On agonism and design:
dialogues between theory and practice

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Abstract

Design has the potential to disrupt the status quo, yet disruption inevitably introduces new conflicts. One of the challenges of Social Design is to navigate the social, political and material conflicts that define contemporary lives and find new ways to transform them into creative resources. In addressing that challenge this thesis investigates agonism, a multifaceted theory that explicates conflict and grounds the need for such an investigation in design activism. The political implications, practical considerations and design potentials of agonism are examined in detail, and three core principles of agonism are defined: Identities, Dialogues and Agonistic Space. These principles are elaborated through their relation to intersubjectivity as a fundamental aspect of human experience, its interactional role in identity formation and communication, and its influence on the production and performance of space. A Constructive Design Research methodology is employed that contributes to the understanding agonism through a series of research trajectories and interventions. Design strategies to enact agonism are proposed around game, play and interaction design: Identities can be investigated through Role-Playing, Dialogues can be initiated through Storytelling, and Agonistic Space can be manifested as a Third Place. These strategies are field tested to examine various communities and the conflicts within them. A game intervention Mind the Gap confronts the endemic problem of the gender gap in academic and professional communities of ICT and STEM. A research intervention takes agonistic perspectives to elucidate conflicts of European migration and participatory urban planning in a neighbourhood community in the U.K. A digital intervention applies agonism towards engaging a platform community that has no material form, in the online project of commonfare.net. These interventions experiment with creative inquiry, game and play as design speculations, sketching and constructing playful inerventions that engage participants in agonism, to enact challenges to the status quo and illuminate potential solutions to complex societal issues. The utility and outcomes of the principles and strategies are evaluated with a focus on emergent intersubjectivity through Dialogic Syntax and Critical Discourse Analyses of gameplay, narratives and design artifacts. The main contributions of this thesis are its shift from empathic perspectives to intersubjectivity in design research, and its operationalization of the theory of agonism for Social Design. Secondary contributions include the elaboration of game and play as design speculation that includes critical reflections on their real-world practices, and the artifact Mind the Gap which has evolved from prototype to a co-created, community driven experience that continues to engage people in meaningful dialogues that challenge the status quo of the gender gap.

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Acknowledgments

1 Introduction

Design has the potential to disrupt the status quo (Markussen, 2013), and in contemporary societies there is pressing need to focus that disruption towards social innovation, which by definition is working towards comprehending the real needs of people and societies, and identifying potential solutions (Mulgan, 2006). These are the objectives of a Social Design that follows the principle that people, publics and societies are themselves capable of identifying their own needs, and design should aid in finding solutions to the challenges they face (Hillgren, Seravalli, & Emilson, 2011; Mariani, 2016). What is required to enact this Social Design are tools for citizens to disrupt, and reconfigure the public domain, develop inter-group communications and foster cross-cultural engagement in service of this doctrine (Menendez-Blanco, Bjorn, & De Angeli, 2017). These tools must redress hegemonic power, foster diversity and inclusion, incite collectivity and collaboration, and re-balance relations among stakeholders, all major challenges with no simple solutions (Keshavarz & Maze, 2013). One of the primary activities of design for social innovation is the search for new ways to address the seemingly intractable social, political and environmental challenges of our times. To approach strongly polarizing issues, including the voices of all potential stakeholders, particularly those of marginalized or disenfranchised social groupings, while accommodating those in more powerful positions and those whose perspectives may lie outside the majority is of utmost importance. Yet socially-orientated design studies do not well accommodate voices from the extremes, nor do they sufficiently value dissonance, conflict or non-participation (DiSalvo & Dantec, 2017; Keshavarz & Maze, 2013).

Civic and public design spaces are gradually shifting to address these challenges (Foth, Agudelo, & Palleis, 2013) and where previously attention was on the artifacts and systems being created to address social issues, increasingly design research investigates emergent social interactions, communities of practice and infrastructuring as facilitated through design (Hillgren, et al., 2011; Koskinen, 2016a; Manzini, 2013). Yet the disruption caused by these new movements inevitably creates more conflict and design research must imagine new practices to transform this conflict and empower citizens, stakeholders and participants to challenge the status quo and collaboratively negotiate for change (Koskinen & Hush, 2016). In search of these new practices, design research is revisiting political debates (Teli, De Angeli, & Menéndez-Blanco, 2018) that query how our societies are ordered, and examining the systems that guide and shape intergroup exchanges to effect transformation and empowerment. These political debates are of themselves conflicted, yet arguing between disparate political systems and theories is certainly fertile ground for design (DiSalvo, 2012).

In this framing of the design challenge as conflict, the concept of *agonism* is a recurring theme offered towards re-configuring political discourse and shaping a more equitable politics. Agonism purportedly incites new forms of democratic participation and is often described as a transformational force. It can channel conflict and confront power relations, reduce polarization in public discourse, and transform confrontation into a creative resource (Keshavarz & Maze, 2013; Knops, 2007). This agonism challenges the status quo by highlighting disagreement and dissent, by making visible the imbalances of power and systemic injustice. It defines, or temporarily redefines the space within which conflict manifests (Hillgren, 2013; Knutz, Markussen, Thomsen, & Ammentorp, 2014) and fosters the political processes and participation necessary to social design (Hillgren, et al., 2011; Koskinen, 2016b). However while proponents of agonism describe and debate its potential for transformation, concrete guidelines or instructions to initiate agonistic practices have not emerged from their discourse (Westphal, 2014).

This thesis puts the theory of agonism into practice, and develops strategies to foster agonism through design. It undertakes an investigation of agonism as Design Activism (Markussen, 2013) and demonstrates its potential utility for Social Design. The research begins with an exploration of agonism, in particular its situation in design and political discourse as a critique of liberal democracy (DiSalvo, 2012; Mouffe, 2009). Several constituent principles of agonism are isolated from the political theories then elaborated through game, play and Interaction Design techniques to define three main design strategies. *Identities* are examined through *Role-Play*, *Dialogues* are encouraged through *Storytelling*, and *Agonistic Spaces* are created as the *Third Place*. Accompanying evaluation methods are developed based on concepts of interactional negotiated identity (Bucholtz & Hall, 2005), dialogic approaches to intersubjectivity (Gillespie & Cornish, 2010), and the identification of agonistic space through observation of participant behavior and the imprints of agonistic encounters left in design artifacts.

This operationalization of agonism is achieved through Constructive Design Research (CDR) or Research through Design (RtD) that employs a cyclical process of design and reflection through which theory and practice evolve recursively (Koskinen, Zimmerman, Binder, Redstrom, & Wensveen, 2011). A general framework for the practice of CDR is derived from various design and Human Computer Interaction (HCI) discourses. This framework is reflected in a detailed description of the research trajectories that traces the concretization of theory through design practice. The design strategies that emerged from the research trajectories are then applied in three interventions that examine contentious issues, each in a distinct community. The gender gap is investigated in the academic community of ICT and STEM (Science Technology, Engineering and Mathematics). European migration and the pressures of urban materiality are investigated in an actual neighborhood in Lincoln, UK, and the challenges of addressing and knowing a community without physical presence are investigated on the digital platform commonfare.net.

Each intervention incorporates creative inquiry and design speculation (Auger, 2013; Dunne & Raby, 2013) that is enacted through game, play and Interaction Design modalities. This use of playful engagements to elaborate preferred, potential futures is an emerging games research practice that combines pragmatic CDR techniques and imaginary, fictional and futures-focused creativity similar to Critical Design (Coulton, Burnett, & Gradinar, 2016; Elsden, et al., 2017; Korte & Ferri, 2018; Schouten, Ferri, de Lange, & Millenaar, 2017). Game instances are developed through which participating players imagine and act out possible future states and explore social activist themes. Imaginary games are sketched to shed light on complex situations by engaging the social and cognitive peculiarities of game and play. And future, potential game design research is proposed to elaborate the initial findings of this research. These game design techniques differ in each of their origin communities; each is situated in a particular social, political and material space, and is enacted with different participants, or players. Data and analysis from these games and gameful interactions demonstrate the emergence of agonistic practices, and mark the success of each design strategy in different ways. Used as face-to-face engagements, as research communication tools, or as sketches and prototypes that elaborate potential design futures (Halse, Brandt, Clark, & Binder, 2010), they hint at the potential for agonism and design to transform real-world perspectives through creative inquiry and Speculative Enactment (Elsden, et al., 2017).

2 Research questions

RQ1: What are some of the key principles of agonism?

This research arises from our practices at the borders of Interaction Design and Social Design, the intersection of technology studies and humanities. As the conflicts of our times grow ever more virulent and dramatic, I am motivated to focus the privileges and opportunities afforded by my research career towards discovering, and constructing a better future. In this, the concept of agonism seems to offer some solutions, by embracing conflict, rather than trying to eradicate it. The potential transformation offered by agonism could be fundamental to re-imagining political processes, but also the social, lived experience. To discover how to harness this, the first task is to better understand what is agonism. What do the theorists, historians, scientists and designers say about agonism, and what can be derived from the cacophony of voices that speak on agonism? This first research question, however is not asking simply what is agonism, but what meaningful application can it have as a design form. As such, this is a question about the future, a future form, and this thesis intends to discover, instantiate, critique and present useful insights on agonism that can further inform the practices of Social Design.

RQ2: How can agonism be instantiated in design practice?

Having examined in depth the political theories of agonism and the concept's various implications, a general sense of its utility to Interaction Design and social innovation can be discerned. Yet the challenge remains, how to instantiate these principles into, and through design practices. Design requires specific forms, tools and methods with which to construct the systems and artifacts that embody design principles. Strategies need be developed to initiate agonism and stimulate publics to engage with that making, to extend it with their own intuitions and knowledge. This research question is asking how could design be enacted differently, if agonism were core to its practice. As such, this question is reflexive, and asks also how the principles of agonism can be relevant to design research. How do the lessons learned in uncovering agonism as a design practice apply to the tensions and conflicts inherent in bridging technology studies and the humanities? In the process of answering this question, I am inspired also to query how, if agonism can initiate new forms of design, can it also initiate new forms of research.

RQ3: How can agonism in design be evaluated?

Once some of the principles of agonism have been aligned and strategies devised for their implementation, this agonistic design must be tested, and examined closely if it achieves the balance of tension that the political theory suggests. This question supports, and challenges the answers to the first two questions. It probes if the initial design principles are sound, looking for evidence that agonism has accomplished its promised transformations. And it questions if the design strategies have followed proper trajectories, have participants indeed entered into agonistic encounters. Here the research is focused first on finding out what to look for, then how to look for it, clearly identify and describe it as the successful, and meaningful emergence of agonism.

3 State of the art / related work

The following section describes the state of the art and related work related and is broken down into three main subsections. The first introduces Social Design and conflict, examining the cultural-historical crossovers of democratic participation, design and research. The next section regards agonism and the political underpinnings of the thesis, introducing its etymology and the various arguments that applying it to political theory. This is followed by a challenge to the predominance of empathy-related practices in contemporary design, which subsequently grounds my alternative focus on intersubjectivity and informs the operationalization of agonism while serving as a primary measure for its evaluation. The final section introduces essential aspects of critical reflection in design, its reciprocal role in agonism that led to the eventual transformation of my design practices and research perspectives that is central to this thesis.

3.1 Social Design and conflict

Social Design offers a frame of reference for design that approaches issues of community, neighborhood and social services, attends to marginalized groups or communities and addresses myriad interpersonal, intergroup, and inter-cultural concerns (Mulgan, 2006). It reflects an activist, interventionist approach (Markussen, 2013) and carries forward the original proposal of 'classic' Participatory Design that goes beyond engaging users in a design process to actually intervening in conflict situations by promoting democratic participation (L. Bannon, Bardzell, Bødker, 2018; Björgvinsson, Ehn, & Hillgren, 2010). Social Design correlates with contemporary transformations in HCI which acknowledge the central importance of participation and co-creation together with stakeholders in design, and tend towards social, cultural and technical synthesis through design research (Sengers, Boehner, & Knouf, 2009). Central to this transformation are the re-evaluation of the roles and agency of designers (E. B.-N. Sanders & Stappers, 2008), a renewed focus on the research value of tacit knowledge unique to the practitioner (Gaver, Boucher, Pennington, & Walker, 2004; Valentine, 2011) and increasingly, the incorporation of artistic and creative practices in research (Auger, 2013; Blythe, 2014; Candy, Edmonds, & Ascott, 2011; Gaver, et al., 2004).

HCI and engineering disciplines are in a curious position as research fields in that they examine the state of the world even as they imagine and shape its future state, designing new technologies that in turn, afford new ways of being and communicating, for better or for worse (Light, 2015). As such, the intentions of the design practitioner, and the agendas of research institutions have the potential to exert untoward influence on the future shape of the world. In Social Design this happens explicitly in terms of incorporating social activism, for example in games, urban investigations, and the development of collaboration systems (Flanagan & Nissenbaum, 2007; Markussen, 2013; Menendez-Blanco, Bjorn, & Angeli, 2017). This also happens implicitly, as in the perpetuation of legacy engineering thinking that constrains designers' imagination and construction of potential futures (Auger, Hanna, & Encinas, 2017) or the reification of social psychology concepts in design practices and artifacts (Siegel & Dray, 2019).

As such Social Design cannot only be concerned with the politics of social justice, critically addressing conflicts of inequality and challenging the status quo to shape a more egalitarian future, it must attend to the politics of design participation. In this, a fundamental conflict concerns whose vision of the world

should move forward (Manzini & Rizzo, 2011), if and how dissenting perspectives on the preferred future shapes of things should be adjudicated (Keshavarz & Maze, 2013). The objective of this thesis is the elaboration of new and different ways to organize participation, to think and act collectively, and navigate the conflicts that lie at the heart of Social Design. In design literature and political discourse, one concept in particular has been widely floated as capable of addressing conflict and dissent, re-configuring communication spaces to foster engagement and dialogue, challenging hegemonies and imagining potential futures. That concept is agonism.

3.2 Agonism

The linguistic root of agonism is 'agon' from the Classical Greek /ἀγών/ that has been variously translated as a contest, competition at games, or a gathering. An agon for the ancient Greeks represented conflict that ranged from the existential struggle to get out of bed in the morning, in increasing degrees of complexity, to a public discussion, a game or sporting event, even to much more elaborate agon such as a war between nations (K. E. Carr, 2017). The agon of classical Greek theatre refers to a debate or dialogue between characters representing opposing viewpoints (Britannica, 2008). This structuring of dialogues within performance, and the potential for a play to transpire as a contest is an integral part of Old Comedy (Humphreys, 1887).

In design, agonism is largely presented as relating to conflict, challenging the status quo and examining power relations (Foucault, 1982). This is primarily derived from the use of the term agonism in democratic political discourse and the critique of deliberative democracy (Knops, 2007). Agonism in this sense acknowledges that conflict can never be, nor should be, eliminated from politics (Rancière, 1999) and it proposes a counter to consensus in participatory decision-making: wherein consensus is seen as attempting to eradicate the conflictual nature of everyday life (Rancière, 2004), agonism supposes to embrace conflict and dissensus as creative resources. In this view, agonism is a promising concept in designing for social innovation and indeed is often discussed as a means by which conflict which could potentially derail communication between competing individuals or groups can be tamed or tempered.

Design for social, political and civic issues inevitably encounters issues of hegemonic power and participation and is by nature critical and socio-political. As design is form as well as practice, at the heart of socio-political design is the differentiation between *politics*, that are systems and structures that guide our societies, and the *political*, that is the emotionally charged and contested space of social engagement surrounding politics (Schmitt, 2008). This concept of the political navigates between the rational thought and passionate discourse at the center of any discussion on how our societies are ordered, and how the systems that guide and shape our societies can, and should be re-configured. The design challenge of agonism is therefore to structure participation towards facilitating the formation of open, egalitarian social environments that bridge critical differences and emotional entanglements, within which citizens from across disparate social, economic and political spectrums can collaboratively negotiate for change.

3.2.1 Political agonism

Chantal Mouffe's *The Democratic Paradox* (Mouffe, 2009) is perhaps the most widely cited treatise on agonistic political thought referenced in design literature, and it comprises a series of articles elaborating her hard critique of liberal democracy and her calls for an agonistic pluralism. The idea is that liberalism, with its reliance for example, on market capitalism and universal human rights, is incompatible with democracy, that is true rule by the people (Mouffe, 2009). The inescapable contradiction of liberal democracy is exposed when the popular vote empowers politicians whose intentions run contrary to liberalism. For Mouffe, deliberative democracy is an illusion, as there are always winners and losers in so-called consensus, and democratic politics must be exposed, even embraced as an ever-conflicted mess of competing positions that can never be fully integrated.

In fact, Mouffe's extended debate on agonism and the development of the concept of agonistic pluralism is rarely examined thoroughly when presented in design literature. More easily digested material from pp95-110 in the chapter "*For an Agonistic Model of Democracy*" appears most often, and recent design scholarship often seems to reference other authors' interpretations of the material found in these pages. A handful of concepts now attributed to Mouffe are repeated and recycled, the origins of which she herself points out, often lie elsewhere. *The Democratic Paradox* is but one treatise among many (Deveaux, 1999; Honig, 1992, 1993) that offer a window onto the exceedingly complex discourse on agonism, one that is in fact quite radical and often repudiates valuable and valued concepts of participation, citizen engagement and different modes of democratic thinking (Roskamm, 2015; Yamamoto, 2017). As a whole the literature on agonism must be approached in true agonistic and critical fashion, examining the various authors' perspectives as themselves newly erected hegemonies which need be challenged. Indeed, we may find more value in the dialogue generated around these ideas than in any literal application of agonistic pluralism itself.

Core to Mouffe's agonism is the need in conflict situations for participants to engage each other not as enemies, whose ideas must be overcome and destroyed, but as adversaries, whose ideas one strives to overcome, yet their right to those ideas each contestant accepts on principle. This adversary-not-enemy strategy relates to William E. Conolloy's call for "agonistic respect," an essential framing of confrontation as between equal-others that is necessary for fruitful political discourse (Connolly, 2013), and Carl Schmitt's earlier theory of politics defined by identities of friend and enemy (Schmitt, 2008). This is succinctly related in contemporary human terms in the conceptualization of an 'alien other'(Neuman, 2001). The changes in identity and perspective proposed by agonism aim at an ideal discourse, a state change in communication not to be confused with the Habermasian 'ideal speech situation' with its rules shaped by rationality and whose eventual outcome is consensus (Habermas, 1990; Mouffe, 2000). Rather, an agonistic ideal discourse is one which participants are free and enabled to contribute, act, question and initiate dialogue, to challenge the subject, topic or direction of debate, even question, disrupt, or reinterpret the rules of dialogic engagement (Benhabib, 1992; Mummery, 2016).

Another aspect frequently cited from Mouffe's work is the need for antagonism to be transformed into agonism (Mouffe, 2014). Although this does neatly tie up her treatise's arguments and suggests a means to foster productive debate and problem solving between conflicted participants, it also potentially contradicts the necessary function of antagonism, that is to challenge the status quo (Roskamm, 2015). Clearly a political theory that prioritizes dissent has some fundamental issues, both for and against insisting on moderation or the mediation of debate, and presupposing intended or expected outcomes. That framing or structuring of debate, giving it a form before

engaging publics to interact, itself establishes a hegemony (Rancière, 1999) and disallows the potential creative, disruptive input of agonistic political engagement (McNay, 2014). The central tenet of agonism is continual and consistent challenging of the status quo, the renegotiation of power relations, which ultimately means also challenging agonism itself as an imposed framework. Were a true agonistic democratic practice in fact instantiated, it should also support the continual questioning of the processes and procedures of politics (Schaap, 2016) and necessitate as well the questioning and reinterpretation of the individual rights associated with participation and the need for structure or institutions themselves (Tambakaki, 2011; Westphal, 2014).

