

## Research Through Game Design Interactive Stories from a Submerged Amsterdam

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### Abstract

Deciding what kind of smart cities do we, as a society, want is not only a political question but also a matter of envisioning possible futures. The speculative narratives that designers produce to support their imagination are called “Design Fictions.” We share SUBMERGED, a cross-platform project that combines game design, interactive narrative, and urban exploration with the objective of empowering citizens to produce their design fictions. Following a “Research through Design” practice, we describe our process for creating SUBMERGED, we synthesize some critical insights from our experience, and we urgently call for a dialogue between semioticians and design researchers on these topics.

### Key Words

Gamification, design research, game design, pervasive game, interactive narrative, design fiction

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## 1. Introduction

A broad and lively debate is taking place around the future of our (smart?) cities. On one end, an industry-led agenda envisions technological solutions for a variety of issues, from traffic congestion to social isolation. On the other side, a multiplicity of bottom-up, citizen-led initiatives advocates for more human-centered, citizen-focused interventions. Like many similar debates, also this ultimately boils down to which future do we, as a society, envision for our urban spaces. As researchers and as engaged citizens, we embrace the task of not only speculating about (im)possible future scenarios but also of giving a voice on these themes to a variety of underserved populations.

In this vein, we share SUBMERGED<sup>1</sup>, a cross-platform project that combines game design, interactive narrative, and urban exploration. It is composed of a smartphone app and a board-game to be used in a workshop setting. Its main objective is to engage a diverse range of players in envisioning how civic media, urban informatics, pervasive technologies and other similar disciplines may contribute to shaping the future of their neighborhoods. What do the inhabitants of a neighborhood hope and dream? What do they fear? As technology progresses, what will they do and say in public spaces? How much freedom should they sacrifice for safety? Drawing upon the research methodologies of speculative design and design fiction (Sterling 2009; Tanenbaum 2014; Tanenbaum, Pufal, and Tanenbaum 2016; Blythe 2014; 2017), SUBMERGED is at the same time an interactive science-fiction narrative and a tool for qualitative data collection. At its core, it tells a speculative story split between the present day and a 2031 version of Amsterdam, when people are living in gigantic underwater domes and new technologies are developed to survive these harsh conditions. The games task players with interacting with time-travelers from future Amsterdam, envisioning possible futures in the form of micro-narratives, which we collect and use as foundations for qualitative analyses and scenario-building.

In sum, we detail how the SUBMERGED project was designed, and we aim at contributing to the growing dialogue on game design as a qualitative research tool. We urgently call for a stronger connection between the study of interactive narratives, urban practices, game design, and we suggest that an epistemology rooted in semiotics and narratology may constitute the foundations on which to build it.

## 2. SUBMERGED: components, objectives, motivation

SUBMERGED is composed by two complementary elements: a location-based mobile game telling an interactive story set in Amsterdam and recording players' reactions to the narrative, and a board-game to be used

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1 More documentation is available online at <<https://goo.gl/S7TZCf>>.

in a workshop to brainstorm about future scenarios. The two parts address the same fictional storyworld (Ryan 2006; 2001; 2015) but can be deployed independently. We hypothesize that this combined approach (workshop plus mobile app/interactive experience) may be successful in making the creation of future scenarios 1) more accessible, 2) scalable to a higher number of prospective participants, 3) more effective in eliciting “on-site” speculations leveraging the GPS sensors in smartphones. This project ran at the Amsterdam University of Applied Sciences in the 2017/18 academic year, born as a curiosity-driven initiative, and then upgraded to research internship. The two authors of this paper are, respectively, main writer/designer for SUBMERGED and research supervisor.

Overall, our motivation for pursuing the SUBMERGED project is manifold. The location-specific mobile game places the players in specific locations in the city, where they are tasked to imagine the future. It based on the research hypothesis, currently under evaluation, that being situated in a specific place (Harrison and Dourish 1996; Dourish 2006; Turner and Turner 2006) may qualitatively affect how test subjects speculate about possible futures set in the same location. When we place someone in the city, does it have an effect on the way they envision the future of that location? Is it enough to imagine the future of a location when we are not there, or is it beneficial to place participants on-site to gather the most valuable data?

