Amsterdam University of Applied Sciences

INAUGURAL LECTURE

Civic Interaction Design

Shaping Public Life in a Network Society

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Creating Tomorrow

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Inaugural Lecture

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CIVIC INTERACTION DESIGN

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Summary

Together with companies, governments, designers, cultural institutions, and students, the research group Civic Interaction Design explores how the design of interactive experiences, digital platforms, and online services can contribute to public life. How can public values regarding democracy, diversity, and sustainability be anchored in an emerging network or platform society?

The digital transition has given rise to new types of public spaces and new ways in which citizens and governments relate to each other. New media technologies and practices such as virtual reality, social networks, and interactive installations in public space offer new possibilities to represent societal themes while also offering new opportunities for exchange and debate. New forms of social and civic organization have also emerged. Various communities, social enterprises, designers, artists, and cultural organizations have started to organize themselves through digital media around themes like the production of renewable energy, local solidarity, or the design of public space. They are part of an "energetic society" of initiatives that address various societal challenges. This also includes the exploration of new roles, design practices, organization models, models for value creation as well as searching for new types of relations with institutions like governments.

At the same time, the emergence of a network and platform society also entails a number of societal challenges in itself. In our society, technology is omnipresent but at the same time also increasingly invisible and incomprehensible. The interfaces of social media networks, the algorithms of the smart city, and the bookkeeping and reputation systems of the platform economy direct processes of social interaction and the way in which society takes shape. They can contribute to social fragmentation and undermine the cohesion of society. The business models of large platform companies conflict in some respects with public values regarding sustainability, diversity, and democracy.

The research group Civic Interaction Design explores these themes with a research through design-approach. We combine inquiries from the social sciences into social practices around media and technology use, and a critical humanities perspective with a design approach.

Together with – among others – students, technology developers, architecture firms, design agencies, governments, social and cultural organizations, and citizens' collectives, our goal is to develop knowledge and know-how on the design of interfaces, interactive experiences, (online) forms

of organization, and design processes that shape public life. How and under what conditions can interactive media technologies be designed in such a way that they contribute to the emergence of meaningful relationships between citizens and between citizens and governments? And how can they provide agency to various actors to contribute to societal missions?

1 Introduction: Searching for New Forms of Public Life in the Network Society

At the beginning of the previous decade, in 2012, I and my fellow researcher Michiel de Lange were invited by the architect Matthijs Bouw for a workshop organized by the Vereniging Deltametropool. What, so the question read, should be the next visionary project for the development of the Netherlands? What could a contemporary master plan, one for the era of the network society and its global cities, look like?

Smart Cities and Digital Platforms

There were plentiful international examples demonstrating the great ambitions of that time. Computer and network companies like IBM and Cisco had already been proclaiming their vision of smart cities for a number of years. The promise was that gathering data about the various processes in cities could help to organize urban life more efficiently. As an example, in that same year of the workshop, the Operations Center in Rio de Janeiro was put into operation: a "control room" built by IBM, packed with screens displaying data visualizations and camera images from the whole city. Civil servants sitting behind their desks could literally adjust the rhythms of the city to the information flowing in by just twisting a few knobs. For years, almost every Powerpoint presentation on the future of the cities included a photo of this control room as an illustration of how "big data" could contribute to the better management of city life.

We also saw how large tech companies began to play an increasingly important role in society. With their digital platforms, they had been gaining control over ever larger parts of social, cultural, and economic life. In that year of our workshop, 2012, Facebook passed the marker of 1 billion users worldwide, and the platform was accorded a major role in the revolts of the Arab Spring. There was even talk of "Facebook revolutions" – a reference to the power of that platform for social mobilization. The Korean musician Psy with his Gangnam Style attained 1 billion views for the first time on YouTube, taking advantage of recommendation algorithms and viral models for the distribution of cultural content. Uber began offering its taxi services on the European continent. Its purpose was to disrupt the transportation market worldwide with its new platform model. A clash with local laws and regulations was part of that strategy. *Disruption!* and *Move Fast and Break Things* were the mottos of the tech industry.

Nevertheless, in our workshop we quickly began to turn the question around. Did we indeed need to look for a grand master plan, a project that appealed to the imagination and involved a great investment in a new (digital) infrastructure? Those smart cities mostly seemed to turn into vehicles for investors, as illustrated by the *tabula rasa* developments such as Songdo in Korea or Masdar in the Middle East. They were cities that – in any case according to the prospectuses and the spectacular fly-through animated variants of them – were full of the latest technology. But the inhabitants of such cities were viewed primarily as potential consumers of personalized digital services, more as individual consumers than as citizens of a society. We saw the same logic in the platform companies. They seemed to fit primarily into a wider development of privatization and liberalization, closely aligning themselves with the mechanisms of the market economy.

Disruption! and Move Fast and Break Things were the mottos of the tech industry.

Smart Citizens and Collectives

Instead of a major project, we directed our attention to a plurality of small-scale initiatives that we came across: citizens who themselves were setting up energy co-ops; residents who organized themselves via social media to renovate a building in their own neighborhood or to develop it as a shared living space; or architects and designers who mobilized local communities around the repurposing of a building or the improvement of public space. It was often very local projects that were not – à la Uber – easily upscaled to other cities or continents.

That was precisely the point of these initiatives in many cases. They were set up by citizens or professionals who wanted to develop an alternative to the neoliberal logic of the free market that had started to reign society and in which international platform companies try primarily to extract profits. They were also meant as alternatives to the far-reaching privatization of the public sector that had occurred in the previous decades. They epitomized new forms of social organization, that were accompanied by new labels such as “Smart citizens” (Hemment & Townsend 2013), and “collectives” (Van den Berg 2013). These terms referred to their clever use of new technologies, their orientation to collaboration in networks and their dedication to collectively set goals.

The fact that they were small scale does not entail that they were not visionary. Some of these initiatives saw themselves as the precursors in

the energy transition, others experimented with new economic models in which inhabitants would take control over the management of communal resources. As Simon Franke, Bart Lammers, and Arnold Reijndorp (2015) described it, many of these initiatives wanted to recapture the public domain, or, in any case, to make public values central once again in the development of their city. Their goal was not economic growth but rather what the Dutch planning agencies themselves would put on the agenda a few years later as "broad prosperity" (PBL/SCP/CPB 2017). This included a prominent role to be played by the inhabitants themselves, or otherwise by designers, architects or other professionals acting on their behalves.

We asked ourselves if the grand visionary project that we were looking for could perhaps be the sum of all these smaller initiatives. Could they, collectively, play a role in the transformations and societal challenges that society set for itself? Wherever smart cities and digital platforms were organized primarily in accordance with market demands, in these initiatives we saw the power of the use of digital media in a societal context.

Although digitalization was not the goal in most of these initiatives, in many cases they did make use of digital tools such as sensors to measure air quality, social media for setting agendas or carrying out a campaign or crowdfunding, online tools for working together, file sharing and communication. The network or platform society also proved to be a society of "civic hackers," groups of people who use technology in a smart way in an attempt thereby – and often collectively – to improve the world, their city, or their neighborhood (Crabtree 2007; Schrock 2016; Townsend 2013; de Waal, de Lange 2020 and Bouw 2020).

A Worthy Alternative?

At the same time, we also perceived that these initiatives could not be proposed without critique as *the* solution for societal challenges. We saw them as a new form of social organization fitting the network society – a society that is increasingly organized on the basis of networks and is also becoming more and more diverse and complex. Nonetheless, these collectives also raise questions. How inclusive are they? Is it not primarily highly educated, usually white citizens who organize themselves well? It may well be social, as Dan Hill (2016) for example writes in his summary of a conference that we ourselves later organized on this theme, but it is not necessarily democratic if one group of citizens appropriates a public space based on a societal initiative. In other words, on what precisely is the legitimacy of these collectives based? They also entail the risk of social fragmentation. If we organize society in line with the

power of networks and collectives, is there still sufficient overlap between all the communities? Or do they inspire communities primarily by believing they are in the right, nourished by filter bubbles and fake news or even conspiracy theories?

Finally, we wondered if such collectives that make the local creation of values central can stand up to the large platforms from California? Can the efforts of local communities and networked communities take on the millions that the large tech companies can invest in the development of intuitive interfaces? Can they go up against the lobby and marketing power of Silicon Valley that attempt to orient the social playing field in such a way as to promote the interests of big tech? "Bottom-up initiatives in the social city" we wrote at the time, "are often too fragmentary. They link up insufficiently with institutional actors and lack clout. They also sometimes suffer from a high sense of 'we-ness' that is more village-like than urban in character" (Bouw et al. 2013).

Making Things Whole Again

In our workshop, we thus came across a nascent tension concerning the digital transition of society that has only increased in recent years. At stake are the organization of society, the functioning of public spaces, and the (power) relations between citizens, governments, and market powers. On the one hand, we saw plenty of opportunities to stimulate new types of social organization and exchange via new technologies, often as an alternative to a neoliberal free market economy and privatization of the public sector. The goal here was to activate the social energy of citizens to contribute to matters of public interest. We saw many of these initiatives like mini-experiments in new ways of organizing society more justly and sustainably. But they were still isolated and lacked proper clout.

On the other hand, we perceived that also because of the rise of those same new technologies, the force field between, among other things, government, society, and market is changing. Tech companies take over control, and the rise of networked communities also brings with it the risk of exclusion and fragmentation. Governments are also searching for a new role. What is their relationship to market actors, tech companies, citizens, and their communities in a network society? How can they create conditions in which public values and democratic principles are safeguarded in a network society?

At that time, we did not succeed in singling out one large and visionary project. However, we did see plenty of opportunities to connect different developments with each other. What if digital technologies, platforms, and the practices associated with them can be designed in such a way that they

could again make "things" whole again, instead of breaking them? What if they were designed so that they could facilitate a "civic infrastructure" and a strong public domain in which societal initiatives, governments, and market actors can collaboratively make out a case for important issues, ensuring public values? What if they were designed so that they could activate public spaces in which new meaningful relations can arise?

What if we could design new experiences, processes, and institutional forms in which societal collectives can be organized in a more sustainable way? And what if governments could embrace new digital technologies in such a way that they will contribute to sustainable, meaningful relations with their citizens and the various societal initiatives? Those questions are central to the new emerging discipline of Civic Interaction Design. How can we shape public life in the network society?

What if digital technologies, platforms, and the practices associated with them can be designed in such a way that they could again make "things" whole again, instead of breaking them?

1.1 The Mission of the Research Group Civic Interaction Design

The working field of the research group Civic Interaction Design is found precisely in the midst of the developments and tensions described above. In our network society, new ways of social organization have been emerging, new types of public spaces and new forms of citizenship have been arising that are taking shape in a shifting force field between government, market actors, tech companies, and social initiatives. Using design-based research, our research group intends to explore the question of how the network society can be organized around public values and societal missions in relation to democracy, diversity and inclusion, and sustainability. We will look specifically at the role of design and designers in the shaping of public life and the role that interactive media and technologies play in that.

Recasting

Four issues arise here. First, there is the question of how societal themes can be represented and imagined through digital media technologies and how public debates about these issues could arise. Second, we are interested in the question of how coalitions, communities, collectives, or publics can form around societal themes, how they can be organized, and what kind of role

digital media can play in that process. Third, we look at the relation between governments and citizens and how these can be designed in a meaningful way via digital media. A fourth concern is the organization and design of the underlying digital and network infrastructures and the virtual and hybrid public spaces that make all these interactions possible.

This means that we need to look further than designing and applying interactive media in existing societal and democratic processes. We will also have to shape those processes themselves in new ways. Michiel Schwarz refers to such an approach as a "recast": the search for new forms, practices, business models, roles and societal relations that fit the logic of the network society and in doing so start from public values (Schwarz & Knoop 2016).

Our research group combines inquiries from the social sciences into social practices around media and technology use, and a critical humanities perspective with a design approach.

The word "cast" has a nice double meaning here. The first meaning is that of a "mold" that, once designed, can be a basis for the wider introduction of new products and processes. A second meaning is that of roles, the division of roles, and the question who can best fulfill which role. The research group will follow both lines: we will search for new forms (products, experiences, interfaces, platforms, processes) for and in social processes. And we will also look into changing roles and relations between citizens, market actors, governments, designers, and other actors.

The search for such a recast for public life in the network society is not a simple task. There are no easy solutions, and knowledge of situated practices and various disciplines is needed. In the research group Civic Interaction Design, we will combine various approaches and will attempt intensive collaboration with professionals and researchers from other disciplines. Our research group combines inquiries from the social sciences into social practices around media and technology use, and a critical humanities perspective with a design approach.

Research through Design

Our focus in the research group is the design and application of digital media and technologies in public life. We start from the traditions of Human Computer Interaction (HCI) and approach these from a humanistic and critical value-based perspective. While the social sciences and humanities emphasize studying the world as it has been shaped, the designing disciplines provides

practices and methods that can help in exploring the question of how it could be shaped. With additional approaches taken from the traditions of Participatory Design, we will also try to ensure that we design not only for citizens and their communities but also with them.

The above perspectives come together in the ways we would like to employ Research through Design (RtD). This approach lends itself well to problems and practices that are new, still not fully developed, or characterized by a strongly advancing dynamic (Zimmerman et al. 2007, 2010; Stappers & Giaccardi 2017). By designing, testing, and reflecting on prototypes for products, services, interfaces, platforms, or even whole ecosystems, we want to get a grasp on the connection between technological and societal developments and processes, as well as experiment with new forms and roles.

Collaboration

We cannot of course do this alone. Research into the design of social media in public life can succeed only if actors who are practically engaged are also involved. In our projects we will therefore collaborate intensively with various social collectives, developers, software builders, architects, interaction designers, infrastructure businesses, municipalities, policy makers, and other professionals. The educational programs in our university play a crucial role in this as well, given that we will be collaborating with teachers, researchers and students.

Nor are we alone in this research field. We see ourselves as part of an internationally emerging interdiscipline at the crossroads of informatics, the humanities, media studies, the social sciences, urban studies, and design that is directed at the exploration, examination, and design of new ways of civic interaction, social organization and public infrastructures.

