

# PLAYFUL EMPOWERMENT

DE ROL VAN ONTWERPINNOVATIE IN BETROKKEN BURGERSCHAP

Prof. dr. Ben Schouten, BA



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Hogeschool van Amsterdam

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Prof. dr. Ben Schouten BA  
Lector Game Research  
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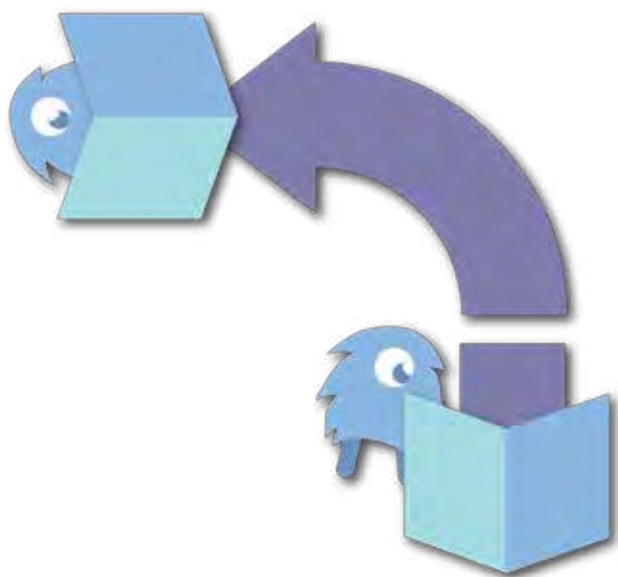
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# Introduction

**I**n today's world, we are immersed in information. Just a single click brings us to online news websites or newsgroups full of conspiracies, a swipe with our finger connects us with weather reports or reviews of restaurants nearby; wearables like smart watches monitor our health condition without us even needing to point, click or swipe.

What's new is that this media universe of websites, apps, sensors, social media, data streams and open source repositories is largely created by ourselves. Voluntary when we post, click, call, like, add, and share. And sometimes involuntary when software or sensors record our actions in the physical and the media world, turning the amalgam of all our individual lives into this amorphous thing called big data. On the downside: more than ever citizens find themselves swamped in a deluge of information, caught in webs of observation and control. On the upside: More than ever, citizens find themselves empowered through new technologies to organize themselves around issues that matter to them. Examples abound

of groups of citizens that have turned away from centralized solutions, taking the helm to organize themselves to create ownership and meaning.

This shift in our (media) culture has consequences for the field of design. We see designers as well as ordinary users stepping up to create tools that allow citizens to organize themselves, to create meaning out of the data deluge. Or to look for new mechanisms to engage around issues, that provide social exchange and cultural experiences.

Play has started to become a central element in these approaches as a mechanism to engage citizens in processes of co-creations. Through gameplay, players create meaning and social bonds; interactions from which a societal play experience emerge. As such, play has become an increasingly important aspect in our media saturated culture. Now that we live in media, it's playful experiences that often allow us to make sense of the world around us and to forge meaningful connections with those around us.

In this lecture we will discuss the mission we have set ourselves within our research group in Play & Civic Interaction Design. We will address a changing perspective on design, one in which users are defined as social and economical actors who co-create products and services. We will see that the role of play in its contemporary and digital form for instance through games, apps, interactive toys is essential in this process. With civic interaction design, we mean the design of products and services that enable citizens to improve the quality of both their individual and communal lives, and that equip them with agency to act as citizens in a media-saturated world. That could be for instance as health care patients who are encouraged to change their lifestyle, or who are given tools to overcome the burden of a severe illness (Schouten, 2013) and share their experiences; or as citizens who participate in a game aimed at revitalizing a neighborhood together with decision makers in a negotiated and mediated outcome, experimenting with different final results (World of Citycraft, 2010).

The *Games for Change* organization is a good example of how new initiatives empower citizens. Founded in 2004, *Games for Change* facilitates the creation and distribution of social impact games that serve as critical tools in humanitarian and educational efforts. They piloted *9 Minutes*, a mobile game aimed at poorly served communities in India, Kenya, and Tanzania. *9 Minutes* is about healthy birthing practices; the game leads you through the nine months of pregnancy with nine levels that reward good prenatal choices in a twitch game. The evaluation shows measurable positive shifts in knowledge and behavior towards safe pregnancy and delivery actions.



**Figure 1:** *The game 9 Minutes (Game for Change Organization, 2012) focuses on good prenatal practices in Kenya.*



This process of participation and empowerment can be seen in many domains. Apart from health care and city planning, we find it in education and in other social, cultural and political practices. Our research group focuses on the design of playful and meaningful contexts and experiences for citizens in a post-digital culture, by which we mean that the digital media and its communication networks can no longer be understood as a separate realm, but have become an inseparable part of everyday life.

Interactive technology has penetrated all possible facets of our life, from bed to work. Social media are just an example of this, and they have undoubtedly empowered us in many cases, although others might argue that this technology digitally connects but does not provide us with collective meaning, or with memories or awareness at the level of society at large (van Dijk, 2010). And perhaps in that observation lies our main challenge in our research group. We need to cast a critical eye on the deployment of new media technologies to position ourselves as citizens in inclusive, democratic societies.

This lecture consists of two parts. The first part focuses on our research in play and civic interaction design. We will define play in its digital form and its intrinsic qualities, such as fun, experience, creation, collaboration, and competition. Next, we will show that through these qualities a new digital culture has emerged in which, instead of a top-down, one-to-many vertical cascade, we find bottom-up, many-to-many, horizontal, peer-to-peer communications (Jenkins, 2004). The main focus in this lecture is on the challenge of how to design for these collective opportunities. Seen through different lenses we will look at several application domains, using our design research projects as examples.

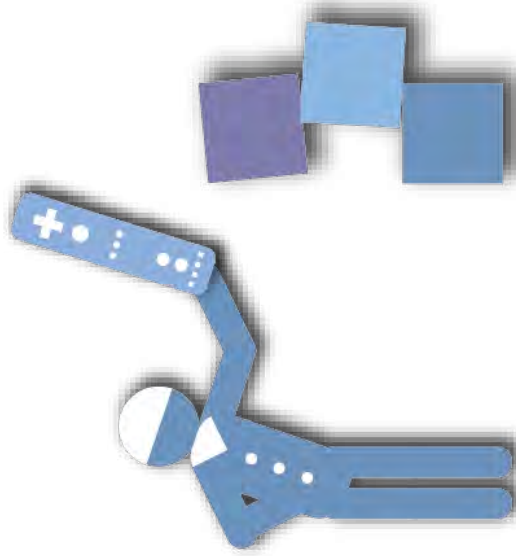
In the second part, I will sketch the plans of our group in relation to research and education at the Amsterdam University of Applied Sciences, including further collaboration with our partners in industry and research.

# Lets start playing

In this section<sup>1</sup> I will define characteristics of playful interaction and qualities of play that can be used in different application domains.

As children play, they are always engaged in some process in which something novel emerges, for instance the sudden transformation of carton box into a spaceship or the sudden appearance of a magic fairy. The imagination and construction of something new in relation to existing knowledge and understanding, is, in my opinion inherent to play (Deen & Schouten, 2010). Sutton-Smith (2001) argues that play is a working model of flexibility. He defines play as an activity that is voluntary, intrinsically motivated and fun, that incorporates free will, offers escape, and is fundamentally exciting. The utilitarian activities of play are well underlined by Brock et al (2009). In *Perspectives on Play, Learning for Life*, they outline a vital link between play, psychological development and educational practice. Brock provides an interest-

## Part 1



<sup>1</sup> Parts of this text have been previously published in: 'The Role of Play', Inaugural Lecture (Schouten, 2011b).

ing and complete list of 'Theories of Play' from 1805 on, focusing on play as instrumental to learning, self-regulation, rehearsal, and levels of involvement, amongst others. Another scholar, Mary Flanagan, underlines the importance of what she calls 'critical play' in resolving fundamental questions in life and or society (Flanagan, 2009). Schouten (2011b) underlines the growing role of play and games for the (re-) construction of social practices, values and identity in post-digital society. In addition to utilitarian and goal-oriented properties, play has non-utilitarian and autotelic (i.e. its purpose lies in itself) properties.

People are inherently playful beings and play is omnipresent, as Huizinga (1938) pointed out in his book *Homo Ludens*. In the definition of Huizinga, play is more restricted to a specific time and place he called the 'magic circle'. In its contemporary and digital form, for instance in games, social networks, apps on smartphones, interactive toys or art, play is much more integrated in a spatial, temporal and social sense (Montola, 2005), spinning off new media, social networks, modern technology and (social) interaction. To put it differently, in the last decade, digital

play has come out of the attic and into daily life.