The board-game part of SUBMERGED was motivated by issues of accessibility, relatability, and some sort of “creative block” that was sometimes observed in the least-experienced participants. This became evident in the first phases of the design process for SUBMERGED, before the play element was added: participants wanted to imagine but had troubles formulating a story or a coherent argument. And yet these people are our target audience, we want to start a conversation with everyday people that might never have participated in a workshop or a “design fiction” session. From this realization, we were motivated to turn our workshops into full-fledged board-games with more playful elements.

## 2.1. *What are we doing here? Designers’ judgments as research insights*

Having outlined our rationale for pursuing the SUBMERGED project in the first place, let us briefly discuss the genre of this essay, and its contribution to the academic community. We acknowledge that what we are presenting here is neither a semiotic analysis or an “*explication du texte*.” We adopt a different kind of self-reflective approach, which we derive from the tradition of “constructive design research” (Koskinen 2011) that, briefly said, assumes the act of concretely producing an artifact as the central research activity. As Shaowen Bardzell and colleagues put it, “design experience in the form of designers’ judgments is equally important to the analysis and reasoning activities that are common to all kinds of research” (Bardzell et al. 2012).

This is what we aim for here: instead of “textualizing” and analyzing<sup>2</sup> our finished SUBMERGED artifact, we tease out significant insights from our creative process. Far from being an occasion for self-promotion, in what follows we offer to the academic community the lit review we used to frame our work, the process and rationale we followed, and a series of insights we synthesized as we worked on SUBMERGED and tested it.

### 3. SUBMERGED across disciplines

In our creative process, three cross-disciplinary core concepts have been particularly relevant for our endeavor: humanistic design research, interactivity in narrative, and speculative design or design fiction. In what follows, we synthesize them in an operational summary.

#### 3.1. A more human(istic) view on game design research

Overall, design research is a disciplinary field concerned not only with concretely creating artifacts but also with synthesizing the knowledge “produced” while designing, making, deploying and observing them (Koskinen 2011; Laurel 2003). Among the many domains where design research takes place, we tap specifically into game design and human-computer interaction (HCI) (Sharp, Rogers, and Preece 2016). Game design deals with the “how-to” and practical processes for ideating and producing playful artifacts (Salen and Zimmerman 2003); HCI is a broad domain concerned with people interacting with computer-based technologies, which today range from smartphones to personal computers, game consoles, and servers.

In its early days, HCI addressed primarily efficiency and usability, with an engineering mindset, but nowadays does “no longer understand the subjects of their work as mere ‘users’ but ‘full human beings’ situated within particular social, cultural and economic contexts, that need to be taken into account” (Ferri and de Waal 2017). As Bødker recently synthesized: “the use contexts and application types broadened, and intermixed, relative to the second wave’s focus on work. Technology spread from the workplace to our homes and everyday lives and culture [embracing] experience and meaning-making” (Bødker 2015). Two elements are particularly significant here. First, scholars gradually expanded their scope towards what today is “Humanistic HCI” (Bardzell and Bardzell 2015), where prominent design researchers look with interest at critical theory, hermeneutics, and semiotics. Secondly, we also draw upon Research through Design (RtD) (Koskinen 2011; Stappers and Giaccardi 2012), conventionally defined as “an approach to conducting scholarly research that employs the methods, practices, and processes of design with the intention of generating new knowledge” (Zimmerman and Forlizzi 2014). As

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<sup>2</sup> We take no issue whatsoever with post-hoc analyses, which we plan to perform once a critical mass of significant data has been collected by deploying SUBMERGED. Here, we merely take a different epistemological approach, inspired by constructive design research and research-through-design (Koskinen 2011; Zimmerman and Forlizzi 2014).

Stappers and Giaccardi (2012) note, conducting an RtD process usually requires the development of a prototype (or artifact) plays a central role in the knowledge-generating process. Specifically, SUBMERGED yielded a “double” prototype – the storytelling app, and the board-game.

In sum, we situate our work at the humanistic side of HCI, and we practice RtD: by doing so, we agree that Design Research in HCI is now at the point where a dialogue with the humanities – and semiotics in particular – is not only possible but also urgent. In this spirit, the SUBMERGED project is meant as a practical contribution to such a dialogue.