Examples are the Digital Civics group at Newcastle University, the Engagement Lab at Emerson College in Boston, the Public Design Lab at Georgia Tech or Design Informatics at Edinburgh University. MIT has had a Civic Media group for years. Other research groups have names like Civic Technology (The Hague University of Applied Sciences), Citizens and Technology Lab (Cornell University), the Institute for Digital Public Infrastructure (Amherst), Urban Informatics (Queensland University), Participatory IT (Aarhus), or Carefull Design (RMIT). Here at the Amsterdam University of Applied Sciences, my predecessor Ben Schouten contributed in important ways to the development of this field. In his inaugural lecture in 2015, he wrote about Civic Interaction Design as “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 in a media saturated world” (Schouten 2015).

It is against this background that we will carry out our research ambitions in the coming years. In the rest of this lecture I will look more closely at our area of application: What precisely do we mean by civics and civic interaction? After that, I will look at the topic of design. How can design and interaction design help answer our questions? There are high expectations everywhere that design can contribute importantly to societal challenges, but some modesty is also appropriate here. What are the limits to what we can expect from the various disciplines of design in examining and approaching societal issues? I will then explain how we will translate these insights into research programs and lines, what our ambitions are, and how we plan to collaborate with education and professional practice in our applied research projects.








2 What is Civic Interaction Design?

To provide insight into the application area of Civic Interaction Design, I will discuss two examples that have emerged from earlier research projects of the research group.

A series of photos of meetings, gatherings, parties, and presentations that occurred in our research into *The Hackable City* offers insight into the type of social processes and relations that we are targeting. Another series of images, of media-architecture installations that we studied in the project Cocreating Responsive Urban Spaces (COREUS), shows how we look at the design and role of digital media technologies. If we take both series together, we can then see how Civic Interaction Design is directed at the question how the design of digital media technologies and practices can give shape to meaningful social relations in public life.

2.1 The Hackable City *as an Example of* Civic Interaction *Design*

The Hackable City is a research project that emerged directly from the Deltametropool workshop I wrote about in the introduction. After the workshop was over, we decided to explore further the questions that came up. How, we asked ourselves, could various initiatives and collectives of citizens, professionals, and governments collaborate with each other to develop a city district together? And what role can the design of digital media products play in that? We chose the Amsterdam brownfield area Buiksloterham for a case study. A coalition of businesses and societal initiatives had developed there that wanted to develop the industrial area according to the principles of the circular economy. What kind of new processes, tools, roles, and relations could contribute to that, and what kind of resistance and problems could such an approach also stir up?

Collaborative City Making

For two years we followed a number of collectives that consisted of future residents, local businesses, designers, and architects who functioned primarily as catalysts of the dynamics. Together with them, we organized debates and workshops, developed – with varying degrees of success – a number of interactive tools by means of which people in Buiksloterham could exchange knowledge, and designed an exhibition object for the Architecture Biennale in Rotterdam that embodied the ambitions of this area.

If I look at the photos now that we took during our research, they offer, in an interesting way, insight into the various types of practices that took place in the years of our research project. The series thus also offers a good view of the contours of the working area of Civic Interaction Design. The photo series consists of the recording of a long series of meetings of various lengths and kinds. People can be seen at a large conference table; there are people in a room with colorful chairs and a large podium; people in a warehouse, gathered around the projection of a Powerpoint presentation; people making comments on large sheets of paper with markers. There are also photos of people who are working with building materials and walking around with hard hats. The process of collaborative city making, the photos appear to show, consisted to a large extent of people meeting, discussing with each other, sharing knowledge, and collectively undertaking, making, and designing.

In addition to the photos depicting meetings, vision workshops, and designing sessions, there are two other "genres." One such genre consists of images of festive gatherings. They show people living in the neighborhood as they toast the first pile being driven into the ground, listening attentively to a speech with a cup of coffee in their hands, or waving exuberantly at the photographer while sitting at picnic tables. Planning a city, it appears from this series, is also celebrating reaching a milestone, and enthusiastically presenting the joint image of the future in order to attract larger groups of people. Finally, I discovered a third type of image: photos of people who look seriously at the camera, shaking hands, signing a large manifesto, and having their photo taken with the city alderman on the podium of a debate center.

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Taken together, the photo series gives a good example of what civic interaction could mean. We see groups of people who devote themselves to working collaboratively toward a common goal: in this case, the realization of a district based on the principles of the circular economy. That means that they first of all imagine the theme and talk about this with each other: What does it mean precisely to build a circular district? What do they understand by that? The images and stories – drawn up in, among other things, the form of a manifesto – then played a role in engaging larger groups of people involved in this. They formed broader networks and collectives and jointly got to work.

That collective action consisted of more than practical activities that required a hard hat. There were also a great many meetings and parties promoting community, where mutual relationships are built up and the trust that is necessary for realizing communal goals can emerge. Finally, some of the activities consisted of the formalization of all those informal contacts, for example by signing the joint manifesto. An important element of this is the exchange of ideas with institutions that can reinforce and legitimize the dreams, wishes, and goals of the collective – hence the importance of the photo-opportunity with the city alderman.

Civic Interaction Design: Three Practices

The photo series thus form a good illustration of practices that Civic Interaction Designers can focus on. If we look at the specific activities that took place, we can group them, into three types of activities. In the first place, there is the representation and imagining of communal themes and issues, and the curation of reflection and discussions on them. In Buiksloterham, the people involved organized these debates themselves. From the perspective of our research, we contributed by designing workshop forms and games that made debate possible. We also developed a digital platform for the exchange of knowledge and know-how. In other research projects, we also see that cultural, public, or journalism organizations or governments take the lead by organizing exhibitions, debates, online data visualizations, and other digital or non-digital activities that inspire debate or enable the sharing of knowledge, know-how, and insights.

Second, we see that people become involved in a coalition, collective, community, or public – different scientific and design disciplines use different terms for this – around the topic of the circular economy. The initiative for that lay on the one hand with professionals like designers, architects, and companies in the circular economy and, on the other, with a number of (future) residents of the area. They orchestrated opportunities for communal action around the theme by organizing workshops and design sessions and translating the results of that into concrete building plans. These initiatives engage citizens and provide them in various ways with agency. The organization of informal meetings and parties where people get to know each other and perpetuate their social connections and commitment to the communal cause is part of this process of engagement.

Third, we saw new relations emerging between citizens, collectives, and institutional players like the local government. In this example, those from Buiksloterham who were taking the initiative sought the involvement of the government by inviting the city alderman. In our contributions to the project,

Domplein. OKRA landscape architects / Ben ter Mull.

we also looked for ways in which the collectives could demonstrate and visualize their societal impact to thereby show that they contribute in a positive way to society. In other research projects, this process works the other way around. We then look together with governments or cultural organizations for ways in which they can meaningfully connect with citizens and initiatives concerning societal themes and challenges.

The research of the Civic Interaction Design group is directed specifically at the role and design of digital media technologies and the ways in which these can play a role in the shaping of the three types of activities. An important focus for Civic Interaction Design is thus the design of (technological) infrastructures, networks, public spaces, and interfaces that facilitate all these activities. We also speak of "civic infrastructure" and of public spaces. That includes, among other things, social network platforms, collaboration tools, means of communication, and urban or digital spaces that can bring people into contact with each other, where new relations can emerge and communal goals be introduced or brought up for discussion, and where connections with other initiatives or institutions can be established.

2.2 *Cocreating Responsive Urban Spaces as an Example of Civic* Interaction Design

To get a better grasp of the ways in which interaction design – the design of digital and hybrid public spaces, experiences, products, and services – can boost public life, I will now shift attention to a second series of images that came from the CoReUs project. CoReUs (Cocreating Responsive Urban Spaces) is an applied research project into responsive public spaces. The project was an initiative by Frank Suurenbroek and his research group Spatial Urban Transformation and explored the ways in which urban public spaces can be designed with the aid of interactive technologies like screens, light installations, digital information kiosks, interactive artworks, or mobile apps. The starting point was that public spaces play an important role in urban life as meeting places where urban dwellers can become acquainted with each other, they can build mutual trust, and where confrontations and communal experiences arise. The contribution of our research group was, among other things, to analyze the body of existing media architecture projects (Pop et al. 2016; Markopoulou et al. 2017; Dalsgaard & Fatah 2014, 2016; Hespanhol et al. 2017). The goal was to better understand the various ways in which interactive installations can contribute to enriching public spaces.

Human Beeing. The Constitute.

Civic Interaction Design: Three Mechanisms

A new series of images – now of media architecture projects from all over the world that have been realized – again offers an interesting look at the different ways in which interactive projects can bring about social relations in public life. Here as well, we can distinguish a number of "genres"; in the research project itself we spoke of different *mechanisms* (Suurenbroek et al. 2019; de Waal et al. 2020). I will go into three of those more deeply here. The first group of projects consists of interactive projects that represent collective themes and identities in new ways in public spaces. In CoReUs we labeled this category as *Sense of place* to emphasize that these installations depict the atmosphere, the identity, and use of the place in one way or another. At the same time, they also offer a *Sense of us* as they also represent the various publics and groups of people that make use of a particular place, or that are involved with a particular theme. As such, these installations also offer opportunities to identify with the represented stories, communities and issues. Some examples are very prosaic and consist of a screen that displays the number of visitors or cyclists who rode by. Others are more poetic, such as a football stadium that depicts the atmosphere in the stadium – measured through sensors recording the sound intensity of the supporters – on the outside with light installations. Still others present the hidden meanings or practices that are invisible to the naked eye: for example, by using light installations to indicate the fire boundary of Rotterdam during the bombardment in World War II or the boundaries of a Roman Castellum from the Roman Empire in the city of Utrecht. What all these projects do is show in different ways who uses or used these spaces in whatever fashion and what kind of shared or contrasting practices and stories are part of the place. Through these representations, these places can come alive, and become meaningful, allowing passers-by to identify with the representations, and begin to experience the place as *their* place. Digital media here offer new ways and possibilities to register collective experiences and to make them and the publics to which they belong visible again in public space.

Playful Interaction

We gave a second type of project the name "(playful) interaction." This category consists of projects that brings visitors to a place into contact with each other in one way or another, often by using playful elements. The *Megaphone* project by Moment Factory that graces the cover of this publication is a good example of this. In a square in the Canadian city of Montreal, the initiators built a small stage with a simple stand in the shadow of a wide façade. On the stage was a red megaphone and a ringmaster invited spectators to proclaim their dreams for the future of the city into it. Using voice recognition technology, fragments

Tetrabin. Steven Bai, Sam Johnson en Martin Tomitsch.

were taken from the torrent of words and projected in a dynamic *word cloud* on the full width of the façade. The installation thus made the public space temporarily a place where a public debate could take place, inspired by the projection of catchwords and themes onto the façade.

While *Megaphone* facilitates primarily short-lived meetings and interactions, there are other projects that invite more long-term relations. For example, in the project *Human Beeing* by the German design and research studio The Constitute, the initiators set up collaboration programs between youth organizations and local bee-keepers in a number of European cities. With them, they designed a beehive in the form of a local building. Not only did the young people get to work with the bee-keepers, they also learned how they could film images of the beehive and project the images on the façade of the original building that had served as model for the beehive. The creators of this project hoped to contribute thus to various social objectives. Young people made new contacts and learned new skills and know-how, both in the area of beekeeping as well as technological competencies. The projections of the bees in public space made the societal theme of biodiversity comprehensible in an aesthetically attractive way for large groups of passersby. And with that the initiators also created a joint spatial and social experience for young people and inhabitants of the neighborhood.

Both examples – *Megaphone* and *Human Beeing* – show how the interfaces of digital media can mediate relations in new ways. They are examples of digital media projects that allow new publics or collectives to arise around themes or places, and bestow agency on them. The examples also illustrate the increasing interwovenness of physical and digital worlds (De Souza e Silva 2006; Willis and Aurigi 2011; McQuire 2008).

Control

We categorized a third type of project under the label "control." The purpose of the installations in this category is to stimulate or enforce a certain behavior. A good example of this category is the *Tetrabin* project. A tetrabin is a waste container with a screen around it where passersby can play Tetris. Every time someone throws something away into the waste container, a new block appears on the screen. By creating a playful experience, the designers hope to tempt passersby to throw their waste in the waste backet instead of next to it.

We also included in the Control category a number of projects with a more controversial character, such as gates with chip card readers that allowed some people to pass into an area but not others. Or the cameras with image recognition technology that monitor an area and send a signal to the police whenever a certain behavior seems to occur. The purpose of

this type of installations is to make places in the city safer or to make them more manageable for one agency or another. That can contribute to a more pleasant experience when people feel more at ease because safety can be better guaranteed. But such systems can also immediately evoke questions of power, exclusion, and inclusivity. Who actually determines the rules and the type of behavior that is enforced by such a technological system? And who is possibly also excluded?

The category Control shows that digital media technologies are not neutral in bringing about social relations in public life. The design of the technology also determines the conditions under which interaction arises and can guide, encourage, or punish behavior. Each design thus always brings an underlying issue of power and values with it.

The point of bringing out these examples in the area of media architecture is not that Civic Interaction Design is concerned mostly or only with installations in public space. We are looking at diverging forms of interactive media and technologies, from games and virtual reality to databases and apps. The issue here is that the research into Civic Interaction Design is concerned with the underlying mechanisms of interactive technologies. How can they contribute to establishing meaningful relations between people and their environment, between groups of people, and between citizens and institutions? In what ways do they mediate forms of interaction that contribute to the public debate, the building up of mutual trust or maintaining social and societal relations? And what forms of power and processes of inclusion and exclusion are revealed in how interactive products or services are giving shape to public life?

2.3 Designing for Civic Interaction: Dramaturgies, Ownership, Care, and Interfaces

If we look at the examples of *The Hackable City* and *Cocreating Responsive Urban Spaces* together, we will see that there is a common underlying approach. Both research projects revolve around the question of how digital media and their mechanisms can be designed to activate public spaces, enabling social processes to emerge, that bring out meaningful relations between citizens, collectives and governments. A number of concepts from scientific literature – dramaturgy, ownership, care, and interface – help give further content to the way in which those relations are designed and can be further explored.