Most authors overlook the challenges that a true agonism presents, the imposition of form or framework on democratic discourse, or they attempt to instate some minimal standard, for example one that recognizes freedom and liberty as inalienable rights, without actually defining what these two concepts entail (Westphal, 2014). The reality is, as Mouffe eventually concedes, that "some limits need to be put to the kind of confrontation that is going to be seen as legitimate in the public sphere." (p. 93 *The Democratic Paradox*) and an agonism that allows for the challenge of everything cannot be a productive resource or an alternative to deliberative, consensual democracy. The realities of interpersonal, intergroup and inter-cultural conflicts, the tendency for emotions to overrule reason in political debates, and the ever contentious negotiation between individual and social identities (J. C. Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) are not easily overcome through design. To encourage agonism, theorists point to so-called agonistic spaces, socio-material configurations that can transform conflict into a creative, productive force (Mouffe, 2007). Agonistic spaces can be physical, conceptual, or representative; they are transformative and disruptive, spaces in which power relations can be mitigated, resisted, and where new knowledge is produced (Topinka, 2010). As such, agonistic space can be said to roughly resemble a Foucaultian heterotopia (Foucault & Miskowiec, 1986). Yet the establishment of any space itself initiates new hegemonies, with their own dominant and submissive forces or ideas (Lefebvre, 1974), and therefore an agonistic space itself may only be possible as a transient proxy, ready at all times to be overthrown.

3.2.2 Agonism in design

Approaches to agonism in design fields that offer consolidated ideas that aim to harness the contestation and conflict that shape political and public space (Honig, 1993) have emerged in the field of community planning (Frögård, 2016; Hillgren, et al., 2011), and examinations of public art and spatial practice (Hadjilouca, 2015; Munthe-Kaas, 2015) as well as to lesser extent game and play spaces (Holland & Roudavski, 2016) and design activism (Markussen, 2013). Design research that alludes to agonistic spaces and situations largely identify them after-the-fact, pointing out agonistic potentialities in project outcomes, as opposed to proposing, and then implementing agonistic space as a design strategy. The creation of agonistic space through design interventions is most generally associated with the temporary use or re-purposing of public places that often arise through participatory urban design interventions (Hernberg, Maz, & #233, 2018). Some specific examples are the performative appropriation of public bus spaces through song and music sharing in Sweden (Björgvinsson, Ehn, & Hillgren, 2012) and reshaping hospital infrastructures to redistribute political power between doctors and patients in Denmark (Knutz, et al., 2014). A more abstract approach identifies agonistic space as emergent in observed practices, such as the identification of a digital public sphere facilitated by examining twitter posts and their geolocation tags during protests in Istanbul (Manfredini, Gharaghooshi, & Leardini, 2017).

Perhaps the most overt proponent of agonism in design is Carl Di Salvo, who promotes an interpretation of the utility of spaces of conflict (DiSalvo, 2010), calling it design that accomplishes the work of agonism, Adversarial Design. This however is framed as "a theoretically informed construct for understanding, describing and analyzing a range of objects and practices" (DiSalvo, 2012)(p.20) and mirrors the majority of design writing that discusses agonistic space and agonism, without establishing what is in fact an agonistic practice or how it might be initiated through design. DiSalvo instead co-opts parallel practices of Critical Design (J. Bardzell & Bardzell, 2013; Dunne, 2008) and Design Fiction (Blythe, 2014) as having the potential to initiate agonistic discussion or generate agonistic space. Yet he confines the concept of activism through design as an explicitly political act of a design or designer challenging an authority (Markussen, 2013) with little reflection on concrete measures or techniques through which design could engage actual people, places, spaces and contests of the everyday community.

3.3 Empathy

Agonism is wholly shaped by engagements with others, and in the contested spaces of politics, this means navigating one central issue of humanity, between cooperation and conflict. In attending to social interactions, conflicts between people, inter-group dynamics and contested spaces, contemporary design trends have increasingly focused on empathy. Design scholarship around the turn of the millennium made explicit that designers must develop empathy for their users (E. B.-N. Sanders, 2003; Stephan & Finlay, 1999) in order to understand the experiences, emotions, and needs of people, and to deal with conflict among stakeholders in Participatory Design processes. A set of practices collectively known as Empathic Design emerged (Mattelmäki, Vaajakallio, & Koskinen, 2014), suggesting this closer emotional alignment between designer and user is possible for example through face to face dialogue. Human-Centered Design (IDEO, 2009) and Design Thinking (Gasparini, 2015; Köppen & Meinel, 2015) also contemporaneously embraced empathy within design practices, if not necessarily design strategies. In the emerging frameworks of Co-creation (Prahalad & Ramaswamy, 2004; Rill, 2016; L. Sanders, 2001) a focus on emotional alignment takes this even further, giving way to presencing and other methods of connecting people and generating new forms of shared knowledge (Peschl & Fundneider, 2014) through situated, mediated engagements (Riva & Mantovani, 2014).

However, while it is widely accepted that empathy can be party to the investigation of self-other identities, the encouragement of pro-social behavior and moderation of antisocial tendencies (D. Grynberg & Konrath, 2013b), many design-orientated approaches to empathy are grounded on overly simplistic interpretations of empathy and fail to grasp its complexity (Kouprie & Visser, 2009). Extensive prior research in social sciences and psychology have in fact unearthed diverse, sometimes conflicting perspectives on the implications, required antecedents, measurement and impact of empathy (Cuff, Brown, Taylor, & Howat, 2016; Zhou, Valiente, & Eisenberg, 2003).

From these myriad perspectives it can be summarized that empathy is a matrix shaped, among other factors, by an individual's disposition and the situation or context of an encounter (Belman & Flanagan, 2010; S. K. D. Grynberg, 2013) (Zhou, et al., 2003), a cognitive focus on empathizing (Batson, 2009) and experienced emotions that can be reactive, responding to the situation of another, or parallel, experiencing the perceived emotion of the other (Stephan & Finlay, 1999).

And although empathy is commonly associated with pro-social behavior, evidence suggests that empathy influences behavior in conjunction with other emotions such as *sympathy* (De Vignemont & Singer, 2006) and can give rise to a variety of responses that are not to be confused with empathy, such as *compassion* and *empathic concern* as well as distinctly self-centered responses, for example *pity*, *commiseration*, or *disdain* (B. Carr, 2001; D. Grynberg & Konrath, 2013b). Most importantly empathy can be experienced yet have no behavioral consequence (Polaschek, 2003) or can indeed elicit quite negative reactions. In a complex social situation, or one in which the pressure to empathize is strongly explicit or overtly authoritative, empathic response can even be hindered (de Gortari & Griffiths, 2012; Kaufman, Flanagan, & Seidman, 2016). In light of these inconsistencies, it is essential for design to critically examine the presuppositions about empathy and its supposed influence on people's actions and intentions (Adamo, Mushiva, & Willis, 2017).

The exploration of agonism lends to this critical approach, and presents several contradictions to shaping design around empathy. First, agonism is not seeking to align participants' perspectives, rather to embrace conflict and disagreement as agonistic pluralism (Little, 2007). It seeks to reconcile rational deliberation that eschews emotion with disruptive radicalism that accepts emotion and passion as the main drivers of political action (Mihai, 2014). This reconciliation is not intended as a consensus, or alignment, but as something more akin to oscillation. In some situations empathy can increase emotional attention to the other, facilitate understanding and acceptance of their positions; in other situations that concerted attention can lead to deeper divisions, ambivalence, and counterproductive responding (Beersma, Bechtoldt, & Schouten, 2018; D. Grynberg & Konrath, 2013b; Kaufman, et al., 2016). Thus attempts at unification of emotional perspectives between parties could potentially work contrary to agonism.

A second contradiction arises from the requirement in design literature that the designer *empathize with their user* (Heimgärtner, Tiede, & Windl, 2011; Wright & McCarthy, 2008), a directive that reiterates the power relations of designer over user: the user is a subject that needs be studied (Gasparini, 2015; E. B.-N. Sanders, 2005). Critical approaches to design, and in particular those focused on social innovation design, are directly concerned with dismantling hierarchies, equalizing the field upon which stakeholders play out the act of design (Hillgren, Seravalli, & Agger Eriksen, 2016). An agonistic perspective on the privileging of designer with empathic tools over the other stakeholders (Kimbell, 2011) suggests that some empathic design practices may actually perpetuate the hegemony that rules over designer and user, rather than empowering the user, as for example Participatory Design often intends (Ertner, Kragelund, & Malmborg, 2010).

A third contradiction in design approaches to empathy is that by empathizing *too much* towards the user, a designer can potentially become too closely aligned with users' experiences and perspectives. Agonism again calls for a pluralism, and a designer must remain to some extent independent, a participant in the process, who draws on his/her/their own creativity and inspiration as contributions towards innovation and discovering potential futures. When a designer is too deeply entranced by the emotional exigencies of the user-as-subject, the contribution to design of the practitioner's unique perspectives and tacit knowledge can be overshadowed. (Mattelmäki, et al., 2014).

3.4 Intersubjectivity

Agonism takes the approach that conflict cannot, and should not be eradicated from the political, and acknowledges that social, political interactions are always between individuals and groups with distinctively separate and potentially conflicted experiences of the world. Consensus or the elimination of differences is not the objective (Little, 2007), and this regards emotional conflicts as well. Seeking to engage people in cooperation and collaboration without disregarding their potentially contradictory perspectives, this thesis work shifts attention to the underlying framework of intersubjectivity (Fuchs & De Jaegher, 2009). As empathy can be understood as a behavioral manifestation of intersubjectivity (Gallese, 2003; Zahavi, 2001); so too are conflict and dissent grounded in intersubjective engagements (Matusov, 1996).

Intersubjectivity is commonly approached quite narrowly, as the shared understanding of meanings (Dennen & Wieland, 2007), or a form of social cognition, an alignment of subjectivities akin to participatory sense-making (Gallagher, 2009). However as is clearly the case in political discourse, people interact even as they hold vastly divergent understandings of the world, and conflict is essentially engagement with the other that, lacking synergy, becomes detrimental. Mutual understanding is certainly a potential outcome of strengthened intersubjectivity, but it does not completely explain the phenomenon (Duranti, 2010). Intersubjectivity is active long before cognitive representations of others' perceptions can be compared and agreed or disagreed with, before reaching any mutual understanding (Gallese, 2003).

The root of intersubjectivity is much more primal, an innate facet of human existence (Duranti, 2010) born from the tacit understanding that the world which one inhabits is in fact a shared world. This most basic level of being reflects the fact that from birth one encounters the bodies of others and is surrounded by artifacts that are clear signs of the presence and agency of others (Schutz, 1967). As such, intersubjectivity is a priori to engagement with others, independent of co-presence, and grounds one's entire conception of existence as encapsulated in a social, or cultural world (Husserl, 1931; Merleau-Ponty, 1942, 1945). The material forms of the world, its *spaces*, are perceived and encountered through lived experiences, and given meaning as *places* that are enacted and performed through social and cultural processes (Casey, 1996; Lefebvre, 1974). Whether they are physical or conceptual, spaces are built, created, and contributed to by others and are thus entwined with intersubjectivity even before one 'enters' them (Dahlberg, 2005; Habermas, Lennox, & Lennox, 1974). Representations of space, and representational space are translations, ciphers of material and conceptual positions shaped from language and interaction that is shared with others (Lefebvre, 1974). Hence space, and its social performance as place, is inherently intersubjective, a socio-material configuration that embodies and directs meanings, norms of behavior, social orders and hierarchies that are derived from the similarities and differences of self and other.

Building on these essential characteristics of being, intersubjectivity is essential to the development of self identity and the process of reflective positioning through which the sense of self is in part derived from one's perceptions of others' perceptions of self (Blumer, 1986; Cooley, 1902; Howarth, 2006). This quickly becomes complicated, in Theory of Mind (Doherty, 2008) for example, as the understanding that self and other are intrinsically linked, even determined to an extend by each other. This idea of an essential human interconnectedness is supported by research into mirror neurons (Gallese, 2003) and the activation of brain function simply from the observation of others' behavior. While the significance

of mirror neuron activity is yet to be fully determined, it provides some evidence of the self's inherent resonance with the other, independent of cognition and communication.

Entering into the social sphere, that is the lived experience of, and engagement with others, intersubjectivity plays an equally important role; social life is drawn from interactions with others and is inherently intersubjective (Gillespie & Cornish, 2010), even as some aspects of identity are drawn from that social life. From a social-psychological standpoint, identity is understood as a construct (Tajfel & Turner, 2004), that incorporates a variety of cognitive representations that are activated in different contexts (J. C. Turner, et al., 1987). One of those contexts is a conception of self relative to the social groups we feel we belong to (J. Turner, 1999). This social identity evolves momentarily, emerging within, dependent upon and constantly reformed momentarily through social interactions, and in particular in dialogue with others (Bucholtz & Hall, 2005; Märtsin, 2010). As such, intersubjectivity is instrumental in shaping the self (Kögler, 2012), as well as shaping social relations; it can be diminished just as it can be repaired and defended (Schegloff, 1992), yet it stays always in both foreground and background of the lived experience.

Taking these various aspects and dimensions of intersubjectivity into account, intersubjectivity can be understood not strictly as mutual understanding but more broadly as the variety of relations between perspectives (Gillespie & Cornish, 2010) or more explicitly, as the complex interplay between self and other which bodily and mentally connects and differentiates people (May, 2017).

It is notable that though intersubjectivity is widely investigated in social, psychological and political sciences, it has been only tentatively touched upon directly as a design strategy (Ho & Lee, 2012). There is, however widespread agreement among the various communities of research that the outward manifestations of intersubjectivity are closely related to *interaction* (Fuchs & De Jaegher, 2009), *narrative* (Gallagher, 2006; Jackson, 2002) and *dialogues* (Nir & Zima, 2017) all of which play significant roles in design. A reiteration of the principles of agonism within political discourse draws close parallels. Agonism at its simplest is reformulating a politics derived from the identities of friend and enemy, changing one's perspective of the other from enemy to adversary. Intersubjectivity is clearly central to the agonistic task of re-framing perceptions of the other. Similarly, in calling for an ideal discourse and the acknowledgment of debate partners as equals, agonism again refers to intersubjectivity. A considerable body of research has linked conversation and dialogue to intersubjectivity (Kärkkäinen, 2006); dialogues contain markers of stance-taking, expressions of emergent intersubjectivity (Nir & Zima, 2017) that position the self and an other, to articulate and digest our own and others' points of view (Gillespie & Cornish, 2010). And the agonistic space described in political literature, the socially constructed places of creative confrontation that embody agonism, are derived from intersubjectivity.

The intimate connection between agonism and intersubjectivity cannot be overstated. The unpacking of political agonism provides the ground for *approaching conflict* between people and groups; the focus on intersubjectivity offers insights into the underlying mechanisms of identity formation and *interpersonal engagement*. That these two perspectives could be combined to inform a design practice and its evaluation became the central theme of the Constructive Design Research, as the recursive processes of experimentation, observation, analysis and reflection consolidated the theory and made visible the potentialities of agonism for Social Design.

3.5 Critical and reflective practice

Agonism calls for the challenging of the status quo, the identification and overthrow of hierarchies and hegemony, and the imagination of potential futures free from oppression. At the core of this is a critical and reflective practice focused on examining the state of things, a desire for change, and an active operationalization of this desire through practical means. As such, agonism clearly intones a critical and reflective practice. The use of 'critical' throughout this thesis intentionally scopes the discussion of design agonism within Critical Theory, which in its most easily digestible parameters is seeking emancipation and liberation from all forms of oppression, and working towards a world that satisfies the exigencies of all people (Horkheimer, 1972). Agonism does align these principles, and the design strategies suggested here follow the three tacks of the original Frankfurt School: they seeks to elaborate the problems of current social reality, identify the agents and actors that can potentially initiate change, and establish norms of criticism and practical, achievable goals to effect social transformation. (Horkheimer, 1972). Yet agonism deviates from Critical Theory's original insistence on consensus and democracy as the primary tools for achieving such a world. A later interpretation of Critical Theory, one that does not compete with other predominant social theories, but rather seeks to elaborate on a plurality and examine their relative limitations and potentialities (Habermas, McCarthy, & McCarthy, 1984) is perhaps more relevant to agonism and design.

The adaptation of Critical Theory to design practice has become a permanent fixture in the discourses of design research in the past two decades, and a critical design form was initially proposed as design that aims at provoking thought, as opposed to finding answers or solving problems, in particular through the design of technologies (Dunne & Raby, 2001). This was and is a deviation from industry-driven design practices focused on creating new, more efficient products, and into the territory of social-psychological discourse, aiming to initiate dialogue around the values embedded in design, foster meaningful reflection on the role of design and designed things, and explore the aesthetic and critical potentials of design in everyday lived experience (Dunne, 2008). Some contend that following the Frankfurt School, what has become known as Critical Design centers on confronting social conformist values of capitalist ideology as a research strategy towards social emancipation (J. Bardzell & Bardzell, 2013). However an agonistic perspective might suggest this preoccupation with capitalism as the primary hegemony that perpetuates the stated values of passivity and social conformity that need undermining could also be attended some critical reflection. Regardless of which system of power and control that is being examined, be it capitalism or consensual democracy or even design and technology scholarship, critical practices in design tend towards provocation, disruption and the elicitation of subversive perspectives (S. Bardzell, Bardzell, Forlizzi, Zimmerman, & Antanitis, 2012) and the related domains of Design Fiction (Blythe, 2014; Dunne & Raby, 2013), speculative making and enactment (Elsden, et al., 2017; Wakkary, Odom, Hauser, Hertz, & Lin, 2015) have much in common with the work of agonism. However the practices of this Critical Design found in the literature can tend toward an outward focus of critique aimed at society at large, rather than sustained self-reflection on the part of individual authors concerning the effects that their practices, constructions and publications could potentially have on society and people's lived experience (J. Bardzell & Bardzell, 2013; Sengers, Boehner, David, & Kaye, 2005) and how design and research approaches could be altered, for example to ensure they are not instantiating new systems of power and control.

Reflective practice also offers several direct relations to agonism and a Reflective Design has been framed in HCI as a means of elaborating, and reflecting on the values associated with, embedded within, and communicated through design (Sengers, et al., 2005). It calls for reflection by designers on their own practices and their values, by users on their own values and engagement with designed things, and the design of things, in particular technological artifacts, that inspire such reflection (Sengers, et al., 2005). This tripartite reflection is to be provoked for example by intentional estrangement, the introduction of breakdowns in convention, or surprises that disrupt the flow of action, interaction and engagement, to facilitate moments of creativity and intuition (Schön, 1983). However the widespread uptake and elaboration of this concept is less evident in design literature. On the other hand, Reflective Design is foregrounded by its earlier interpretation as a component of Emotional Design, in the sense of designing products that reflect the user's values and identity, and facilitate 'belonging' to one or another community through their use (D. A. Norman, 2004). This reflective capacity of design has been widely embraced, both implicitly and explicitly, in Product- Interaction-, and in particular User Experience Design, with instantiations that aim to reflect users' values and drive product uptake or brand loyalty rather than implying any deeper introspection on technology, research or society.