### 3.2. *Between narrativity and interactivity*

SUBMERGED is also an Interactive Digital Narrative (IDN), which may be generally defined as a form of storytelling that adopts digital technologies to adapt *fabula* and *syuzhet* to a user’s input (Wood 2017; Koenitz et al. 2015; Budniakiewicz 1992; Herman 2004). In practice, IDNs are not a genre per se, and span from narrative-driven video games to interactive novels, experiments in non-linear television and cinema, and even conceptual video-art. As SUBMERGED leverages a kind of interactive narration, it may be useful to provide here some theoretical outline of this domain. The categorization of the theoretical approaches to interactive digital narratives is unwieldy and exceeds the scope of this work. Here, we simply point at two general perspectives on IDN: one dealing with automatic story generation, the other focusing on the experience of the user (or, one might say, the reader).

The first strand has its roots in Russian Formalism. Already in the 1920s, Propp argued that “to create a folktale artificially, one may take any A, one of the possible Bs, then a C, followed by absolutely any D, then an E, then one of the possible Fs, then any G, and so on” (Propp 1928). Propp was certainly not thinking about computers, but his vision of potentially endless narratives caught on as the computing power available increased in the following decades. Propp’s ante litteram vision was soon picked up by computer scientists interested in automated story generation. The second perspective has its roots in Computers as Theatre (Laurel 1991), Brenda Laurel’s seminal work where she proposes a set of notions for describing human-computer activities derived from theatre studies. Other scholars in this tradition, among which Janet Murray (Murray 1997) and Marie-Laure Ryan (Ryan 2006) are particularly noteworthy, developed and expanded this approach to digital narrativity in more recent years.

In synthesis, SUBMERGED draws upon the long theoretical tradition of interactive digital narrative both in the sense that it produces a narrative text following the users’ input, and that it aims at eliciting a narrative experience for the players themselves.

### 3.3. *Design fiction*

SUBMERGED is in the form of an interactive story that we use to “provoke” players to produce micro-narrative scenarios. Specifically, SUBMERGED is part of a genre conventionally defined as design fiction, which entails

the creation of a possible – and yet fictional – narratives to explore the impact of future technologies as part of qualitative research (Sterling 2009; Blythe 2017; Tanenbaum 2014; Markussen and Knutz 2013).

Short narrative vignettes – either written *ex novo* or extracted from existing works of fiction – are indeed common and effective ways of envisioning futures. Among the ones written *ad hoc* to illustrate a design idea, Weiser’s vignettes bringing his vision of “ubiquitous computing” alive are arguably the most recognized (Weiser 1991; Reeves 2012). Weiser argued for computers becoming so pervasive and somehow transparent to fade into the background, becoming practically invisible: as he wrote, “neither an explication of the principles of ubiquitous computing nor a list of the technologies involved really gives a sense of what it would be like to live in a world full of invisible widgets” (Weiser 1991). As a counterpoint, other researchers examine works of fiction – often sci-fi – in a “hermeneutic dialectic between our mundane present and an alternative reality, not for escapism but [...] to help bring some version of that alternative reality into existence” (Bardzell and Bardzell 2014). For instance, Bell and Dourish examine the influence of popular TV series on digital design over the decades (Dourish and Bell 2014), and Shedroff and Noessel look at “diegetic prototypes,” fictional devices situated into narrative frames, as sources of inspiration for today’s designers (Shedroff and Noessel 2012). Indeed, fictional computer interfaces in popular sci-fi movies have become a classic example of how diegetic prototypes influenced design conventions (Kirby 2010).

### *3.4. At a crossroad, but where are the semioticians?*

With the SUBMERGED project, we found ourselves rather naturally at a crossroads between many disciplines that implicitly resonate with narrative semiotics – as demonstrated by the concepts just mentioned: from a qualitative approach (Stappers and Giaccardi 2012; Laurel 2003; Koskinen 2011) to a humanistic epistemology (Bardzell and Bardzell 2014, 2015), attention to narrativity (Ferri 2015; Blythe 2017; Blythe and Encinas 2016), and the conscious and creative use of diegesis (Tanenbaum 2014; Shedroff and Noessel 2012). Yet, we wonder if semioticians are somehow missing an opportunity to dialogue around these topics. Two moves have been proposed recently in this sense. Ferri already argued that playful and location-specific could be particularly productive in supporting such a dialogue (Ferri 2016). Secondly, Ceriani recently reviewed the analytic protocols followed by design researchers interested in future forecasts, and reread them from a semiotic perspective. As it deals with the conditions of emergent sense, “semiotics has something important to offer in relation to the design of possible futures, where meaning is generated from conditions of possibility imagined and furnished by a society” (Ceriani 2017).