Dramaturgies

In our research group, we describe the examples from *The Hackable City* and CoReUs as *dramaturgies*, a concept we borrow from the work of Maarten Hajer (de Waal et al. 2018; Hajer 2005; Knoop & Schwarz 2017, 2019). We use the term dramaturgy to refer to the design of the spatial and temporal settings in which interaction between people and between citizens and institutions emerges. To give an example: in *The Hackable City*, we designed, together with Play The City Foundation, a game in which participants from Buiksloterham developed their neighborhood together in a fictive scenario. The game had a special setting: a large game board shaped like the district around which the participants could stand. It took a certain amount of time, and there were a number of rounds in which the game unfolded. The participants were assigned various roles in the development trajectory, and the designers of the game took on the roles of host and gamemaster. A dynamic emerged from this setting in which those involved could become better acquainted, share knowledge, and form new coalitions.

We use the term dramaturgy to refer to the design of the spatial and temporal settings in which interaction between people and between citizens and institutions emerges.

The *Megaphone* project in Montreal can also be seen as a dramaturgy: the space is set up in a certain way (the projections on the façade, the large megaphone in the middle of the square) combined with a staging (the role of the ringmaster who invites people, the algorithm that translates the texts spoken into it into a cloud), which contributes to conversations taking place in the square.

Various aspects play a role in such a dramaturgy. In the first place, there is the design of the settings in the sense of physical and virtual spaces in which people come together. Second, there is also the defining or activating of roles along with the action repertoires that belong to those roles, and the development of a story arch through time. The concept of dramaturgy points to the necessity of a situated way of reflecting on these aspects and of thinking further than only the design of a digital medium or interface. The context in which they are used, and the accompanying roles and relations are also part of the design process of Civic Interaction Design. Whoever designs a screen in public space that leads to discussions, as in the example of *Megaphone*, will have to design the adjacent public space so that a public can look comfortably at the screen and have to think about the content of roles like that of the ringmaster.

By approaching Civic Interaction Design as a dramaturgy, certain questions come to the fore. In what setting does interaction occur, and how do different people experience such an environment? What kind of attributes can serve in that setting as "conversation starters"? Which actors should be involved in the process, and what role can they play? And who directs the process as a whole and from what viewpoint? The design task here concerns the design of space, media, and technologies that facilitate interaction, *and* the design of roles, relations, and broader processes in which connections with other groups or institutions can be established.

Ownership & Care

The various examples from *The Hackable City* and CoReUs also show that our interpretation of Civic Interaction Design goes further than formal interpretations of citizenship that are limited to the political rights and responsibilities of citizens. Civic Interaction Design also pays attention to the informal and affective interactions that play a role in the way in which societal relations emerge in public life. In addition to political aspects, social and cultural dimensions also play a role (van Leeuwen 2020; Cardullo et al. 2019; Couldry et al. 2014).

Civic Interaction Design is thus also concerned with the ways in which people are connected and feel connected with a broader community. Couldry (2014) and Dahlgren (2009) describe civic culture as a "sense of we-ness around specific issues or ideologies that involve like-mindedness." Carl di Salvo and Christopher Le Dantec (2017) similarly argue that Civic Life occurs largely in the sphere of the everyday. They do not look so much at the formal rituals of democracy as at the "mundane daily interactions of interacting with neighbors dealing with municipal bureaucracies and forming or working in community groups." It is in that spirit that Eric Gordon and Paul Mihailidis (2016) also define civic media as "any mediated practice that enables a community to imagine themselves as being connected, not through achieving, but through striving for common good" and "technologies, designs, and practices that (re)produce the sense of being with others toward common good." Finally, Gordon et al. (2019) state that civics goes further than the interaction of citizens with governmental institutions: it includes all kinds of ways in which people give meaning to and deal with societal themes. "Civic life," they conclude, "as opposed to political elections, for example, is not a matter of winning or losing; it is a matter of meaningful, connective interactions."

Two English concepts in the literature on this topic play an important role in the above processes. "Ownership" describes the extent to which people feel involved in collective themes and have the agency to exercise influence

there (de Lange and de Waal, 2013). Ownership can take shape through involvement in the formal organizations of civil society, such as a union. But it can also take form in more informal networks and temporary communities like those we encountered in the workshop on the visionary future project and that are representative of the network society. Civic Interaction Design thus revolves around the question of how such forms of ownership and commitment can be designed.

Another concept that plays an important role is "care." Making use of Tronto's *Caring Democracy* (2013), Eric Gordon and Gabriel Mugar argue in their book *Meaningful Inefficiencies* that the concept "care" is an important part of citizenship in a democratic society. The concept, they write, "[orients] people toward an understanding that citizenship is the practice of how one works with others to take care of the world they live in." The concept of care thus entails the question who in society cares for matters of public and collective interest and how can that best be organized. It is not always necessary that citizens themselves are also responsible for organizing care for the world around them. The phrase "caring for" does not only refer to an active caring for something but also attaching great value to something. Designs for care can thus be explained in two different ways. In the first, it is a matter of designing a concrete action perspective whereby collectives can be organized around and take care of societal challenges. But, second, the focus can also be on the development of dramaturgies in which societal themes are put on the agenda and can thus contribute to support and involvement, without that entailing per se that that those who put a theme on the agenda also have to solve the problem themselves.

Public Spaces, Urban Culture, and Interfaces

A final perspective with relevance for the field of Civic Interaction Design that I want to discuss here emerges from the discussions on urban culture. In the debate on urban culture, the concepts public sphere and public space play a central role. In the modern, pluralistic society, the starting point of the debate reads, public space plays a crucial role as a collection of places and moments where communal experiences arise (Boomkens 1996; Hajer and Reijndorp, 2001; Willis and Aurigi 2011; Gumpert and Drucker 2001). That what is communal becomes visible and experienceable in public spaces. And at the same time, the community of people to whom that experience or theme belongs also becomes visible. All public spaces in the city together form a "social system that spatially organizes the lives of various citizens. In contemporary terminology, the city functions as an interface, a system that brings citizens together in public spaces and around matters of common interest"

(de Waal & de Lange 2014). Various theorists have argued that public spaces also have an important function in public life as a "mixing chamber" (Goldberg) in which urban dwellers can meet each other and be confronted with each other and on that basis form new publics. An ideal type of the digital public sphere plays a similar role: a place where people meet each other, exchange ideas, and organize themselves, and where society as a whole also becomes visible and tangible. A digital public sphere can once again be understood as a collection of places where new collective experiences, meanings, and mutual trust can be built up.

In my book *The City as Interface* I wrote about the urban public sphere in a similar way as the places where "a modern urban public arose from the interaction between urban dwellers: a group of people who have been temporarily or permanently united with each other around a communal goal or practice" (de Waal 2013). Here I used the term interface to emphasize that the network society is not so much concerned with the spaces themselves as with how relations and relationships arose in the spaces, whether or not they were mediated by digital media. Civic Interaction Design revolves around the design of interfaces, experiences, processes, and dramaturgies in which crossovers can arise between the various groups in society.

3 Civic Interaction Design and the Digital Transition

Now that I have mapped the working area of the research being done by our Civic Interaction Design group, it is important to step back and explore the broader force field in which social relations take shape. The Netherlands Scientific Council for Government Policy (Wetenschappelijke Raad voor het Regeringsbeleid; WRR, 2012) speaks in this context of the social order, or in Dutch: *maatschappelijke ordening*. With that term, the WRR is referring to the relations between the market, the government, and society (the term the WRR uses for civic initiatives) in relation to the promotion of matters of public interest. The issue of social order revolves around questions like how much latitude precisely do social collectives, like those we encountered in *The Hackable City* research, have to exercise influence over society? Does the government allow them to range freely? Or are they quite limited in their possibilities? Is there room to develop a district like Buiksloterham in an alternative way, in line with the logic of the circular economy? Or, do market actors and their investment logic prevail in the end? What opportunities, rights, and responsibilities do citizens have in this interaction? What role does the government play, and what is left to the market?

For Civic Interaction Design, this is an important question. The social order is not a given but a dynamic process in which various actors attempt to strengthen their hold on society. The digital transition contributes to a shift in the power relations between actors. It brings out new views on what citizenship is, and leads to the emergence of new civic roles, and possibly even new institutional forms. These themes also belong to the research area of Civic Interaction Design.

3.1 The Digital Transition and Shifts in Societal Organization

In recent years, various authors have pointed out that digitalization in the area of Civic Interaction Design leads to broader shifts in the area of citizenship and the constitution of the social order. For designers, researchers and policy makers, Nick Couldry and his colleagues argue for instance: it is "[unhelpful] to approach 'digital citizenship' simply by asking what digital tools can add to stereotypical acts of citizenship (voting, joining a party, reading a manifesto)" (Couldry et al. 2014). Citizenship and societal roles are not a fixed set of practices and habits. Their content is subject to constant change. Isin and Turner (2002) describe in similar ways how citizenship goes beyond a formal set of rights and

responsibilities and should be seen as a social process in which "individuals and social groups engage in claiming, expanding or losing rights."

The Perspective of Communities & Collectives

It is precisely in that way that the citizens' initiatives we encountered during the Deltametropool workshop at the beginning of the previous decade can be understood. These collectives were waging a battle in which they were claiming the right to play a role in the social order. At that time we were by far not the first or the only ones who viewed such initiatives in that way. A few years after the workshop, the WRR published the report *Vertrouwen in burgers* (2017). In that report, under the term "doe-democratie" (do democracy), among other things, a view of a democratic society in which citizens could play a central and active role stood out. At around the same time, a group of architects In America proposed an approach they called "tactical urbanism" (Lydon & Garcia 2015). This approach consists of organizing small-scale interactive and often bottom-up interventions in order to contribute to the improvement of the city. In the United Kingdom, the think tank Nesta published a report on the Civic Economy (2011), in which a large number of examples are collected of initiatives that – in the words of the authors – link the spirit of entrepreneurship to the aspiration of "civic renewal." This concerns the local organizations in which citizens work with each other to combine social and economic goals like a better local food supply, local energy production, the organization of cultural facilities, or the revitalization of local markets. In *How to Thrive in the Next Economy*, John Thackara (2017) writes that, in the meantime, a million groups worldwide have become active that organize themselves around themes like climate change and economic solidarity. In the Netherlands, Mariska van de Berg (2013), among others, describes the rise of informal citizen's collectives in her book *Stedelingen veranderen de stad: Over nieuwe collectieven, publiek domein en transitie*. The Ministry of the Interior documented similar initiatives in *Doen: Nieuwe Vormen van Democratie* (2013). A movement has emerged worldwide to organize local economies around principles of the commons, whereby the use value – and not the exchange value – of goods is central, and the management of such goods is organized on the basis of mutual solidarity and around social relations.

The constant issue here is that of groups of citizens, social enterprises, non-profit organizations or initiatives by professional designers or architects claiming a new space for themselves in reaction to a number of larger developments. They are searching for ways to live in more sustainable ways, as an answer to climate change and environmental pollution. They are responding

to changes in a government that has withdrawn more and more since the end of the previous century and left tasks formerly viewed as public to market actors. Or they seek an alternative for the advancing logic of the market society that has more and more come to be marked by what is called shareholder capitalism. Investments are then made primarily with a view to the high return for shareholders in the short or medium term.

The Market Perspective & Surveillance Capitalism

To a certain extent these collectives can also be understood as a reaction to an emerging platform society (Van Dijck et al. 2016, 2018) with its *surveillance capitalism* (Zuboff 2019). Platforms like Uber, Airbnb and Amazon play a major role as mediators between suppliers of services and clients and determine the rules to which suppliers and clients adhere. They also manage the identities and reputations of suppliers and clients. The latter play an important part in the distribution of business and the personalization of services.

Platforms themselves become a kind of government that determine the rules for economic and cultural exchange as well as for exchanges in the public domain. Citizens are primarily cast in that system as individual consumers and entrepreneurs who are themselves responsible for organizing their lives.

The products and services that these platforms provide are convenient, practical, and nicely designed. But the logic by which these services are organized is often invisible, hidden in algorithms, and data analyses on the back of their smart interfaces. The logic of these platforms is often to the detriment of the power position of citizens, governments, and suppliers. Platforms themselves become a kind of government that determine the rules for economic and cultural exchange as well as for exchanges in the public domain. Citizens are primarily cast in that system as individual consumers and entrepreneurs who are themselves responsible for organizing their lives.

The Government Perspective: The Energetic Society

From a government perspective, we can see an increasing interest in recent years in the "societal energy" of various collectives that have arisen in the past decade. The Netherlands Environmental Assessment Agency (Planbureau voor de Leefomgeving) argued already at the beginning of the previous decade for a new management philosophy they called *De energieke*

samenleving (The Energetic Society) (Hajer 2011). Great societal challenges like the climate crisis could be dealt with better if governments actively looked for a link to the innovative ability found in various initiatives in which citizens, businesses, social organizations and knowledge institutions collaborate with each other. Emancipated citizens no longer allow themselves to be told what to do, the agency argued. Society has grown more complex, with more diverging lifestyles and increasing diversity. Hierarchical institutions like the government are not as good in the innovation needed to tackle the complex problems of our time (Potjer and Hajer 2017). Network governance has become a term that is used internationally for this approach. "Networks," Deakin and Taylor argue, "potentially unlocked a third way between states and markets, extending the public sphere, empowering communities and cultivating inclusive policy making" (Blanco 2015). We see an echo of such arguments in discourses on *government as a platform*. In that view, the government plays the role of facilitator of social processes by making smart use of digitalization. Via online platforms, the government can communicate more effectively and efficiently with citizens and government processes can be connected with initiatives from society or business life by, for example, making open data available.

In practice, such an approach has proven to be difficult. The ways in which collectives organize themselves is often dynamic and iterative. They begin with something, try something out, run into a wall, turn in another direction, and gradually develop their ideas and methods. Collectives have little interest in formal procedures such as procurement schemes (Beunderman 2015; van den Berg 2013). Such a way of working does not usually fit with governments that want to know in advance what results can be expected, to manage risks, and, moreover, start from a principle of equality that makes it difficult to allow all kinds of exceptions and provide customized accommodation of such exceptions.