Reflective Design claims Critical Design as one of its components; Critical Design states meaningful reflection as its explicit focus (Dunne, 2008) and yet the foundational texts of neither form detail how to deal with these reflections, or the potentially divergent and conflicting interpretations among stakeholders of any given design or intervention (Sengers & Gaver, 2006). In contrast, agonism allows for, even introduces and provokes dissent within design engagements (Keshavarz & Maze, 2013), anticipating the arrival at markedly different conclusions from those of the designer. In the senses of critical and reflective practices, designers can be seen as reflecting through the activities of design (Schön, 1983), while users are posited as engaged in separate cognitive modes of experience and reflection (Kurniawan, 2004). The objective of incorporating agonism into design is more akin to navigating this continuum between immersion or engagement and reflection (Willis, De Angeli, & Zancanaro, 2017) while coupling with the objectives of Social Design to incorporate and incite social critique within the parallel activities of design and use of artifact or system. In referencing Critical and Reflective design methodologies, it is not the intention to explicitly align an agonistic design with either, rather to point to congruencies in the approaches, and suggest that agonism can be a useful addition to established techniques for critical reflection through design.

4 Research Methodology

The following section on research methodology and practices first outlines the overarching Constructive Design Research (CDR) methodology that produced this thesis. A framework is derived from a plurality of design research concepts, taking into account extensive criticisms of this particular form that relies on design practice to elaborate design theory. A detailed description of the approach to CDR as applied in this thesis is presented, followed by the investigative techniques which include ethnographic fieldwork, Dialogic Syntax Analysis, Critical Discourse Analysis, Game and Play, and Speculative Design.

4.1 Constructive Design Research

Constructive Design Research (CDR), also known as Research through Design (RtD) is an interdisciplinary approach to investigating wicked problems (Rittel & Webber, 1973) that incorporates design practices into research, and practices design towards the development of theory. Though several prominent researchers have introduced this as a methodology (Gaver, 2012; John Zimmerman, Jodi Forlizzi, & Evenson, 2007; Zimmerman, Stolterman, & Forlizzi, 2010), the concepts of design as a form of research, and the intuitive, creative practices of design as legitimate forms of scientific inquiry project an enigmatic presence on the methodological pantheon. Constructive Design Research advocates for a radical rethinking of rationalism as the basis for scientific inquiry and expressly fosters individual, social and experiential creativities to contribute intuitively in the development of theory. This reflects a central struggle in agonism, the juxtaposition of reason and emotion, of politics and the political.

CDR is designing for the future, to elicit and examine preferred, potential realities that design researchers instantiate and then study through an iterative process of participatory construction and co-creative reflection. Its focus on uncovering future realities is consistent with the framing of agonistic space as a place that encourages participants to imagine and actively shape potential futures. This constructive aspect, the making, opens up investigation beyond laboratory and field work to include gallery, showroom and artistic spaces as distinct sites of emergent theory (Koskinen, Binder, & Redström, 2008; Koskinen, et al., 2011; Zimmerman & Forlizzi, 2008) and brings together an extensive literature on the convergence of Interaction Design and artistic inquiry under one umbrella (Barry, 2014; Candy & Ferguson, 2014; Forlizzi & Battarbee, 2004; Höök, Sengers, & Andersson, 2003; Giulio Jacucci, et al., 2009).

One treatise in particular compiles many of the relevant aspects of CDR (Koskinen, et al., 2011), while others attempt to consolidate the field (Bang, Krogh, Ludvigsen, & Markussen, 2012; Gaver, 2012). However, no standard or formal methodology exists and as the technique has become more widespread, so too has discussion as to what constitutes valid research of this kind (J. Bardzell, 2019; Forlizzi, Zimmerman, Hekkert, & Koskinen, 2018). CDR as such reflects a broad coalition of practices, scattered experiments, and particular implementations, not all of which are explicitly related. These include cultural commentary (Gaver, 2007), annotation (Bowers, 2012), probes (Wallace, McCarthy, Wright, & Olivier, 2013), speculation (Dunne & Raby, 2013; Elsden, et al., 2017), narrative (Blythe, 2014) performance (Macaulay, Jacucci, O'Neill, Kankaineen, & Simpson, 2006), and game design (Coulton, et al., 2016; Korte & Ferri, 2018) to name but a few.

In this thesis CDR is interpreted with special attention to the unique particulars of situated, embodied interactions (Dourish, 2001; Young, Peyton, & Lutters, 2013) and the applications of CDR towards research in the wild (Brown, Reeves, & Sherwood, 2011; Chamberlain, Crabtree, Rodden, Jones, & Rogers, 2012; Koskinen, et al., 2011). The constructions which underpin the work are at the crossroads of design research and Action Research (Fricke & Totterdill, 2004), where Design Research is understood not as the activities of investigation and inquiry that inform what, how or why we design, but as the practice of design in examining the world, and Action Research, as the practice of actually making changes, and then examining the results to arrive at new understandings (Cole, Purao, Rossi, & Sein, 2005; Lovett, 2008). Design Research and Action Research share the intention to generate or synthesize new knowledge of the world, research voices that are in coherent dialogue within Constructive Design Research.

4.1.1 Framework

The amorphous nature of CDR, its iterative development style and elicitation of theory from within less-than-standardized design activities make it a particularly useful investigative tool for wicked problems and the contested spaces of agonism. However its lack of formally proofed and accepted methodological process can be misconstrued as less-than-legitimate in terms of scientific inquiry. To bring some clarity to this necessarily experimental methodology, this thesis implements a self-reflexive framework that explores, and critiques its own evaluation, building on Interaction Design studies (John Zimmerman, et al., 2007).

Given the diversity of the problem-spaces and the context-sensitive nature of each community or site of inquiry, results of at each stage are varied. For this reason strong attention is given to the documentation of the research process. The methods used and the rationales for their selection are described so that the process can be reproduced, or re-purposed in another form to achieve similarly meaningful results. The integration of different materials and approaches to addressing the specific situation are also made clear. The research is grounded in literature review, where appropriate, as well as ethnographic investigations and analysis of discourse and narratives to support assumptions. The research is framed as work within the real world, making clear to identify the current status quo and the motivation to address it. Preferred states are articulated and research documentation demonstrates how the design achieves results. Through the process of documentation, the intention is to elaborate how other researchers can build on these research outcomes and how to implement the process described to other or future design challenges. The significance of the new knowledge created, or captured within the artifacts and practices is presented in a manner that communicates the knowledge derived from the work, and how the community can leverage that.

4.1.2 Criticisms

In a direct response to contemporary discussions within HCI and design communities on the nature of design research and Constructive Design Research in particular, (J. Bardzell, 2019; Forlizzi, et al., 2018), this work reflects on four main criticisms drawn from within our design communities (Zimmerman, et al., 2010). The first concerns methodological development, and the recognition of the need for extensive and detailed documentation of the progress and evolution of CDR projects. Therefore special attention is given to the interdisciplinary nature of these investigations, identifying which, and how theories from other disciplines were interpreted and integrated into the research process. The reporting is explicit about how reflection on the artifacts and activities generated through the CDR has contributed to the development of theory.

The second criticism of CDR also concerns researchers' insufficient critique of theory in project outcomes. It is understood that CDR practitioners need to be the harshest and most unyielding critics of the technique, in order that it will be eventually accepted as viable scientific research process. This is related to another criticism, the lack of established evaluation criteria in many CDR projects. Of course, the evaluation metrics for the CDR evolve over the time-frame of the research in tandem with the theory, as the nature and direction of the research is itself transformed through design practice. In this thesis, for each phase of the CDR the evaluation criteria are defined, or redefined, yet always in some way examine the emergence of agonistic practices and behaviors. A fourth criticism of CDR is that design and research communities lack sufficient and substantial examples of successful projects upon which to gauge prior art, in part owing to the fact that few venues publish such experimental design studies. While this may be gradually changing, there is also the perception that few CDR projects set out expressly to develop theory, and that theoretical contributions of the researches appear to be realized and described after the fact.

Such a critical, self-evaluative approach is essential if we are to answer calls to push forward the boundaries of what is considered research (L. Bannon, Bardzell, J., and Bødker, S., 2018). In the spirit of this, the reporting of trajectories and interventions attempts at each stage to peel apart the layers of developing theory and practice to examine the efficacy of CDR. At the same time, the research establishes how and when agonism is emerging through the design activities and interventions. Although some drawbacks and difficulties encountered within CDR are made clear, these are couched in terms of lessons learned in full awareness of the challenges and potential pitfalls of claiming that a new design theory is indeed manifest.

4.1.3 Approach

The processes and practices that make up Constructive Design Research are widely variable, and as it by is default interdisciplinary, it is not possible, and perhaps not preferable to concretely systematize its implementation as a singular methodology that is applicable to other design challenges or domains. The trajectories and interventions of this thesis have been developed and enacted in very different ways, using a variety of investigative techniques that may or may not provide meaningful results when applied by others to their particular design and research situations. And while there are a number of practices found throughout the Constructive Design Research and Research through Design literature that could be considered essential, the myriad individual projects and publications claiming these as their guiding research methodology are incredibly diverse and a standard practice is difficult to discern. While no attempt is being made in this thesis to provide its definition, the following detailed description offers an insight into the approach as applied in this thesis, that can serve as a practicable, reproducible and extensible process description for Constructive Design Research, or Research through Design.

The main component process in this thesis' approach to Constructive Design Research are **Literature review, Concept creation, Construction, Field test, Evaluation, Documentation** and **Critical reflection.**

Literature review – every constructive design requires a background in domain literature, and often the literature of several communities. Though this review may be undertaken first, it is continually revisited and updated, as research trajectories unearth more of the theory and its relevant counterparts. Literature here is taken in a broad sense, to include not only peer-reviewed scientific publications but also examination of contemporary art and art-historical representations, media resources, maps, performances, products or other designs, and any element of public and cultural discourse that can theoretically or concretely inform the research and design.

Concept creation – this phase involves the conceptualization and planning of system or artifact, and can include any and all design practices, whether it is infrastructuring for a social, service orientated application, the examination of materials and components for a physical object or experimentation with the code and communication elements of a technological artifact. Social and participatory aspects of design, as well as consideration of environment, affordances, situation, use and any other design factor are part of the concept creation.

Construction – involves the actual creation of the system or artifact, as performed by designer, contractor, individual, group or public. Construction is the making of the thing and includes any and all processes related to both real and imagined embodiment of the concept in the world.

Field test – is the use, actualization and enactment of the designed thing, the individual or social, private or public, exclusive or shared performance of the design construction.

Evaluation – requires that some form of information derived from the processes and enactment of the design construction can be meaningfully made sense of, utilizing, but not limited to, established evaluation metrics. These metrics need not be defined beforehand, yet need to be clearly described to validate any assumptions derived from the CDR.

Documentation – this is the codification of the design research process and outcomes, an illustration of the thing be it textual or visual that can communicate with others: what it is, how and why it was undertaken, what are the outcome of its use, what is its potential value, and many more questions that need to be clearly answered to provide an holistic representation of the CDR. In particular a constant referral is required in the documentation to the elicitation of knowledge at each stage, and evolution of theory as it emerges from the other activities of the CDR and especially the field testing design construction.

Critical reflection – is enforced throughout a Research through Design, picking apart design commitments, reflection on the process, participation, successes and failures, attention to legacy vs. innovative thinking, re-evaluation of assumptions in the literature, honest self-critical review of the relevance and significance of actions and outcomes, the intentions of designer and role of funding institutions, and potential unintended instantiation of systems of power and control that can potentially result from the work. This is the unending beginning of Constructive Design Research, and an active focus at every stage of research through design.

These activities are not necessarily followed in linear fashion, they are reciprocal, reflexive, dependent on each other, often undertaken simultaneously, overlapping and intersecting as they transpire over time, and should be embraced as equal and co-operative activities in the process of Constructive Design Research.

4.2 Investigative Techniques

4.2.1 Ethnographic fieldwork

This thesis has relied heavily on aspects of ethnographic fieldwork, the study of cultures through participation in situ. At various stages the research applied so-called quick and dirty fieldwork, visiting the communities under investigation and interacting with people and places to construct a basic understanding of their social actors, practices and social order. Also undertaken were cyber-ethnographies, the examination of online communications, such as web and email, as well as the interactions on a digital platform. These interactions included participation in design workshops, stakeholder discussions and the construction of interface and gameplay concepts towards the development of said platform. As such these investigations were influenced by design ethnography, in particular a style of participant observation focused on the imagination and elaboration of potential futures (Halse, et al., 2010).

The field investigations of this thesis have also been inspired by performative ethnography which phrase identity and interaction as forms as cultural performance and production (Pollock, 2006) that can be investigated through performance and theatrical engagements (Boal, 2000). These influences promote performance as a mode of social activism (Park-Fuller, 2003) and open the possibility to study, and potentially influence culture through improvisation and role-play, but also to express new knowledge about cultures through performative acts such as drawing, mapping, and playing games. Another related form of cultural inquiry that informed the fieldwork is sensory ethnography (Pink, 2009, 2011), for example where sound recording, photography and visual arts are used as tools of inquiry to develop multimedia interpretations of culture for study.

Throughout the varied implementations of ethnographic fieldwork undertaken in the thesis, particular attention has been paid to my role as a researcher, my presence and influence within the engagement. The role that I played varied in different contexts, and included artist, activist, tourist, cyclist, documentarian as well as design researcher. The influence of these roles pointed out the challenging crossovers between ethnographic field work and Action Research (Lovett, 2008). While attempting to retain some reflexivity and awareness of the impact that taking a political stance would have on the research, I have embraced the roles of activist and artist, designer and researcher as essential partners in practice.

The social activist stance adopted in this work responds to ethnography, as the main methods of ethnography are participation and observation, and the field itself is historically grounded in the elaboration of deviant, marginalized identities, through the study of poor, unrecognized or disenfranchised members of society. Over a century of push towards activism in ethnographic research resonates with calls from within Social Design communities for practitioners to be more pro-active (DiSalvo & Dantec, 2017).

4.2.2 Dialogic Syntax Analysis

One of the primary techniques used to establish the functionality of the design mechanisms borrows heavily from socio-linguistic scholarship. Throughout this thesis, a sensitivity to language and discourse as practices of interaction, and their remnants in conversation has been cultivated. Particularly relevant for this research are the concepts that variously fall under the moniker of discourse analysis but are derived from much broader, trans-disciplinary methodologies of conversation analysis, thematic analysis, and discursive psychology. Several aspects of these methodologies examine the structures of language and offer markers of the emergence, or activation of intersubjectivity, which has been identified as essential component of agonism. Intersubjectivity has likewise been implicated in the formation and performance of identity (Bucholtz & Hall, 2005; Kögler, 2012), as influenced and facilitated through dialogue and interaction with others (Gillespie & Cornish, 2010), and identified as a significant factor in the social activation of material spaces as places (Harrison & Dourish, 1996; Simonsen, 2007). Therefore attention to language and its intersubjective underpinning is essential to evaluating the agonistic outcomes through each of the design principles.

Dialogic syntax (Du Bois, 2014; Du Bois & Giora, 2014) and resonances in particular were used to examine emergent intersubjectivity. Resonance is the repetition of phrases and active reformulation of prior utterances in conversation point to one partner's socio-psychological engagement with the thinking of the other, an essential aspect of intersubjectivity (Nir & Zima, 2017). These resonances and associated stance-taking among participants are examined and understood as being situated in conversations and storytelling (Valsecchi, 2016) as well as in collective narratives that emerge through agonistic design interventions (Nir, 2017).

Analysis here attends to language as discursive practice, as not only what is being spoken or written is important, but also how that is used in a situation to convey, enact and collaboratively construct meanings. The examination of these structures of interaction reveals instances wherein participants are actively engaging with the perspectives of others, and in forming their own responses they leave behind signs of that intersubjectivity.

4.2.3 Critical Discourse Analysis

A second form of textual analysis used in this research explores design spaces and their conflicts in addition to pinpointing emergent agonism, as a metric of functional strategies, Critical Discourse Analysis (Fairclough, 2001). Its interpretation in this thesis derives from media studies and in particular media archaeology (Zwaan, 2014) to approach discourse as a continually updating archive which includes any and all symbolic representations that reference, are associated with or contribute knowledge to the subject. Analysis of such a discourse takes into account conversations and textual representations, but also media documents such as maps, fictions, political rhetoric, advertising, artworks, design forms, tropes, and many other sources.

This research implements a Critical Discourse Analysis that in particular seeks to elaborate and illuminate social struggles, power structures and hegemonies (Van Dijk, 1993). This practice has been fundamental to the continued updating of humanist perspectives in Interaction Design (J. Bardzell & Bardzell, 2015), congruent with media archaeological perspectives of dialogue as both representing and actively shaping social dynamics. The use of Critical Discourse Analysis here is a key reflection of agonism in the research practice, as both revolve around the perpetual struggle between opposing forces that defines the social realm (Falzon, 2006; Foucault, 1982). Included in this discourse are

several approaches to narratives, which are used both to frame investigative priorities as well as to examine social interactions. The first application examines various media to expose conflicts with power structures and generate, or distill micro-narratives from the archive. This is a practice of creative inquiry intended to focus attention on particular issues. The second application elaborates on individually and collectively expressed stances within and regarding the archive, to understand people's participation in and positioning vis-à-vis those issues (Herman, 2008; Jaffe, 2009). As narrative is variously understood to be fundamental to the development and conception of the self (Gallagher, 2006), replete with its own unique capacity to facilitate the intersubjective manifestation of empathy (Keen, 2006), the focus on narrative in discourse is not arbitrary. What initially was approached as thematic analysis, on reflection was closer to the elicitation of social, political and material stances, which when examined through Critical Discourse Analysis illuminate the positions of social actors, social practices and the social order (Fairclough, 2001).

4.2.4 Game and play

As the underlying premises of Agonism and Design begins to crystallize, the path to enacting agonism becomes more clear: by staging interventions, facilitating interactions and shaping the social environment, the mechanisms of intersubjectivity can be leveraged to influence participants towards collectivism, cooperation and open communication. And in pursuit of techniques that can facilitate the interventions and interactions required, we turn to game and play. Games are fundamental mediators of opposing forces, socially informed collaborations that elaborate and illuminate rules and norms. From an Interaction Design perspective, games offer established pathways to create agonistic structures; and the agon itself, at its root, is akin to a contest, a competition at games.

Elements of play lie at the heart of human culture and civilization and those traced from the remnants of ancient cultures suggest that play has a duplicitous role in society: it helps us makes sense of the world, and simultaneously shapes the world. For example the role-playing of shamanic mask-dancing (Schechner, 2004) and various forms of ancient Greek theatre (Aristotle, 330 BC) encapsulate, and transmit the values of the cultures they represent, through both action and word. The agon itself represented a particular form of enacted dialogue, a scripted interaction, in Old Comedy (Humphreys, 1887). Play and games address the contemporary cultural situation and simultaneously perpetuate its existence through the transmission of mythologies and world-view. (Majkowski, 2016) As playfulness becomes a shared activity, it is structured as play, and these shared forms are further codified in social interactions as games (Stenros, 2014). Engaging in social play requires an acceptance, or at least acknowledgment, on the part of participants of rules, and agreeing to play a game establishes a willingness to undertake a cooperative behavior (Stenros, 2014). Game as such embodies the foundational participatory behaviors of cooperation and social engagement, and an extensive body of research that investigates game and social innovation (Arnab & Clarke, 2017; Bronack, 2011; Flanagan & Nissenbaum, 2007; Kaufman, et al., 2016; Mitgutsch & Alvarado, 2012; Sanchez, 2011; Stokes, 2016; Swain, 2007; Winn, 2007) informs the agonistic approaches to design.