All said, there are some contributions in this still-uncharted opportunity space, but we still see a gap in semiotic literature when it comes to design fiction and speculative design, especially with a practical angle. In sum, our objective here is to stimulate a contribution from fellow semioticians to an

agenda effectively synthesized by sci-fi writer Octavia Butler: “So why try to predict the future at all if it’s so difficult, so nearly impossible? Because making predictions is one way to give warning when we see ourselves drifting in dangerous directions. Because prediction is a useful way of pointing out safer, wiser courses” (Butler 2000: 166).

## 4. Designing SUBMERGED

What we focus on here is not necessarily a theoretical or analytic contribution, but a practical and artifact-centric one, in line with our RtD methodology. In what follows, we dive deeper into the details of the two games composing this project and we tease our some practical insights we gathered in the process of designing them.

### 4.1. SUBMERGED, the location-based mobile game

The mobile game part of SUBMERGED tells a time-travel story, and starts with players receiving mysterious phone-calls from a future Amsterdam, and being tasked with visiting a set of specific physical locations. They are told about the city’s impending destruction, and also that the root causes for that can be found in the present – but the game’s characters leave the details completely open to interpretation. Will energy waste be Amsterdam’s doom? Will

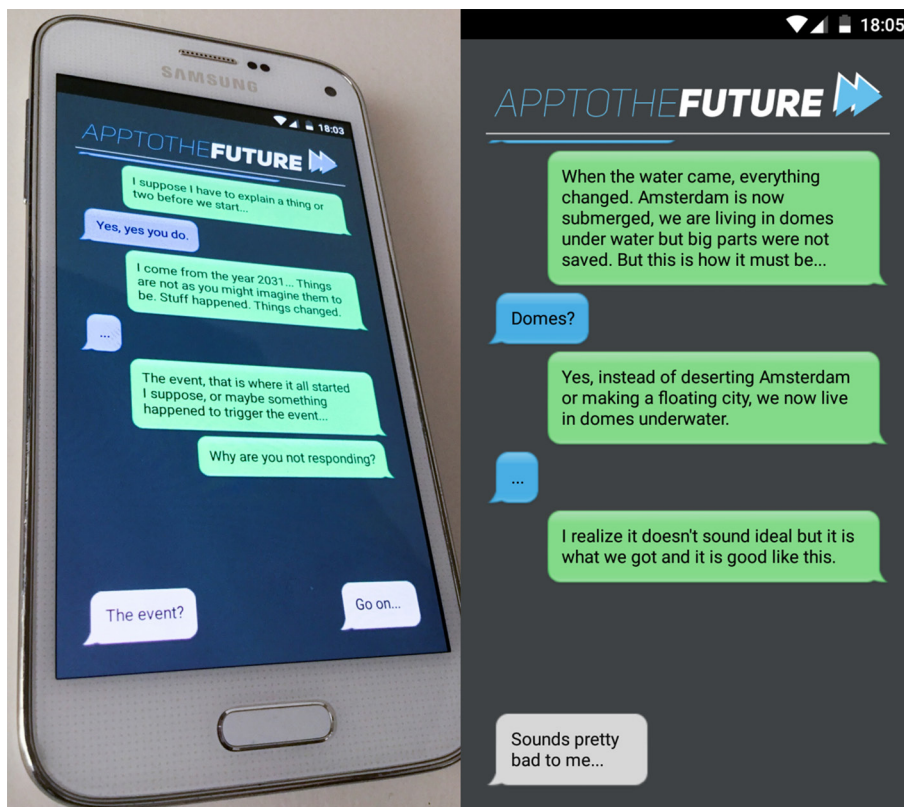


Figure 4.1. The SUBMERGED mobile app.

it be unsustainable traffic? Social upheaval? Throughout the game, players are sent in a walking route, mapped via their phone's GPS, across the city center and periodically prompted to report their observations via the app (Fig. 4.1.).

From a technical point of view, the game makes use of an engine named *Appthothefuture*, also developed at the Amsterdam University of Applied Sciences, able to render simple branching locative experiences on Android smartphones. It presents a simple conversational interface, similar well-known chat applications such as Whatsapp, and simulates a chat between players and in-game characters. At specific times, the app may also initiate a simulated phone call, collecting audio-recording similarly to a structured interview protocol. Additionally, the game may also ask to take photos of their surroundings.