3.2 Three Challenges: Fragmentation, Legitimacy, and Responsibilization

Thus, we see a number of important developments with regard to the social order. Social collectives have started to organize themselves around divergent themes and thus attempt to blow new life into the public domain. Governments have embraced this logic in part but also wrestle with it, whereas they have also outsourced many of the traditional government tasks to the market. At the same time, digital platforms are becoming increasingly strong players, and they entail a strong libertarian view of citizenship. Civic Interaction

Designers are therefore concerned with a number of themes that can come to the fore in this force field: societal fragmentation, the legitimacy of the collectives, and far-reaching responsibilization.

Fragmentation

Let us begin with the first theme: societal organization via digital media can lead to an energetic society, but it can also lead to one-sidedness, a far-reaching "parochialization" of the public domain, an echo chamber, a filter bubble or what the American philosopher and professor of Citizenship & Public Affairs Peter Levine (2016) calls "the perennial problem of factionalism." The traditional solution to this problem, Levine and others argue, was to set up a public sphere or an institutionalization of organizations in which all citizens were involved in the one way or another. Local newspapers or television news programs were widely read and watched, and broad social and political movements like unions managed to connect large parts of the population. But precisely this kind of more or less compulsory membership in communities has come under pressure through individualization. This development has been strongly reinforced by the algorithms of dominant online platforms and social networks that have in the meantime grown into an important factor in the organization of public debate. How inclusive are the divergent social processes that Civic Interaction Designers give shape to? Where do moments of overlap emerge between various collectives, and where does society become visible as a whole? These are important issues for Civic Interaction Designers.

Where do moments of overlap emerge between various collectives, and where does society become visible as a whole?

Legitimacy

The second theme has to do with the legitimacy of the collective social initiatives. Who do they represent precisely? Not all citizens by far are linked to these movements (Tonkens et al. 2015). In response to the commercialization and privatization of the public domain, many of these movements claim their "right to the (smart) city" (Foth et al. 2015; Cardullo et al. 2019; Lefebvre et al. 1996), but whose right is that precisely? How can interests of divergent collectives be weighed and public interests be guaranteed in these processes? The legitimacy of these collectives will in many cases benefit from being reinforced by other institutional actors such as a local government. Or they need to search for other, new forms of legitimacy. The issue of inclusion, diversity, and legitimacy is also one of the design tasks that Civic Interaction Designers will be faced with.

Responsibilization

A third important theme is that governments that embrace the logic of the participation society can make themselves guilty of what is called "responsibilization." With the use of fancy terms like Big Society and the Participation Society, tasks that the government itself once performed – because, from the perspective of public values, that is simply the task of the government – are now passed on to citizens with an appeal to their ability to organize themselves. In fact, critics say, this is a far-reaching liberalization in which citizens themselves and as individuals are made responsible for the solution of societal problems (Morozov and Bria 2018; Zukin and Papandatonakis 2017; Iverson 2011; Thomas et al. 2016). Here we find parallels again between a liberal view of management by governments and the libertarian approach of large tech platforms that is oriented to individual responsibility. Here again is a task for Civic Interaction Designers. How can societal initiatives concerning public values be inspired or anchored in institutional practices, without leaving citizens to their fate? The starting point of Civic Interaction Design is not that citizens must or can solve everything themselves. It is a question here of how, in a process of digital transformation, societal initiatives, government, and the market can be related to each other in new ways to promote matters of public interest.

3.3 Public Values and Societal Missions

Though this lecture began with an optimistic search for the power of social collectives, we now see a more complex picture slowly emerging. Governments try to embrace the societal energy from society with new management philosophies, with the risk that citizens then have to figure it all out themselves. Digital media play a role in the rise of a civic economy and the emergence of new ways of producing economic and societal value on the local level. At the same time, large international businesses play a continually larger role in the construction of what was once called the "information super highway," and they determine the rules one-sidedly. Far-reaching personalization, algorithms of digital platforms directed to emotional effect, and smart city services that increasingly position citizens as individual consumers undermine public spaces where connectedness between groups can emerge and where society can determine its course as a whole. Governments call for the ethical or responsible development of technologies, but their range is still limited with respect to the influence of large international platforms.

How can Civic Interaction Designers set their own course on this complex playing field? What compass can designers and researchers use when they work with citizens, societal collectives, governments, or businesses to give shape to new products, services, experiences, and processes? "Public values" and societal missions are central concepts for finding orientation in our approach to Civic Interaction Design. As researchers in the area of Civic Interaction Design, we are interested in the question of how the balance between the various actors in society can be organized in such a way that public values are central and what new interactive forms, practices, relations, and roles can give shape to societal missions.

Public Values

The most difficult issue here is that public values cannot always be easily defined and that they operate on different levels. Public values, as José van Dijck, Thomas Poell, and I write in our book The Platform Society (2018; Dutch: *De platformsamenleving* 2016), are not fixed in advance but are established in a continuing political process in a democratic society. We stated: "In general, it is a question of, on the one hand, determining norms in the area of, among other things, quality, accessibility, sustainability, affordability, solidarity, and freedom of choice of specific services and provisions; and on the other it is a question how and by which actors this can best be promoted." Here, it is important to recognize that public values and interest can be promoted by both governments and businesses, collectives and communities, and professional organizations that have embraced professional norms in their practices or professional codes. In our current democratic system, final responsibility does lie with the government as, among other things, regulator and watchdog (van Dijck et al. 2016; WRR 2011, 2012).

The Rathenau Instituut looks at the digitalization of society as a whole and claims that public values in seven different domains can be at stake: privacy, autonomy, security, control over technology, human dignity, justice, and power relations.

Various actors have also brought the importance of public values to the fore in recent years as the starting point for societal organization. The WRR (2011) distinguished here between driving, anchoring, and process-oriented public values. Driving public values concern the efficiency and effectiveness of specific services: Are they, for instance, safe, accessible, available, and affordable? Anchoring public values are basic rights of citizens that are often anchored in the constitution, such as – for example – privacy. And process-oriented principles concern the democratic process: Is there

sufficient transparency? Can governments and other actors be expected to take responsibility for their shortcomings?

The Rathenau Instituut looks at the digitalization of society as a whole and claims that public values in seven different domains can be at stake: privacy, autonomy, security, control over technology, human dignity, justice, and power relations (Kool et al. 2017).

In the meantime, (inter)national and local governments have placed the ethical aspects of digitalization on the agenda. The cities of Amsterdam, Barcelona, and New York are strongly promoting digital citizens' rights in the Cities Coalition for Digital Rights. They call for priority for rights like privacy, transparency, democracy, and inclusivity in the development and regulation of new digital services.

Societal Missions

Supplementing these kinds of public values, there are also various actors that introduce societal objectives, missions, and values into the public debate. From a combination of social justice and ecological awareness, the idea of the Doughnut Economy, for example, is embraced in many places in the world. The city of Amsterdam has embraced the principles of this vision as the starting point for future policy. There have been calls for some time from the world of design for Sustainist Design (Schwarz & Krabbendam 2013) or Design Justice (Constanza-Chock 2020), which propose frameworks for inclusive design and for the shaping of a world in which sustainable, meaningful local relations are central. Various value frameworks are introduced on the European level as well for policies that are oriented to the role of technological developments; one can think here, for example, of the ethics guidelines for trustworthy AI by the European Union. The Sustainable Development Goals of the United Nations are based on a long series of public values and societal missions, ranging from the eradication of hunger and poverty to the stimulation of responsible consumption and production. The economist Mariana Mazzucato (2021) proposes that the government takes a strong management role to spur on societal missions around the climate issue, for example. But these missions can only succeed, she claims, if the society can also be involved in this.

Diversity and Inclusivity, Sustainability, and Democracy

We cannot provide an exhaustive list here of public values on which this research group will be based. We can indicate that we will be conducting our projects in a value-driven way. What values we take as our starting point depends on the project. Thus, there are other values at stake for citizen involvement in energy corporations than those found in a research project about the potential of social media platforms for public debate. That means that we will always have to chart which values or societal missions are at stake per project. In doing so, we will also look at the tensions that can arise between different values and the interests of stakeholders.

For the type of projects and values, we will thus look at societal missions on the European and national level and the broader frameworks of the metropolitan region of Amsterdam, as well as that of the agenda of the Digital City. In general, that means that we will focus on questions that have to do with digitization, diversity and inclusion, sustainability, and democracy. We look at developments in the area of digitization and ask what the digital transformation means for how public values can be given shape in the areas of democracy, diversity and inclusion, and in doing so also focus on the societal challenge of sustainability – both socially and ecologically.

We thus take on an important but difficult task. With our research we would like to contribute to the development of new products, tools, processes, relations, roles, and dramaturgies by which public values and societal missions can take shape in the societal processes of the network society. Until now, I have looked in this lecture – mainly from the perspective of the humanities and the social sciences – for new forms, practices and relations that we have encountered in our own research and in the literature. I have also introduced a series of concepts by which we can understand and further develop these forms and practices. But to be able to actually make a contribution to the development of new products, services, roles, and relations, we need to connect this reflective perspective to the perspective of design.

4 On the Role of Design

When the Irish geographer Rob Kitchin analyzed various studies on smart cities in 2014, he arrived at an interesting insight. On the one hand, he found a great many studies that critically analyzed developments in the area of smart cities. At the same time, he saw that the actual development and implementation of smart city applications were primarily driven by technological research. There was hardly any overlap between the two worlds. The critics commented on the way in which investors placed smart cities on the market – just as I myself did in the introduction of this lecture – but hardly contributed any alternatives to this practice. Kitchin wrote: "Hardly ever do critical scholars undertake applied research aimed at creating smart city initiatives, preferring to critique instead" (Kitchin 2014). At the same time, he also asserted that engineers in the technical disciplines and the investors and businesses that put the technologies on the market had limited interest in the social implications of their new findings. They saw new technologies as a value-free set of instruments by which they could simply better organize cities.

The ambition of the research group Civic Interaction Design is to combine both perspectives with each other. We do not want to just look critically at the implications of technological developments for the network society. We also want to contribute actively to the search for new forms, roles, and processes in which public life can be organized in meaningful ways. We do not wish to do so by implementing technology as a value-free solution machine but to introduce the perspective of public values into the process of design and implementation.

By seeking a link to the design disciplines, we find a series of methods and approaches that can help here. In particular, we are inspired by a number of traditions. Our research is directed in the first place at the design of interactive applications in public life. That makes design traditions like Human Computer Interaction and related fields such as Urban Interaction Design, Urban Informatics, Multimedia, Game and Digital Design very relevant for our approach. To be able to make our perspective of public values and the focus on societal relations central, we approach HCI traditions from a critical value-based and humanistic perspective. Finally, we also find inspiration in the approach of Participatory Design, in which designers help articulate the interests of the people whose lives will be influenced by technological innovations. The combination of these traditions enables us to contribute in a constructive-critical way to the development of new forms of public interaction and to continue to reflect critically on the various ways in which public values can be promoted in the network society.

4.1 Human Computer Interaction

Human Computer Interaction is the core discipline for designing digital and interactive products and services. It originated at the beginning of the 1980s, building on insights from the worlds of software engineering and computer science. In the beginning, HCI research revolved around the question of how technology and its interfaces can be designed in such a way that people can carry out very specific tasks or shape well-defined (business) processes. Conversely, that led to the question how new technologies in turn change the nature of these tasks, processes, and their corresponding roles. The spreadsheet is an efficient way to do bookkeeping. Once the spreadsheet is implemented, the analysis of the data in the spreadsheet can be used to guide or organize business processes in new ways.

The focus initially lay on the design of tools to increase productivity like spreadsheets and word processors, based on cognitive models on information processing. But as computer and information technology developed from a single beige box on our desks to the world at large surrounding us, the HCI fields also expanded. Since then, HCI encompasses the application of technology in diverse societal, cultural, and professional fields – from the design of smartwatches and health apps on the mobile phone to the application of virtual and augmented reality. Through that development, the narrow focus on cognitive models and later business processes has broadened and the discipline now deals more broadly with shaping services, processes, and experiences (Caroll 2013).

Third Wave HCI

In our explorations, we place ourselves in the third wave of HCI, which looks at the way in which people in various contexts ascribe meaning to their lives and work through the use of technology (Bødker 2006, 2015). Research for the design of new media thus goes further than the question of usability (do the users understand which button they have to press to accomplish a task?) and efficiency (how can a process be designed in the most efficient way?). Supplementing (to be clear: not in place of) that, the emphasis has come increasingly to lie on the social and cultural meaning of technologies: What does a design signify for the way people give meaning to their lives and how is it related to their surroundings? Here, power relations and governance issues also require consideration: Who actually determines what features a new technology should have? And if it is designed, what does that mean for the power relations in society, the agency of people to shape the world around them and for the organization of public life?

Digital Civics

Within the domain of what is also called "digital civics," different authors put the emphasis on the importance of the design of objects, interfaces, and processes that reinforce social relations, instead of giving shape only to transactions (Vlachokyriakos et al. 2016; Olivier & Wright 2015; Corbett & LeDantec 2019). According to these authors, whenever HCI principles are applied in the area of civics, the danger exists that too often processes and interfaces through which citizens, for example, communicate with governments are viewed from the perspective of efficiency. Citizens are seen as clients of governments who should be served as efficiently as possible. There is of course nothing wrong in designing a digital service that makes applying for a driver's license easier and more efficient. But if all interactions between governments and citizens are shaped according to the logic of an instrumental relation between a service provider and client, that will affect the quality of the relationship between citizens and the government. Civic Interaction Design explores primarily how citizens and governments can develop sustainable and meaningful relations.

Meaningful Inefficiencies

In this light, Gordon and Mugar (2020) have argued convincingly for the design of what they call "meaningful inefficiencies": processes that do not optimize government interactions from an administrative perspective but allow for play spaces. The objective is to provide citizens the opportunity to acquire more insight into the working of the system, to offer room for experimentation, and to build meaningful relations. Civic design, they argue, thus goes contrary to a number of basic assumptions of standard HCI that are directed at making processes run easily and friction-free, with technology assuming as invisible a role as possible in the background. They write: "Civic design requires a challenging of the presumptions of efficiency; namely a challenge to the presumption that the primary purpose of designed systems is to achieve a stated goal with the least expenditure or resources" (Gordon and Mugar 2020). Marcus Foth and his colleagues argue in a similar way for the shift from usability to "citizen-ability." Interaction designers should search not so much for a better user experience as for "a better citizen experience and in fact a strengthening of the efficacy of our citizenry and its polity" (Foth et al. 2015).