A good example of the omnipresence of digital play is *Ingress*, an augmented reality massively multiplayer online role-playing GPS-dependent game created by Niantic Labs, a start-up within Google. With augmented reality we mean a digital overlay over the real world, in this case the city, where you can play



**Figure 2:** *Ingress* (Niantic Labs, 2012) is an game that is played in the real world with a digital overlay (hybrid game). As a player you want to control places of cultural significance.

a video game in real life and meet other players. The line between reality and a game becomes blurred, as the game can be played everywhere and anytime. The game has an open-ended science fiction story line, which means that rules can be interpreted and need not necessarily be followed up. The Ingress app taps into your phone's GPS data to pull up a map of your area, with local sculptures, murals and cultural landmarks called *portals*, which appear as bright splashes of green, blue, or white light. There are two competing groups: resistance (blue) and enlightened (green). The game is to control these portals and the areas enclosed by them. In Ingress, special events are also organized. These events are for players of all levels and last approximately 4-5 hours, including 3-4 hours of walking/biking gameplay and a one-hour social meetup at the end. Faction groups sometimes plan pre-event get-togethers and after-parties.

More formal definitions of digital play describe games as 'systems that provide informal experiences' (Juul, 2005). Salen & Zimmerman (2004) define games as an artificial conflict, based on rules, with a quantifiable outcome. However, as games like *Little Big*

*Planet* (Healy, 2008) and *Minecraft*<sup>2</sup> (Persson, 2009) and the advance of user-generated content have shown, the game mechanics<sup>3</sup> can be less fixed, and games become more informal, playful and open-ended (Deen, 2011). A good example is the popular game *The Walking Dead* (Telltale, 2012), where different plots or story lines can be played according to the player's choices and/or skills. Marinka Copier defines, play and games as systems of communication and continuous negotiation of (role) players within a socio-cultural network of human and inhuman actors (Copier, 2007), which is less focused on rules, goals, objects or environments, but instead describes the relationships between all actors. Through gameplay, players create meaning and social bonds. From these interactions a play experience emerges. These systems

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2 Minecraft is an extremely successful game that allows players to build imaginary worlds using 3D blocks. The game doesn't have playing characters or story line, but is based on crafting, exploration and encounters.

3 Game mechanics are constructs of objects, rules and feedback loops intended to produce enjoyable gameplay. They are the building blocks that can be applied and combined to 'gamify' any non-game context. See [http://gamification.org/wiki/Game\\_Mechanics](http://gamification.org/wiki/Game_Mechanics)

of communication and negotiation are primarily, what we like to call, *interaction spaces*, consisting of three elements: 1) playgrounds (e.g. the game board, the virtual or the real world, the city, school, or hospital), 2) interactions (e.g. to walk, to shoot, to compete, to create) and 3) experiences (e.g. joy, frustration, fantasy, fellowship, empathy).

One remark however needs to be made, before we continue this lecture. When we talk about games in this lecture, we will focus mainly on serious games, although we rather use the word 'applied' games<sup>4</sup>. Serious games are games that are primary used for other purposes than pure entertainment. The earlier mentioned game *9 Minutes* is a good example of such an applied game. It is also a good example of how games can be integrated and become an inherent part of daily activity, in this case the healthy nursing of your baby.

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<sup>4</sup> We like to speak of Applied Games, because Serious Games implies that they are not fun, which is mostly untrue.

And this brings us to an important aspect of our research; to design for interactions that are seamlessly integrated into our daily lives, in such a way that the boundaries between play and other activities disappear or blur. These opportunities to play can be found everywhere and anytime, as part of (school) activities, during fitness sessions, at work or during many other activities.

Thanks to the creative process of play and game development, abstract concepts become tangible. Turning complex concepts or ill-defined problems into games helps players to manipulate, change and rearrange these concepts in order to create understanding. As such, games and game development can empower people to play with real-life issues and become autonomous actors in a rapidly changing world.

Now that we have sketched the grounding qualities of play, in the next section I would like to shine some light on how playful interaction 'can come to action' to empower player, seen through three different lenses: motivation, participation and argumentation.

## The lens of motivation

**T**he first lens I would like to talk about is motivation. Elements of game and play can be used to intrinsically motivate people to carry out a particular task, adopt a particular lifestyle or give a sense of autonomy and self-efficacy. However, here we want to look a bit beyond the simplistic behavioral strategies we sometimes find under the buzzword of gamification<sup>5</sup>, in which we are influenced to change our behavior by rewards and punishments or other ludic activities.

Games and playful interactions have the unique quality to turn abstract concepts and thinking into tangible (digital) artifacts that can be changed, manipulated or rearranged (Deen, 2015). This restructuring process can elicit a feeling of autonomy, which means that the locus of causality (making things happen) is internal to players (I make things happen). As a result, players may feel that their acts ‘matter’ in the game world. If the game world ‘fits the real

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<sup>5</sup> The use of game elements in non-game applications to make it more fun and engaging.

world’, for example through role play, playful activities can in many cases interfere with players’ own lives and experiences. This may present a feeling of agency and engagement, which in many cases is stimulating and motivating, especially when these human motivations are defined in terms of self-determination theory (Ryan & Deci, 2000). This cognitive psychological theory within research into human motivation suggests that people can become intrinsically motivated if particular needs are satisfied. This means that people do not necessarily need any rewards or punishments to engage in an activity, if an activity is considered satisfactory in itself. According to these scholars, the three universal human needs that can stimulate the internalization of external activity (becoming intrinsically motivated) are competence (I can do it!), autonomy (I do it, and I do it in my own way) and relatedness (I feel related to the topic and I do it with people I care about). This means that if games and playful activities are designed carefully and in line with these human needs, they can motivate a player to engage in activities that may empower in unpredicted and valuable ways.

Related to the concept of motivation, is the notion of self-efficacy. Self-efficacy is the belief that someone can successfully overcome challenges or difficulties presented by their (social) environment (Bandura, 1997). Murray (1997) suggested that the feeling of mastery and control is an inherent quality in interactive media. The inherent capacity of games and play to restructure abstract concepts in meaningful ways can present players with a feeling of self-efficacy. Applied games can build on this belief, invoking trust and understanding through the successful completion of challenging puzzles, goal-setting task strategies, positive imagery, self-instruction, time-management monitoring, help in seeking evaluation and other explorations that are broken down into the cognitive or physical level of players and into manageable pieces.

As such, a game or playful activity can teach a player to become a competent player. Moreover, if the challenges presented connect to real-world experiences and situations, players may become empowered to overcome these situations. On the next lens we will elaborate on the participatory qualities of play.

## Games4Therapy

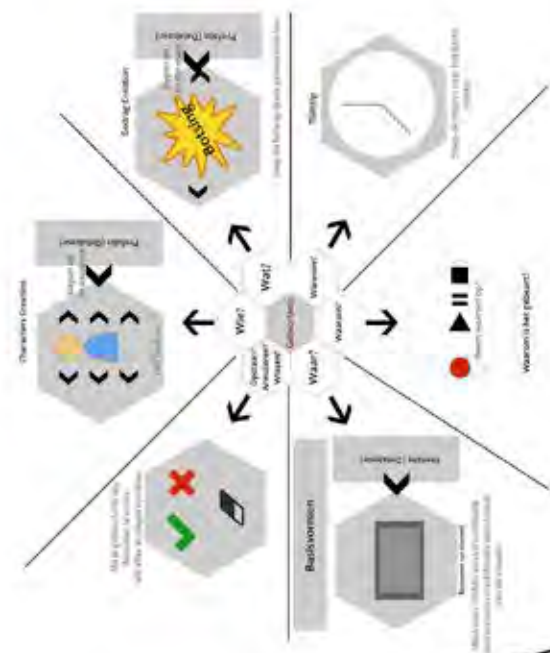
*Partners: GGZ. Mondriaan, Hogescholen Zuyd & Fontys  
Period: 2014-2015*

*Researchers: Menno Deen & Karel Millenaar*

The focus on autonomy and self-efficacy within social media has proved to be highly engaging. One of our research projects, The Games [4Therapy] Project is built upon the belief that abstract and 'difficult things' like emotions, behavior and possible results of acts can be made tangible in a game, offering young players an opportunity to play with their mental models and semantic qualities and, more importantly, train them in dealing with their own emotions.

This project focuses on the therapy of youngsters who are currently under treatment at a mental health institution. One of the issues facing clients who suffer from externalizing problems is dealing with their response to particular situations. They often lack the ability to hold back, think first, feel and then act. In order to train this skill, therapists at the Mondriaan Mental Health Institution utilize the 5G method.