As we were developing the *SUBMERGED* location-based mobile game, it was necessary to pay special attention to three elements in specific throughout our creative process: the physical places to be visited in the game, the structure of the interactive narrative, and the sense of agency bestowed to players.

#### 4.1.1. *The SUBMERGED places*

We decided to set the game in an area in Amsterdam spanning from the *Amstelvein* to the *Visserplein*, traversed by *Wibautstraat* and *Weesperstraat*, two main streets in the neighborhood, as well as one of Amsterdam's central axes. Both are well known for the urban challenges they face, such as high traffic volumes, flooding, and air pollution. With a community of 30,000 residents, 60,000 students and almost 200 organizations, hotels, museums, social and municipal institutions, the area is also known as a world-class knowledge cluster, as it hosts a campus of the Amsterdam University of Applied Sciences, the University of Amsterdam's Faculty of Social and Behavioural Sciences and a number of faculties of the Amsterdam University of the Arts.

The design project started with visual urban explorations and an autoethnographic report (Ellis, Adams, and Bochner 2010), with notes collected both in visual and written form (Fig. 4.2.).

Some elements stood out for inspiration – in a sort of narrative *moodboard*<sup>3</sup>: a combination of old and new architecture, and a combination of low-tech (bikes) and high-tech, with water everywhere. In retrospect, this is where *SUBMERGED* was born, with Dutch culture being so intertwined with water, the sea and the looming danger of living under sea level their whole life (quite literally, even in today's Amsterdam).

#### 4.1.2. *SUBMERGED, the narrative structure*

Having collected and synthesized the inspiration material, we then turned to the actual story-writing. The *SUBMERGED* location-based game tells a branching storyline with one entry point and four possible endings, as schematized in Figure 4.3.

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3 A moodboard (a visual composition made of an arrangement of photographs, typography or different materials to convey an idea, emotions or specific concept).





Figure 4.2. Visual inspiration for *SUBMERGED*.

As the Apptothefuture engine is able to locate the user via the smartphone's GPS sensor, it can also react by triggering an in-game event, such as a message or a phone call. This enabled us to pair locations in the play area with specific in-game events, a feature that is also reflected in the branching structure of the narrative.

From a writer's perspective, it was challenging to balance the need to tell a narrative that is in itself compelling, and using it as an invite – an incipit, one might say – for players to describe their surroundings and speculate about their future. We found a suitably subtler approach in a dilemma-driven structure, opening the story with an impossible question (“If you could change the future, would you?”). Using tropes about time travel and time loops has

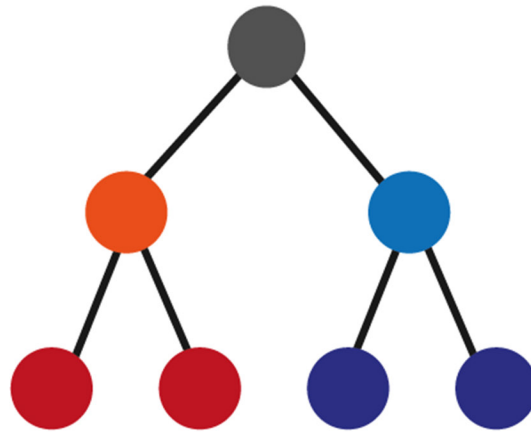


Figure 4.3. A branching structure with four end-points

proven conducive to creative speculation in our players: would you change the past to improve the present? Even if that means that everything that has happened, all achievements, and even people are ripped from reality? By presenting ethically-ambiguous questions, we kickstarted a narrative arc that the majority of our players could identify with.

#### 4.1.3. Giving players agency

In our process, we aligned with Janet Murray’s definition of agency as the aesthetic pleasure of being able to affect the storyworld in a meaningful way (Murray 1997; 2012). In our writing, we gave players a significant choice early on (“Would you change the future?”) that – unbeknownst to them – would affect their whole gameplay experience. In other words, that early branch in the structure affected the values across the rest of the narrative and influenced the narrative positions and values of the fictional characters encountered in the game. Players who answered that they did not want to change the future would end up “chatting” primarily with a character named Helix and working against a second one called Sammy. Vice versa, those who did want to change the future were teamed up with Sammy and work together against Helix. This way, players could project their own ideas onto the characters, which were expressly designed as “blank slates” with gender-neutral names, no visual representations, and were always referred to as “they.”