Urban Interaction Design

We see similar calls in the field of media architecture, urban interaction design (Brynskov et al. 2014) and urban informatics (Foth et al. 2011). These disciplines related to HCI look at the role that digital technologies play in urban life and in the urban public sphere. They distinguish themselves from a smart

city approach, which looks primarily at processes of efficiency and provides a "seamless" experience of urban services for consumers. Instead, designers and researchers in these disciplines argue precisely for the importance of designing from the perspective of the needs of "smart citizens" and local communities. They base themselves not on cognitive models or on traditions of engineering but cite sociologists like Simmel and Sennett and critics from the field of urban culture who argue for the city as an open system, with public spaces where differences can become visible, collective experiences can arise and crossovers between various communities can occur. While the Danish architect Jan Gehl once attacked functional modernism in urban planning with his call to design for "life between the buildings," the above disciplines propose an urban design that also embraces "life between the systems." Not "seamless," but "seamful" design is the motto for the design of interfaces that organize urban life (Galloway 2008; D'Ignazio et al. 2019).

4.2 Value Sensitive Design & Humanistic HCI

From the above, it follows that Civic Interaction Design does not revolve around making services or products more efficient as such. Rather, it revolves around the question how public life can be reinforced and how public values can be safeguarded in the application of new technologies. Explaining and making the values at stake visible is an important part of the design process.

Value sensitive design (Friedman et al. 2009, 2019) is an approach to design that has focused attention on that kind of question since the beginning of the 1990s. This approach was developed from the insight that technology is not a neutral aid but is a driving force in economic, cultural, and social processes. For instance, spreadsheets or, more recently, the emergence of decentralized database technologies like blockchain, lend themselves particularly well, for instance, to the quantification of products and processes. That can easily lead to positivistic "measurement is knowledge" views of administration that place emphasis on measurable results. Consequently, societal processes can themselves be so organized that they are increasingly directed at such results. That is not to say that the introduction of databases will lead per definition to the objectivization and formalization of social processes or to excessive efficiency thinking in the workplace or in public life. It does mean that such formalization is one

This approach was developed from the insight that technology is not a neutral aid but is a driving force in economic, cultural, and social processes.

of the possibilities, and questioning the desirability of that has to be included in the design process.

Value sensitive design offers a number of methods by which values in the design process can be investigated and analyzed. The methods focus attention on the properties of technologies as well as on the specific empirical practices that emerge around technologies, including an analysis of the various direct and indirect stakeholders and their interests. Its methods also bring out the tensions between various values and stakeholders. In a society in which technology plays an increasingly important role, such a value-driven exploration is of great importance. One of the most important tasks for Civic Interaction Design is making such values concrete in specific products and services. Public values are our starting point, but these values must be made specific in each research project, including an exploration of the possible tensions that are involved.

Humanistic HCI

As a supplement to this value sensitive design approach, we also find inspiration in the case made for a *Humanistic HCI* by Bardzell and Bardzell (2016), in which they argue that the relation between technology and society can be interrogated and imagined by means of design, design research, and design criticism. They seek inspiration in the humanities and the ability of that discipline to introduce ideas, values, and concepts that give direction to the way in which we experience our world and give form to it.

Design, Bardzell and Bardzell argue, could add repertoires from the humanities and the arts to their work area. Concretely, they propose using design history and interaction critique for placing developments regarding interaction design in a larger history. They also argue for critical design and design-for-debate approaches that present fictional products and services that criticize current affairs and imagine alternative futures. The purpose of this is to spur the debate on the desirability of various future scenarios and to reinforce or invalidate political or research agendas. They write: "Doing so enables HCI researchers and practitioners to interpretively explore alternate worlds, to discover the possible and the preferable in them and to construct both pathways and the collective will to pursue them" (Bardzell & Bardzell 2016).

4.3 Participatory Design

If we engage in research into the design of interactive technologies in public life, following the HCI traditions mentioned above, then it is of great importance that all stakeholders can play an active role in the design process. And they should do so not only as "users" who give feedback to the effectiveness of prototypes, but primarily as citizens who contribute their thoughts about to the underlying values at stake. For such an approach, we find inspiration in the methods and traditions of Participatory Design, a design method that emerged (first under the name Cooperative Design) in the 1970s in the Scandinavian countries (Sundblat 2010; Bannon et al. 2019; Simonson & Robertson 2012).

That happened at the time that technologically driven automatization and computerization began to get a firm foothold in various industries and sectors, such as the graphic industry and the health sector. Researchers at different universities were linked with unions that worked towards the democratization of the workplace. On that basis they set themselves the goal of developing new information technology with all interested actors. The goal was not so much to make the business process more efficient or to increase profit, but rather to give the final users of these technologies – printers, journalists, nurses, doctors, etc. – a voice in the design of the new technology. This, again, was to be done, not only from a usability perspective (Do they understand how it works? How we can have them work more efficiently?), but to see to it that technology improved the quality of the profession. Practitioners were also given a voice in the design of the content of their work and the way in which they worked together in the workplace. This approach links up with a wider tradition of action research in which researchers play an active role in developing solutions together with all those involved in a specific issue, in which the interests of all parties involved are taken into account (Foth & Brynskov 2016).

An important point is this: Participatory Design does not mean that the employees, citizens or city dwellers will themselves develop the technologies and business processes. It means that professional designers collaborate with them to ensure that their interests are safeguarded in the final design. Similarly, nor does Civic Interaction Design mean that citizens (have to) do everything themselves; it does mean that public interests have to be guaranteed in the design process of social life.

Co-Design

While Participatory Design was originally concerned with the application of ICT in the workplace, the discipline has expanded in recent decades to the co-design of technological applications in various societal areas. In his *Sustainist Lexicon* (2016) Michiel Schwarz speaks in this connection of co-design as a method that has been on the rise. Co-design, Schwarz writes, does not concern design *for* so much as design *with*, with the goal of safeguarding the "ownership" of all those involved of the final product.

But there is also a risk in the growing popularity of co-design. According to one of the pioneers in the area of Participatory Design, Susanne Bødker, the method has become so popular that its significance has in the meantime been watered down. Participatory Design has deteriorated into the involvement of users of consumer products to make them more attractive and user-friendly. That robbed the area of its original political hue and dedication to democratization. Participatory Design in its original meaning goes beyond solely the involvement of users. As Bannon et al. (2019) write: "This is a far cry from earlier work in the field, where Participatory Design sought not only to incorporate users in design, but also to intervene in situations of conflict through developing more democratic processes."

New Roles for Designers

Working from a tradition of Participatory Design often means that designers take on a new role. In addition to giving shape to products or services, they also play the role of organizer or advocate of collectives around themes of public interest. When researchers in the 1970s wanted to strengthen the position of employees and workers in the development of new technologies for the workplace, the environment then was relatively uncluttered. Most people worked during their lives largely for a single employer. And institutional actors like unions played an important role in society.

Since that time, society has become more complex. The development, production, and distribution of new products occur in complex networks of businesses, suppliers, contractors, and franchisees. In the area of labor, flexible work and freelancing has become much more usual and unions have a less obvious role than previously. A designer who, working on the basis of ideas of Participatory Design, wants to tackle a social theme like the organization of labor together with a specific group will find it less easy to arrive at an obvious contact point. The designer will probably first have to gather a coalition of various actors around the theme. Different actors will need to feel that the theme speaks to them, that they can identify with

it, and that they have the idea that their contribution can lead to results (see also Huybrechts et al. 2018).

Professionals often play a connecting role in these processes as initiator and organizer in the role of "community orchestrator" (Balestrini et al. 2017) or "network weaver" (Webb et al. 2019). A number of architects and city makers in the Netherlands used the term "urban curator" (Beer et al. 2015) for that, i.e., professionals who settled in an area as "outsiders" in traditional development trajectories so that they could become part of the local community and, together with that community, explore the potential to shape that development in a communal way. Their role often goes beyond just getting the coalition together; they also play a role in making relations between the coalition and other collectives or institutions like governments that can confirm the desires or insights of the coalition via regulations, subsidies, or making resources available. Liesbeth Huybrechts speaks in this context of "institutioning," i.e., the various ways in which collectives attempt to exercise influence on the functioning of existing institutions (Huybrechts et al. 2017).

4.4 The Limitations of Design

The developments in the design disciplines and approaches described above show that in recent years more attention has been paid to the societal impact of design and the creative industries. In the Netherlands, the creative industry has been a top sector since 2012, that, according to a number of research agendas, can contribute to societal transitions. The new research agenda of ClickNl reads: "The creative industry has, as the director of change and developer of new solutions and interventions, an important role to play in tackling societal challenges." (Rindertsma 2019).

Because of that, much is expected from designers, also from Civic Interaction Designers. Through the design of digital technologies, the designer contributes to ways in which citizens can develop relations with each other around societal themes. In that process, underlying values and possible implications of new technologies can be charted and reflected upon. The designer must often play a role in spurring on collectives around specific societal themes and establishing relations with institutional players. I have shown above that there are diverse tools and approaches from the design disciplines available from which designers can draw in carrying out these tasks. It is our research group's ambition to contribute to the further development of this.

Nevertheless, some modesty is also fitting here. As stated, much is expected from the design disciplines. The energy transition, the survival of our democratic institutions and practices, "wicked problems," such as climate change or poverty and loneliness: sometimes, it seems as if all of this can be resolved with the magical methods of design thinking. This carries the risk of depoliticization: instead of seeing a problem as a fundamental political problem in which various interests and moral views clash with each other, such a societal issue can be presented as a design problem that can be solved with a bit of creativity by a pile of post-its.

Much is expected from the design disciplines. The energy transition, the survival of our democratic institutions and practices, "wicked problems," such as climate change or poverty and loneliness: sometimes, it seems as if all of this can be resolved with the magical methods of design thinking.

Design can certainly play an important role in addressing societal challenges such as the energy transition. It can contribute to the development of new energy-neutral products and materials and explore new ways of social organization in which citizens can collaborate with each other in energy co-ops. Through the design of interfaces, behavior can be guided, and by imagining futures, new directions become conceivable and even embraced as desirable.

At the same time, the ultimate success of many of these contributions will stand or fall with political dedication. An economy can only be designed as truly circular if legislation and regulations and possible subsidies support this and if politicians can resist the often powerful lobbies of established interests.

Moreover, design does not automatically make a positive contribution to societal developments. The rise of digital platforms or decentralized cryptocurrencies can disrupt existing institutional processes in a short time. Fake news, conspiracy theories, criminal money flows that, thanks to Bitcoin, fall outside of supervision by inspection authorities are just as much the result of design as online platforms for citizen participation are. An appeal to the societal responsibility and professional norms of designers is a good beginning to foresee and prevent such outcomes. Design can also contribute to addressing these problems by exploring and imagining possible negative scenarios. But politics should again play a crucial role here by regulating the introduction of new technologies and their business models.

It is in that context of interaction between politics, design, and society that our research group wishes to contribute to research into the design of new technologies in public life. On the basis of the above-mentioned research traditions, we aim to contribute to the exploration, design, and critique of new products, services, and interfaces for public life. We will look at emerging roles for citizens and professionals, new institutional forms, and societal relations that arise to organize, via interactive technologies, coalitions around societal missions. And by imagining both positive and negative scenarios using approaches from a humanistic HCI and the humanities themselves, we also spur on the wider debate on the technologization of society from a public values perspective.

5 Our Approach and Research Program

I described above the most important perspectives, issues, and sources of inspiration of the research group Civic Interaction Design. It is now time to take up the How and What questions. How will the research group contribute to research into the role of digital technologies in public life in the network society? And what kind of research project do we plan to develop?

To begin with the How question: in our research into the above themes, the research group will make as much use as possible of a Research through Design (RtD) approach. This approach is described by Stappers and Giaccardi (2011) as "studies in which knowledge is generated on a phenomenon by conducting a design action, drawing in support knowledge from different disciplines, and reflecting on both the design action and an evaluation of the design result in practice." Such an approach, Zimmerman et al. argued (2010), is very well-suited for the formation of "nascent theory" and the exploration of problems and practices that are new, not completely developed yet, or are characterized by a quickly developing dynamic. Zimmerman et al. (2007) also argue that RtD offers good possibilities for exploring "pre-patterns" – an early version of design elements and concepts for technologies and applications that are still being developed. Zimmerman, Stolterman, and Forlizzi (2010) also argue that RtD is a good approach in particular for "messy situations with unclear or even conflicting agendas" and research that is directed at the future. By designing prototypes in iterative ways for products, services, or otherwise – the authors themselves speak of artifacts – and reflecting on them, the research group can explore and study potential futures, as well as the ways these products, services, and experiences can take shape in these futures.

In our projects, we do not focus on a single technology or a specific impact area within the broader field of Civic Interaction Design. We work in and with various technologies, from Virtual Reality and Games to the Internet of Things and the decentralized databases of Distributed Ledger Technologies.

We will be guided by themes and technologies that societal developments or research agendas show to be urgent and we plan to explore these in collaboration with educational and societal partners. The themes of digitalization, diversity and inclusivity, sustainability, and democracy will be central in this research.

Three types of research are intertwined here: Form and experiment; Context and transformation; and Power, possibilities, and imaginaries. This division is based on a report by the Netherlands Council for Culture (Raad voor Cultuur 2010), supplemented by the value perspective that plays

an important role in our research. This is also partly inspired by approaches from value sensitive design (Friedman & Hendry 2019).

In the Form and experiment research, we will look at the (im)possibilities of new technologies and media. How do new technologies work? How can we shape them? How can we use them to tell stories, establish relations, or use them in other forms of societal interaction and public life?

In the Context and transformation research, we study the application of technologies in specific empirical situations. In this approach, the research looks more broadly at the role of technologies in public life and its societal relations, the roles of the various players, the business and governance models and the possible new institutional forms that arise. Finally, the research into Power, possibilities, and imaginaries explores the desirability of possible futures as a consequence of the development of new technologies. Each of the three perspectives has its own methods, research traditions, and communities of practice. Nevertheless, many of our projects also have a combined approach in which the three perspectives overlap. That obtains partly for the projects discussed below in one of the three approaches.