<u>5G schema Cognitieve animatietherapie</u>	
Alternatieven	
Gebeurtenis:	
Gedachtene:	
Gedachten:	
Gedachte:	
Gedachte:	
Gedachte:	
Gedachte:	



**Figure 3:** Design document for the development of a game that presents clients with tools to remember a particular situation (gebeurtenis) that happened to them. The tool 'asks' clients 'what, where, who and when' did this happen.



In the play application *Thought-O-Gram*, see figure 3, clients are asked to memorize a certain event in detail, such as an emotional outburst of theirs that led to aggression and violence. The 5G method allows the client to describe or visualize: 1) what happened, 2) what the client thought about the event, 3) what the client felt, 4) how the client behaved, and 5) what the consequences of the client's behavior were.

In *Thought-O-Gram*, clients form a better understanding of their mental and emotional processes in particular situations. By reflecting on this situation in a therapy session, therapist and clients together co-formulate 'helping thoughts' that can steer negative emotions towards more positive and constructive ones. The rule is: first think, then feel, then act. In *Thought-O-Gram*, clients reconstruct a particular event using a rich scenario-builder. Clients can use predefined props (about the whats, wheres, whos, whens and whys) to recreate the event visually. When the event is reconstructed, players are asked to add thoughts and emotions to people involved, such as (boos [angry], blij [happy], bedroefd [sad], beschaamd [shamed], bang [afraid]), see figure 4.



**Figure 4:** Reconstruction of an event in *Thought-O-Gram*. After recreating the event, clients can add feelings (gevoelens), thoughts (gedachten), behavior (gedrag) and results (gevolg).



**Figure 5:** Sketch of the puzzle game, players can explore multiple paths that emanate from a particular event.

By doing so, clients can consider a possible result that emanated from the thoughts and emotions. When finished, they are asked to construct a more positive outcome of the situation.

For another stage of the therapy, we created a puzzle game (see figure 5) that can be played with multiple patients and their family or peers, presenting players with predefined and editable hexagons. Every hexagon corresponds to an event, a thought and an emotion. Players can explore multiple paths that emanate from a particular event. Depending on the thoughts and discussions amongst the players, new paths can emerge, suggesting that thoughts steer emotion, and thus steer behavior and results.

## The lens of participation and expression

**T**he previous lens of motivation and self-efficacy focused on cognitive, motivational and behavioral aspects mainly for self-regulation. In the next lens<sup>6</sup> we will focus on interaction, expression and participation. Examples can be found in domains like education, health care, urban planning and art. To zoom in on one example, here I will focus on the ways play facilitates citizen participation in the domain of science. Worth mentioning is the online game *Foldit* (University of Washington, 2011), which is designed to reveal the shortcuts nature uses to weave a tangle of amino acids into a protein. Another example is the construction of 3D images of street scenes or the exploration and classification of solar systems, *Galaxy Zoo* (2007). These games are called ‘Citizen Science’ games and are based on user participation, crowdsourcing, co-creation and engagement.

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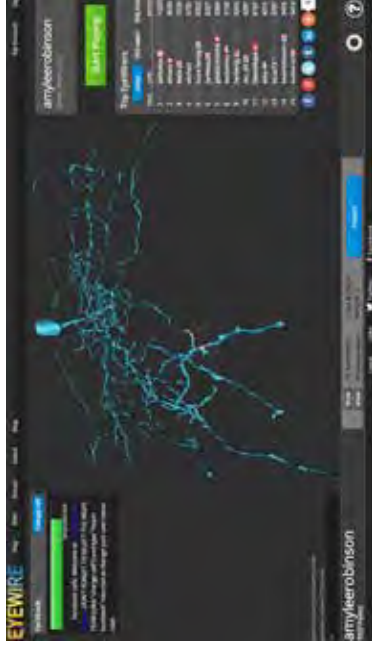
<sup>6</sup> Parts of this text has been previously published in: The Playful Scientist: Stimulating playful communities for science practice, Schouten et al (2015).

Although traditional methods for practicing science rely mainly on experts, these new forms of science allow non-experts to participate as well, a trend mirrored in the societal trend toward more participatory cultures. Citizen Science (also known as crowd science, crowd-sourced science, civic science, or networked science) is scientific research conducted, in whole or in part, by amateur or non-professional scientists, often by crowdsourcing and crowdfunding. Citizen science projects exist in various forms and with numerous ways for the public to participate. What most of these projects have in common is that participants contribute in scientific activities made available by experts through apps and desktop applications. Together with the vast amount of data gathered through sensors on ordinary devices like smartphones, one could say that everybody can become an expert or even a scientist. A good example of this current practice, is *EyeWire* (Seung, 2012), an application to digitally map the brain, a task so tedious and time-consuming that scientists at MIT have asked the citizens to help (re)construct brain images through a game.

## EyeWire

MIT Lab, Sebastian Seung, 2012

*EyeWire* is a game to map the brain. The online community taking part in *EyeWire* numbers over 50,000 people from 100 countries, all of them citizen neuroscientists, who map the 3D structure of neurons and discover neural connections. By joining *EyeWire*, you can help map connections between retinal neurons.



**Figure 6:** *EyeWire*. A player wins points if coloring a neuron branch results in a neural volume found.

This information advances neuroscience research on how the retina functions in visual perception.

In *EyeWire*, a gamer is given a cube with a partially reconstructed neuron branch stretching through it, see figure 6. A player learns to ‘color’ in the gray outline of a single neuron branch, which usually extends from one side of the cube to another. This generates volumetric reconstruction, branch by branch. Multiple players map each cube and their work is compared. Advanced players, called Scouts and Scythes, oversee the work of the global community. These players have the power to extend branches and remove mergers.

The player’s task is to select the areas that the Artificial Intelligence missed, thus improving the trace of the neuron. Some improvements may simply fill in holes, others may extend a branch, and others may find new branches that the AI missed.

*EyeWire* holds regular competitions and a weekly ‘happy hour’ on Friday from 2 to 4 p.m. EST. During these challenges, players compete for bonuses, profile icons, and even neuron naming rights. In-game trivia occa-

sionally takes place through chat. Players level up in *EyeWire* by beating the Starburst Challenge, unlocking the right to map difficult starburst neurons and earn double points. Advanced players participate in Hunts, where they scour completed cells looking for mergers or mistake branches that need to be scythed away by an ominous, in-game overlord character known as the GrimReaper.

In the above-mentioned examples, we can see a congruous quality. Through a process of encountering problems and autonomously finding ways to overcome them, the player feels more competent and is subsequently encouraged to continue with the activity (van der Spek, 2012). Being engaged in play will not only increase a person's knowledge about a certain topic, but also improve his or her disposition towards the subject. By being involved and participating in the domain of citizen science, players acquire the epistemic frame of a scientist and learn how to think scientifically (Shaffer, 2006). Apart from being fun, these games are experiential sense-making tools, where players, immersed in and about complex systems, learn at their own pace and volition; thereby acquiring the cognitive skills required to deal with increasing complexity (Squire, 2003).

The practice of playful interaction in the domain of science shows a clear shift from the mechanics of data available through databases and websites to the dynamics of processing and co-creation through games and play. It is clear that although the distributed, collective intelligence afforded by the internet

may obviate the existence of a large active knowledge base, the interoperation of data into meaningful context is even more important. This requires a new way of thinking about the education needed to cope with this hyper-connected world, often encapsulated in 21st-century skills and new media literacy (Jenkins, 2009). Within these skills, greater emphasis is placed on sense-making in authentic contexts, with ill-defined complex problems (Lombardi, 2007). As young people find things that intrinsically motivate them, they often join online communities, so-called affinity spaces (Gee, 2005), where they can share knowledge and skills pertaining to their interests with other people from across the globe. This participatory culture in turn shapes the worldview, or epistemic frame, of its community members (Shaffer, 2006).

## The lens of argumentation and persuasion

**T**he aforementioned examples have shown us that playful interventions based on human-computer interaction are not solely grounded in terms of functionality, a solution-based view of the world and based on usability<sup>7</sup> (Polaine, 2010; Nielsen 1993). Gaming and playful interaction add an extra dimension of (co)creation and social interaction to design which goes beyond data, usability and functionality. To understand play in its digital form, the changing role of interaction and its user experiences, as a means of reflection, is crucial. Of these experiences the persuasive nature of play and games (Bogost, 2010) has been shown to be a very powerful tool for inducing attitude change (Wouters, van der Spek & van Oostendorp, 2009).