Furthermore, we struggled with the fact that – as game designers of a mobile app – we had no control whatsoever on when our players would use it. Of course, specific parts of the story would be unlocked only in specific locations, but we could not possibly know whether players would go there during the day, or in the middle of the night, or on which day of the week, and so on. For this reason, the spy-like scenario where they help the protagonist observe Amsterdam was expressly left open to interpretation. For example, halfway through the game, character Sammy writes to the player: “While Helix usual-



Figure 4.4. Some SUBMERGED cards.

ly doesn't use technology from the past [...] they might have to now. [...] On your way to Waterlooplein, could you look around and [...] just tell me what you saw and what you think Helix might want to use. Helix is very smart so they might be able to make something with your outdated 2016-technology." This was written to be independent of the time and day in which the game is actually played, and ended up prompting interesting speculations that gave us a glimpse of how our players conceptualize the (re)use of digital technologies.

#### 4.2. SUBMERGED, the board-game

The board-game part of SUBMERGED is a playful workshop activity where a small group of five to seven participants co-creates a story set in the speculative future Amsterdam under the glass dome. With a special deck of cards that equally draws inspiration from games like Storycubes (O'Connor 2005) or Fiasco (Morningstar 2009), and from structuralist narrative concepts such as actants, actors, themes and figures (Budniakiewicz 1992; Greimas 1970; Greimas and Courtés 1979), players participate in a cooperative storytelling session to imagine "how does it feel like" to live in an underwater Amsterdam.

##### 4.2.1. Designing the Cards

The idea of using cards and other game-pieces to gather inspiration for a partially-randomized storytelling is, clearly, not new. It resonates not only with popular pastimes such as the surrealist game of Exquisite Corpse, but also with commercially-available board-games such as Storycubes (O'Connor 2005) and Dixit (Roubira 2008) and, interestingly, with the above-mentio-

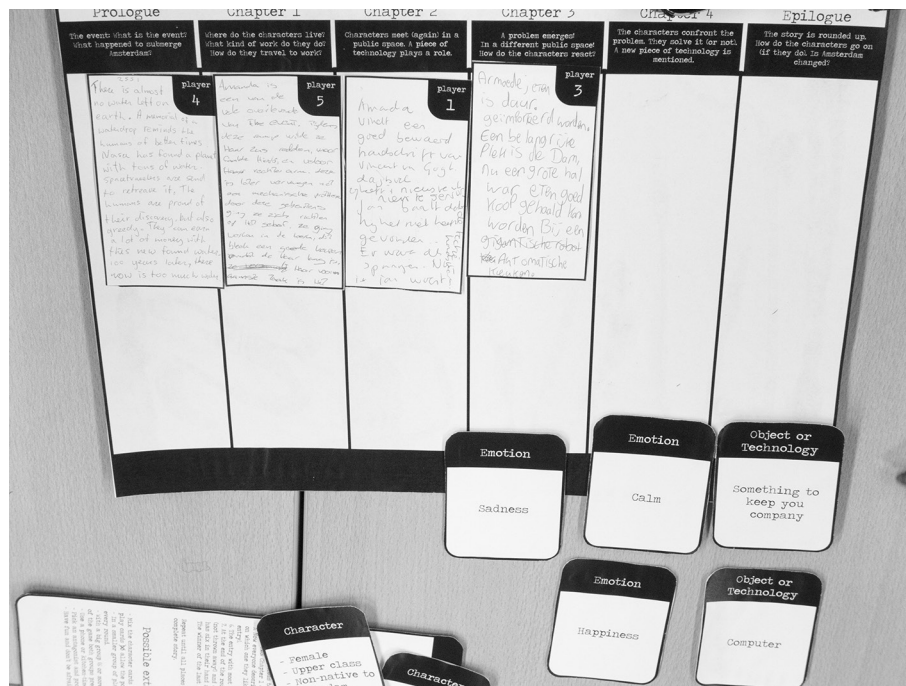


Figure 4.5. Playing the SUBMERGED board-game.

ned early experiments in computer-generated interactive digital storytelling (J. Ryan 2017). Within design research in specific, there is a long tradition of using decks of “design cards,” with exemplars such as Halskov et al.’s Inspiration Cards Workshops (Halskov and Dalsgaard 2006) to Flanagan et al.’s Grow-a-Game cards (Flanagan and Nissenbaum 2014) (Fig. 4.4.).