In the development and realization of design forms for agonism, Wittgenstein's concept of the language-game (Wittgenstein, 2010) has manifested both figuratively and literally. This new design form is established with descriptions, simplifications of theory, and references to prior art that create a language-game that can be used to communicate, what is agonistic design. At the same time, agonism is embodied *as* a language game, a structured interaction centered on dialogue and storytelling, in which utterance and participation takes the form of the performative speech or written acts. The utility of such agonistic

language-games to encourage the kinds of communication necessary to break the impasse of polarized publics and address contentious issues has been drawn out in the subsequent interventions. The analysis of resonant aspects of constituent wordplay (Nir, 2017; Valsecchi, 2016), the development of intersubjective communication and the establishment of the agonistic space can be examined. Though this comes dangerously close to Wittgenstein's "Sprachspiel mit dem Worte 'Spiel'" (von Savigny, 1998)(§71) that is, playing word games with the word 'game', so also are the principal aspects of political discourse, rhetoric, reason and eventually persuasion (Wittgenstein, Anscombe, von Wright, Paul, & Anscombe, 1969) themselves essentially wordplay and language-games.

4.2.5 Playing out potential futures

The imagination and elaboration of potential or preferred futures is key to agonism and design; as such the research trajectories and interventions presented in this thesis have much in common with speculative approaches to design, both in terms of designing to stimulate imaginations of potential futures, and as a means to examine and evaluate a current state of affairs (Auger, 2013). Indeed speculative concepts may offer a bridge between Constructive Design Research and the application of Critical Theory to design, as these traverse the same territories of HCI and Interaction Design yet at times follow divergent paths (J. Bardzell, 2019; Forlizzi, et al., 2018). Constructive approaches, in short, are seen as pragmatic, elaborating theory through the practice and still dependent to some extent on hypothesis. Critical, speculative and fictional approaches can appear as wholly imaginary, focused more on envisioning design futures than on making things in an attempt to arrive there. These perspectives are not mutually exclusive and the discourse between them may well be manufactured to incite precisely this questioning. In pursuit of both constructive and critical strategies, this research has instituted a hybrid practice that utilizes aspects of game and play to facilitate speculations on a future, preferred state. Similar interpretations of games as research constructions to bridge disciplines are beginning to appear in design literature (Coulton, et al., 2016; Korte & Ferri, 2018; Schouten, et al., 2017), in particular extending game and play approaches as transformational methods for urban contexts (Brynskov, et al., 2014; Cristina Ampatzidou, 2015) where actual construction of alternate futures by citizens is tightly constrained (Tan, 2017).

These emergent constellations of game and play as design speculation represent two sides of the same coin (G. Ferri, personal communication 17 March, 2019). Posed as Research through Game Design, the designer develops a game in order to gain insights and produce knowledge of a complex situation; the speculation occurs as players are stimulated by the playful situation to imagine potential futures and identify possible changes to the contemporary state. These distinctions are reflexive, and games can be created for the designer to observe actual gameplay or imagine a prospective gameplay, as well as for players of games to engage in the formulation and enactment of preferred realities, or dystopian futures to avoid. In this a speculative discourse is shaped by the rules and norms of gameplay and the game and its magic circle serve as a filter, or ordering mechanism, to regulate the countless unpredictable variables of in-the-wild research. Thus the making and playing of an actual game allows for potential futures to be examined in situ, through a game that is situated in the current reality or a game that is itself a speculation. No actual game need be created, and what is examined is a potential future in which the speculative game exists and is played. This approach allows the complexities of a hypothetical situation to be analyzed through the many facets available to game designers and developed by social and cognitive theorists with attention to game play and the magic circle. Both the creation of a game to elicit visions of preferred realities, and the speculation on imaginary games to elaborate challenges and conflicts are used in this research to make concrete the investigation of agonism and design.

5 Agonism and design

Political concepts of agonism call for the balancing of rationality and emotion, and a change in perspectives to approach political opponents as adversaries, not enemies (Mouffe, 2009). This in theory is made possible by altering the nature of discourse to one in which participants to engage their other and accept differing identities and divergent perspectives (Mummery, 2016). To facilitate this communication shift, particular socio-material configurations, or agonistic spaces are needed. Such agonistic spaces should engage people in creative confrontations, incorporate dissent, reconfigure power relations, and embody the agonism through which participants collectively imagine potential, preferred futures. (Mouffe, 2007). Agonism can thus be understood as a social process of reconfiguring the status quo.

5.1 Principles of agonism

Examining the contested discourse of politics and political engagement, several core principles of agonism can be isolated. First, the principle of *Identities* elaborates on the self and its engagements with others. Agonism asks people to re-evaluate their perceptions, to think of others as 'adversaries not enemies'. Second, the *Dialogues* principle calls for open exchange of ideas among equals, and invites the sharing of one's experiences and reflection on the experiences of others. Third, the principle of *Agonistic Spaces* envisions socio-material configurations that support creative confrontations and challenge the status quo. A fourth concept of agonism derived from the political discourse, the 'transformation of antagonism to agonism' was initially taken as the guiding focus, yet at various junctures in the research this proved to be problematic and is not included as a potential actionable principle nor did it survive in its initially stated role as the overall objective of agonism. To implement the three principles that did prove their merit and utility, a framework was built around agonism as a competition or game, to structure interactions that establish rules of engagement and behavioral norms but nevertheless allow for improvisation and transgressive play.

It follows that Agonism can be defined as the provision of frames for interaction around individual, social and spatial transformations, and its role in design is to enable new and different ways of participation and collaboration through dialogue and intersubjective engagement.

5.1.1 Identities, Dialogues and Agonistic Space

Central to several core treatises on agonistic political thought (Honig, 1993; Mouffe, 2009) is the idea that in a conflict situation, participants should engage each other not as enemies, whose ideas need be overcome and destroyed, but as adversaries, whose ideas one strives to overcome yet whose right to hold those ideas is accepted on principle. The framing of confrontations between equals, also called agonistic respect, is then necessary to fruitful political discourse (Connolly, 2013), and is rooted in a concept of political engagement that identifies others as either friend or enemy (Schmitt, 2008). Agonism is proposed as an adversary-not-enemy strategy (Björgvinsson, et al., 2012), to transform antagonism into agonism and foster productive debate and problem solving.

The changes in identity and perspective proposed by agonism aim at an ideal discourse (Benhabib, 1992) in which participants are free and enabled to contribute, act, question and initiate dialogue, to challenge the subject, topic or direction of the debate, even question, disrupt, or reinterpret the rules of discourse. The linguistic framing of the ἀγών further elaborates the centrality of dialogue to agonism,

as in classical Greek theatre it describes a debate or dialogue between characters representing opposing viewpoints (Britannica, 2008). This specific shaping of dialogues within performance allows for a theatrical play to embody and enact the contest between ideas and philosophies, as word games that are integral to Old Comedy (Humphreys, 1887). Such scripted storytelling is performative, a negotiation between social structures, identities and sites (Dolan, 1993), an overlay between fiction and reality, performer and audience, and enacted dialogues that play out individual, social and inter-cultural power struggles (Boal, 2006).

Agonistic space is the primary mechanism, that should encourage agonism and transform conflict into a creative, productive force (Mouffe, 2007). Such spaces would be physical, conceptual, or representative, transformative and disruptive, spaces in which power relations can be mitigated, resisted, and where new knowledge is produced (Topinka, 2010). Agonistic Space has been examined in the contestation and conflict that shape political and public spaces (Honig, 1993), community planning (Frögård, 2016; Yamamoto, 2017), urban practice (Hadjilouca, 2015; Munthe-Kaas, 2015), games (Holland & Roudavski, 2016), technology design (DiSalvo, 2012), even design activism (Markussen, 2013). However, agonistic spaces are largely identified after-the-fact, and design research for the most part identifies agonistic potentialities in project outcomes (Björgvinsson, et al., 2012) or emergent practices (Manfredini, et al., 2017). Missing in both political and design discourse is the definition and execution of any design strategy that can manifest agonistic space.

5.2 Design strategies for agonism

The analysis of agonistic political theory and its application to design produced the three main principles of agonism, which were explored and elaborated through four research trajectories. At each site of investigation a variety of techniques were employed to expand on these three principles and imagine how they could inform design strategies to enact agonism. The first showroom work suggested that the immersion and reflection aspects of a magic circle could be viable as a frame within which to explore agonism. The subsequent field study in Lampedusa suggested that dialogues, and face-to-face, situated interactions were some of the most pressing needs in the contested space. The dramaturgical investigation techniques explored in the summer school elaborated on role-playing as a transformative and empowering tool for examining identities. The Games for Cities training school brought into focus the imagination and enactment of potential futures within the material, social and political constraints of the urban environment. The constructions, practices and reflections from each phase of the grounding research thus contributed to the evolution of a theory of agonism that can inform design.

5.2.1 Game and Play Mechanics

The next step in developing the emergent theory was to construct a practice that should enact the principles of agonism and which could be tested. Building on prior experience in practice and the specific contributions of the research trajectories, a framework emerged that initiated game and play structures to facilitate the required equilibrium between opposing forces, as well as interaction frames and rules to guide and regulate power, tension and change. Game is the staged and mediated confrontation between identities, that is between players, as well as between a player and their own player-subject (Sicart, 2011). A player is the person at an event interacting with other players and the artifact; their player-subject is a parallel identity enacted through a player character that exists within the game and is constrained by its rules and norms.

The unique situation of a multi-player game, in which participants are engaging with each other as well as navigating different aspects of their own identities was then taken as central to an agonistic design. Engaging in the social play of a game requires an acknowledgment by all participants of rules, and signals a willingness to undertake a cooperative behavior (Stenros, 2014). Dissent, another important element of agonism, should be articulated directly by game mechanics or allowed to emerge spontaneously as transgressive play, the symbolic acts of subversion and resistance perpetrated through the game's own mechanisms (Aarseth, 2014). Approaching agonism as game and play revealed the methods, or mechanics for implementing each of the principles of Identities, Dialogues and Agonistic Spaces.

5.2.2 Role-Play, Storytelling and the Third Place

The psychological principle of identities can be enacted in game design by role-playing, which initiates perspective-taking (Davis, Conklin, Smith, & Luce, 1996) and can expose the negotiation between self and other, a fundamental dimension to initiate agonistic behavior. By allowing participants to imagine and act as others, the design of role-playing interactions makes visible the conflicts of identities, drawing participants to reflect on the emotional and sensory experiences that shape identity, and possibly switching their out-group perception from that of the enemy to that of an adversary.

The behavioral principle of dialogues can be structured as storytelling (Valsecchi, 2016). Storytelling encourages interactional negotiation and highlights the socio-cultural linguistic aspects of dialogue and identity formation (Bucholtz & Hall, 2005) and allows both storyteller and audience to reflect on and articulate their personal experiences and those of others (Valsecchi, 2016). Making sense of the dialogues initiated by storytelling evokes intersubjectivity, as the interplay between the participant self and a perceived other, as audience and storyteller (Jackson, 2002). Storytelling dialogues can be textual, enacted through utterance, but also include any symbolic communications (Du Bois, 2014) or performative acts that are sequential, reflexive and/or responsive to speaking or acting partners.

The game-space of agonism is closely associated to the Third Place, that is the social activation of material spaces that become participatory, creative, and generative environments (Memarovic, et al., 2014). Third places can be conceptual or material, are shaped through the performances of their inhabitants, and given their form and meanings through social interaction (Massey, 2010). The third place is emergent, as in cafés and arcades where diverse participants are drawn together in shared appreciation and co-creation of a particular ambience. The third place is neither one of serious work or productivity, nor one of complete leisure (Oldenburg & Brissett, 1982). A game by its very nature generates a unique social and cultural place known as the *magic circle*. This is the place of play, distinct from ordinary reality that has its own rules of engagement (Huizinga, 1955). Environments grounded in game can take on characteristics of the Third Place and embody the balance of serious and contested with the relaxed and convivial, and shape an arena for creative confrontations that is central to the theoretical framing of agonism (Mouffe, 2007).

6 Theory from practice: trajectories

What follows is an account of the four research trajectories, each of which contains cycles of construction, reflection and evaluation that at each phase that contributed to the understanding of agonism and its potential application in design. These trajectories are presented in temporal order, and although the main contributions of each phase of the research emerged during or directly after the activities and analysis, some significant reflection transpired over time, as new revelations from subsequent iterations inspired second-takes on initial outcomes. Over the three-year period of PhD research, a variety of contexts and sites were investigated, and each phase of research improved on issues that were brought into the study at the beginning, and expanded on the central themes derived from the very first engagement. As the many facets of agonism emerged from the literature, these were explored through the research investigations that in turn further refined the theory in practice, testing the strategies for its implementation and adding new sources to the literature review at each turn.

As CDR is an evolutionary methodology, in which theory is developed as the research practices proceed, a traditional definition of the practice and its requisite processes is not available. The research and evolving theory, while grounded in the literature review, is elaborated through its practice; each stage is documented as a set of approaches and activities and results are presented in terms of their contributions to understanding of agonism and reflections on its potential instantiation through design.

To help clarify this, each stage of inquiry is introduced with a diagram (Figure 6.1), categorized by the three CDR contexts of Lab, Field and Showroom and visualized as in (Koskinen, et al., 2011), noting the roles played by myself and other participants, the research forms and focus and the contributions to the developing understanding of agonism and its instantiation through design. This interpretation of Lab, Field and Showroom does not expect that for a given design challenge, investigations must be undertaken in each of the three contexts. Rather these contexts are taken as general framings of the research, constructions and situations to aid in analysis.
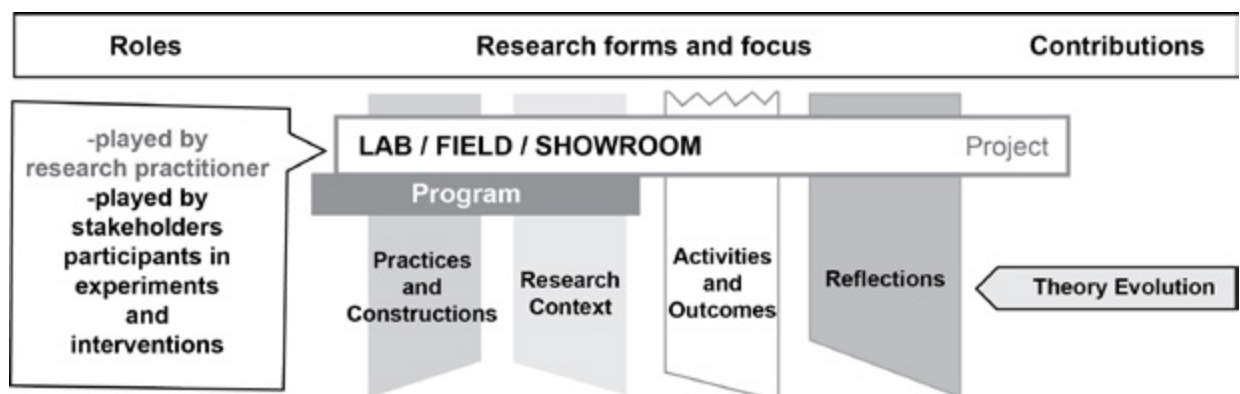
Figure 6.1: CDR diagram

Reporting begins at the start of the PhD undertaking when my established media arts practice of Soundscape Design and experience with Interaction Design and building immersive audio-driven virtual environments presented an immediately accessible field for investigation. In addition my particular interest for future research and creative inquiry into urban places and practices shaped this beginning. Thus commenced the series of research trajectories that iteratively enacted and examined theory and practice, and allowed the research focus to sharpen itself organically.

The following diagram describes the four research trajectories (Figure 6.2).
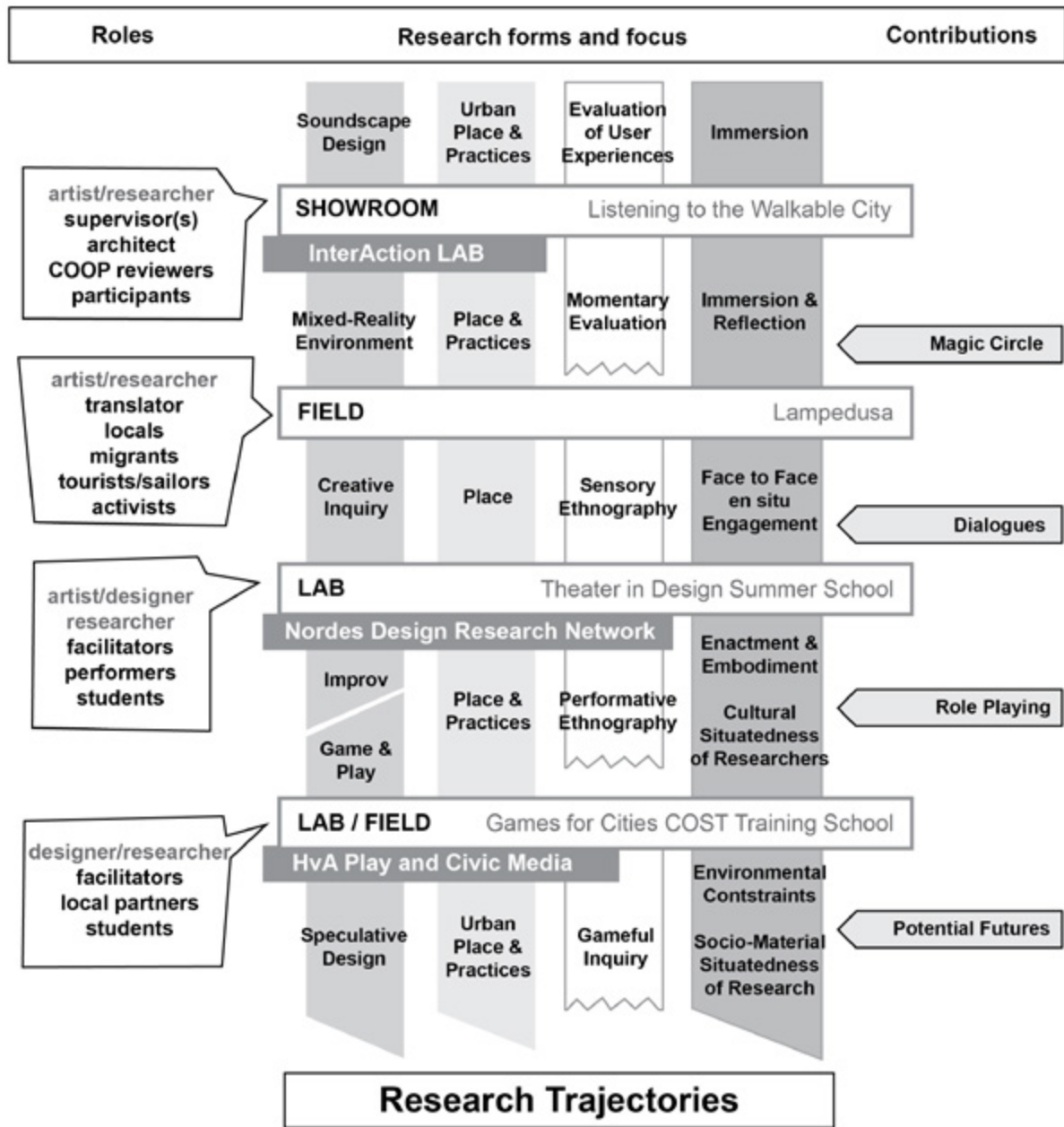
Figure 6.2 Constructive Design Research Trajectories

This thesis is written with two distinct voices, that of a researcher and that of a creative practitioner. One great challenge has been to integrate these very different perspectives and illustrates the intriguing possibilities of CDR, bringing theory and practice together. Every attempt has been made to let both voices speak freely, to complement the other, each with their own contributions. My research voice opens access to prior art and a wealth of background that reveals the material to the practitioner while my creative voice explores and expresses from an intimate, engaged and social perspective, providing its unique experiences in reciprocal support. In an emergent field such as CDR it is difficult to know precisely what to do, how to do it, and how to write about it, and this thesis is also a learning experience, trying to meld and make sense of the various perspectives through its composition.