With the growing mainstream acceptance of games to touch on more serious matter, especially within the field of serious games (such as games for health and education), we sense that the discipline is steadily

maturing. Part of this maturing is the use of games for persuasion by designers as well as citizens who seek an outlet for presenting a different point of view on issues, people, objects or concepts that commence in the real, physical, world.

The underlying assumption in this type of application is that playful mechanisms, such as discovery, captivation or fellowship (Korhonen et al., 2009) can be used to persuade people to perform certain behavior, by appealing to intrinsically motivating strategies. Engaging people in play that brings forth arguments and stimulates critical thinking is not a new phenomenon, yet it is with the advent of the computational era that the use of games for such purposes is becoming increasingly more popular.

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<sup>7</sup> Parts of this text have been previously published in: A Foundation for the Persuasive Gameplay Experience (Kors, Spek & Schouten, 2015).

# Mr. Powerful

Partners: Medialab and Amnesty International

Period: 2014

Researchers: Martijn Kors, Medialab: Loes Bogers

Students: Lisa Maier, Fay Gramberg, Rob Boerman and Radoslav Gulekov

In cooperation with the Medialab at the Amsterdam University of Applied Sciences, a group of students experimented with the design of a game for Amnesty International Amsterdam to reinforce a positive attitude towards Amnesty International's fight for the Freedom of Speech, which resulted in a game called *Mr. Powerful*. In the game you play as *Mr. Powerful*, who disrespects the freedom of speech through demonstrations, media and petitions. It is the player's task to shut down these channels through a series of mini-games that become increasingly difficult to accomplish. The difficulty of the mini-games eventually reaches a point in which the player unavoidably fails, making the argument that suppressing the influences from outside is a battle that cannot be won. This seeming 'failure' is, however, rewarded with a different

playable character that has more awareness, presenting how the player can actually help Amnesty in its cause (e.g. through signing a current petition against the violation of human rights) and consequently making a real world difference.



**Figure 7:** *Mr Powerful* (Medialab, 2014) is a game designed by students of the Medialab, reinforcing a positive attitude towards the activities of Amnesty International.



# Meltdown

*GEOlino, 2013*

The persuasive quality of play does not only apply to the digital realm alone; there are various interesting projects that exemplify the sometimes preferred, more physical setup. *GEOlino's Meltdown*, a board game designed by Kolle Rebbe, is a great example of how a physical game can raise awareness about climate change and stir up dialogue among pupils on the topic (Kolle Rebbe, 2013). The physical form of the game allows for more intimate connections between participants and provides a great starting point for discussion in which participants can share their opinions. The board game is presented as part of a series of lectures on climate change and could be seen as a vignette to vividly illustrate part of the complex issue to a younger age group. In the game, players have to guide a mother polar bear together with her polar bear children over slowly melting ice floes in a race against room temperature. The game essentially starts once the game board is taken from the freezer, presenting the problem of imminent climate change.



**Figure 8:** *Meltdown* is a board game that highlights the threats of climate change. In the role of mother bear, you have to save you're polar bear children.



For a long time the primary focus of attitude change through games has been situated on the negative side-effects such as aggression and violence, yet recent years have also shown that the influencing and qualities of games can be valuable in addressing and shifting perspectives on various wicked problems.

Games as medium, just like text, photos and film are capable of conveying particular values held by their creators (Flanagan, 2009). Their interactive nature provides a unique dimension to captivate and persuade audiences on a more personal level, allowing them to play with different perspectives in relation to issues, people, objects or concepts that also commence in the real, physical, world. We increasingly see games and play activities that go beyond the creation of rewarding experiences alone, implementing messages to persuade and leave the player with something to think about in relation to events that commence in the real, physical, world.

## Other research activities

**I**n the previous sections we focused on the qualities of play and how these qualities lead to interaction opportunities using three different lenses (motivation, participation and argumentation). In the next section, we want to focus on several other research projects in our group that are related to interactive storytelling and automated game design, facilitating the easy production of games and thus empowering the game developer as well as the (end) user.

As discussed in this lecture, a central theme in our research is interaction in relation to engagement and empowerment. This theme is also central in a research project called Interactive Cinema, where we explore the crossovers between games and cinema in cooperation with the Netherlands Film Academy. The possibility of audiences to influence the story line of TV series and/or movies has been experimented with many times. Now, with the emergence of interactive games, these possibilities become more relevant. A major difference between enjoying a movie and playing a game is in the activity of the user. While the

movie audience can 'lean back' and enjoy the media content in a relatively passive way, a gamer needs to 'lean forward' and actively engage. In this sense, a game player is empowered, as he or she has control over what happens on the screen.

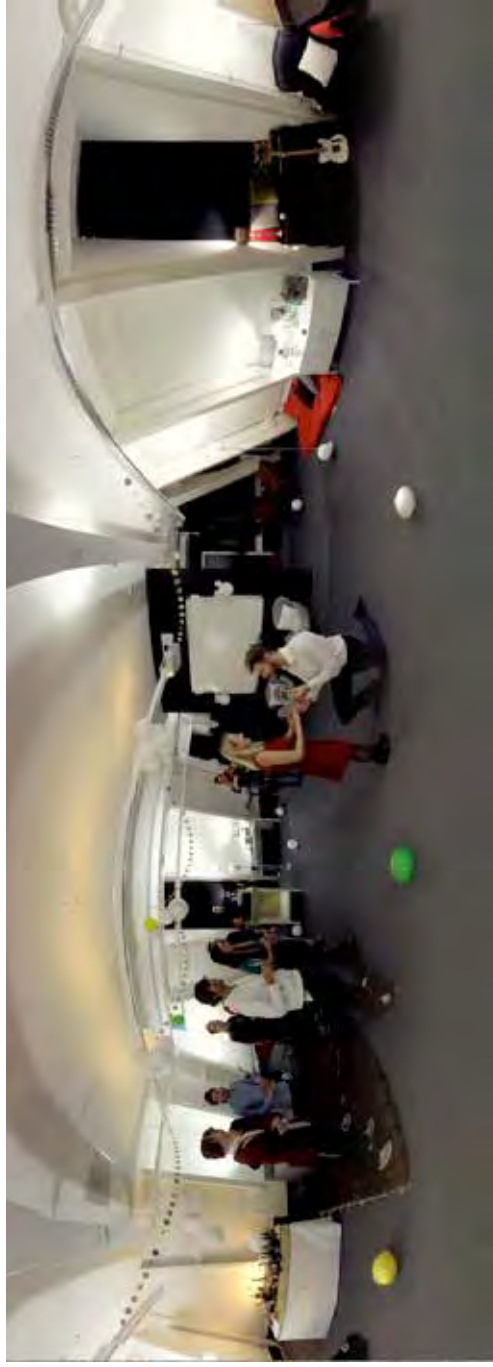
## Interactive Cinema

*Partners: Netherlands Film Academy, Submarine*

*Period: 2014-2015*

*Researchers: Mirjam Vosmeer (HVA) and Harry Schreurs (Netherlands Film Academy)*

The topic of interactive cinema has been studied for at least two decades, but with the introduction of new technologies, such as 360 video content viewers like the Oculus Rift, new possibilities arise. Within the Interactive Cinema project, the concept of 'empowerment' is approached from a different angle. This project, together with the Netherlands Film Academy, explores how characteristics of both media currently converge, and what kind of entertainment experiences this merging might result in. To research these items, we have explored what happens when elements of empowerment and interaction can be added to a story line in a movie. To identify the new position of the user in these crossovers between games and movies that are not completely lean back, nor entirely lean forward, we have proposed the term 'lean in'.



**Figure 9:** *WeMakeVR, interactive movie. In this movie you can influence the storyline. As main character, it is your best friend that wants to propose to his girlfriend this evening. You can, by focusing you're attention (by turning you're head), put on a record, remind the bridegroom where he has hidden the wedding ring, or prevent the ex-girlfriend to create a scene.*

Our first design experiments resulted in a short interactive movie using the Oculus Rift that has been presented in VondelCS, the building formerly occupied by the Filmmuseum. This movie featured several interactive moments that were cued by the focus of the user's attention, leading to alternative story endings. (see

figure 9). The first thing we observed was, that viewers were sometimes unaware that they could interact with the movie content or did not realize that they had indeed induced a specific action. We therefore focused on ways to accentuate this interaction possibilities with some more feedback. Surprisingly, we found that

adding feedback decreased the sense of presence, and that this factor was correlated with enjoyment. In other words, the moment that people could interact with the movie, they were taken out of their flow, and this made the experience less enjoyable for them.

