historical research, a set of amalgam characters and events put together from many pieces. As an example, the story of our character Emil Nordström, a young printer shop worker who is laid off after he has been marked by the police as politically radical and who later emigrates to America, was created even though this name

and person exists in the archive. Emil Nordström in *Turmoil Alley* is inspired by a registration card found in the archives of the Detective Police of Malmö. This historical person also named Emil Nordström (figure 2) was born in Kristianstad, southern Sweden, in 1887 and was taken in for questioning by the Malmö police in 1908. These registration cards, of which we found many, were primarily for political registration. The young men whose faces look back at us were registered as young socialists, presumably after having engaged in so-called agitation activities. While we know very little about the historical Emil, our fictionalized Emil decides over the course of three short films that life would be better elsewhere and as many Swedes at this time, he emigrates with a friend to America.

The characters we created—Emil, Gustav, Estrid, Nils, Josefina, August, Karl—appear in short films, vignettes of everyday life situations in which work and leisure are entwined. The everyday of our characters resonates with the larger historical events of Malmö as they occurred: strikes, political demonstrations, the emergence of cinema and so on. Themes such as the precarity of work, the influx of new inhabitants into the city, emerging workers' and women's rights, new mass media forms resonate in the short films. All movies have a voice-over providing short accounts of the characters, most often in mundane situations such as being at home, writing a postcard, going to the movies or worrying about economic issues etc. The visual material in the movies are combinations of authentic historical photos from Malmö, film snippets, music or radio recordings, advertisements from the time and so on. None of the movies are longer than two-three minutes, making it possible to view several clips during a short period of time. The choice of shorter movies was intentional. The ambition was not to provide longer individual immersion in a long-form narrative; rather, we aimed at giving an impression of *Turmoil Alley | Larmgränd* as densely populated, allowing the viewer to be able to quickly browse among the different stories.

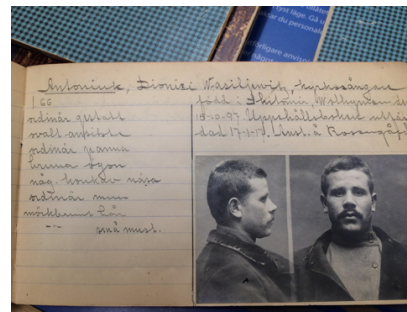


Figure 1 Photo of ledger in the Malmö City Archives (photo: the authors)

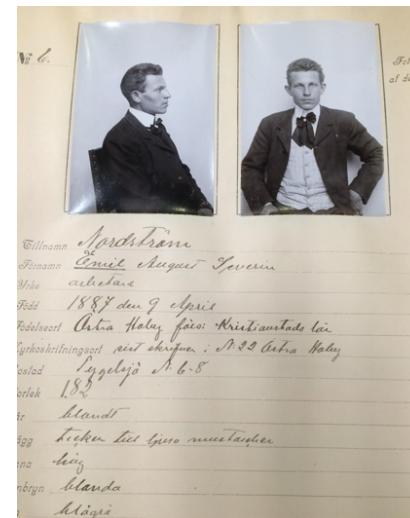


Figure 2 Photo of ledger in the Malmö City Archives (photo: the authors)

Perhaps even more important is that the short and fragmented stories provide a labyrinth-like structure where different associations between the characters and actual events provide nodes that act like crossing (or forking) paths, i.e. different characters and stories are linked to the same events. Addressing the same events, for example the General strike in 1909, makes it possible to span out the narration and to provide different points of view that can provide reflection of diverse meaning-making of specific political or cultural events and potentially recurring patterns and decisive moments in history.

An example of character snapshots is from a film featuring August: "August turns and twists the postcard...he's not a man of words and better if his wife Ylva takes care of the greeting to his mother and father living on the countryside. Ylva is with their kids at a communal park. She has time for that now that she has been sacked from her job at the wool factory." This short account gives several potential associations, to his wife, the children and his parents, to the factory and the communal park. At the same time an object is introduced in the form of a postcard which might appear in other stories. No overall closure is provided in the fragmented narrative and even though there are no interactive hyperlinks between the movies, because visitors can view them in any order the potential for interactive storytelling emerge.

Mediation and design: The Turmoil Alley Mobile Augmented Reality application

Early in our creative process, the idea was to overlay, or reveal as it were, history in the contemporary cityscape of Malmö. In an often used move to connect the here and now with past events, seen in applications such as What Was There and the Museum of London's Streetmuseum app, we wanted to create a mobile experience that allowed histori-

cal people and stories to come to life as one walked through the city. Streets and parts of town where houses and street-scapes are still reminiscent of what it looked like a hundred years ago became our canvas. We decided to work with a mobile Augmented Reality framework called Argon, created by the Augmented Environments Lab at Georgia Institute of Technology. Argon operates with geolocation and image recognition as key functions to place virtual content in relation to the real world. Using the Vuforia image recognition feature embedded in Argon, we created the Turmoil Alley application together with the design company Doris. However, lighting conditions and changing visual elements in the street landscape make it notoriously difficult to work with image recognition outside. Inspired by work such as Highrise, a multimedia web documentary, we began thinking of creating a semi-fictional street that could "house" our stories: Turmoil Alley emerged.