6.1 SHOWROOM: Listening to the Walkable City

The first phase of the CDR began a practice-led research that examined how to evaluate participant experiences in digitally mediated immersive environment. A project was formulated, jury reviewed, and accepted to join the Interactive Experiences Track of the COOP2016 Conference, which took place in Trento. The primary concepts applied were related to Sound and Ambience, the Reality-Virtuality Continuum, the Memory-Experience Gap, and the dichotomy of immersion and reflection. This work examined my creative practice as media artist, constructing immersive technology-mediated environments.

Figure 6.3 outlines the first investigation that was based on soundscape design. My role in this was as media artist, generating a unique place of a Mixed-Reality Environment, and as researcher, initially exploring the concept of momentary evaluation, that is the gathering of participant feedbacks during, rather than after an experience. This resulted in a published paper on immersion and reflection (Willis, et al., 2017) and began to draw the links between the immersive multimedia environment and the magic circle of game and play (Huizinga, 1955).
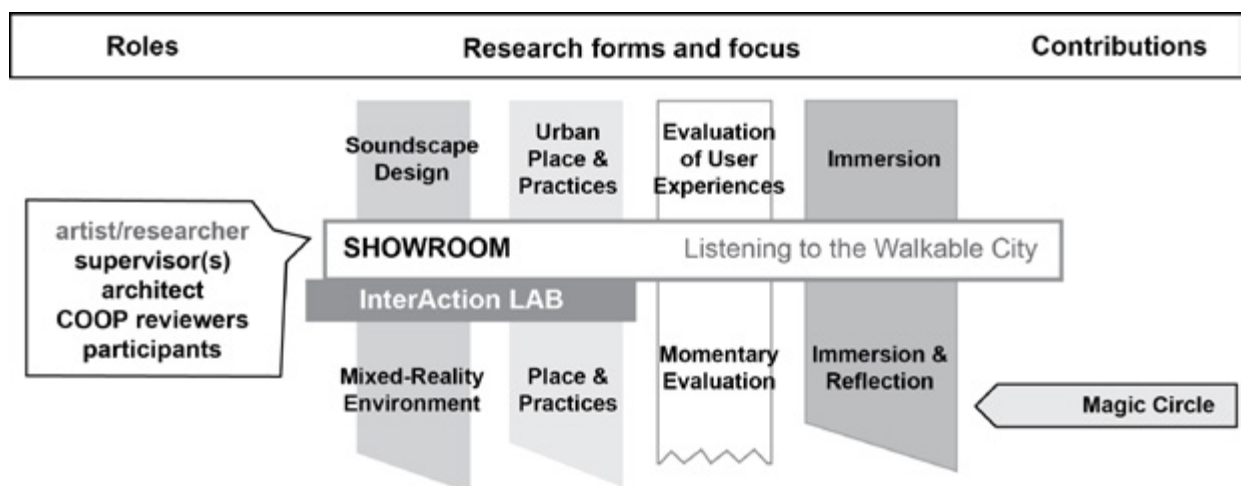

Figure 6.3 Phase 1 showroom

6.1.1 Immersive Soundscape Installation

The work began with a literature review, an introduction to cognitive science and HCI aspects of immersive environments, beginning with immersion. Immersion in any form, be it narrative, theatrical or technology-driven is related to the 'willing suspension of disbelief', the idea that an observer consciously disregards the fact that a situation is beyond the ordinary reality in order to follow or participate, accepting the logic of the experience regardless that it may deviate from that of the real world (Mateas, 2000). This is essential to understanding technology-mediated experiences, as virtual worlds, games and interactive installation involve hybrid situations that fluctuate along the reality-virtuality continuum (Milgram & Kishino, 1994). The real and the virtual in this model are located at the extremes and the space between regarded as Mixed Reality (Figure 6.4 following page), and for participants to engage meaningfully with the virtual or imaginary, there must be some suspension of

disbelief. Considering immersion as a complete captivation (Murray, 1997), reflective thought and contemplation of the immersive experience seem to inhabit opposite end of the continuum (Hansen, 2005). This is congruent with Schon's perspectives of reflection-in-action, the conscious renegotiation of knowledge and practice within an activity, and reflection-on-action, the post-experience review of knowledge gained through an activity (Schön, 1983).
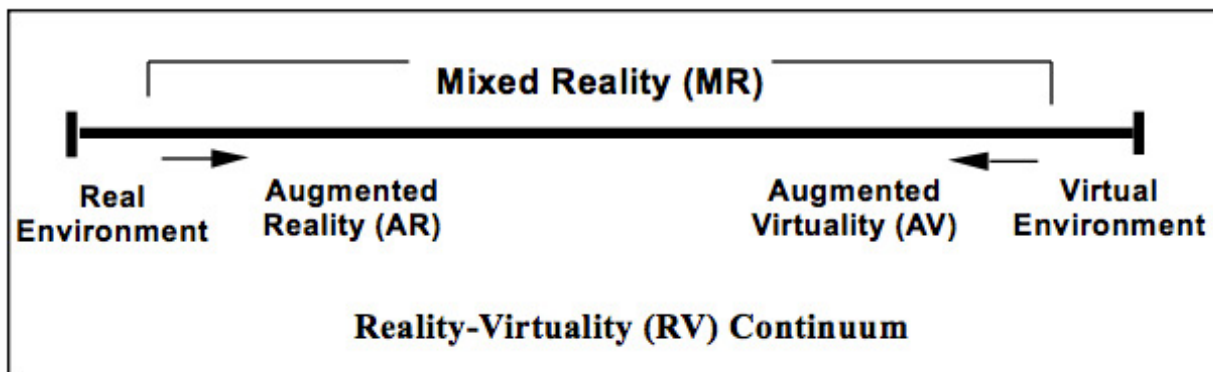
Figure 6.4 Reality-Virtuality Continuum (Milgram & Kishino 1994)

This first investigation was initiated with a review of evaluation methods for immersive experiences (Bilda, Costello, & Amitani, 2006; Candy & Ferguson, 2014; Edmonds, 2014; G. Jacucci, et al., 2010; John Waterworth, 2005). These included techniques such as video-cued recall (Bilda, et al., 2006) to supplement questionnaires and multimodal investigations such as design probes, cultural commentators (Gaver, et al., 2004), polyphonic assessment (Gaver, 2007) and sensual evaluation (Katherine Isbister, 2006). In this review it was noted that the majority of HCI research into experience evaluation relies on post-experience reporting, which potentially fails to access the thoughts, feelings and emotions of participants from within the lived experience (Bruun & Ahm, 2015). The importance of extracting participants' perspectives through momentary impressions became a primary concern, related to the potential, and sometimes marked dissonance between the emotions, sensations and the perceptions of the moment and those recalled afterward (Kahneman D., 2005). This dissonance is referred to as the memory-experience gap (Miron-Shatz, 2009) and it has driven the development of methods to address the immediate experience in cognitive science research (Csikszentmihalyi, 1994) and behavioral medicine (Smyth & Stone, 2003). The discrepancy between momentary and retrospective data in reporting is attributed to a variety of experiential, environmental, memory and cognitive factors (Miron-Shatz, 2009).

6.1.1.1 Soundscape Installation

These questions and concerns about experience evaluation were threaded together with my media artistic practice, and grounded the creation of *Listening to the Walkable City*, an immersive soundscape installation that served as an object of investigation (Figure 6.5a following page). This installation ran for several days during the COOP2016 conference in an underground car-park that was accessed by a set of stairs leading down from the venue forecourt. The material components of the installation were a circular array of six audio monitors on stands, a north arrow marked on the floor in the center and a bamboo street-sweeping broom. Several chairs and tables were located to the sides supporting computer, audio equipment, and a coffee machine.

Figure. 6.5 a,b: Installation environment in Trento, Italy and real environment, Hong Kong

The real environments portrayed in the soundscape were pedestrian stairs in Hong Kong that are the focus of the research project "Hong Kong Stair Archive: Documenting the Walkable City" by architect Melissa Cate Christ, at HKPOLYU School of Design, with whom the I had previously worked as Research Assistant. The soundscape was composed of street recordings made on these stairs that were loosely arranged in the installation environment to reflect the real world situation in Hong Kong. The 8-meter radius of audio monitors in the car park encapsulated several short segments of stairs that ascend relatively steep inclines in the city and are capped at each end by auto traffic. The ambiance portrayed by the sounds comprised the social and cultural activities of the this niche urban environment, its narrow but open spaces interspersed with small parks, public toilets and lined with trees, local small businesses and outdoor restaurants (Figure 6.5b).

6.1.2 Experience Probes

Participation in the study was opt-in; attendees to the conference were invited to wander the environment during conference breaks and were allowed a few minutes to explore before being offered a clipboard and pen and invited to enact a probe that consisted of a printed form with basic instructions and a map circle with a 'North' arrow (Fig. 6.6a following page). This arrow was replicated on the floor of the installation and aligned north of the virtual soundscape, the car park installation space and the probe (Fig. 6.6b following page). Participants were asked to "*Describe (in any language) some of the sounds that you hear. Number them 1,2,3… and mark their position on the map.*" Additionally they were asked to "*Describe the ambience that this installation presents.*" and after, to "*Describe your experience, impressions, or comment on this installation*." Participation was largely individual with little discussion or collaboration during the probe exercise. Several participants sat in one of the chairs to write in more detail, though most remained standing. Instructions were left deliberately simple, and
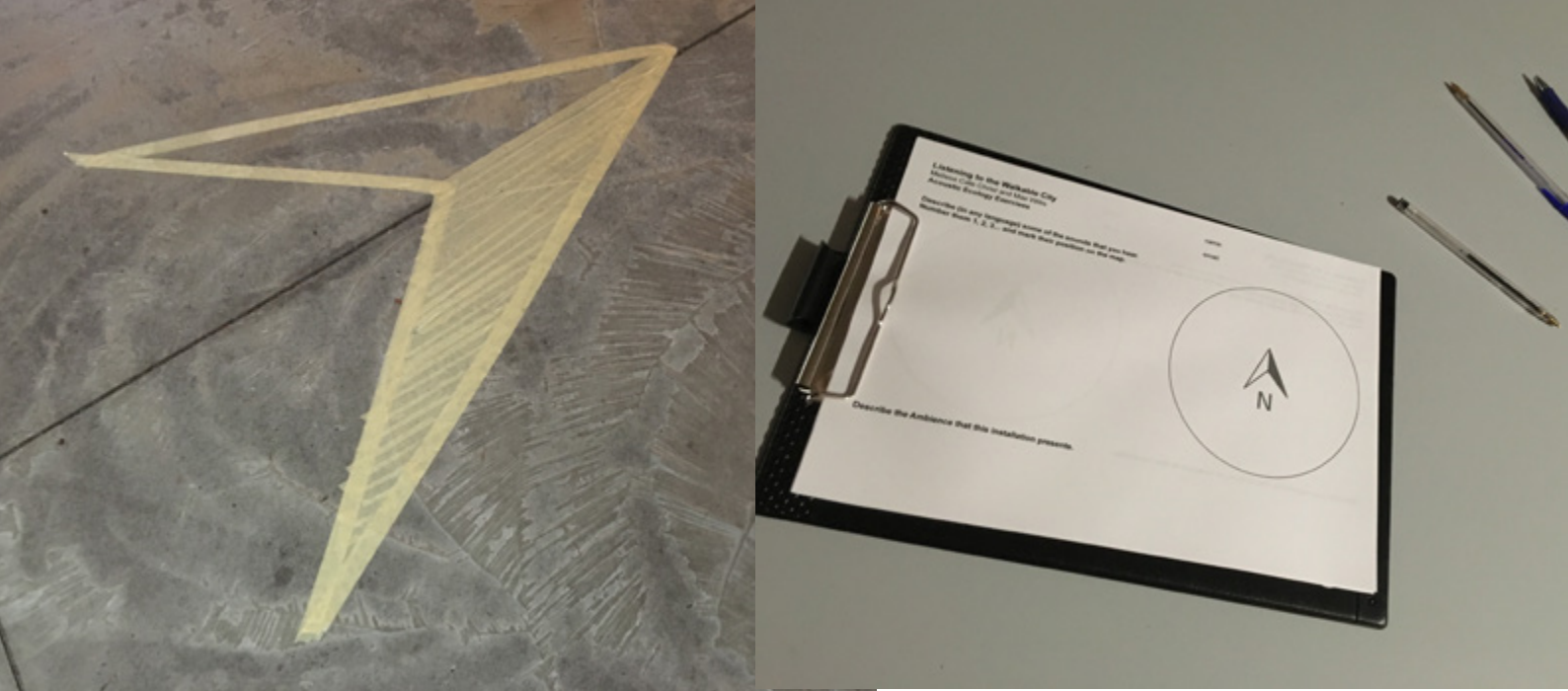
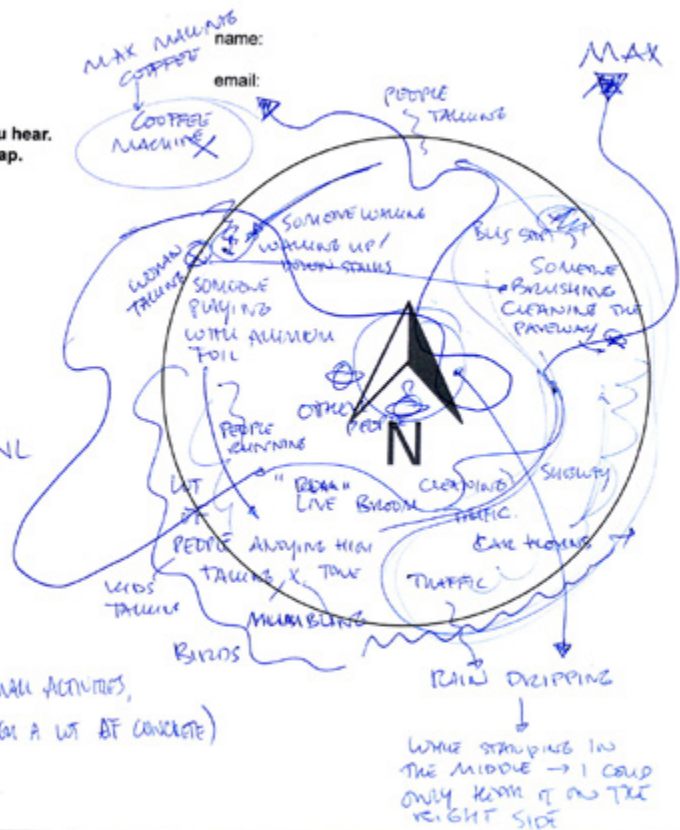**Figure 6.6a, b: Probe clipboard and North marker on floor**

participants took various approaches to completing the exercise.

The probe produced 34 participant-authored maps (Fig. 6.7); where necessary, these were translated into English by native speakers. Transcripts were thematically analyzed using AtlasTi, first grouping descriptions of sound sources together, such as "*broom*" and "*sweeping*", "*auto*", "*car*" and "*traffic*" and then examining for inscriptions of senses of self and place. Self-perception was identified for example in "*I feel*", "*feeling*" and "*I am*", references to memories such as "*in some ways it remembers a bit Beijing or Hong Kong*" and creative or imaginative declarations, as in "*These sounds are really inspiring for writing poetry!*" and "*... crimescene*". Sense of place was noted in comments such as "*It seems to be in a shop overlooking the street in a pedestrian district...*" and "*People passing by or exiting the workshop; happy because their work time has finished*." Frequencies were determined not by word occurrences, but by the number of participants reporting in each category, as many participants repeated words and phrases. Participants' probes were further sorted by the method used to map, for example numbering of sounds or speakers, showing motion, and text entered direct on the map. Detailed analysis of these probes can be found in (Willis, et al., 2017).

Listening to the Walkable City
Melissa Cate Christ and Max Willis
Acoustic Ecology Exercises

name:

email:

Describe (in any language) some of the sounds that you hear.
Number them 1, 2, 3... and mark their position on the map.

CAROLINE HUMMELS
C.C.M.HUMMELS@TUE.NL

MAX MAKING COFFEE
COFFEE MACHINE

PEOPLE TALKING

MAX

SOMEONE WALKING
WALKING UP/DOWN STAIRS

WOMAN TALKING

SOMEONE PLAYING WITH ALUMINUM FOIL

BUS STOP

SOMEONE BRUSHING CLEANING THE PAVEWAY

N

OTHER PEOPLE

PEOPLE RUNNING

LIST

"REAL" LIVE BROOM

CLEANING TRAFFIC

SUBWAY

CAR MOVING

PEOPLE ANNOYING HIGH TALKING X. TONE

TRAFFIC

KIDS TALKING

MUMBLING

BIRDS

RAIN DRIPPING

WHILE STANDING IN THE MIDDLE → I COULD ONLY HEAR IT ON THE RIGHT SIDE

Describe the Ambience that this installation presents.

CROWDED CITY WITH PEOPLE, TRAFFIC, SMALL ACTIVITIES, WITH A BIT OF NATURE (ALTHOUGH A LOT OF CONCRETE)

Figure 6.7: Experience probe samples

Listening to the Walkable City
Melissa Cate Christ and Max Willis
Acoustic Ecology Exercises

name:

email:

Describe (in any language) some of the sounds that you hear.
Number them 1, 2, 3... and mark their position on the map.

① RAINY DAY, CLOSE TO A "ROOF GUTTER" → GRONDAIA italian: TRAFFIC, MAYBE CLOSE TO A SCHOOL.

② BACKGROUND NOISE HEARD FROM INSIDE A TRAIN, A CITY TRAIN, IT IS POSSIBLE TO HEAR TRAFFIC or TRAM "TRAM".

③ C'E' UNO SPAZZINO CHE PULISCE LA STRADA CON UN SCOPA FATTA DI "SAGGINA": RAMI / E RAMO SCELLI MORBIDI, UN MARTELLO PNEUMATICO

④ CHICKENS, IS IT A MARKET? OR A SOUNDS MORE AS A STREET FOOD PLACE.

⑤ KITCHEN WARE, OPEN STREETS PEOPLE WORKING FACING, MAYBE A FABBRO. (PERSON THAT WORKS METAL.