In a second interactive movie, we started to experiment with the kind of voice-over perspective that would suit an interactive video experience. In classic movie theory, the use of voice-over is frowned upon, as it is seen as a lazy way of adding information to the image on the screen. But within interactive content, the user needs new ways to engage with the story. Here, we found that adding a voice-over that addresses the user in the second person results in a more immersive experience than first or third person did and suits interactive cinema best.

The project Interactive Cinema also addresses the use of game engines like Unity to create interactive movies, as well as the further integration of cinema and games where movie theaters or television formats could be overlaid over existing scenery.

In the second research project that I want to bring forward in this section, our research is dedicated to the production of tools for game development that empower the designer. The development and design of games is complicated and time-consuming and is done in game engines like Unity. In order to enable innovation in the market, we believe it is very important that tools are easy to use and available for everybody. This is the central research topic in our Automated Game Design project, to develop an advance knowledge of the development process of games and automated game design. In this project, carried out in close collaboration with several industrial partners, we build and evaluate toolkits through which games can be developed faster, leaving more time for creative design processes. One of the major bottlenecks in fast prototyping appeared to be, to combine design ideas about mission design and level design with existing game mechanics.

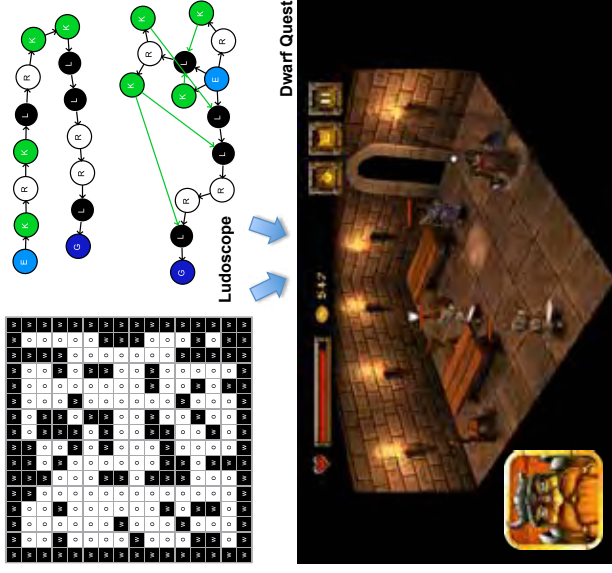
# Automated Game Design

Period: 2013 - 2015

Partners: NHTV, TU Delft, Dutch Game Garden, ITU Copenhagen and 6 industrial partners  
Researchers: Anders Bouwer, Daniël Karavolos, Stefan Leijnen, Riemer van Rozen, Joris Dormans

In this project we developed several tools. The tool called Ludoscope can be used to semi-automatically generate new levels for a game, based on a rudimentary sketch, a description of a mission, and/or a conceptual recombination of rules. Different representational views (e.g. graphs, tile maps, context-free grammar rules, and voronoi diagrams) are incorporated to allow the designer to choose the representation that best fits his or her ideas about the game being designed.

For example, in Figure 10, on the top left, you can see a tile map with a randomly generated set of walls and open spaces to create a dungeon. The graphs on the right side of the figure are automatically generated



**Figure 10:** Automated creation and adaptation of game levels and mission structures using the Ludoscope tool, in the context of a case study with Wild Card Games on the game Dwarf Quest.

graphs to represent a potential mission for this game. Green arrows indicate which keys unlock which locks of the dungeon (multiple keys might be required to unlock a single lock). At the bottom of the figure, a screen shot of the end result is shown (Copyright *Dwarf Quest*, Wild Card games).

Another tool called Micro-Machinations entails a game design language for describing economic game mechanics. This library enables game designers to modify game mechanics while a game is running, which is a highly desirable feature that allows for the fast prototyping of interactive game features.

The theoretical contributions of the project lie in the combination of expertise about procedural content generation (Dormans & Leijnen, 2013), formal models of games and game design (Dormans, 2013; van Roozen & J. Dormans, 2014), and emergence and system dynamics in game design (Leijnen & Dormans, 2014).

In the future these tools for automated game design will also be available for the end user, which will allow larger groups of (semi) professionals to design for play and games in a much easier way.

## Lets play civic

**S**o far we have seen numerous examples of our research projects. These examples have two aspects in common. On the one hand, they show the affordances to give the user a more active role in several application domains, such as health care or education, which we have called playful empowerment. And as a consequence, on the other hand, these projects also redefine the relation between the different relevant stakeholders.

Let's first have a look at this notion of empowerment. The projects shown here can be understood as emblematic of an irreversible shift that took place in the last decade from merely browsing information on the web to interaction in what we have mentioned earlier, interaction spaces (page 8) or affinity spaces (page 16), empowering users to act upon knowledge, acquire skills and bond in a (social) context. In the examples given above, the focus lies merely on the experience of the user, the citizen, the actual human being we find actively immersed in the digital world we have created. As such, we have labeled *citizen*

empowerment a central theme in our research, and many of the examples shown can be understood as 'civic media': media in whatever form or shape that empower citizens to improve the quality of their individual lives, and provide them with the means to engage and act upon collective societal issues. The latter is an important societal shift towards the rise of what has been called 'networked publics' (Varnelis, 2008) or 'issue publics' (Latour, 2005, Marres, 2006). These are publics that consist of groups of citizens who share a particular goal or matter of concern and use a variety of media platforms to visualize this collective issue and organize themselves around it.

In our previous examples we have looked at the power of play to do exactly that: engaging citizens in playful ways in debates and interactions about important issues. A good example in a more civic setting to illustrate the role of play within the theme of citizen empowerment is *World of Citycraft* (2010), a playful environment in which citizens come together to discuss issues around urban planning.

# World of Citycraft

*Play the City foundation, 2010*

*World of Citycraft* (WoC, 2010; Schouten, 2011a) is an interactive real-time real-agent city generation game; a good example of the shift in relationships between citizens, professionals and institutions. WoC enables users to change the planning and realization of an urban design into a more dynamic, democratic and interactive process of negotiation in which different stakeholders (citizens, architects, government, citizens etc.) work together to directly influence their own direct local environment. One could say that these playful activities, support:

- A bottom-up approach instead of top-down decision-making. The game can provide a more open platform for discussion.
- Cocreation, allowing a large audience of users, city planners and investors to participate in design.
- Iterative Design, enabling instant prototyping, virtual and real visualizations, 3D models and printing.



**Figure 11:** Play Cape Town. In November 2014, 80 local stakeholders, with the help of the City of Cape Town set up a City Game session with local stakeholders, in which they strategized their urban visions. Several collaboratively sourced ideas were proposed, such as co-operative ownership of land, rent policy for regularized shops and ideas for sustainable tourism.

- Wisdom of the Crowd and agent technology, where information and decisions can come from many sources.
- Open-Ended Play, a more dynamic and balanced way of designing, less restricted by fixed rules or regulations.
- An optimal opportunity to connect the virtual and the real world.

This play methodology has been used in many settings by the *Play the City Foundation* to engage multiple stakeholders in complex urban challenges, such as to help transform the centre of South Africa's second-largest township (Play Cape Town, 2015) within a very complex social context.



From this example there is an important other issue that follows: call it pro-am (Leadbeater, 2004), the rise of the prosumer (Tofler, 1980), cultural convergence (Jenkins, 2009), digital social innovation (Nesta, 2015) or by any other name, what is at stake is also the shift in relationships between citizens, professionals and centralized institutions on the other hand.

New media and interactive technologies have given 'amateurs' access to tools and knowledge that were formerly reserved for professionals, for instance in decision processes around urban planning, as in the example of *World of CityCraft*. These media and interactive technologies lead to a more bottom-up approach instead of top down process of decision-making. When the citizen in this future trend, is indeed empowered, and can no longer be considered as just a 'simple consumer', the role of design will change and become more important. Thus, the theme of citizen empowerment, and the topic of civic media, does not just only address the position of citizens in a newly emerging media world. They also address the role of the design and that of professionals working in existing societal institutions. It's not

that their roles have become superfluent.

The role of design shifts from the mechanics of information to the dynamics of processing and co-creation; it is the designer who through the different lenses we have seen, set the user in motion and create the arenas of playful interaction that allow citizens to inspire, debate, participate or persuade with one another. Yet he or she does so in new ways: often in collaboration with end-users, or even by designing tools through which citizens can design these applications themselves.

The same goes for professionals such as planners and policy makers. They are looking for new ways to provide the right frameworks and procedures that actually allow citizens to become empowered. Thus in a post-digital world the role of professionals and institutions remains an important one, and as an institution concerned with the education of future professionals, our research explicitly addressed the role of these professionals and the 21st-century skills they need to cooperate with citizens.