5.1 Form and Experiment

The various design approaches found in the broad field of Human Computer Interaction are at the core of many projects in the research group Civic Interaction Design. We are curious about the (technological) possibilities of new technologies for the representation of societal themes and the public debate, for the engagement and organization of citizens around societal themes, and for the ways in which they can be designed to shape interaction between citizens and institutions. Civic Interaction Design thus begins with the exploration and mastery of new media and technologies. How do they work? And how can designers work with them? Together with students and professionals, we explore the possibilities and limitations of new technologies for various societal processes.

Civic Interaction Design thus begins with the exploration and mastery of new media and technologies.

Part of our research in recent years has been of this kind. In various projects in the area of Virtual Reality, Mirjam Vosmeer researched the language in which stories could be told in this new medium. Gabriele Ferri, Angella Mackey, Karel Millenaar, Dolinde van Beek , along with Tara Karpinski and Michel van Dartel from Avans University of Applied Sciences and Inte Gloerich from the Institute of Network Cultures and partners Metabolic,

VR for Diversity

Researcher: Mirjam Vosmeer

Partners: Utrecht School of the Arts, Vrije Universiteit Amsterdam, WeMakeVR, IJsfontein, &Samhoud Media, UC 360, The Virtual Dutchmen, Submarine Channel; VR Days Europe

Involvement of Education: Digital Society School, Master Digital Design, Minor Immersive Environments

Virtual Reality is still not commonly found in living rooms, but museums and major festivals have been showing a growing interest in this technology. Such institutions are often interested in complex interactive VR installations with a clear message, for VR appears to have the ability par excellence to offer viewers new perspectives on various topics. In October 2021, the RAAK MKB project VR for Diversity was started, a continuation of previous research projects around storytelling for VR in this research group. Together with knowledge and industry partners, we are investigating how interaction design for virtual reality can optimize the persuasive power of the medium and offer the viewer a new perspective on the theme of diversity.

Space & Matter, Stipo, Spectral, and Enki Energy, research the possibilities of decentralized databases like blockchain for organizing "resource communities," groups of people who collaborate with each other in jointly producing and managing resources like energy, mobility, and housing. How can such communities make use of blockchain to keep track of the use and contributions by those involved?

Other researchers look at the development of various digital design tools. For example, the Prototyping Tool for Card Game Design project by Anders Bouwer and Riemer van Rozen explored how designers can develop a card game quickly and handily. That can be applicable in, for instance, design workshops in which stakeholders have to discuss the desirability of specific developments via a card game in which various scenarios can be explored.

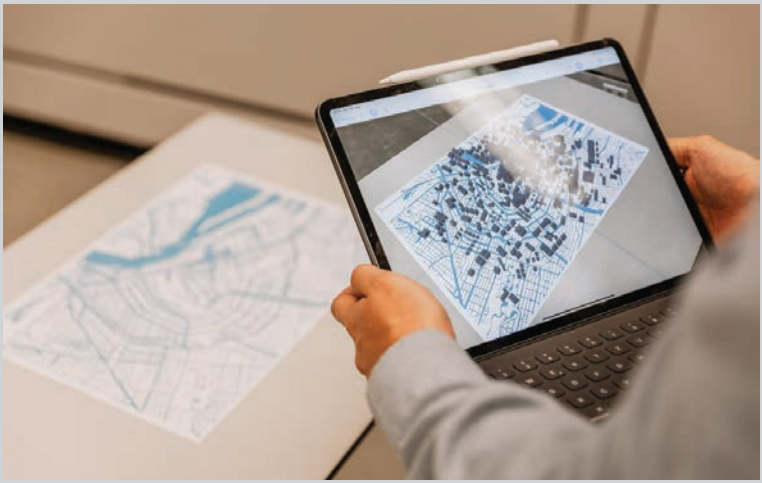
In addition to developments in the digital domain, we also look here at the blending of digital and physical worlds, and the rise of hybrid public spaces. With Frank Suurenbroek and Ivan Nio of the research group Spatial Urban Transformation, we explored how digital media installations can play a role in the activation of public spaces by experimenting on the Arena Boulevard in Amsterdam Zuidoost. And in various projects, with an international coalition of designers, researchers, and cultural institutions, Gabriele Ferri, Ben Schouten, and Karel Millenaar researched the role of urban games, in collaboration with partners such as The Beach and Diana Krabbendam and Play the City and Ekim Tan. How can the design of playful interventions make public spaces more interesting and lead to the emergence of new relations between people?

A Look Ahead

In the coming years, we will continue this line. In her new VR for Diversity project, Mirjam Vosmeer is researching how a story or experience in virtual reality can be told and designed that can give rise to reflection on a theme like diversity. Together with Indira van 't Klooster from the Architecture Centre of Amsterdam and researchers from the Centre of Expertise Urban Governance and Social Innovation, Pamela Nelson and Katy Barnard with students from Communication and Media Design (CMD) and the Master program in Digital Design, explore how data visualization and projection mapping can be utilized to spur debate on the future of the city around city models.

Together with again Frank Suurenbroek and a large group of societal partners, design agencies, and international research partners, we have just started a study of the design of public spaces in the Covid era. Researchers Giulia Gualtieri and Boudewijn Boon are searching for design guidelines and a framework by which the design of public spaces can contribute to making

4D City Making



Researchers: Katy Barnard, Pamela Nelson, Martijn de Waal, Gabriele Ferri.

Partners: Research group Bouwtransformatie, UGSI Programma Inclusief Bouwende Stad, AMSIB program line MAPPING IMAGINARIES, Architecture Centre Amsterdam, Amsterdam Public Library.

Involvement of Education: Master Digital Design, CMD, Learning Community Storytelling.

City models have served already for decades as a spectacular and attractive medium for imagining the future of the city. Think, for example, of the Futurama exhibition at the World Exhibition in New York in which General Motors presented a future New York full of highways and overpasses as a futuristic Walhalla. The addition of digital media like projection mapping and augmented reality makes it possible to imagine urban developments in an even more dynamic and personalized way. Together with students from CMD and the Master's program in Digital Design, and the Architecture Centre of Amsterdam, the 4D City Making project explores how these technologies can be designed in such a way that they turn city models into "conversation pieces" that makes urban developments understandable for a large public and spur discussion about the future of the city.

neighborhoods more resilient by, for example, strengthening social relations and making use of sustainable materials. With the European Connecting Cinemas, we explore new ways in which interactive installations can be used to reinforce the cultural experience of going to the movie theater.

What these studies all have in common is that we are searching for the language or grammar of new technologies. We explore elements and conceptual approaches by which a new technology can be utilized and designed in public life. We do that together with students and partners both in the lab at the university and in *living labs* on location.

5.2 Context and Transformation

Context and transformation research is directed at the implementation of new technologies in specific contexts and situations. Context research looks at what that means concretely. How do new societal relations emerge? How does the nature of that relation change? How do relations with external actors and institutions change? Transformation research extends those questions and investigates how such applications can be scaled or yield a longer lasting impact. What kind of business model, governance structures, roles, and relationships are necessary for that?

In this type of research, we will focus on what we above called *dramaturgies*: the design of settings in space and the time in which collectives, communities, or publics can form around themes of societal importance and can also act. Here we look not only at new forms of interaction but also at the roles of the various actors. Our leading questions are inspired by Gordon and Mugar (2020) and De Lange and De Waal (2013). Gordon and Mugar state that civic design concerns the way in which civilians are offered possibilities to interact with each other, form alliances, state shared interests, and on that basis are able to deal with matters of public concern. In a similar way, De Waal and De Lange asked how urban dwellers are involved in publics around communal themes or issues and what perspective for action do they find here.

Context and transformation research is directed at the implementation of new technologies in specific contexts and situations.

The project described above, *The Hackable City*, is an example of such a study. Together with Michiel de Lange, Matthijs Bouw, and Froukje van de Klundert from One Architecture and with Cristina Ampatzidou and Tara Karpinski from the University of Amsterdam, we followed a number of

Smart Technologies, Empowering Citizens

Partners: TUE/e, HVA, Philips, KPN, IJSFONTEIN, Play the City, TransformCity, One Architecture.

Involvement of Education: Master Digital Design

Researchers: Ben Schouten, Gwen Klerks, Silvia Cazacu, Nicolai Brodersen Hansen, Martijn de Waal

STEC is a four-year research project financed by the Netherlands Organization for Scientific Research (NWO) in which the Faculty of Industrial Design (TU/e) and the research group Civic Interaction Design and six partners from the working field are collaborating. With STEC, we research the role of platforms, new media, and smart technologies as the incentives for agency, inclusion and citizens' participation. In this project, we highlight the perspective of citizens who wants to have a voice. We focus on the strongly felt need for change and the role of local communities, and the interactions between institutions and citizens in which data, values, and meaning can be shared in order to engage in action.

collectives of city makers in order to study dramaturgies in which inhabitants, designers, architects, developers, and other actors collaborate with the municipality in order to develop an area working out of public values.

In the *Straatwaarden* (Street values) study, together with the Erfgoedlab of the Reinwardt Academy and researchers Riemer Knoop, Nancy van Asseldonk, and Michiel Schwarz, we similarly explored how traditional heritage institutions can use heritage to inspire societal processes and, conversely, how "city makers" can use heritage to organize publics around the themes they have put on the agenda. We looked at, for example, the former industry area de Binckhorst in The Hague, in which the self-appointed urban curator Sabrina Lindeman tried to develop the area with local actors into a live-work area. We also descended on Katendrecht, where the Verhalenhuis Belvédère offers residents a stage where they can share stories with each other, using the dramaturgies developed by the initiators. In the Smart Technologies Empowering Citizens (STEC) project, together with Ben Schouten, Tilde Bekker, Nicolai Brodersen Hansen, and Gwen Klerks from Eindhoven University of Technology, we look into ways in which technology can be used in a number of diverse civic initiatives.

In the above cases, we explore dramaturgies that offer communities and collectives agency and specifically look at the role of digital media in that process. In other projects in context and transformation research, the starting point is found in institutions like local governments that are searching for new ways to give shape to their relations with citizens and citizen collectives. With – among others – Patrick Spigt, Bas de Boer, and Evelien Wamelink from the city of Haarlem and Olina Terzi from the Digital Society School, we worked on the exploration of Government as Platform as a new management philosophy and as a set of design guidelines for setting up government services and administrative processes. How can the government interact in a new way with citizens by organizing itself on the basis of a "platform philosophy"? That means that the government provides services to citizens on the basis of a service-design idea in an integrated fashion and can also make a link to societal initiatives in that. Supplementing that, the government also facilitates – departing from a perspective of "networked governance" – initiatives from communities and business life. Here it is important that the technology which is developed complies with public values that are related to the democratic process. And it is also important that the attendant software and technological infrastructure are developed as open source and in an agile way so that various actors can contribute to the development of new services and technologies. In this project we developed a prototype, looked ahead to

Digital Prototyping Tool for Card Game Design

Researchers: Anders Bouwer, Riemer van Rozen.

Partners: CodeGlue (Rotterdam) FourceLabs (Oss).

Involvement of Education: Vocational Education Program ICT

In het DGA Gaming FieldLab project, called “A Digital Prototyping Tool for Card Game Design,” research is being carried out on digital tools for the prototypes of card games, by which, for example, variations of traditional card games can be created and tried out by changing the rules during the game. Entirely new “card decks” can also be designed. These tools are being developed in collaboration with the Dutch game companies FourceLabs and Codeglue in case studies in which they work on new games.

the consequences of implementation, and contributed to the development of a new view of how the government can function in a network society.

A Look Ahead

In the coming years we will expand on this research approach. On the basis of the Form and experiment research project described above into blockchain and resource communities, we are setting up a follow-up study that will put the lessons learned into practice by developing elements of a digital management platform for a concrete resource community. For the Government as Platform project as well, we have set up a follow-up study with the research group Responsible Technology and the Learning Community Responsible Software Development. With the Chief Technology Office of Amsterdam, the University of Delft, and the research institute AMS, we are also planning to set up a project that should make the effect of algorithms in public space comprehensible to citizens.

5.3 Power, Possibilities, and Imaginaries

A third approach within the research group is directed at the imagination of possible futures that address the role of new technologies in society. In this third approach, we also assess the public values that are at stake in the introduction of new technologies.

The introduction of new technologies and their implications is a complex process in which various actors play a role. Universities and the research and development departments of commercial businesses introduce new products, governments regulate what is and is not permitted, and citizens and consumers often use technologies in very different ways than those for which they were designed. In *A Brief History of the Future of Urban Computing and Locative Media*, Anne Galloway (2008) explains that expectations and "imaginaries" play an important role in this process. These imaginations of new technologies, both in the positive and in the negative sense, are performative, i.e., investors, regulating agencies, governments and citizens and consumers are led partly by the stories and images circulating about the possible application of technology. As described in the work of Flichy (1999), these visions are also referred to as *technological imaginaries*. These imaginaries are of course also part of a political game. By means of stories and imaginaries, various actors involved in the introduction of new technologies attempt to propagate and to legitimize their ideas.

CoReUs: Cocreating Responsive Urban Spaces

Researchers: Frank Suurenbroek, Ivan Nio, Martijn de Waal, Gabriele Ferri.

Partners: among others, Ijsfontein, Info.nl, Space & Matter, IAA Stedenbouw en Landschap; AKKA architects, ArenA Boulvard, Ax710 in collaboration with NP3

Involvement of Education: CMD

With the help of interactive technologies, a responsive public space adapts to users and situations. The quality of a place as public domain could be reinforced by the application of these technologies. However, the integration of responsive technologies into spatial design is still in its infancy. What precisely are the possibilities of responsive technologies to contribute to the strengthening of public spaces from the perspective of spatial design? The research project COREUS investigated those questions by means of a research through design-trajectory, in collaboration with various actors on and near the ArenA Boulevard in Amsterdam.