While creating the cards for the SUBMERGED board-game, we decided to keep an open-ended non-deterministic approach that would maximize players’ creative freedom. No specific “winning conditions” were set, and the game is expressly cooperative. The cards themselves are open to interpretation: among the “inspiration cards” that players may tap into for creating their narrative fragments there are Emotions (a broad palette from from Happiness to Nostalgia or Envy), Places (we avoided naming them specifically, and opted for open descriptions such as “An expensive place,” or “A place for remembrance” and “A place for eating”), and Objects/Technologies (also in this case, as open-ended as possible, e.g. “Something to stay up to date with the news”).

#### 4.2.2. Designing the Gameplay

The SUBMERGED board-game can be played by five to seven players, plus a facilitator in charge of explanation and data-collection. Gameplay is turn-based, with players inventing individually some snippets of the overall story, followed by them presenting their ideas, voting, and moving on to another turn. A game board, placed in the middle of the table, represents a story subdivided into six chapters; each player has six “chapter cards” (one for each part of the story), six “inspiration cards” and one “character card” (Fig. 4.5.).

All the narratives generated with the SUBMERGED board-game revolve around two main characters – a design decision that was taken to keep narrative complexity manageable in a playful workshop setting. The game begins with players deciding the identity of those two main characters based on their character cards. Then, for each turn, all players put on the table one of their inspiration cards: everyone's task is to silently imagine a narrative fragment involving the characters and all the cards on the table. They then write their proposals on "chapter cards," then vote for the story fragment they like the best, and continue the narrative from there – with each chosen part becoming "established reality or canon". The game continues with the chapters to be written which are, in order, the prologue, chapter one, two, three, four and the epilogue.

## 5. Insights from the design process

SUBMERGED was characterized by the hiccups and accelerations that are typical of curiosity-driven, student-led projects. Nevertheless, we call it a clear success, as it led us to reflect upon a number of practical implications that would otherwise have been opaque from a purely theoretical standpoint. In what follows, we touch upon some insights that we extract from our design experience.

### 5.1. Digital or analog?

As a research tool, SUBMERGED is not platform-agnostic in its structure: in other words, implementing it as an app or as a board-game leads to significant differences impacting on the experience and, ultimately, on the collected data. Let us examine, for instance, how the game is connected to specific places. The mobile app uses the GPS function of the phone to lead the player through the city and the locations that we wanted to look into. While the order in which the places may be visited could vary, everything else remained constant (e.g. similar questions were asked at the same locations), leading to relatively similar and comparable experiences across various participants.

On the other hand, the board-game is a much freer tool for spontaneous creation. A relatively small deck of 60 cards offers a number of permutations much higher than the branching storylines could afford. In other words, no session is the same, depending on the participants as well as the cards: different stories emerge from the sessions with new and interesting results. However, the data is not as easily comparable as the results from the digital game are. Furthermore, the board game produces a quantity of raw linguistic data that is much higher of the digital counterpart, thus requiring a prioritization of more or less significant outcomes.

### 5.2. Single-player or multiplayer?

As a follow-up to the previous point, we realize also that the two different implementations (app vs. board-game) have an impact also in term of

the players' immediate social context. As explained above, the mobile app is a single-player game where players traverse Amsterdam on foot, while they chat on their phone and record audio with headphones and mic. Similarly to other recent games, such as *Lifeline* (3 Minute Games 2015), it invites a closer relationship with the fictional character “at the other end of the chat” rather than with other players.

On the other hand, the board-game is intrinsically multiplayer and cooperative, in the spirit of the already-mentioned surrealist *Exquisite Corpse*. As different chapters of the story may be authored by different players, gameplay ultimately created a sense of common ownership. The results are hard to track back to a specific participant because quite a lot of discussion generally happens during the sessions, which we count as a positive feature if our objective is to record as much linguistic data as possible but, nonetheless, leads to definitely “messier” outputs.