In one of our research projects, The Hackable City, we are exploring these issues. Here, we use a research-by-design approach to find out how we can combine the affordances of digital media to indeed provide citizens with a greater sense of ownership (De Lange & De Waal, 2013) in the redevelopment of Buiksloterham, a former industrial quarter in Amsterdam-Noord. At the same time, we are looking for new roles, design can play in this process, as well as what this bottom-up organization of citizens means for local government.

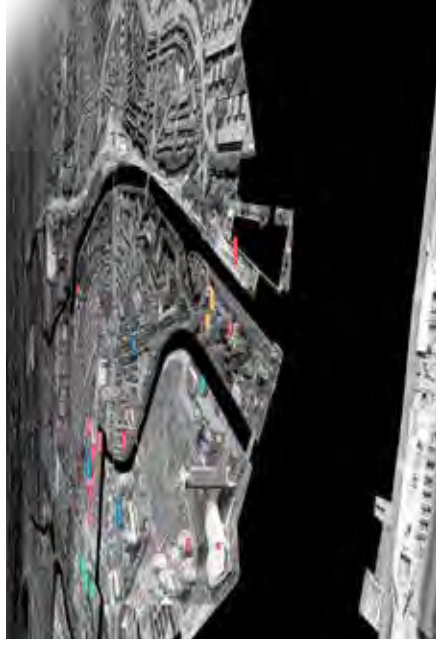
## Hackable City Buiksloterham

*Partners: UvA, One Architecture, Cooperatieve Vereniging Buiksloterham, Ministry of the Interior and Kingdom Relations, Pakhuis de Zwijger*  
*Period: 2015-16*  
*Researchers: Martijn de Waal, Ben Schouten*

In the North of Amsterdam, the former industrial area of Buiksloterham is currently being redeveloped. Whereas until recently a 'clean slate' approach would be applied to such an area, this time it was decided to try a new approach that would involve a broad variety of local stakeholders and provide them with ownership in the redevelopment process. We will investigate the role of digital media in this process in a research-by-design project. We will develop three prototypes for tools that are to improve the opportunities for citizens to engage with the redevelopment of the area. In one prototype, we will look at the process of bottom-up development of the area through a group of 'self-builders', a group of citizens that individually

have acquired a plot of land and are allowed to build their own houses. One of the issues they run into is the exchange of knowledge about both technological and procedural aspects of building their own houses. We will research ways to build an online knowledge community that will facilitate this process. A source of inspiration are websites such as Wikihouse, where a library of blueprints is made available for houses that can be put together using new technologies such as 3D printing.

In another prototype within this project, we will look at ways in which we can make use of urban data to visualize particular development opportunities. An example of this strategy can be found in the project OSCity.eu – an initiative by Mark van der Net, who is also a collaborator in our Hackable City research project. This project has found a way to plot more than one hundred open data sources about the Netherlands on an easy-to-grasp digital map. Various data from other projects on a digital map in the Netherlands can provide important insights and opportunities for successful development that may be of interest to both professional designers and citizens.



**Figure 12:** *Buiksloterham, Amsterdam-Noord.*

For instance, one of these ‘action maps’ shows an overlay of datasets that show us locations with a growing urban population that have a surplus of empty office space and where the price of office space is half of that of housing. Ergo: those are the spots that might be most interesting for converting offices into housing. We will explore similar approaches that will give insight into opportunities for the development of a circular economy in Buiksloterham.

Addressing these critical questions is of the utmost importance. In this lecture, we emphasized that we strongly believe in a research-by-design approach in our group. As the big data and smart cities researcher Rob Kitchin recently has pleaded in the Cambridge Journal of Regions, Economy and Society, there appears to be a big gap between the critics of technologies that may play important roles in the organization of our (urban) societies and the companies, governments and technical scholars that build the cities of the future. While the critics do point to important shortcomings of new technologies from a societal perspective, they hardly play a role in or even have an influence on the development of alternative sets of technologies that respond to their criticisms. The other way around, many of the commercial developers of new media platforms are unaware or uninterested in the points that are raised in the critical debates.

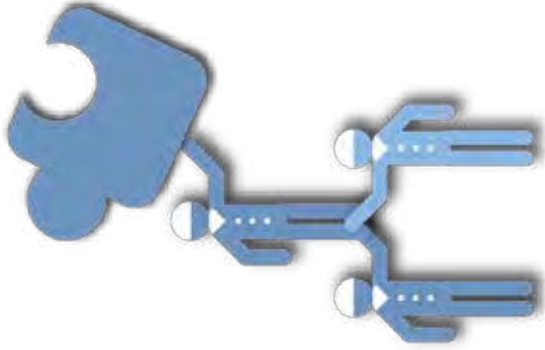
This gap between the ivory tower and the labs of technology firms on the one hand, and the streets of the city and the offices at town hall on the other, need to be bridged (Kitchin 2014). And that's where

aside from our research strategy also our educational program comes in. When educating the designer of the future, we feel its important to make this link between critical thinking and designing. The designer of the future does not only need the relevant skills to design. He also needs to be able to reflect on his role in relation to the citizens he is designing for or with, as well as the capacity to reflect critically on the role of his products in society at large. In the second part of this lecture, we will elaborate more on this important role of design thinking in research and education at the Amsterdam University of Applied Sciences as well as on plans to educate for digital craftsmanship in a new master curriculum on digital design.

# The role of design and future plans

**T**his is my third inaugural lecture as Professor at a University of Applied Science (UAS); in 2006 I was appointed Professor Ambient Intelligence and in 2008 Professor Serious Game Design at Fontys University of Applied Sciences. I am very proud now to be 'home' in Amsterdam. In these years I have tried to develop a 'working model of research' at UAS in which education and practice play a fundamental role, which I want to share today with you. In this second part of my lecture I want to sketch the future plans we have in our research group of play and civic interaction design, including the role of research at universities of applied sciences and share some experiences and recommendations with you.

Over the last 20 years the organizational form of vocational training has changed. Larger entities like the Amsterdam University of Applied Sciences emerged and research became an essential part of practice for teachers as well as students. Professors were installed,



## Part 2

research was initiated and since then the existence, quality and character of research on UAS is sometimes debated: what is the added value of applied research and how is this research positioned to other research activities at universities and other knowledge institutes?

Let me say, I strongly believe in the quality and uniqueness of applied research at Universities of Applied Sciences and in my opinion the role of design thinking is central in the success of applied research, as I will discuss below. We have seen many examples in this lecture where designs & prototypes were used as foundation for applied research and business development; in our group we practice Research for Design with an emphasis on the word practice.

Research for Design is research to enable design (Tieben, 2015, Downton, 2003); it provides information and insights that designers can use in specific design projects. Usability testing and user research are examples of research for design (Frankel & Racine, 2010). However design can also be used in another way and we call this Research through Design. Research

through Design is about creating knowledge through action-reflection in a design process (Jonas, 2007). In this research, prototypes are iteratively designed, developed and evaluated, which leads to rich, qualitative and situational insights; in this process, theory, designs and evaluations together drive and inform the knowledge generation of prototypes (Hoven et al., 2007). Insights from these intermediate results, prototypes and evaluations are then used to inform new iterations, designs and new research questions; by looking at multiple series of prototypes and evaluations, more general conclusions such as frameworks or design recommendations are formulated (Sein, Henfridsson, Purao, Rossi & Lindgren, 2011).

And that is exactly the quality and existence of applied research in our domain of creative industries that I have tried to show you today. Ideally students contribute to the intermediate results that integrate to more general research efforts. Vice versa, research can be meaningful integrated in education and the place to do is make-labs, see the next section.

Seen academically, research through design is cur-

rently only practiced at Universities of Applied Sciences including art academies and design schools. At university level these design activities reside mainly at universities of technology and I would be strongly in favor of more educational and research activities in design at other universities, including the foundation of new chairs in design. A tendency that can already be seen in digital humanities, a close collaboration between natural sciences and the humanities; I would like to qualify the design in our group as humanistic design which is less driven by usability and control and more human culture oriented.

There is another reason why I strongly believe that research practices in general at universities can be inspired by the practice of research through design. It is the process of open co-creation in close collaboration and participation with all stakeholders, including industry and students. The boundaries between work and leisure, and between media consumption and media production, are becoming increasingly blurred (Pearce, 2006).

This will require a completely different role of the

designer, not being the sole author of the game or application, as demonstrated for instance in the Gamejams we organize. In this way, design focuses on interactive products as creators, facilitators and mediators of experiences as well as the creation of opportunities for citizens.