Such imaginaries, Potjer and Hajer argue, can also play an important role in the search for solutions to societal missions, such as, for example, energy transition. "The Urban Agenda," they write, "needs imaginative experiments; experiments that do not just test new technologies and solutions, but create new visions for the city and give people a sense of what the future city could be like" (Potjer en Hajer 2017).

Building upon the traditions of Humanistic HCI and Speculative Design, our research group wants to contribute to the exploration of the implications of new technologies and their consequences for the social order. DiSalvo, Jenkins, and Lodato (2016) speak in that connection of speculative civics. By designing speculative and fictive prototypes, they attempt to spur discussions on the use of new technologies in society and to make specific societal constellations conceivable.

Tanenbaum (2014) sees a number of important functions for such an approach, two of which are of importance here. First, it is a way of making futures conceivable where we look not only at the technological aspects but also explore their ethics, underlying values, power relations, and social consequences. Second, such a narrative can have the effect of raising issues. Speculative projects can show the possible consequences – positive and negative – of new technologies to governments, citizen collectives, or businesses. This makes certain futures conceivable and can thus open up a perspective for action to stimulate such futures or to prevent them from becoming reality. Speculation, Stuart Reeves (2012) summarizes, can help us to get a grasp on the ways in which "socio-technical environments will develop, what new ones will emerge, enabling us to reason about *what* to design, what not to design and how to design."

An example of this approach is the speculative workshop on Civic Blockchain applications that we organized with Inte Gloerich from the Institute of Network Cultures and with international partners John Vines, Chris Elsden, and Anne Spaa of Northumbria University (Elsden et al. 2019). On the basis of that workshop, we investigated the impact of distributed databases, smart contracts, and algorithms for power relations in the city. Instead of *The City as a Service* – a view that emphasizes the development of consumer services – we introduced *The City as a License*. In that scenario, the city consists of a collection of services that grant "licenses" to urban dwellers on a personalized basis: for parking, for the use of space, or for gaining access to urban resources. While *The City as a Service* proposes scenarios in which urban dwellers from the creative class can conveniently make use of taxi services, can work where they want, and order designer coffee whenever they want,

Circulate: Design Thinking for the Circular Economy

Researchers: Gabriele Ferri, Wouter Meys, Dolinde van Beek, Angella Mackey, Karel Millenaar, Nazli Cila, Martijn de Waal, Tara Karpinski, Inte Gloerich.

Partners: Metabolic; Enki Energy; Café de Ceuvel; Spectral; Space & Matter; Stipo; One Architecture; Crowdbuilding.

Involvement of Education: Master Digital Design, CMD

The Circulate-project researches the design of digital platforms for resource communities. These are groups of citizens that produce and distribute resources. How can technologies like blockchain and digital platforms be designed in such a way that they invite participation in a circular economy while also reinforcing social capital? In the Circulate project, researchers looked at the underlying values that are of importance for communities, and how they can be articulated and operationalized into the design process.

The City as a License poses questions as to who precisely gains access to those services, who is excluded, and who determines that.

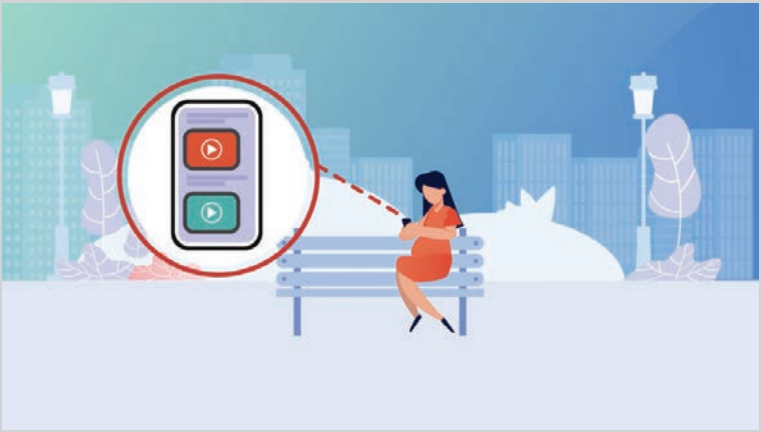
For our research project *Circulate*, guest researcher Anna Brynskov made the speculative short fictional movie *Alexandra* in which a personalized digital assistant plays a strongly regulative role in managing a "friendship contract" between two housemates. Based on agreements previously made, Alexandra offers the housemates access to provisions in the household, such as electricity. But she can also withdraw these privileges if she concludes that the friends do not keep to their agreements. The objective of the movie is to provoke a discussion about the role of algorithms in social and economic relations.

Another example in this category is the project *Geolocalized Storytelling and Futuring* by Gabriele Ferri and Genevieve Korte. Here the researchers explored a new method of using an app to get citizens involved in discussions on the future of the city.

Under the category of Power, possibilities, and imaginaries, we also include the critical and conceptual explorations of new technologies in relation to public values, as in the tradition of value sensitive design, Humanistic HCI, and the humanities, or Science and Technology Studies. We do this by, among other things, literature studies and engaging in design criticism by critically examining existing artifacts and expectations and promises. This approach came to the fore in a number of other projects. In the project *The Platform Society* – a collaborative work with José van Dijck and Thomas Poell from the University of Amsterdam – we analyzed the mechanisms of digital platforms and described how the underlying business models, and mechanisms of selections and personalization in various sectors can undermine public values. With this publication, we targeted not only fellow researchers but also explicitly policy makers.

In the project *Smart Cities? Public Code!* we worked closely with Boris van Hoytema and Ben Cerveny to explore what values public software – software that is used by governments – has to meet in a democratic society. If algorithms and digital platforms are playing an increasingly important role in administrative processes, in a democratic society it is then necessary for these processes to be transparent and accountable. The result of this study was the Standard for Public Code that can be used in the development of future software (Cerveny et al. 2019).

Government as Platform



Researchers: Martijn de Waal, Olina Terzi

Partners: City of Haarlem

Involvement of Education: Digital Society School

The project Government as Platform explores new ways in which governments can organize their services for citizens and businesses through the development of open, digital platforms and online services. The project contributed to the development of a vision on how the government can best be organized in a platform society.

A Look Ahead

In the coming years, the research group will continue to do this kind of research. At this time we are working, for example, with the Chief Technology Office of Amsterdam, health insurer Zilveren Kruis, and our colleagues at the research group Digital Life on a speculative project that explores the impact of platformization on the future landscape of care and health services. What could platformization mean for public values like accessibility, affordability, quality, and privacy?

The three approaches of Form and experiment, Context and transformation, and Power, possibilities, and imaginaries obviously overlap, both within research projects and between them. The new technologies that we explore in the Form and experiment research can be implemented in a specific context in a subsequent Context and transformation-research trajectory. In turn, the images of the future that we produce in the Power, possibilities, and imaginaries approach inform the two other perspectives. Whereas in turn the research done from a Context and transformation approach may result in imaginaries and discussions that feed into Power, possibilities, and imaginaries approaches.

The three approaches of Form and experiment, Context and transformation, and Power, possibilities, and imaginaries obviously overlap, both within research projects and between them.

5.4 Connection between Society, Teaching, and Research

The discussions so far have demonstrated that Civic Interaction Design is a very interdisciplinary field. Insights and methods from the design disciplines are combined with those from the humanities and the social sciences. Technological developments are linked to social innovation, and bottom-up initiatives and social or technological experiments are connected to larger transitions and themes, such as energy transition and the safeguarding of democratic values.

Various actors are constantly involved in our research projects: governments, cultural institutions, media organizations, project developers, architectural and design agencies, and other players from the creative industry, civil society and various social collectives. Almost all our projects are set up with various partners, both from the research world and society.

Trust in Play: European School for Urban Game Designers

Researchers: Gabriele Ferri, Martijn de Waal.

Partners: Goethe Institute (Athens), Technopolis, EdgeRyders, Innovathens, City of Athens, Resilient Athens, The Beach / Garage Notweg

Involvement of Education: Digital Society School

Trust in Play is a capacity-building project in which young designers from various disciplines were engaged for a year in developing projects in the area of urban game design. Urban games are playful interventions in public space and have increased in popularity in recent years. With this project, the research group also contributes to the building of a new design discipline.

The research group Civic Interaction Design contributes to these coalitions with its expertise in the design of digital media and technologies and their entanglement in social processes. In doing so, we are looking for collaborations with other partners within and outside the Amsterdam University of Applied Sciences that can contribute domain-specific knowledge, for example in the area of urban development, administration, the circular economy, or environmental psychology. With them, we explore the possibilities and limitations of the ways in which people can shape public life using new technologies, from a perspective of public values.

By combining research and education around these themes, we want to contribute to the exploration and solution of social issues and to innovation in professional practice. The challenges and societal missions are complex, and we can explore them only together with professionals and social initiatives. They contribute their current and situated practical knowledge, and together with them, we explore the possibilities and significance of new technologies for social organization. In addition to the development of various prototypes in joint research projects, we plan to do that in exploratory workshops and design sprints in which (paper) prototypes are developed within a short time so that a preliminary exploration of opportunities and challenges can be researched within a short period.

Collaboration with Education

We would like to collaborate with the education programs in our institution in a similar way, and often involve lecturers and students in our projects. Together, we explore the ways in which designers can deploy interactive media and technologies. We are also actively involved in the development of minors and other elements of the curriculum. Under Ben Schouten's supervision, the research group was one of the initiators of setting up the Master program in Digital Design, which we still work with intensively. The new academic director Gabriele Ferri is also affiliated with the research group as a researcher. Mirjam Vosmeer plays an important role in the connection with education by, among other things, the CMD program where she is also one of the initiators of the new minor Immersive Environments. Lecturer and PhD candidate Marije ten Brink is one of the organizers of the minor Designing User Research. Anders Bouwer, as Riemer van Rozen did previously, plays an important role in the link to the education program of HBO-ICT. Almost all researchers in the research group are also instructors and lecturers in the faculty's educational programs.

In addition, we also play an active role in different learning communities in which instructors, researchers, students, and professionals meet to exchange knowledge and to set up new networks and projects. Together with

From Prevention to Resilience: The Design of Public Spaces in Times of Pandemics.

Researchers: Gabriele Ferri, Giulia Gualtieri, Frank Suurenbroek, Gideon Spanjar, Martijn de Waal, Boudewijn Boon.

Partners: City Space Architecture, UNStudio, Pakhuis de Zwijger, The Beach, PBL Netherlands Environmental Assessment Agency.

Involvement of Education: Master Digital Design

In the project From Prevention to Resilience and together with the research group Spatial Urban Transformation and various design studios, the research group Civic Interaction Design researches the use of public spaces in the Corona era. We explore how social and ecological resilience can be reinforced on the neighborhood level with design interventions in public space.

Marjolijn Ruyg and the learning community Urban Interaction Design, we want to deepen our knowledge in the area of media architecture and other technologies that can influence the experience of public spaces in the city. Here we see a new professional field emerging in which interaction designers, architects, and city planners together give shape to the development of the city. How do we educate these new types of designers? What competences do these professionals need to have? With the learning community Storytelling, under the leadership of Silvana Berends-Pavlovic, we look at the role of stories in social innovation and societal transitions. How can narratives be employed in what we called above dramaturgies for civic interaction? And with the learning community Critical Making and Research through Design, led by Loes Bogers, we look at the various ways in which practices of making and design methods can be used for research and in teaching. We hope to be able to give even more depth to our interest in mediated experiences in the form of immersive, hybrid, augmented, and virtual environments in a new learning community that is still to be set up.

A final important role of the research group is the professionalization of lecturers. Lecturers can for a time deepen their research skills and knowledge by conducting research in the research group by, for example, pursuing a doctorate in the field. At this moment, Tamara Pinos Cisneros, with her Toys-4Therapy project researches the use of smart toys for advancing medical compliance among children with cerebral palsy. In his project *Reviving Political Unity: Online Platforms and Democratic Deliberation*, Wouter Janssen is researching the relation between various ways of moderating online platforms and the quality of the deliberative debate on these platforms. In *Digital Shared Photo Elicitation*, Marije ten Brink investigates ways in which photography can be used to promote reflective learning.

Output

Our output thus consists of different types of knowledge and know-how. The prototypes that we develop in the various Research through Design projects are themselves a form of embodied knowledge that make developments and possibilities comprehensible. These are further documented in order to make the developed knowledge accessible for professionals. We write white papers, draft a design canvas that makes a specific design process understandable, publish annotated portfolios in which we explain a design rationale of a prototype by zooming in on specific elements of the artifact. In addition, we develop design or policy guidelines as well as vocabulary and grammars that can clarify, explain, and give further shape to developments in the area of media technologies like virtual reality, digital platforms, or blockchain. In videos, essays,

and books we publish broader reflections on the developments concerning civic interaction and public values in a platform society. We transfer knowledge in lectures, workshops, and capacity-building trajectories directed at professionals. In addition, we are of course part of an international academic community. We publish and present papers at academic conferences, organize academic workshops and training schools, contribute to journals and edited volumes, and organize academic conferences.

A good example of how we attempt to establish connections between all those worlds is the Media Architecture Biennale that we are organizing with Frank Suurenbroek from the Faculty of Technology and Michiel de Lange and Nanna Verhoeff from Utrecht University for the summer of 2021. After editions in, among others, Vienna, Aarhus, Sydney, and Beijing, the Biennale is now taking place in the Netherlands. Designers, planners, interaction designers, policy makers, artists, and researchers will meet for a week to display projects and to exchange ideas about the various ways in which the design of media technologies play a role in the public spaces of the city. Initially, this primarily concerned media that was immediately visible: the large screens, illuminated advertising, and often spectacular art installations on façades and squares. Increasingly, however, a broader debate has arisen on the media technologies that are not immediately visible but also influence urban life, from the algorithms of the smart city to the platforms of smart citizens. How can the design of media in the city, so reads one of the central questions of the Media Architecture Biennale, contribute to active public spaces, meaningful social relations, and a sustainable society with a strong democratic foundation?

Conclusion

More than a decade ago, in a catalogue of an exhibition that she oversaw as curator in the Museum of Modern Art in New York, Paola Antonelli defined the ability of design to teach people to cope with change as one of its most important tasks. "Designers stand between revolutions and everyday life.... Designers have the ability to grasp momentous changes in technology, science and social mores and convert them into objects and ideas that people can understand and use" (Antonelli 2008).