The Turmoil Alley posters are made up of photographs of various houses that existed in the 1910s and 1920s in Malmö. We photographed and edited individual houses, removing features that either seemed out of place or disturbed the image recognition software, and then combined them into two sections of a street (Figure 4 and 5).

Exhibiting Turmoil Alley | Larmgränd

Turmoil Alley | Larmgränd has been shown twice as an interactive exhibition using mixed media as a storytelling vehicle. The centerpiece of the Turmoil Alley exhibition consists of the two large-scale posters and the AR application. In a patchwork fashion, the houses make up a fictionalized street, and the images of the houses on the posters function as a portal of sorts for the story fragments about people in Malmö between 1900 and 1925 that we have created. To access these stories, the visitor uses Argon, a mobile Augmented Reality browser for iPhone and Android smartphones, and enters the URL for Turmoil Alley into the AR browser



Figure 3 Example of nodes in the narrative creating an amalgam of fictive characters and actual events. (Illustration: the authors)



Figure 4 The first poster, approx. two meters wide.



Figure 5 The second poster, approx. three meters wide



Figure 6 Layout of the museum exhibition (photo: the authors)



Figure 7 Above the camera, to the right, the film showing the three king meeting (Above photo: the authors; the right: a film still from the 1914 film)

(app.larmgrand.se). The AR browser opens the camera and as you direct the phone to the poster houses, it recognizes the shapes and plays the film associated with a particular house. There are in all 14 short movies associated with the images on the posters and an additional 4 movies linked to the postcards that were produced for the exhibitions as a take-away item (Figure 8).

In early experimentation we tried to merge the AR experience into a reactive room, where visitors' explicit choices (triggering movies) were combined with the room's autonomous playing of media, video and sound, through measuring the visitors' body movements, ie being close to specific objects or places in the room. The technical infrastructure was pretty complex and the dependency on iBeacon technology made it hard to work in rooms of smaller size. As a first exhibition opportunity in a museum space was offered to us we had to let go of that idea, instead focusing on making the wall-sized posters work in a seamless way together with our Argon application. But remaining from those early experiments was the idea of including physical objects, which is an interesting aspect not least for museums. AR is most often seen as a technology to geo-locate specific digital material in place, outside. The integration of AR as a mixed media and mixed reality experience alongside other media and physical objects remains underused. The layering of media, all chosen and placed in a curated room (orchestrated by us) within the larger setting of the curated museum exhibitions speak to an embeddedness of the experience we created.

During the first exhibition, Larmgränd, at Malmö museums the films were all in Swedish. The exhibition space was in one room, with sparse lighting (see figures 6 and 7). The posters' matte surfaces allowed us to use spot-light lighting and to create a curated environment in which wall projections of two films associated with the Larmgränd application were always running.

Technology-focused exhibitions profit from a set-up that provides a rich experience even without the technology, a mixed media approach that many a researcher wished they had incorporated once they encounter the all too familiar bugs in the code of an application or network problems that render the applications inoperable. For Larmgränd we decided to include some physical objects and media in the form of a more general looping film clip projected on one wall, a table with postcards that visitors could take with them (figure 8), a looping video of a historical meeting that took place in Malmö in 1914 between the three Nordic kings, around the same time as many of our stories, and, finally the vintage film camera that actually filmed the three kings' meeting (Figure 7).

The camera was placed on top a purpose-built pedestal, which had a hidden projector placed inside that displayed the film of the Kings' meeting in front of the camera. The effect was a bit peculiar and viewing the film as it were projected from the camera that actually recorded the film made at least some visitors engage in conversation with us during the opening day. The postcards included instructions on the back for how to use the Argon app. The front of the postcards was either of houses from Larmgränd or were reproductions of old Malmö postcards; all were image targets, possible to use with the Argon application to reveal one of the movies. Thus, a visitor could try out the technology outside of the context of the museum exhibition and still be able to view movies attached to that specific house. This became a kind of "take-away museum" that turned out to be very popular; all the postcards were gone before the end of the exhibition.

The second exhibition, the one which this book is focused on, was the ICIDS art exhibition. The exhibition's theme, Time & Tempo, echoed our own preoccupation in Larmgränd with the complex, unfinished and motley layering of history with the present in the urban environments. Larmgränd became Turmoil Alley, and the translated films

now in English were shown at the ICIDS art exhibition for an international audience (figure 9).