# Game[4Diversity]Jam

*Partners: Amnesty International*

*Period: 2014-2015*

*Researchers: Menno Deen and Dop Terlingen*

*Students: HVA & HKU*

Empowerment and participation is not only found in playing games, but also in the actual process of creating games. Kafai (2006), already demonstrated that creating games educates students about the respective subject. More interestingly, the creative endeavor of developing games through gamejams (fast prototyping sessions within a certain theme), enforces developers to clearly pinpoint the core-concept of a particular subject. This can also relate to socio-cultural issues, such as gender acceptance, discrimination and freedom of speech. Stichting Games [4Diversity] offers developers (students, professionals, researchers) an environment to express their perspective on socio-cultural issues by making games. Within the 35 hour development session, students discuss and present their view on the world, creating new and innovative games that are inspired by a certain socio-cultural perspective. As a result, organizing gamejams on societal issues can empower developers

to express their feelings and build on their trust that they can make a difference. The last jam we organized, was at the office of Amnesty International in Amsterdam on March 28 & 29, 2015. Main topic was the position of minorities in our society. [www.gamesjam.nl](http://www.gamesjam.nl).



**Figure 13:** Game[4Diversity]Jam at Amnesty International, 28-29 March 2015, Amsterdam.



In the future, playful interaction will be part of everyday life activity; an approach that can be called upon when necessary as part of existing applications in learning, social networks, healthcare etc. (Tieben, 2011). I have shown you today that one of the best examples of practicing applied research is the design for games & play and the reason is simple, games are open frameworks of 'thinking by doing' so applied games ARE applied research, games are youth culture and more important many gamers are game designers. Especially in the domain of design, research has an 'actionable character' which allows, if done correctly, for extensive integration with education. In fact in our research group, in many cases, initial design explorations by students are followed by synthesis in research. But then it is of uppermost importance that these explorations are inspired and initiated (by needs from) society and industry on which topic we will elaborate in the next section.

## Relationship with the industry

**I**n this new field of interactive media, games, gamification and playful interaction, the Dutch are internationally leading. According to CLICKNL/GAMES the Dutch Games Industry has a great potential for growth. In 2013 the total revenues amounted 805 M. Euro. It is important to strengthen the industry and innovation is an essential part of our mission at HVA. Let us discuss some of the driving and hindering factors in the relationship with industry as well as our research practice.

Play & games are highly multidisciplinary and several disciplines contribute to the theory, design and validation, such as media studies, information and communication technology (ICT), psychology and art. However this playful activity, especially in the digital arena, is still a developing field and lacks a consensus of nomenclature, process and categorization. Each discipline brings its own flavor of meaning to terminology fairly loosely, but commonly and interchange-

ably used (Polaine, 2010). There is simply not enough literacy, design research and validation practice. Applied research in this field can only flourish if applications are build, designs are made, but above all, evaluations are done and synthesized as part of the full (iterative) cycle of research through design.

Together with the Erasmus University (Prof. J. Jansz) and the University of Utrecht (Prof J. Raessens) a four-year NWO project is dedicated to this issue (Raessens, Jansz & Schouten, 2014). You have seen examples from this project earlier in this lecture. In this research project we work together with companies as Ranj, IJsfontijn and Submarine. Specific cases from industry are reverse engineered and used as input for further design research. In this project we work in parallel with real assignments and projects of these companies, however two problems seem persistent.

The first problem I would like to define as the Zoom Problem. Many research results in our sector consist of models, frameworks, lenses etc. that are too abstract and not always applicable. Typical research requirements (like universality and generalizability)

result in too abstract models or solutions that cannot be implemented in industry. In our group we try to overcome this with archetypical design and recommendations strongly focused on a specific user group or context. The role of design labs, where students and researchers put their 'efforts on the table', is therefore of uppermost importance.

The second problem is that of working in different speeds; it is merely impossible to do research within a production process. We solve this by taking several problems apart (re-engineering), however results are always 'too late'. I think it is important that both (research as well as industry) keep their own responsibility, but what is of uppermost importance, is flexibility and a fluid membrane between industry and research. Despite the financial and organizational efforts made, I personally think we can do better in this domain and research has not lead to sufficient innovation. This opinion is shared with industrial leaders and is highly debated in the field. The market is mainly artificial subsidized and return of investments are not clear for all stakeholders. So let us discuss in the next section, some future plans we have.

## Future plans and recommendations

**I**n the research through design that I previously described, in an ideal situation, intermediate results are co-produced by students and integrated by researchers. Given the actionable character of our design research, the best way to create these intermediate results is through labs in which projects are well integrated with research and scaled down (to address the zoom problem) to clear assignments for students that are inspired by the need for societal and economical innovation (to address the speed problem). In these labs research efforts and industry innovation come together; researchers guard the quality and teachers guide the students in the process of their education. By creating central research topics (such as Citizen Empowerment) overarching the different research groups, further multidisciplinary integration between the different research groups (lectoraten) is established. These central research topics can change swiftly according to different urgencies.

In the next years, we would like to contribute to that vision in the following ways:

- 1** In order to bridge research efforts to industrial innovation, agenda setting is essential. In November 2014, Minister Bussemaker launched the initiative to create a national research agenda. Our research group contributes to this effort in collaboration with CLICKNL/GAMES to provide a new research agenda for what is called the ecosystem of games for the forthcoming years to strengthen the industry, building on three central themes: 1) Game worlds, 2) Users and interaction and 3) Transfer of gaming (Huisman, 2012). This new research agenda will be published in the forthcoming two months. Moreover a series of 5 interface workshops with industry are planned at Pakhuis de Zwijger.
- 2** We are currently negotiating the opening of a new incubating office for the game industry, together with the Dutch Game Garden (DGG) in Amsterdam. Dutch Game Garden's mission is to create employment and economic growth by stimulating the games industry in the Netherlands.

Through facilities and myriad services DGG helps startup game companies establish themselves, promote the healthy growth of their studios and further the development of high quality games.

**3** Creating Labs for life long learning. Labs are of uppermost importance for several reasons. Firstly because of the nature of research (through design) that I discussed earlier. Long-term research issues can be scaled into practical problems and vice versa. A lab is a place where the demarcation between research and education fades. Graduate students, interns, teachers, researchers and professors work together with external (industrial) partners. Medialab Amsterdam is the oldest lab in our institute and we are currently setting up an (civic) interaction lab. See <http://www.hva.nl/create-it/onderzoek/labs/labs.html>

**4** HVA should give the highest priority to the creation of lab facilities in order to improve the quality of design, design theory and applied research. Almost as even important is educating our bachelor students in the methodology of (design) research in an early stage of the curriculum. The position of lector is in this case crucial to

my opinion; chairs at UAS are not always able to set agenda in education and research within our domain, and this should be improved. By doing so, the mutual integration between our several research groups will be improved.

**5** Master education will be the roadmap to further integrate higher education and research activities at different universities. That is why we decided in close collaboration with a number of design agencies within creative industry, to set up a professional master for digital design. In September 2015 this new international master program Digital Design will prelaunch with a number of pilot modules, and will be fully operational in February 2016. Nine leading digital agencies and the Amsterdam University of Applied Sciences collaborate to realize this international top program: Achtung!, DDB & Tribal Amsterdam, FHV BBDO, Fabrique, MediaMonks, Mirabeau, Momkai, Tam Tam en Woedend!

# New Master in Digital Design

**T**he design of our digital life & culture is ever changing and fundamentally different from what we used to know. The digital connected world immersed by data, has changed and shifted from 'simply data everywhere' to creation, collaboration and experiences. Technology is an inextricable part, moreover service design and participating consumers (prosumers) are an integral part of the value chain that drive our society to other solutions for wicked problems. This asks for a different designer, who's ambition it is to respond to the needs of the modern media driven citizen in his/her globally networked, digitally tooled habitat and a central quality to that is excellence in craftsmanship. A designer who is capable to understand the changing relationship between stakeholders (clients, professionals, (end)users) in the eco system of creative industries.