⑥ RAIN AGAIN, SITUATION OF N.1. SAME

④ ⑤ ③ ⑥ ② ①

N
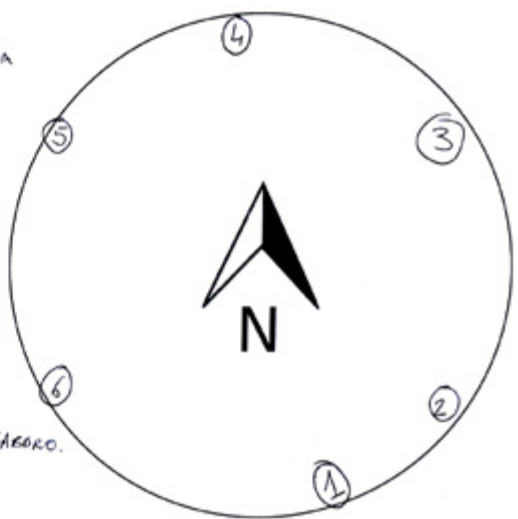
Describe the Ambience that this installation presents.

AT THE END, I REALIZED THAT THE AUDIOS ARE CONNECTED ONE TO ANOTHER. WHEN I ARRIVED AT POINT 6 THE AUDIO OF POINT 5 WAS CONTINUING. SPOTS

DURING THE WALK EYES AND SIGHT ARE NOT IMPORTANT: I WAS LOOKING AT THE CEILING, THE MAN NEXT TO ME KEPT EYES CLOSED. IT IS STRANGE THE DIFFERENCE BETWEEN ACTUAL LOCATION (CAR PARKING) AND THE WORLD PRESENTED BY SOUNDS. THE RECORDING IS FROM FAR AWAY, I DO NOT RECOGNIZE THE LANGUAGE PEOPLE SPEAK, BUT SOUNDS ARE UNIVERSAL. I WAS SURPRISED TO RECOGNIZE THE SOUND OF A SPECIAL KIND OF BROOM. IT PLEASANT WHEN I RECOGNIZE, MYSTERIOUS WHEN I CANNOT CONNECT TO SOMETHING KNOWN.

6.1.2.1 Results and Evaluation

Unsurprisingly, the probes described a true-to-life perception of the actual place in Hong Kong, highlighting the capacity of soundscape to accurately transmit ambience. Participants' ability to identify the individual elements of the soundscape, and describe accurately the overall ambience, was to be expected, as the installation was a straightforward arrangement of familiar urban sounds in an enclosed listening environment.

The main interest came from examining participants' reporting of these sounds in relation to their awareness of self and presence in the environment. Self-perception (41%) was identified in statements such as "*If I close my eyes I have the impression of find myself elsewhere*" and "Impression that around you is an oriental market in action". Sense of place, or first-hand experience of the ambience of the soundscape (38%) was marked in texts such as "*It seems to be in a shop overlooking the street in a pedestrian district [...]*" and more imaginatively, "*A gutter, a water loss slips unseen in a silent narrow street, on the margin of the big and noise metropolitan arteries […]*" Nearly a third (29%) of participants expressed both self and place, clear signs of presence in the virtual that signal immersion. Several participants addressed the overlap of real and virtual presence directly, for example "*During the walk eyes and site are not important: I was looking at the ceiling the man next to me kept eyes closed. It is strange the difference between actual location (car parking) and the world presented by sounds.*" and "*I felt I was walking a bit in circles; maybe moving back-and-forth; am I looking for an address?; The sounds move from one side to another; but I felt more like it was me that was moving.*" Another important overlap between reality and virtuality on the continuum could be observed in how participants created their probe. Some participants (52%) numbered their sounds and marked them on the map, while others numbered the six audio monitors on the probe and described the sounds they perceived were emanating from each source. However the percentage of participants simultaneously reporting reflection and immersion remained constant, regardless if individuals were consciously attending to the installation environment or were focused on the virtual world of the soundscape.

This preliminary investigation of using probes demonstrated possibility that a hybrid state of real-virtual, immersive-reflective experience could be initiated through the probe. That 38% of participants described movement within the soundscape, and 26% depicted motion on the map further suggested that participants were cognizant of their own position, as listeners, in relation to both the real and the virtual environments. Furthermore, the probes demonstrated the potential to engage participants in reflective practice and gather data from directly within the immersive experience. The probes provided sufficient detail to establish if participants experienced self-reflection and sense of place, even identifying some participants reporting from a state that clearly fluctuated along the reality-virtuality continuum. The proposition that one can reflect while immersed was borne out even among participants acting with acute awareness to the technological mediation, the virtual nature of the installation.

6.1.3 Reflections on practice

The construction and analysis of the soundscape practice elaboration on the peculiar mental state balanced between reality and virtuality that participants were clearly engaged in. It encouraged the idea of polling from within, and as an essential part of, an experience, and demonstrated the possibility to enact momentary evaluation of participant experiences and perceptions. Not satisfied with observing the effect, or affect of technological simulation on participants, and having spent years doing such in-the-darkness virtualizations, a conscious decision was made to focus the research outward.

This project had tentatively identified a place of shifting consciousness, a suspended identity somewhere between the constructed artifact and an experience of the real world, that reflecting different states of being and made visible participants' presence and agency. The question naturally turned towards, "What can be achieved there?" Converging interests with another PhD student in the areas of persuasive design, attitude and behavior change, pervasive games, geolocation and diversifying the site of investigation from the art space to the public led to more investigations in the literature. This led to an intuition that, in this delicate realm between reality and fantasy, participants might be more susceptible to persuasive messages. Some literature suggested that this might be true (Baranowski, Buday, Thompson, & Baranowski, 2008; Kors, Ferri, Spek, Ketel, & Schouten, 2016) and that attitudinal shifts could be initiated through such probes, as play and games (Ian Bogost, 2007; Tanenbaum, Antle, & Robinson, 2013). Perhaps most crucial was the reflection that in fact, the reality-virtuality continuum may not be technology-dependent at all, and roughly coincides with immersion in theatre and the magic circle, the fundamental social and psychological mechanisms of performance and games (Huizinga, 1955). These realizations morphed into a much stronger interest in game, play, driven by my own established practices and tacit understandings from many years' involvement with theatre and Interaction Design, where the locus is on creating meaningful experiences, and drawing participants into that suspension of disbelief, out onto the reality-virtuality continuum.

6.1.3.1 The Stirrings of Agonism

Design intuition before this point had focused on the place established by the virtual environment, and the identities of participants or visitors within the installations, including those people whose voices and activities contributed to the soundscape. The examination of the reality-virtuality continuum revealed a new facet of identity, that of the visitor to the virtual world, and its real-world counterpart the participant in the immersive environment. My own focus in the PhD was in this period transforming from questions of how to make sense of my technology arts, and participant engagement *within the technological construct*, to asking how my arts could in some way make sense of the world, and elaborate participants' perceptions vis-à-vis the world *through the technological construct*. At the time Brexit, the 2016 USA elections and extremist rhetoric that amplified, and popularized fear of migration and of migrants dominated the geopolitical atmosphere, I took the decision to focus on this social issue, and to examine European migration through my media arts.

Addressing such a hugely conflicted socio-political space framed the research from that point in terms of design activism (Markussen, 2013) and quickly unearthed the design literature on agonism (DiSalvo, 2010; Mouffe, 2007) with several influential articles emerging over the summer of 2016 (Koskinen, 2016a, 2016b). While agonism had not crystalized yet as a central theme, the research continued its practice-led approach: as a sound artist and installation designer my intuition was to seek out a real-world place that had particular relevance to the concept, travel there to collect audio, and to build another soundscape installation, within which to further examine the issue. In Italy, one place that most closely signifies the migrant and outsider is Lampedusa, a small island in the Mediterranean Sea.

6.2 FIELD: Lampedusa field research

For the second phase of the research I undertook a week-long field excursion to the island of Lampedusa and continued the creative inquiry by cycling about the island to explore, recording sounds, engaging with locals and eventually conducting interviews with local stakeholders. As it was based on the exploration of the environment primarily through listening, the investigation was inspired by Sensory Ethnography (Pink, 2009). The intention was to gather material on the island, and upon return to my university in north Italy, create an immersive soundscape installation that would in some way elaborate aspects of the place and it's particular challenges in regards to the migration crisis. The roles I played were sound artist and researcher, and the main contributions proved to be the need for face-to-face engagement directly within the community, and the importance of dialogues between community stakeholders. This stage of the research is outlined below in Figure 6.8.
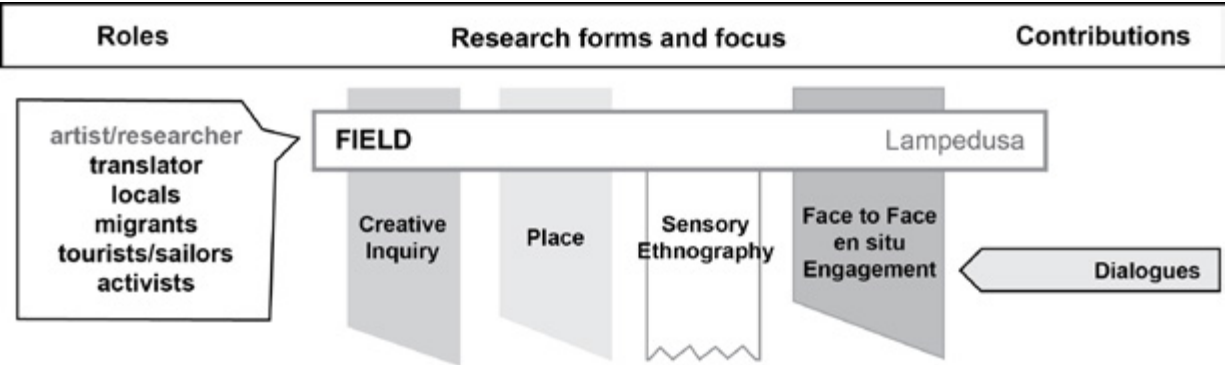

Figure 6.8: Phase 2 field study

Lampedusa is a small island between Sicily and the North African coast (Fig. 6.9) whose name in Italy has become synonymous with the 'crisis' of migration. The island was, and still is largely a quiet backwater, tourist destination, and a rare breeding ground for sea turtles. Yet gradually Lampedusa entered the public consciousness, known as the effective maritime border of the EU, following provocations by Mohamar Quadafi in Lybia in the 1980's, then more so due to the arrival of hundreds of thousands of people in boats, primarily migrants from Africa and the Near East which accelerated around the turn of the millennium (Fig. 6.10). This influx of non-natives, and the rapid development of tourism and military/naval infrastructures on the island radically reshaped the social and political landscapes of Lampedusa (Coluccello & Massey, 2007; Melotti, Ruspini, & Marra, 2018). The island became embroiled in Europe-wide debates the security and humanitarian challenges of border controls, and the associated criminality of human trafficking (Campesi, 2011; Cuttitta, 2014; Orsini, 2015).

Figure 6.9: Lampedusa from the air

Figure 6.10: Migration Routes and Lampedusa image: Matteo Riva Panorama
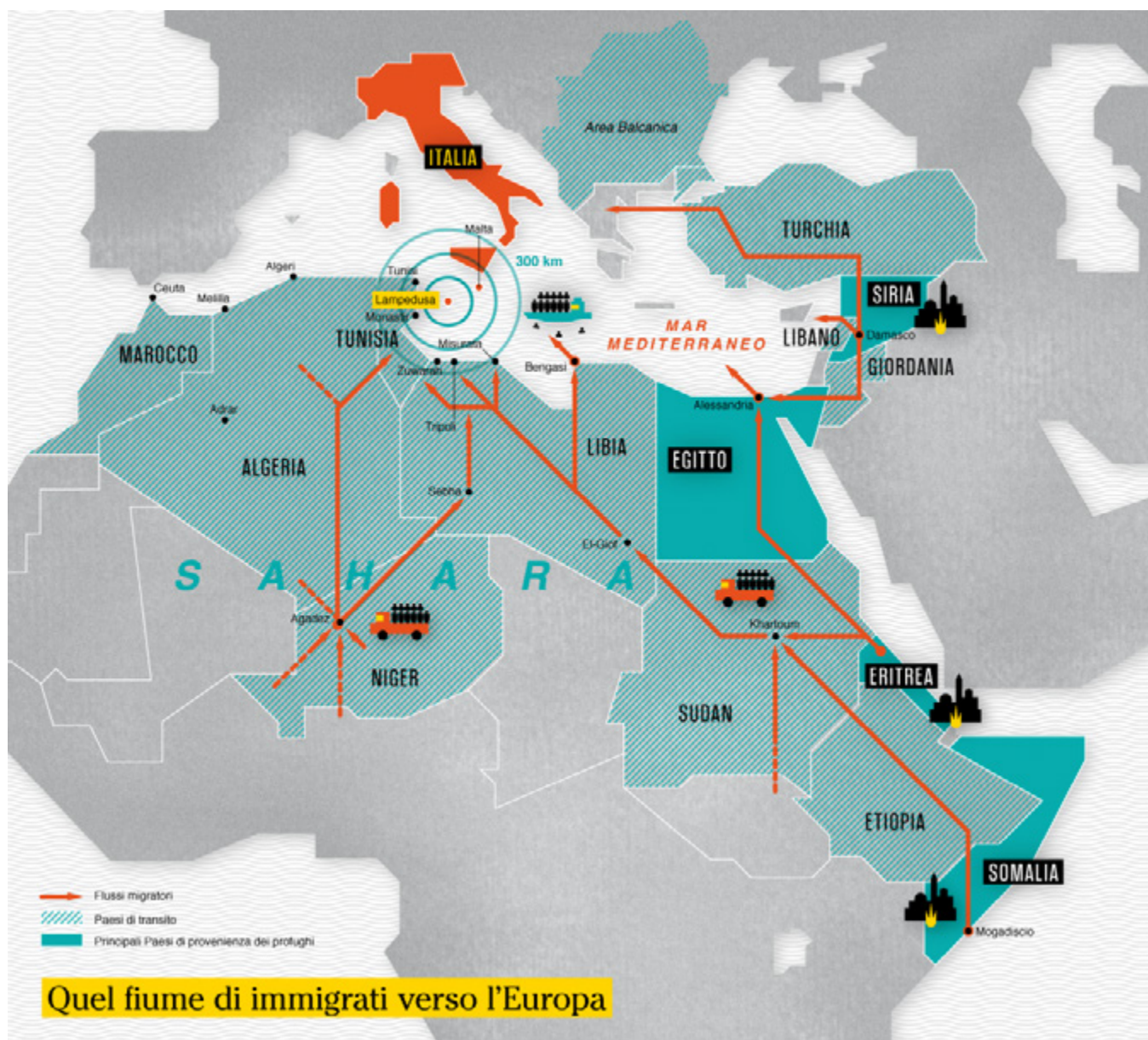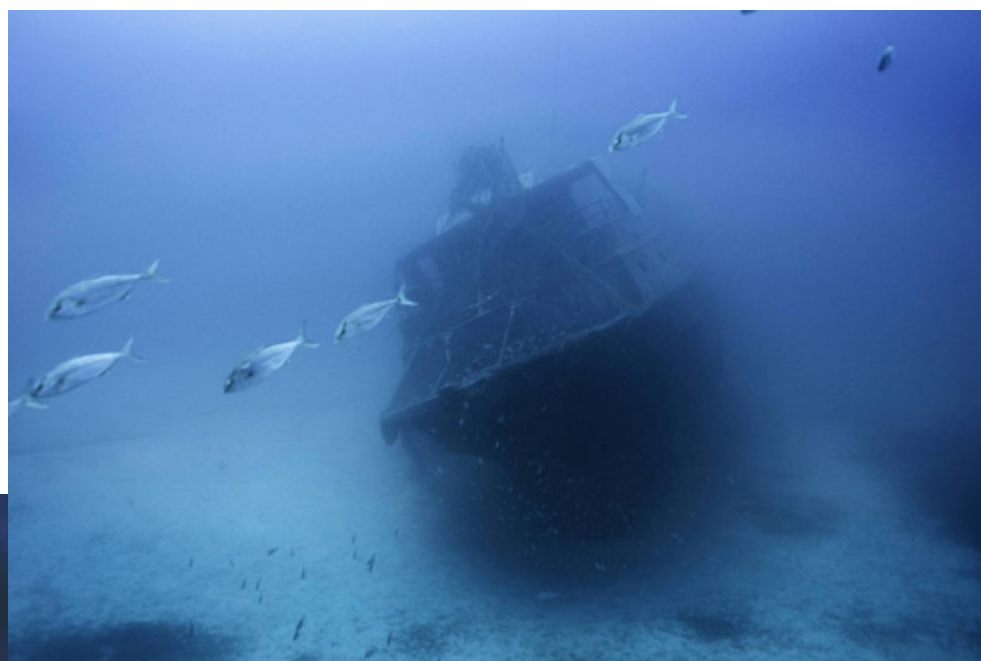
Figure 6.11: "Immigration, the endless massacre"

Figure 6.12: Wreck that claimed over 300 lives

Figure 6.13: Fire at Sea Poster, Berlinale Golden Bear

Figure 6.14: The raft of lampedusa, Lanzerotte

6.2.1 The migration crisis

Lampedusa had also become associated with the humanitarian costs of migrant crossing of the
Mediterranean Sea, following intense media coverage of several migrant ships sinking in October
of 2013 (Fig 6.11). One particularly horrific shipwreck off the coast of the island drew widespread
attention, as more than 300 lives were lost within sight of land (Fig. 6.12). This one incident sharpened
attention to the dangerous journeys undertaken to reach Europe, although the cumulative total of
individuals who have perished in these seas is reportedly nearing 15,000 souls, according to one NGO
(www.missingmigrants.iom.int). The tragic loss of life was broadcast by sensational news headlines
such as "*Immigration, the endless massacre*" and video footage taken by police divers and posted online
that depicted the ship and corpses scattered across the sea floor.

In popular culture and artworks, Lampedusa also features, for example the winner of the 2016 Berlinale
film festival Golden Bear prize, Gianfranco Rossi's 'Fuocoammare', or 'Fire at Sea' (Fig. 6.13) was
set on Lampedusa with the migration crisis playing a supporting role, and the famous underwater art
gallery off of Lanzerote features a sculpture '*The raft of Lampedusa*' that idealizes the migrant crossing
(Fig 6.14).

6.2.1.1 Investigation of Place and Practices

It was against this backdrop myself and an Italian-Egyptian translator (English, Italian, Arabic) embarked on a week-long excursion to Lampedusa. During this time we acted as tourists, staying in an airBnB bungalow, and explored the island day and night by bicycle. The environment, people, places and practices were observed and documented as we visited visiting important sites, sound recording, engaging people in informal conversation, and facilitating semi-formal interviews with a variety of people on the island. These included Lampedusa natives, naval officials and sailors, temporary and established migrants, several members of the local migration-orientated NGO Askavusa, other tourists and seasonal Italian service-sector laborers.

Lampedusa is a very small place, with one main town of Lampedusa that features a promenade, several churches, a small museum and hospital. A long promenade lined by restaurants and souvenir shops leads downhill to a small harbor (Fig. 6.15a). The rest of the town and its local activity spread either side of the main street (Fig. 6.15b). The place is quite small and its outskirts are reached quickly on foot or bicycle, which is one of the main forms of transportation there. Dotted around the island are beaches in various states of isolation; every available swimming or sun tanning place appeared to be utilized, most often including a beach bar and umbrella rental. In the summer months the main streets of town appear wholly empty during the morning and the heat of the day, and late at night, yet full of activity mornings and evenings. During the winter season the place is said to be quiet and deserted.