There are by now many museums and cultural heritage institutions that experiment with reality media technologies (Engberg & Bolter, 2017) such as augmented and virtual reality experiences, often alongside regular exhibitions. Many present compelling and interesting designs using digitized cultural heritage material. However, there remains much work to establish design processes for site-specific design, beyond one-off applications. While remaining a limited experiment, *Turmoil Alley | Larmgränd* challenged us to reflect on the process of using and curating digital heritage material to create fictionalized yet historically relevant stories for a present-day audience. Apart from the extended use of rich media, of which mixed realities technologies is but one example, it has been observed how museums and archives are changing from being collection-centered to being community-centered and for the public (Vermeeren et al, 2018). Dialogical formats with visitors are preferred, formats that lends themselves to other kinds of engagement by extending the physical visit or through concrete involving the public in different rearrangements of collections (Vermeeren et al, 2018). One example is the Dutch Rijksmuseum in Amsterdam, that allows visitors to play with the paintings on display by "hijacking" their content via an augmented reality app. By re-appropriating the painting in this way, art gets closer to the individual, and it acquires a meaning that is more personal and may, therefore, resonate longer in the visitor's memory (Vermeeren et al, 2018).

In the early experiments, as well as in a student project that created a prototype experience (figure 10), we tried out some models for participation with promising results. On that occasion visitors were asked to associate stories from their own life to the stories they were confronted with in the exhibition. A possible alternative for coming work could be to collectively continue to grow the population

of *Turmoil Alley | Larmgränd* together with visitors, on or offline, over a longer period of time.

We see the participatory dimension of cultural heritage as a potentially strong candidate for creating public debate around archived collections, particularly since they have become digitized and shared via websites or APIs. On the one hand the changing role of spectatorship in contemporary culture has given rise to expectations on participatory action and engagement that transcends the traditional settings of archives and museums where "visiting" and "passive observation" direct the code of conduct rather than active engagement. But as already Dewey highlighted in his distinction between the art product and the work of art, the former being the physical and potential, and the latter being what is experienced as people engage with the art product, successions of interpretations, re-mediations and speculation form integral part of experience of art or exhibited objects (Dewey, 1933). It is highlighted by Dindler (2010) how this aspect has been echoed in the writings of Berleant and how the process of appreciating a painting requires us to imaginatively enter and explore the world of the painting. Berleant's notions of participatory engagement thus form a proposition that people not only appreciate situations as observers, but actively invest their resources, beliefs and prior experiences in the environment (Berleant 1970 as cited in Dindler, 2010). Although this referred to art what is at stake is a transactional process between people and environment in which there is a continuous exchange. Berleant also extended the general argument to encompass nature as well as the built environment (Berleant 1992) and we think that archived objects can be included in that environment.

The lines of argumentation presented above are also gaining more and more focus in the participatory design community. Participatory design is a practice of participation and it evolves through cycles of making, telling and enacting (Brandt et al, 2013). For supporting organization of



Figure 8 The postcards (photo: the authors)

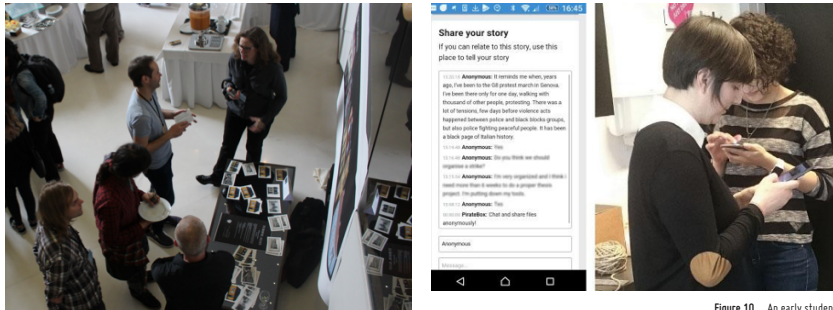


Figure 9 The ICIDS art exhibition space. (Photo: Vanessa Cesário)



Figure 10 An early student-made prototype.

the social and collaborative discourse around specific topics the PD community has for a long time explored formats of engagement, taking emerging language games as a starting point rather than rational descriptions (see Ehn 1990). For example, the early work in using card-board mock ups as printer screens provided a fictional space in which participants could express aspirations on desirable futures, frame complex contemporary phenomena or negotiate the meaning of relevant pastime. Narrative dimensions have been strong already at the outset of the Scandinavian tradition. In the recent years the concept of design fiction has grown strong as a way of making design inquiries. Design fiction has emerged as a uniquely productive approach to speculative inquiries (Wakkary et al, 2015). In relation to participatory design it has been suggested that they enable critical reflection and inspire action relating to design inquiries that deal specifically with re-shaping or suspending established conventions (Dindler, 2010). Further, Dindler argues that fictional space emerges as participants in design engage in games of make-believe mediated by props that give mandate to imagination and serve as both anchoring and transcending elements. Objects and media from cultural heritage archives can take on the role of such props while at the same time providing both anchorage and transcendence.