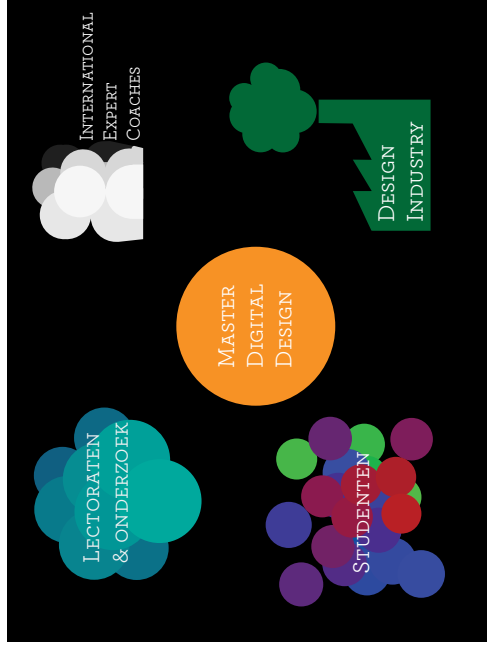
The need to design the future starts with educating the designer of the future and although the creative

industry is steadily growing, there is a strong demand for excellence in craftsmanship, which is acknowledged by leading digital agencies in the field as well as from young design talents. It is time that design education is supplemented with a master degree that frames this excellence<sup>8</sup>.

I am proud to say that we will establish a new digital design master. Dutch design already has a benchmark in the design industry and is in need of a digital equivalent. The challenge is to attract, educate and maintain excellent designers and to strengthen the design eco-system, its agencies and entrepreneurs, here in Amsterdam and internationally. Amsterdam is the best place to start this challenge; with its open and direct culture it is the perfect hotbed for developing contemporary digital products and services.

<sup>8</sup> There are several reasons why a master program in design is essential. 1) Master students can unite a long-term research perspective with short-term objectives (zoom/speed problem). 2) Master students are, in my opinion, the missing link between applied research, including PhD students and bachelor students. It will strengthen the position of research at AUAS. 3) The provision of a professional master program is essential for the further integration of different types of universities.

The educational program of the professional master Digital Design will focus on the hybrid, (analog and digital) design space, where craftsmanship, technical skills go hand in hand with vision and identity. It focuses on the dynamics of interaction between citizens, technology, experiences and business. Designers from different design backgrounds will be mastered



**Figure 14:** The School of Digital Design and its partners, each taking their role: lectoraten for research, industry for practice and designers & other experts for design and craftsmanship.

to excellent professionals with an international vision on digital design. The educational program will be based on self-directed learning reflected in competencies allowing students to mature their identity and become professional life long learners. In the curriculum the student will master skills, knowledge and attitude in a curriculum composed of individual projects, learning modules and assignments. The design of products and services will be user centered (humanistic design), skilled, creative and technological sound and grounded in strong and alternative business cases.

Flexibility will be the key asset of this master. A clear profile of the individual student's competencies based on a portfolio of designs will be taken as a starting point. The educational program is admissible to several bachelors of design: architects, interaction designers, game designers, industrial designers, media designers as long as they are in match with the competence profile of the group, and the student is highly motivated. According to the (grouped) competencies, we select a team of coaches and supervisors fitted to the selection, from the pool of stakeholders,

consisting of: industrial partners, research groups (lectoraten) and educational experts. But what is more important each year we start all over again, with a different group of coaches, supervisors, according to the newly selected students. The earlier mentioned incubation facilities, labs as well as the integration with PhD students and bachelor students, will provide a flexible high-standard master education.

An interdisciplinary team of craftsmen from different design disciplines supported by professionals from our industrial partners will coach the students in a studio setting. The studio will be open to lectures from international key speakers in different design disciplines. The earlier mentioned labs will be integrated and have the ability to facilitate designers in residence. It will be an open and inspirational space that inhabits a constant dialog with the professional design field and research, the studio will operate as a design agency on its own.

With this initiative we think we have grounded the education of new trends in design that we have sketched today and to be able to teach the students

the skills they need and what can be expected from them in society. So, lets play.

And with these words I have come to an end of this lecture. I hope I could inspire you today and look with me at the role of play and civic media: the shift from information spaces to interaction spaces and the role of design within. Hopefully this lecture raises a lot of questions, which I will be happy to answer, now or in future days.

Amsterdam, April 2015.

## Dankwoord

**A**llereerst wil ik het College van Bestuur van de Hogeschool van Amsterdam bedanken voor het in mij gestelde vertrouwen.

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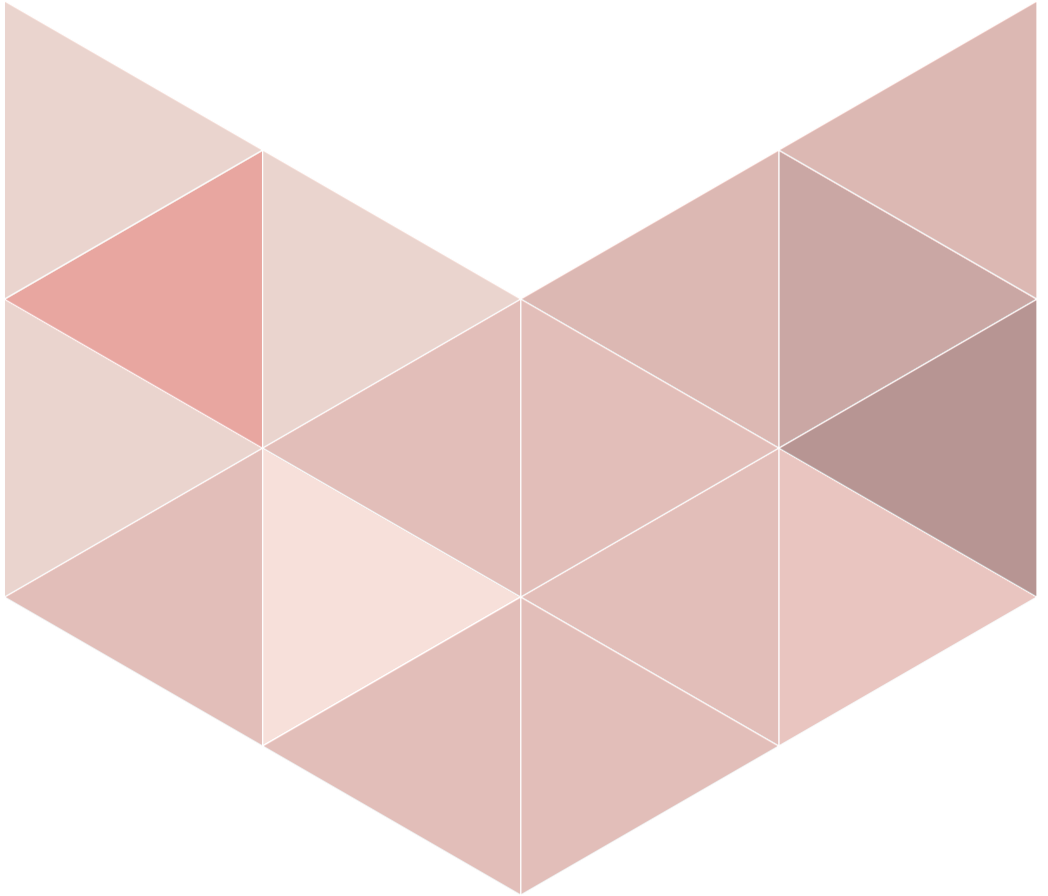
## Curriculum Vitae

**B**en Schouten graduated from the Rietveld Art Academy in 1983 and worked as an artist for 15 years. He developed an interest in patterns and iconography and discovered a fascination for mathematics. In August 1995 he received a master degree in mathematics, specializing in chaos theory. In 1996 he founded Desk.nl, an application software provider, providing innovative internet-related solutions. Together with the Dutch Design Institute (Vormgevings Instituut), Desk was internationally acknowledged with a Webby Award in gaming.

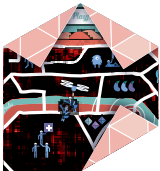
In 2001 he received a PhD in Information and Communication Technology (ICT) for his thesis on content-based image retrieval and interfaces that allow browsing and searching for images in an intuitive way, according to human perception. His thesis was acknowledged with a Bronze World Medal for Design at the New York Arts Festival, in the category New Media, sub-category Information and Education.

In the succeeding years Ben Schouten started a research group in Biometrics and Human Behavior Analysis in Smart Environments at the Centre for Mathematics and Computer Science (CWI, Amsterdam) and taught at the Utrecht School of Art & Technology (HKU) in Interaction Design and Gaming. In 2010 he was appointed Full Professor Playful Interactions at Eindhoven University of Technology and in 2013 Lector of Game Research at Amsterdam University of Applied Sciences.

He is a member of the Dutch Games Association and the advisory board for CLICK.nl/Games, which advises the government on innovation in the creative industries. He is also an advisor to the European Commission on the ‘Internet of Things’ as well as to the Dutch Cultural Media Fund, responsible for E-culture. Ben Schouten has published more than 80 articles on play, user motivation, empowerment, self-efficacy and epistemic game design. His group focuses on play for social innovations, citizen empowerment and culture.



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