6.2.2 Complex island realities

A thematic analysis was performed on field notes, observations and interviews that identified several themes related to place and practice, as well as perceptions and activities concerning migration issue. The predominant themes included *locals vs. outsiders, transience, poor communication,* while further reflection also identified the theme of *status*. These themes are described here, together with a series of vignettes that illustrate some of the complex challenges presented by Lampedusa. Various, sometimes overlapping stakeholder groups were identified, and included local Lampedusans, short- and long-term migrants, tourists, military personnel, local businesspeople, church officials, NGO volunteers, activists, artists and researchers.

Locals vs. outsiders was a frequently identified theme, embedded the widely-held and oft-mentioned perception that visitors to the island cannot understand the Lampedusa situation and often arrive with predetermined agenda that has been shaped by sensational media representations. This must be said to include my own preconceptions as investigator, as the situation on the island in 2016 turned out to be quite different than imagined a priori. Curiously, negative perceptions expressed by locals towards outsiders were rarely associated with migrants. Outsiders were identified as the various military organizations and service-people, Italian and European governments, artists and NGO's attempting research on the island. To a lesser extent tourists were treated as outsiders, though the tourism was mostly communicated as a necessary and integral part of Lampedusan place and practices, and locals seemed to have less expectation that tourists should engage any differently than as drivers of the service economy.

Figure 6.15a (left): Tourist promenade, early morning, Figure 6.15b (right): Local funeral, afternoon

6.2.2.1 Vignette: The sailors and their captain

Early in the morning, a group of sailors in uniform were approached as they walked along the empty promenade in the direction of the harbor and the navy ships moored there. Upon being approached, they identified themselves as members of Guardia Maritima and their captain (speaking). The sailors were easygoing, ready to answer questions in Italian. They remarked at once that the flow of migrants to Lampedusa been reduced drastically, even stopped in the last two years due to the change in strategy. The Italian Navy, they said, got tired of the tragedy and began sending its ships to the 40km maritime border with Libya to intercept the migrant dinghies and fishing boats. Some of these vessels, they said, were no more than rafts, that the smugglers towed to the 40km mark and then called the Italian authorities for help, often disabling the motors of the rafts. Upon rescuing the migrants, Navy officials would call to the handful of holding centers in Sicily, and when it is decided which centers had capacity to receive these new detainees, the migrants would be taken directly there. Only occasionally would a ship arrive in Lampedusa, though one such boat had been escorted into the harbor the day before, and the sailors seemed honestly relieved that the major tragedies were being averted by this practice. After this brief encounter, the sailors carried on towards their ships, one slapping the captain on the back and laughing "Eh, Capitano!"

The sailors' account clarified why there was currently little visible evidence of the migration crisis on the island. The famous boat graveyard had been largely cleared, and only a handful of migrants were observed. Many of these people had lost their belongings and were issued with a uniform of sorts, a white tshirt and red or blue sports shorts, recently arrived migrants were easily spotted. In fact, people of color on the island were almost exclusively identified as migrants or street sellers, with a few exceptions of young people working in bars and restaurants.

The focus on locals vs. outsiders is strongly correlated to transience and in fact only a very small proportion of the summer-time population lives on the island throughout the year. Many local young people professed to spend most of their time in Sicily or elsewhere in Italy and returned only for the tourist season. The street sellers were also only present on Lampedusa during summer months, dependent on the arrival and departure of the tourists. Migrants arriving in boats typically spent a week on the island and then are shipped on, and there appeared to be little integration of these people

Figure 6.16 (right): Crowded migrant boat, off the Libya coast. Image: Italian Marina Militare

Figure 6.17 (left): Crowded beach, Lampedusa

into the local society and economy. Military personnel were stationed on the island cyclically, though locals expressed that their presence as a group had become more persistent and permanent over the years. Artists, filmmakers and researchers had investigated the island for only a short time, and this was suggested by the NGO volunteers as a significant problem, and that lacking a fuller experience and understanding of the island's complex issues, these people went on to portray the island, and Lampedussans inaccurately.

6.2.2.2 Vignette: Different perspectives at the NGO

Askavusa is an NGO originally founded by a group of a dozen or so interested Lampedusans ostensibly to engage with the humanitarian discourse around the migrant crisis. The group re-purposed a relative's boathouse, and curated a small collection of objects collected from outside the migrant holding center. Exhibits included milk cartons from Egypt, grain packets from Libya, juice cartons, pots and pans, life jackets, etc. Current members of the NGO had a falling-out several years ago, and though events were held infrequently, such as a drum jam with African migrants, the museum was closed, and visits possible only by appointment. An interview was arranged with one prominent member of the group in the museum space, a big bearded Italian man who sat in front of a small audience of the two researchers and opportunistic tourists who had happened upon the open space. This man claimed not to be an artist, yet presented the museum exhibits as installations. When asked who are the NGO members and what do they do, he launched into an extended, politically charged speech in a distinctly Anti-European tone, describing an island overtaken by outside political forces. One of his main concerns was the 'militarization' of the island, and he recounted that an original force of several local police officers in the town, and 7 American CIA operatives manning the listening post in the west, had grown to more than 500 military personnel. He demonstrated one musical/tool for ship caulking, claiming to be one of the only people on the island who can replicate this Algerian technique, and drew our attention to a video demonstrating the musical craft handwork, pounding on the wooden hull of a ship in dry dock. Overall the tone of his discourse was strongly activist, and his impassioned speech lasted nearly 40 minutes.

Another of the NGO founding members, a woman, was approached for an interview outside of the museum space, and agreed to an informal interview after her work at an ice cream shop. Her tone was significantly more relaxed, and she repeatedly suggested that facilitating dialog between the all of the

stakeholder groups on the island was the most important goal of the NGO, and that such communication was currently nonexistent. She noted the militarization of the island, but also spoke of the contribution of the military soldiers and government officials to the local economy. This woman was refreshingly honest and upfront, and said she would be uncomfortable to work with artist or outside researchers again, having previously had bad experiences of such collaborations. She spoke of several individuals who had come to the island with predefined narrative about Lampedusans, and were only there to collect media to support that position. One artist did not even want to come visit, only asked for their contribution to an exhibition elsewhere in Italy, and another photographer had come, but then had portrayed the islanders in a very poor light. She insisted that in order to understand Lampedusa and the challenges there, we would need to return to experience Lampedusan life in the long term, and she would want to see some longer-term commitment before she would be comfortable to cooperate in any potential project. That being said, she was quite amenable and seemed open to cooperation and to introducing other members of the NGO for a longer-term project.

This theme of poor communication, or lack of communication was not only vocalized by members of the NGO as hampering coexistence between the military and local people, but was apparent also in the interpersonal and administrative falling-out that had disrupted the group. Likewise, the official Lampedusa museum had no information on the informal migration 'museum' or even the existence of the NGO, nor did local businesses owners who were asked. Communication was also clearly an issue for many migrants as the most recent arrivals were of Malian and Senegalese extraction and spoke French rather than English or Italian. A couple of migrants were observed communicating with tourists, who inquired as to their stories while buying them beers, which also reflected a limited, but existing curiosity to engage on the part of some tourists.

6.2.2.3 Vignette: Open racism and status check

In the evening, the street sellers congregated along the promenade and set out tables of wares that consisted of many North African handicrafts, trinkets and hand-made jewelry from local Italian artisans (Figures 6.18a&b). Wandering through this informal marketplace, one conversation in particular with one street seller left a lasting impression. This man, who was on the side arguing with his son and seemed to have an East European accent, gestured to one voluptuous Italian woman as she passed, "She's no good," he said, "she goes around with 'negros'". This was quite surprising, as it was spoken openly to myself, an obviously foreign white American researcher and directly to my translator companion, a small dark-skinned Egyptian-Italian woman. When she replied that the word 'negro' is offensive, the street seller replied, quite unfazed, "Well, that's what they are!"

Figure 6.18a Cafe nero at a sidewalk cafe, and Figure 6.18b local street-seller

A critical analysis of the previous vignette exposes many layers of latent and overt racism, misogyny and perceptions of status that were identified in retrospect as an important theme (Guetto & Azzolini, 2015). This negative comment on the inappropriateness of the local woman's social behavior was overtly racist, and suggested resistance to the idea of integration and perhaps even angst toward black male virility. The connotation that the woman's sexuality was a local commodity that was being lost to the migrant outsider was succinct, particularly as it was so casually communicated to myself, a white male foreigner accompanied by a dark-skinned but clearly Italian translator. Subsequent reflections reinforced the idea of status, as many people spoke to the 'real' Lampedusans who actually lived year round on the island. These people had the highest status as locals, reveled in their obscure dialect, and spoke of their privilege to experience the close-knit community feeling that descended on the place during off-season, when the tourist crowds left and the island returned to its authentic, small town identity.

Those migrants who had arrived and were hosted temporarily on the island when I visited were almost exclusively young West African men, who spoke no Italian and very limited English. They were housed in a holding camp some distance from town, yet some would sneak through a hole in the fence and congregate on a wall across from a tourist beach, conspicuous in their uniform white t-shirts and shorts. Small groups would wander up through the town, some sitting on benches and watching the nightlife, and in the daytime many congregated at the church for free access to internet and telephone. Other migrants had been in Italy longer, spoke Italian and seemed more secure with means of income, to some extent integrated. However the majority of clientele in hotels, bars and restaurants, and visitors renting umbrellas on the beaches were Caucasian, and people of color were for the most part, serving them as merchants who set up stalls on the promenade, wandered the beaches hawking jewelry, or working in local bars and restaurants.

6.2.2.4 Vignette: Meaningful integration

Riding bicycles around the town during the morning and evening, one individual in particular stood out from the crowd, a sleight young black man wearing colorful clothes, sporting dreadlocks, and riding a mountain bike. When approached, he was easy to engage in conversation, and shared his story. A migrant from Gambia, his English was excellent, and he said he had been in Italy for 6 years. First he stayed in Rome for six months, and then for several years in Sicily, then a year or so ago he had come to Lampedusa. He had been making a living creating t-shirts and handicrafts, and a friend had put him in contact with a local family of artisans on Lampedusa. Arriving on the island initially for an interview, he had been there for more than a year. He was learning the local stoneware crafts, as the children of the artisans for whatever reason were not following the family traditions. In addition to continuing their traditional crafts, he was able to sell some of his own works in their store. He seemed quite at home, and was aware of his unique situation being able to earn a living making art, and said that life could be good in Lampedusa.

6.2.3 Critical reflections on practice

What emerged from the ethnographic investigation in Lampedusa strongly suggested that any work to be done around the concepts unearthed on Lampedusa, should be done on Lampedusa, and should center on developing communication locally between the many stakeholders. The real situation on the ground was inconsistent with the media portrayal of the island and life there, and the crisis was at that time, no longer quite the emergency. The investigation of the lived environment exposed various identities, seasonal, spatial and cultural practices that shape the place that is Lampedusa. It likewise exposed the seemingly predatory nature of my original artistic inspiration to go to the island, collect media, and return to my university in the north to develop a virtual environment that would examine the migrant issue. This initiated some critical reflection on my own role as an outsider, as I was practicing exactly the kind of appropriation that some local people had articulated as being unhelpful.

The ethical concerns drove me to completely re-evaluate my artistic approach, and it came as no real surprise when during the Venice Biennale 2019, precisely these concerns were illuminated momentarily in the art world media. An artist had resurfaced and transported the sunken migrant ship that had claimed so many lives, and put it on display (Fig. 6.19). The ship was installed apparently at a cost of many millions of Euros, and exhibited without context or additional information, which led to scenes of art-tourists taking selfies with, and picnicking beneath what amounts to a maritime grave. This drew some heated, if ultimately short-lived media condemnation of the appropriation of this tragic artifact for an art stunt, which was titled "Barca Nostra", or "Our Ship", at Italy's flagship art and culture event, even as the Italian government was instituting policies that forbid ships from disembarking rescued migrants at Italian ports.

Figure 6.19 "Our Boat" exhibited at Venice Biennale 2019, photo: @MartinLHerbert

The main takeaway from this field phase of the research is that if anything could be shaped from the media collected on Lampedusa, it must be done in situ, an intervention on Lampedusa to strengthen local communications, as face-to-face engagement. It must avoid the sensationalism of crisis or emergency and allow local participants to define and share meanings of their own place and its practices. Most importantly, any work in this space must address skepticism of locals dealing with outsiders, and their not unfounded perceptions that outsiders use Lampedusa to further their own agendas, and even profit from the stories of tragedy and the challenges faced by real people on the island and in the seas just offshore. Subsequent reflection elaborated on these issues, and challenged the very concept of creating virtual environments: when the lived experience of the real world offered so much detail and room for improvisation and interpersonal, intergroup communication, what was the point of abstracting that experience through technology? When the people on the ground in fact have so much to say, yet their voices are rarely heard, what right do I have as artist to tell their story through my own artistic voice, or as researcher, to elaborate on their lived experiences at a university far away, in pursuit of my PhD?

6.2.3.1 Contributions to agonistic theory

Agonism had yet to be established as the central theme of the research, and as this second investigation reflected more on the attempt to engage artistic practice as research, several key points from the Lampedusa investigation were clarified in retrospect. The first is the dual focus on communication and activism, both which were clearly challenged in Lampedusa. The activist group had itself suffered from poor communication, among its members and in disseminating knowledge of its presence, intentions and activities among the island locals. The activist rhetorical style of one Askavusa member made communication difficult, even with potentially like-minded personalities such as myself, while the other NGO member spoke in her interview passionately about the need for everyone on the island to communicate to relieve tensions. The second main hint of agonistic concerns from the Lampedusa investigation was the critical reflection on the privileged role of the artist and the perceived hegemony of university or otherwise funded outside study over the island and its people. The explicit message from the activists was that outsiders are shaping the narrative about the island, and that local voices are not necessarily part of the European, or even the inter-Italian discussion about the place and its role in the migration issue. This revelation that unheard voices from the real place wanted to more actively contribute to the representation of their place and practices would later become a central critical concern in investigating agonism and design.

6.3 LAB: Improvisational Theatre for Social Design

The next phase of the research returned to the lab setting with lessons learned in Lampedusa and initial ideas on how to enact or embody an investigation of the migrant experience, and at that point I was still imagining the creation of an immersive environment. I joined the *Improvisational Theatre for Social Design* track of the Theatre in Design PhD Summer School at University of Southern Denmark, Kolding. Presented by Henry Larsen and Jacob Buur, from the Mads Clausen Institute, Thomas Markussen from Department of Design and Communication, University of Southern Denmark and Preben Friis form the Nordes Design Research Network. The 5-day PhD summer school gathered a diverse group of PhD students, academics and theatrical professionals to unpack the potential roles of theatre and performance in facilitating design research. This phase focused on enacting and embodying design challenges in theatrical skits, and facilitated a turning point in my research, away from the digitally mediated environment of soundscape and into game and role-playing. The exploration of performance and the use of improvisation became not only a research tool to investigate social challenges, but also an act of introspection on my own culture and community of research, my practice and intentions. This phase of the research was strongly inspired by performative, enacted and embodied forms of ethnography (Dolan, 1993; Park-Fuller, 2003).

The *Improvisational Theatre for Social Design* track examined micro-provocations, disruption, and embodied enactment and a variety of tools to investigate organizational change and social design. Sociality, identity, politics and the political were prominent themes in the lectures, constructions and performances enacted during the summer school. The concepts of participatory theatre (Boal, 2000) and performative ethnography (Pollock, 2006) were explored in depth, first in the frame of health care and the elderly, then as group and individual explorations of the participants PhD research projects. My roles in this engagement were several, as artist, designer and researcher, the research forms ranged from improve to game and play. A number of critical reflections throughout the experience placed the focus in particular on the cultural situatedness of myself and my teammates as researchers, while the main contribution to the developing concepts of agonistic practices was the emphasis on role-playing. This third phase of the research is outlined in Figure 6.20.
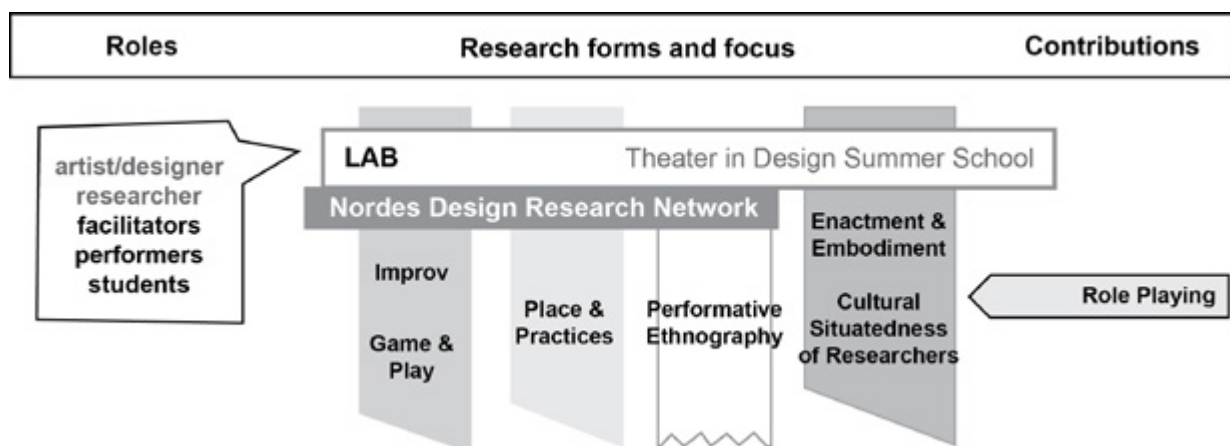

Figure 6.20 Phase 3 Lab

6.3.1 Enacting potential futures

The activities were grounded in primary texts that covered experimental design research (Brandt & Binder, 2007), improvisation in research (Larsen & Friis, 2018), performance and Interaction Design (Macaulay, et al., 2006) and more broadly, pro-social theatre and performance practices (Boal, 2000; Friis & Larsen, 2006). The use of performance in design research were first applied to an actual topic, 'Falling, the New Epidemic' that related a particular challenge in health and welfare of elderly people, the widespread incidence of avoidable falls and injuries in hospitals and care institutions. This problem was presented as a design challenge, that had been approached as a form of performance study, examining nursing practices, presence and reducing the prevalence of falls through organizational change (K. Norman, Renshaw, Mowles, Larsen, & Tucker, 2015). In the initial activity, workshop attendees, a nurse practitioner, and performance facilitator enacted a particular scenario. The objective was to elaborate on the current reality, and imagine a potential or preferred reality, and then enact that through performance. This scene was based on a real world experience in a care home of an elderly woman who lay in bed at night and wanted to go to the toilette, but was reluctant to call for the nurse through the electronic call system, so as not to be perceived as troublesome. She had therefore arranged the furniture so that she could steady herself and make her way across the hospital room to the WC. Unfortunately, this strategy failed, and she fell, peeing herself in the process. When the nurse eventually discovered her, the elderly woman was scolded for not calling for help in the first place. "Oh look at you, you've hurt yourself. And, oh, you peed on the floor too. What a mess!", said the nurse. Later the elderly woman's son arrived, and scolded her again, "Why she causes trouble for the nurses?!" Then the woman felt very bad, and the question stood, how cold the participants in this situation perform differently to relieve this stress and resulting injury?