So, complemented with the theme of fictionalizing, platforms for co-authoring and negotiating the meaning of facts relevant for urban life can then be created. Such experiences may come close to the shadowlands between fiction and documentary that we aimed at populating through our concept of “fableing,” with the further ambition to highlight critical phenomena in contemporary mediated cities.

Acknowledgments

The authors wish to thank Doris HB (Johannes Karlsson and Sebastian Bengtegård); Jay David Bolter, Joshua A. Fisher, Colin Freeman and students at Georgia Institute of Technol

ogy (US); Malmö museums, Magnus Denker, Thobias Franzen, Johan Salo, Magnus Wallon, and the Swedish Research Council.

References

- Bakhtin, M. M. (1981). *The Dialogic Imagination: Four Essays*. Ed. Michael Holquist. Trans. C. Emerson & M. Holquist. Austin and London: University of Texas Press.
- Berleant, A. (1970). *The Aesthetic Field*. Springfield, IL: CC Thomas.
- Brandt, E., Binder, T. & Sanders, E. (2013). *Ways to engage telling, making and enacting*. In T. Robertson. (ed). *Routledge international handbook of participatory design*. New York, NY: Routledge.
- Couldry, N. & A. Hepp. (2013). *Conceptualizing Mediatization: Contexts, Traditions, Arguments*. *Communication Theory*, 23,191–202.
- Dewey, J. (1934). *Art as Experience*. New York, N.Y.: Perigree.
- Dindler, C. (2010). *Fictional Space in participatory design of engaging interactive environments*. (Doctoral dissertation, Faculty of Humanities, Aarhus University, Denmark). Retrieved from: http://digitalurbanliving.projects.cavi.au.dk/native.dk/dindler_dissertation_web.pdf
- Ehn, P. (1988). *Work-Oriented Design of Computer Artifacts*, L. Erlbaum Associates Inc. Hillsdale, NJ, USA.
- Engberg, M. (2011). *Writing on the World: Augmented Reading Environments*. *Sprache und Literatur*, 108, 42(2), 67–78.
- Engberg, M. & Bolter, J. D. (2017). *Mobile Cinematics*. In P. Hesselberth & M. Poulaki (Eds.), *Compact cinematics: The moving images in the age of bit-sized media*. (165–173). London and New York: Bloomsbury.
- Fable. (2018). *OED Online*. Oxford University Press, January 2018, www.oed.com/view/Entry/67384. Accessed 23 February 2018.
- Le Dantec, C. & DiSalvo, C. (2013) *Infrastructuring and the formation of publics in participatory design*. *Social Studies of Science*, 43(2), 241–264.
- McCullough, M. (2006). *On the Urbanism of Locative Media [Media and the City]*. *Places*, 18(2), 26. Retrieved from: <http://escholarship.org/uc/item/84x6m3nf>
- Mattern, S. (2017). *Code and Clay: Data and Dirt*. Minneapolis, MN: University of Minnesota Press.
- Mukhtar-Landgren, D. (2005). *Den delade staden – Välfärd för alla i kunskapsstaden Malmö*. *Fronesis*, 18, 120–132.
- Nyzell, S. (2005). *Arbetarnas Möllvången och Möllvångskravallerna 1926*. Malmö: Museers e-skrifter, 4.

- Raley, R. (2010). Walk this Way. In J. Schäfer and P. Gendolla (Eds), *Beyond the Screen: Transformations of Literary Structures. Interfaces and Genres* (pp. 299-316). Bielefeld, Germany.
- Stuedahl, D. & Smørðal, O. (2015). Matters of becoming, experimental zones for making museums public with social media. *CoDesign: International Journal of CoCreation in Design and the Arts*. 11(3-4).
- Wakkary, R. Odom, W., Hauser, S., Hertz, G. & Lin, H. (2015). Material speculation: actual artifacts for critical inquiry. In proceedings of the Fifth Decennial Aarhus Conference on Critical Alternatives. 97-108, Aarhus, Denmark.
- Whitehead, A. N. (1929). *The Function of Reason*. Boston, MA: Beacon.
- Vermeeren, A., Calvi, L., Sabiescu, A. & Stuedahl, D. (2018) *Future Museum Experience Design: Crowds, Ecosystems and Novel Technologies*. Springer.
- Williams, B. (2002). *Truth and Truthfulness: An Essay in Genealogy*. Princeton, N.J.: Princeton University Press.