I explained above that the future of the network society can indeed be seen as a "momentous change" that needs interpretation. The rise of digital media technologies coheres with the rise of new types of public space, new forms of social organization, changing views of citizenship and shifting power relations between governments, markets, tech companies, and social initiatives. How can we give shape in such a network society to public life from a perspective of public values?

I introduced Civic Interaction Design as an approach by means of which we could look for an answer to that question. Civic Interaction Designers can introduce new objects and ideas by which the "revolution" of the digital transition is converted to the practices of everyday life. They design narrative experiences in virtual reality that give rise to reflection, interactive installations that represent collective experiences in public space, digital market places for energy communities, games for city makers, interactive city models for cultural institutions, or digital platforms where governments communicate with citizens, to mention only a few examples from our own research.

Many of these projects are examples of public spaces in which social themes are imagined, where people can organize themselves around important themes, and where interaction with institutions occurs. Our projects often revolve around the design of dramaturgies: situated, spatial and temporal settings, with narrative arches, playful elements, and roles that form a coherent experience in which meaningful relations can arise. They are also interfaces that mediate (new) societal relations and unlock overlap between various worlds and communities.

These dramaturgies and interfaces call for "ownership" and "care" – various forms of involvement and care for societal themes. In our research into new social forms and design practices, the research group Civic Interaction Design departs from of a perspective of public values and societal missions. Democracy, diversity and inclusion, and sustainability are important themes in our work.

Civic Interaction Design goes beyond the application of new technologies in existing social processes. Civic Interaction Designers experiment with new forms, practices, business models, roles, and social relations that fit the logic of the network society and in doing so start from public values. They also imagine the impact of technologization on society in both positive and negative scenarios with the goals of provoking a broader public debate. What futures do we consider possible? And which are preferable?

More than a decade ago, in a catalogue of an exhibition that she oversaw as curator in the Museum of Modern Art in New York, Paola Antonelli defined the ability of design to teach people to cope with change as one of its most important tasks.

The role of designers changes in this process. They are not just the designers of new products and services but often also play an active role in curating coalitions around social themes. At the same time, citizens and professionals from other fields also play a role in these processes. They are not trained in the traditional way as designers but do contribute to the working field of Civic Interaction Design.

Difficult questions also arise here. How can social fragmentation be prevented? What is the legitimacy of bottom-up collectives? And how to prevent citizens from suddenly being held responsible for all social problems?

A single great visionary project will not – any more than that was possible ten years ago – be able to answer all these questions. What we do need is a "recasting" of social roles, relations, and institutional forms that depart from public values, as well as new forms of collaboration around societal challenges. With our research group, we hope to be able to contribute to these tasks through our design-oriented research.

Acknowledgements

An inaugural lecture is a special genre. In such a lecture, a professor gives his personal vision of the research field that he plans to explore in the coming years. But the emergence of that vision, as well as its realization are collective activities par excellence. Various colleagues in research, education, and the work field were involved the shaping of the vision and plans laid out here, and will continue to be involved in its actualization. I would like to express my gratitude here for these indispensable contributions in the genesis of this lecture, the research group, its research agenda, and the projects that we have carried out in the coming years and will continue to develop in the future.

I would like to thank first of all, the Board of Trustees of the Amsterdam University of Applied Sciences for the trust they have placed in me. In particular, I would like to thank the current and previous deans of the Faculty of Digital Media and Creative Industry, Frank Kresin and Geleyn Meijer for their trust and the many discussions with them on the research field of the group, the direction for our faculty's Center for Applied Research, and the nature of applied research.

Special thanks are due to my predecessor Ben Schouten. In 2014, Ben brought me to the Amsterdam University of Applied Sciences, and in recent years we were in constant discussion on the role of design in the network society and the societal implications of the digital transition. I hope we will be able to continue these discussions for years to come.

I also owe a debt of gratitude to all the great colleagues within the research group. Thank you: Katy Barnard, Dolinde van Beek, Anders Bouwer, Morgana Braga, Marije ten Brink, Tamara Pinos Cisneros, Tamara Dobler, Gabriele Ferri, Giulia Gualtieri, Wouter Janssen, Angella Mackey, Wouter Meys, Karel Millenaar, Pamela Nelson, Riemer van Rozen, and Mirjam Vosmeer. It is a great pleasure to work with you, develop new projects, come to new insights together and to learn from you. Research is also served by active public spaces in which short and more structured, spontaneous, and planned encounters can take place, new relationships can be established, and new insights and ideas emerge. Unfortunately, we have, for unavoidable reasons, seen far too little of each other in the past year, and I look forward to better times in which we will again run into each other and can again exchange ideas in real life.

I would also like to express my gratitude to colleagues in the Center for Applied Research and the education programs at the Faculty of Digital Media and Creative Industry. In the last few years, we have worked together on a vision of research and education for the faculty, and it is my great pleasure

to work this out and bring it to fruition in the coming years as well. Thanks, too, to (former) professors Somaya Ben Allouch, Ben Kröse, Geert Lovink, Troy Nachtigall, Sabine Niederer, Nanda Piersma, Harry van Vliet, Tamara Witschge. Thanks to Valerie Lamontagne as well: your time with us was much too short and we will always miss you.

Particularly intense and pleasant was the collaboration between the research group and the Master's program in Digital Design in, among other things, the various student projects and in jointly organized lectures and meetings. Thanks to Gabriele Ferri and Paul Geurts for the pleasant collaboration, and thanks to all instructors and other staff members for their inspiring discussions. The Digital Society School is another inspiring initiative at our faculty, and it is a special experience to have worked with the staff there and to make plans with, among others, Gijs Gootjes, Marco van Hout, Jurrien Wind, Nick Verouden, Olina Terzi, Anna Aris, Theo Ploeg, and Anneke van Woerden.

I am also indebted to the (former) education managers at the Faculty. Research and teaching are continually merging more and more, and it is a great pleasure to have made and make plans about this with Stephanie Beckers, Eelco Brancart, Andre Neumann, Dirk Reynders, Jord Schaap, Jorien Schreuder, Albert Sikkema, Irene Sparreboom, and Harry Zengerink. The collaboration with the teaching staff and programs has been given a boost by, among other things, learning communities being set up in recent years. Thanks to Marjolijn Ruyg, Loes Bogers, and Silvana Beerends-Pavlovic for the collaboration up until the present.

Moreover, in recent years, it has been and still is very pleasant to work with my colleagues from the Center of Expertise for Creative Innovation and the Center for Applied Research at FDMCI and the various offices that make the work of the research group possible because they look at budgets, draw up personnel contracts, manage websites, organize meetings, engage in joint reflection on policy, organize networks, and oversee data storage. Thanks to Matthijs ten Berge and Dominique van Ratingen, and Joyce Overklift Vaupel Kleyn, Thierry Verburgh, Femke Glas, Maarten Rottschafer, Wouter Groot, Marcel Haarhuis, Wendy Jansen, Timothy de Graaff, Jaak Mulder, Nancy Tuhuteru, and Louise van Tetterode.

It also has been inspiring to work with colleagues from other faculties. With Frank Suurenbroek, Jolanda Tetteroo, and Gideon Spanjar of the Faculty of Technology, we have developed a number of special research projects on the interface of urban design, public space, and digitalization in recent years. In the Smart City Academy, researchers and research groups from various faculties exchange ideas. Thanks to Marije Poel, Stan Majoor,

Andrea Haker, Willem van Winden, Ingrid Wakkee, Inge Oskam, and Guido van Os. The future of applied research lies in the interdisciplinary collaboration around societal missions, and I am very much looking forward to taking up that task with you and also with other research leaders and instructor-researchers in and outside the Amsterdam University of Applied Sciences in new research projects and other forms of collaboration.

In our applied research, we always work with partners from society, from design studios and architecture agencies to technology developers and cultural organizations. New knowledge, insights, and know-how arise in the encounter between theory and practice, between research and the work field, and it was a great pleasure to have worked with so many special, innovative, and enthusiastic businesses, entrepreneurs, societal and cultural organizations, and I look forward to new projects that we will yet develop together. In particular, I would like to thank Klaas Kuitenbrouwer and Het Nieuwe Instituut, Egbert Fransen and all staff at Pakhuis de Zwijger, Liesbeth Jansen from the Marineterrein and Indira van 't Klooster from Arcam for the podium that they have offered to the research group in recent years to share our ideas and insights with the work field and society. In Amsterdam, the Chief Technology Office is an indispensable partner in many of our projects. Thanks to Ger Baron, Aik van Eemeren, Tamas Erkelens, Truke van Boxtel, Jan Duffhues, and Coen Bergman for that. The Chief Science Officer from the city of Amsterdam, Caroline Nevejan, plays an important role as the one initiating contact and connecting people.

There was and is good collaboration with researchers from other knowledge institutions. Already since we, as research assistants, organized a conference on mobile media technologies and urban culture in 2008 called The Mobile City, I have been working with a great deal of pleasure with Michiel de Lange from Utrecht University. The work with José van Dijck and Thomas Poell on the book *The Platform Society* forms an important foundation for my current research. René Boomkens has been an important mentor as, among other things, the promotor of my doctoral dissertation, *The City As Interface*. Particularly vivid and interesting was the collaboration with the Reinwardt Academy in the *Straatwaarden* (street values) research project of the Erfgoedlab. Thanks to Riemer Knoop, Nancy van Asseldonk, and Michiel Schwarz. I would also like to thank Jeroen Boomgaard, Ektor Ntourakos, and Katie Clarke at Arias for their collaboration on, among other things, the Media Architecture Biennale.

In recent years I have also worked with a great deal of pleasure with international colleagues in various European research projects and network actions like the COST programs *Cyberparks* and *From Sharing to Caring* on

hybrid public spaces and the sharing economy. Thanks to Carlos Costa and Gabriela Avram for the invitation and to all participants for the interesting exchange of perspectives. Also thanks to Susa Pop for the particular invitations in and concerning her projects in the area of interactive media art in public space, and thanks to Martin Brynskov for his leading role in the Urban Interaction Design network. Thanks to Dimitris Charitos and Iouliani Theona for involving me in their Hybrid City endeavors. The workshops with colleagues from Northumbria and now Edinburgh University Chris Elsden and John Vines were interesting as well. Thanks also to Eric Gordon for our inspiring conversation on civic media and civic interaction design. I have also worked very intensely in the last two years with the large international community of the Media Architecture Biennale. I thank Gernot Tscherteu and Juan Carvajal of the Media Architecture Institute in Vienna for their trust and the many chairs for their work and camaraderie in making MAB20 a great success in 2021. I would also like to thank my fellow chairs, Frank Suurenbroek, Michiel de Lange, and Nanna Verhoeff, and the major work done by Morgana Braga as the implementer of many of our plans.

This lecture has been created thanks to the astute commentary by a number of readers, and I would like to express my heartfelt thanks to them. Michiel Schwarz (often also with Diana Krabbendam and Riemer Knoop) has been a great discussion partner for years, helping me to sharpen my ideas and contributing to earlier versions with particularly valuable critique. I also would like to thank Frank Kresin, Tamara Witschge, Sabine Niederer, Gabriele Ferri, and Wouter Meys from the Amsterdam University of Applied Sciences for their comments.

Special thanks is due to Egbert Fransen and Dick Rijken who were part of the supervision committee during my tenure track.

Finally, I would like to express my gratitude to my parents and family for all their support in recent years. Thanks to my dear Anna, and to Kees and Kamiel (the best sons ever) for everything.

Sources

I wrote previously on the Deltametropool workshop, forms of collaborative city making, and developments in the area of communities, governments, and the market in publications on *The Hackable City* together with Michiel de Lange, Matthijs Bouw, and Cristina Ampatzidou, as well as in the publication *Klik, Like! Share. Hoe digitale media de publieke ruimte veranderen*.

For discussions on public values I draw from research done for *The Platform Society* that I conducted with Jose van Dijck and Thomas Poell. Dramaturgies and institutioning were previously presented in the research into *The Hackable City* and the publication of *Straatwaarden* (street values) that I wrote with Riemer Knoop and Michiel Schwarz. I wrote earlier on technological and urban imaginaries in *The Ideas and Ideals in Urban Media* and in *De stad als interface*. I described insights on citizenship and smart cities together with Marloes Dignum in *The Citizen in the Smart City: How the Smart City Could Transform Citizenship*. For insights into the third wave of HCI, speculative design, and design fiction, I draw from discussions and jointly written papers and other publications such as those with Gabriele Ferri and the research team of Circulate, including our publication *A Lab of Labs: Methods and Approaches for a Human-Centered Design*. From, among other things, the STEC project, Ben Schouten also made an important contribution here. Along with Frank Suurenbroek and Ivan Nio, I also wrote previously on public space and interactive media in *Responsive Public Spaces: Exploring the Use of Interactive Technology in the Design of Public Spaces* and *Responsive Public Spaces: Five Mechanisms for the Design of Public Space in the Era of Networked Urbanism*.

Images

The cover image is taken from the project Megaphone by Moment Factory. https://momentfactory.com/work/destinations/public-spaces/megaphone). The images illustrating The Hackable City project were taken during the research project, with contributions from Stadslab Buiksloterham, Frank Alsema and Delva Landscape Architects. They have been published previously in our Hackable City-cahiers. The images representing various media-architecture projects have been contributed by various designers and agencies. Domplein is a design by OKRA Landscape Architects / Ben ter Mull (https://www.okra.nl/projecten/domplein/). The Human Beeing project is an initiative from The Constitute (http:// theconstitute.org/human-beeing/).

Tetrabin is a project by Steven Bai, Sam Johson and Martin Tomitsch (http://www.tetrabin.com/). The images illustrating our research projects have originated from these research projects themselves.

For more information about these and all our other projects, see www.civicinteractiondesign.com

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The digital transition has yielded new types of public spaces and new ways in which citizens and governments relate to each other. The research group Civic Interaction Design explores the role of interactive media and digital technologies in these developments. Together with businesses, governments, designers, cultural institutions and students, the research group investigates how the design of interactive experiences, digital platforms, and online services can contribute to public life. How can public values regarding democracy, diversity, and sustainability be embedded in an emerging network or platform society?

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