### 5.3. *Data, but of which kind?*

From the very beginning, we knew that the objective for both parts of *SUBMERGED* was stimulating participants to produce narrative fragments about the future. And, yet, by concretely making and testing the two systems, we are able to reflect on the qualities of the data we collect. The *SUBMERGED* mobile app yields audio recordings, as well as photographs taken by players at predefined moments in the narrative. This way of data collecting was chosen to emulate the way we communicate through a phone when we record voice messages and send photos to friends. The text communication is done through a ‘choose your answer’ kind of way with predefined options that lead the player through the branched narrative. This data needs to be transcribed and coded for further analysis. On the other hand, the *SUBMERGED* board game yields written data and, possibly, audio and video if one chooses to record the whole workshop to capture the discussion among players. The handwritten notes produced when playing the board-game need to be digitized for analysis.

### 5.4. *Solitary explorers or social brainstormers?*

Ultimately, the two parts of the *SUBMERGED* project promote two very different kinds of playful experiences – a fact that we suspect carries over to the data we collect. On one hand, we have a location-based mobile game tasking players with activities that are physically situated in an urban environment but, at the same time, conducted alone. On the other one, there is a board-game to be played in a group, but that cannot be experienced in situ like the mobile app. In the end, we have produced two examples that are situated at the opposite ends of the spectrum: while we cannot (and do not want either!) argue for one being better than the other, there are clear differences between the two types of urban practices that they support.

Let us start with the *SUBMERGED* location-based mobile game. Initial feedback from participants suggests that the sessions were enjoyable and the data collection was deemed “easier.” Participants never commented on it

being “work” or an effort but experienced it as a game. As part of our playtesting protocol, we observed (“shadowed”) participants as they played the game and became immersed in the interactive story. We have recordings of players responding to the game’s prompts in an emotional way, expressing negative feeling towards the (virtual and fictional) antagonists and a desire to help the protagonists in their mission. In one particular session, a player was at a point in the game where the protagonist asks to look for “suspicious individuals” who might be other time-travelers and, indeed, this participant indeed began actively looking around. This prompted us to break protocol and check if the player was aware that there were no actors involved in the session, to which she confirmed that she was just “into the story”. This suggests to us the importance of character creation in a narrative: even if the focus of SUBMERGED is data collection, we hypothesize that its effectiveness lies in how the characters are introduced to the players, which constitutes a significant part of the immersive experience. In sum, we have preliminary evidence that physically situating players in urban spaces primes them to experience their surroundings in ways that are significantly different than what they would do if they were just strolling.

Vice versa, the board-game yields results and experiences that are almost the opposite of the other prototype but are still quite valuable for different reasons. During playtest sessions, participants described their experience as “intense but fun” and “after the first round it becomes fun”. Indeed, in the initial round players figure out the mechanics, and have to familiarize themselves with how to play. In general, the system requires a vivid imagination from the players: we are unsure if some of the self-reported stress is due to the fact that the board-game experience is more intense and compressed in a shorter time frame, or to a slight competitive element, as many players wish to write the “best” chapter and have it voted by their fellow participants. Interestingly, we had a playtest session also with a group of younger local students, whose age ranged from 16 to 19. While some mechanics were slightly altered to fit the increased size of the group (instead of individuals writing their own chapters, it was done in small groups), we observed participants actively engaging with the story. Unexpectedly, that game experience veered away from sci-fi and went into a more political and governmental angle, prompting players not only to point out what was wrong, in their opinion, with their city but also which behavior-changes were useful to correct it: an unexpected but very interesting development that “just happened,” by virtue of group dynamics.

## 6. Conclusions

We have presented our SUBMERGED project, a system composed of a location-based mobile game and a board-game, both useful to prompt participants to create speculative narratives about the future of their cities. Indeed, a number of qualitative disciplines – from design research to humanistic HCI, game design and (although in a minor percentage) semiotics – are turning to “design fictions” as a way to gather insights on what is desired and feared

in (im)possible future scenarios. Clearly, this is a provocative subject that is somewhat resistant to many research methods, and we make the case that producing a playful experience may yield interesting results. However, our contribution here is not necessarily an analysis of the data we collected – for which many more deployments and test would be needed – but is more methodological and reflective. In sum, we call for more attention to game design as a qualitative research tool, a perspective that is uniquely positioned for a transdisciplinary dialogue.

There is, of course, much more work to be done in this direction. As design researchers who are inspired by both the humanities and game design, we plan to iterate on our prototypes, and we call for help from our colleagues in semiotics and narratology, towards better analyses of the complex narrative data that we collect with these interdisciplinary methods.

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