A variety of scenarios were subsequently acted out, from more compassionate responding to the elderly woman, a repositioning of the elderly woman as reluctant to be seen as troublesome, as being quite intransigent, as well as the introduction of advanced technological systems that could potentially alert the nurse to movement of the woman without her having to signal that she needed help (Fig. 6.21). Our group, however, which consisted of myself and two women, one of Mexican and the other of Cypriot extraction, took a very different tact. Our proposal for a potential future enacted not a change to nursing practice or responding to the elderly woman's plight. Rather, we presented a reality in which the elderly woman was in fact, not confined alone to a hospital room, but sleeping in her family home. At the foot of her bed slept her grandson who, when woken by the elderly woman in the night, walked her from the home into the field so that she could relieve herself, and no falling occurred. This markedly different social practice reflected for us a common situation informed by our own experiences in less developed countries, where decrepitude in a care home is not necessarily the inevitable future for the elderly.

This sketch introduced a critical reflection into the discussion, concerning the cultural situation of the current research in Denmark, where the practice of incarcerating the elderly is widespread. The performance concept also made visible the cultural situation of our team of researchers, as our performance ideas reflected very different origins and tacit understandings, specifically our divergent socio-cultural attitudes towards the treatment of the elderly. This opened the idea that in emerging economies, the elderly often play a central role in market life, childcare, and household chores that may even contribute to their continued mobility into late old age. This performance was oddly received, and when challenged, other workshop participants were reluctant to admit, how many of their families had 'locked up' their elderly in care homes.

Figure 6.21: Workshop participant, nurse practitioner and facilitator

**Figure 6.22: Object performance, a fall on the stairs**

6.3.2 Performing research

The Theatre in Design Summer School also examined Constructive Design Research techniques (Krogh, Markussen, & Bang, 2015), aimed at embodying or encapsulating research ideas through objects (Seago & Dunne, 1999) and video sketches. The falling scenario was further developed through one such performance (Fig. 6.22 previous page), and in another, the formality of theatre itself was critiqued, setting it in opposition to the more free-form, disruptive potentials of performance. A video action explored this disruption (Fig. 6.23) and resulted in a physical theatre enactment of the disruptive potential of performance as it challenged the status quo of theatre.

Figure 6.23: Video stills, disrupting theatre with performance

Following this, the focus of performance turned to each individual PhD student's research project, and the techniques for constructing and performing around research concepts were brought back into an iterative design mode, through an exercise in Dynamic Research Sketching (Markussen, Bang, Pedersen, & Knutz, 2012). Each student created a poster to represent their research intentions, design processes, outcomes and expected contributions. These posters were then performed, critiqued, discussed, and redesigned over a period of two days (Figs. 6.24-26). This technique fostered conceptual drift, and allowed participants to experience their own research, and that of their peers, as lived, embodied, enacted performances.
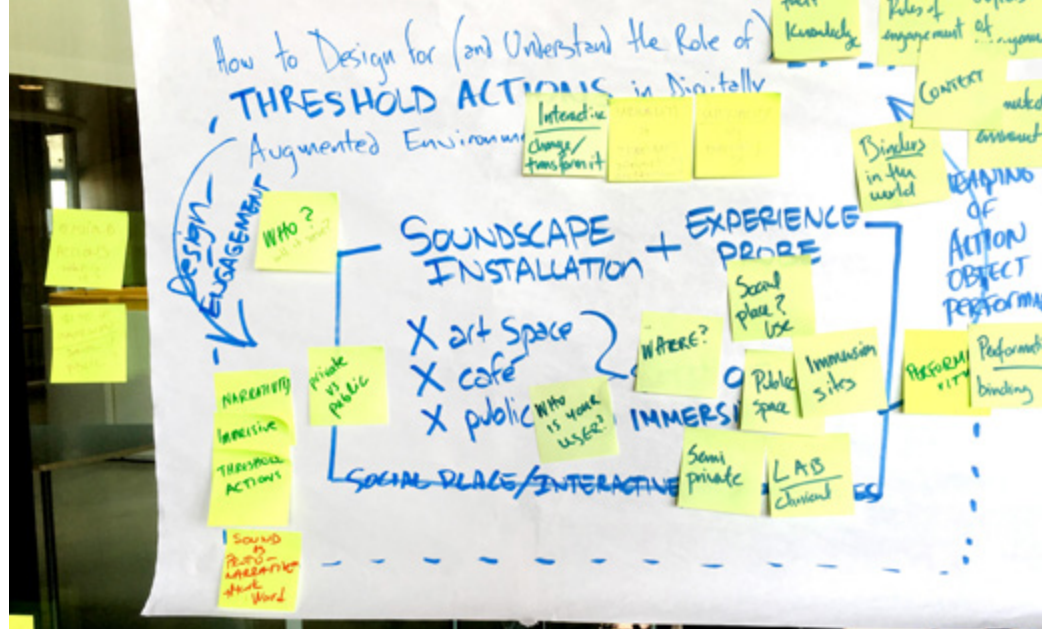
Figure 6.24: Research sketching 1

Figure 6.25 (left): Research Sketching 2

Figure 6.26: Research sketching 3

At one stage, working in the original small groups that had formed at the beginning, as performers and participants we acted through a revolving roster of specific roles as presenter, inquisitor, innovator and note-taker. The main concepts of each our research were extracted through this role-play, and re-presented with post-its as an overlay on the research poster, to generate a new, layered artifact that incorporated not only written text, but body movement, expressions, intonations, shape and form. For me this was a particularly informative exercise that examined in depth my ideas of soundscape, installation, the enactment of the migration experience and eventually led to my questioning the entire premise of constructing a technology-mediated environment in which to study the migration crisis.

The final movement of the Theatre in Design Summer School turned to an actual improv performance that each participant designed and directed. This offered an opportunity to test my creative, theatrical inspiration to initiate a lived experience for an audience of what it might be like as a migrant in a boat, lost on the high seas. The entire remaining group of more than a dozen participants and facilitators was rounded up and confined within a long circle of yarn. The yarn circle represented the confines of a rubber dinghy, and participants were implored to imagine that they are migrants on the journey to Lampedusa. Packed tightly together, the audience/performers were guided across the performance space, shuffling their feet, as free movement was difficult so tightly pressed together. All the while, we three facilitators shouted at the group in foreign languages, Spanish, Greek and Mandarin Chinese, and although participants may not have understood, we berated them aggressively, telling them that they were unwelcome in no uncertain terms. Stopping halfway across the performance room, halfway to Europe, several participants were asked politely to leave the group, and were told "Sorry, you have died of dehydration….and you…you just drowned. Please leave the circle, you cannot continue the journey." The rest of the group then continued shuffling across the room, the facilitators continued shouting, until their 'boat' reached Europe, on the other side of the room. At this point the remaining 'migrants' in the boat were told that of course it's not the end of the story because, "You don't have visas…" and with that, the mini-performance ended.

This proved to be a powerful experience for participants and the summer school organizers alike. The discussions that followed exposed a brief but profound reflection on the experience, in particular the enactment of death, and exclusion of some participants during the play. This impromptu experiment in perspective taking, attempting an experienced, embodied insight into the plight of migrants brought a moment of gravity, yet also a lighthearted catharsis into the room, which was commented on by several participants afterward.

6.3.3 Reflections on cultural situation

The first takeaway from this Lab phase was the attention to my own cultural situation as a researcher. The summer school was a product of a society that would conceptually and financially support a week-long education session around the idea of elderly people falling, and very much reflected priorities of an aging, rich, white population. This incurred some reflection from the participants on the Nordic progeny of participatory design, and commentary on the expense of the summer school and its Avant Guard agenda that addressed problems of the developed world. Could this money be better spent on other research projects that would benefit a wider diversity of participants? Initially the groups were formed by competencies, and it was only by chance that the Mexican, Cypriot researchers were grouped together with me, an American of First Nations heritage with a long history and experience in Asia. Yet this cultural composition of my research group had a strong impact on our contributions, and pointed to a pressing need in any social design research to be attentive to cultural situation of research, and researcher.

The second takeaway regards the initial reliance on technological mediation and my practice-led creative inquiry. Rather than technology-driven arts, another of my own creative practices proved to be more valuable, that of theatre and performance, and this signaled a shift in my research away from the idea of technology-defined soundscape immersion, to a more visceral and perhaps more realistically achievable suspension of disbelief through imagination and role-playing. In particular the experience of performing death at sea was influential in facilitating this drift. Colleagues who had worked with similar performance situations, and who were also actively studying migrant experiences, suggested that the impact of situating such a dark episode as a playful engagement was, as intended, powerful, positive and constructive. While this does not disavow responsible redress of the many ethical concerns that have been raised throughout this research, it demonstrates that with careful handling, even the most challenging of humanist concerns can be addressed in play, and that the provocative and moving nature of performance can be harnessed in Constructive Design Research.

6.3.3.1 Towards an agonistic design

In particular the feedbacks from Thomas Markussen, and his encouragement to take more aggressive perspective, to allow my own activism to emerge as an explicit intention of my research, contributed to my understanding of agonistic theory and their potential incorporation into my creative and research practices. The entire experience supported my evolving interpretations of game, play and performance as research tools, with participants and facilitators all providing further inspiration to 'do something' with my research. Also, the physical, face-to-face and embodied perspectives questioned my previous reliance on technological mediation, and suggested that role-playing, situated communication and in-person engagement could prove meaningful even with minimal props and entirely analog execution.

The Theatre in Design Summer School elaborated fundamental theatrical concepts such as scene, situation, objects and representations that certainly influenced the development of agonism as a methodological approach, and also pointed out how the an agonistic method would itself remain in dialogue with other forms of research. The facilitators' unanimous insistence on reflexivity in the research practice and engaging critical design as being critical of itself, enabled a radical transformation of my priorities. Through this process, my research drifted more towards Social Design, both in the process of discovery and determining its intended outcomes.

6.4 LAB: Games for Cities COST Training School

The final research trajectory incorporated both lab and field investigations, and ensued as I was accepted to participate in the Games for Cities COST Training School program in Amsterdam. A collaboration between CyberParks, Amsterdam's University of Applied Sciences Lectorate for Play and Civic Media, and Utrecht University New Media Studies Department, the training school was hosted by Martijn De Waal, Gabriele Ferri, and the Play the City organization's Ekim Tam, and included feedback and facilitation by game research influencers such as Ariana Marinari, from Politechnico Milan and others. With the remit of exploring urban gaming as a form of citizen empowerment and civic participation, the training school took as its focus the concept of Circular Economy Amsterdam. Participating researchers formed design teams and partnered with local organizations to investigate various aspects of the circular economy concept, in situ in the Cyberparks studio and on the streets of Amsterdam. This phase of the research articulated many aspects of game and play, again focused on place and practices, but this time exclusively in an urban context. It elaborated challenges associated with environmental constraints and the socio-cultural situatedness of my research. In particular, Games for Cities supported me towards developing a gameful inquiry, and experimenting with game and play as Speculative Design with an explicit focus on designing for potential futures. This research trajectory is outlined in the following in Figure 6.27.

Figure 6.27: Phase 4 Lab and Field

6.4.1 Circular Economy challenge: urban mines

My Games for Cities design teammates Moozhan Shakeri and Mauro Salvador and myself partnered with Amsterdam Institute for Advanced Metropolitan Systems (AMS), represented by Virpi Heybroek. AMS is an interdisciplinary research institute that focuses on urban challenges, in areas such as urban mobility, energy, food systems and circularity, through the focus of Amsterdam as a Living Lab (Hillgren, 2013), citizen engagement and public-private-municipal partnerships. Our assigned Games for Cities challenge addressed one AMS project, *Prospecting Urban Mines of Amsterdam*. This initiative, supported by the Waag and University of Delft, is an aspect of circular economy that imagines a potential future in which material resources become financially nonviable or too carbon sensitive to bring into the urban area. These resources will then need to be retrieved from existing urban infrastructures (van der Voet, et al., 2017), hence the concept of urban mining (Graedel, 2011). The game design team was tasked with raising awareness among citizens to the value of metal resources in existing structures in the City of Amsterdam and the potential for future recycling and or reuse. AMS provided a heat map of surveyors' perceived material values of the city (Fig. 6.28) and confined the investigation to the neighborhoods between Staadsleidenbuurt and Westerpark (Fig. 6.29), an area that did not feature as particularly mineral rich on the map.

The challenge was approached as a game and play scenario per the parameters of Games for Cities, and was strongly influenced by Critical and Speculative Design. Although the concept of urban mining was acknowledged as having historical precedence, for example the stripping of the façade of the Roman Coliseum in ancient times for its marble, developing a concept for urban mining in modern Amsterdam
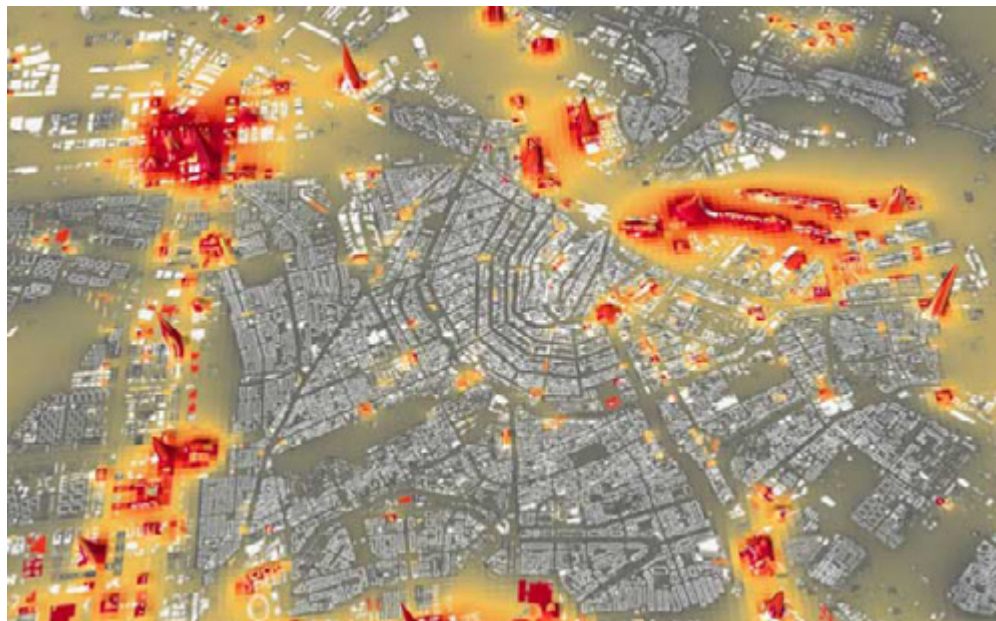

Figure 6.28: Resource heat map of Amsterdam

Figure 6.29: The neighborhood in question

is decidedly design for the future. Urban Mining is not currently widely practiced, and the design challenge was posed as imagining 'what if?" when resources such as steel and copper will no longer be available. Throughout the process we imagined the problem, and the raising of meaningful and lasting awareness, from the perspectives of citizens playing a game. To this effect, the scaffolding model of game design Loops and Arcs (Cook, 2012) was implemented (Fig. 6.30).

This model for designing and evaluating games examines the cycle of interaction that begins with the player's world-view, which informs player actions. These actions are 'handled' by game rules or in a digital game, by a 'black box' or game engine equivalent, which returns some meaningful feedback to the player. The player's world-view is subsequently updated and they continue the learning process of the game. This technique is usually applied to understanding trajectories over which players grasp the relevance of game interfaces and rules to explore their own agency, yet in this instance was adapted to the scaffolding of knowledge and concepts of urban resources through gameplay.

Many ideas were brainstormed, sketched and iterated, and my two partners rented bicycles, while I rode my skateboard, and we surveyed the neighborhood in question (Figs. 6.31a,b). The site visits revealed a potentially wider scope of value interpretation of urban structures than ACM had been taking into account. A game concept was developed that asked players to evaluate 'social value' and

Figure 6.30: Game Loop knowledge scaffolding

Figures 6.31a,b: Team lab and field explorations

'reuse value' through an in-game polling interface, before addressing the value proposition of mined material resources. This led to the concept of a pervasive game that fulfilled the initial requirement to raise awareness, but which also could be used as a data collection tool to gather individual and collective sentiments as to the social value in their neighborhood infrastructures. A paper prototype was constructed, and its play-testing was video-recorded, edited, and presented.

6.4.2 Urban gameplay concept: Metal Kong

The result of this collaboration was MetalKong (Figs. 6.32-6.40 following page), a game design intended as an event or public relations happening that would run for a half hour, with players beginning and ending gameplay in Westerpark. The game was narrative driven and revolved around a non-player character Kong, a giant ape that was destroying the city. Players must save the city by building a metal cage to contain the ape, and that metal must be mined from the urban environment. Failure to collect enough metal to build the cage resulted in Kong destroying the neighborhood and players losing the game. If enough metal was collected, Kong was contained and put on a ship out of the city. The speculative gameplay transpired as players navigated the game-space using a gps-enabled tablet or mobile phone, and follow a pathway through the neighborhood that passed by selected structures (Figs 6.35-6.37). At each place, players would be presented with information about the building in question, its potential value in material resources, thus elaborating the public awareness aspect, as the game interface and activity transmitted information about the structures and environment. Before deciding to reclaim the materials from each structure, and thereby destroying it, players would be prompted to provide their own evaluation of the *social value* of the structure. The intention was to extend the idea of value in the building to the potential rezoning or reuse of the building along the principles of reduce and reuse, rather than an immediately move to recycle.

In this way, the game would explicitly drive players to think about the potential value of a structure, how it fits into the neighborhood, how it is used now, how it might be re-purposed in the future, and imagine what kind of social value it represents. By querying players' values as part of gameplay, the game would gather information about players attitude towards or acceptance of urban mining, and their appraisal of individual structures' value and whether or not to destroy them in order to take the materials. A scoring mechanism added to the pressure introduced by the time constraint, as players might decide to keep a building after assessing its social values, but they also must deal with the threat of Kong, and by association, the impending scarcity of resources that makes urban mining necessary in the first place (Figs. 6.38-6.40).

The paper prototype was then play-tested by the group, and a video made of one non-associated university student, a speculative enactment of the game (Fig. 6.41, page 63). In a 'real' game design process, this stage would produce usability or understandability data that could be returned to the next game iteration and development of a higher-fidelity prototype. However, as a speculative design practice, the player pretending a course of gameplay was sufficient to produce a video artifact that captured the enactment and embody the gameplay concept. This video was subsequently shown during the final presentation event as part of the team's pitch to the local partners.

The game concept was well received and the AMS administrators were surprised and curious to the social and reuse value concepts, something that they had not considered as their original impetus was on material resources such as copper and steel. During the final game pitch, another city official applauded the AMS partner for acknowledging this perspective, and the action demonstrated a potential for real world change, by augmenting, perhaps even influencing policy-makers' conceptualization of a problem.

Figures 6.32, 6.33, & 6.34: MetalKong paper prototype

Figure 6.35, 6.36, 6.37: Game elements to navigate and share information

Figure 6.38, 6.39 & 6.40: Game elements collect data

Figure 6.41: Metal Kong video enaction

6.4.3 Critical reflections and ethical concerns

During the project presentation, several ethical issues were raised concerning the definition of social value and prompting people to evaluate buildings. It was suggested by the Games for Cities Training School resident ethicist that the concept of social value is difficult to define and can mean different things depending on the information available to players. As a hypothetical example, players of the game may not know that a building in question is actually used as an informal sleeping place by local homeless people, and their evaluation may not take into account other people's perspectives and practices in that place. If such a game were indeed used to analyze public sentiments, and resulted in real-world demolition or re-purposing of a structure, this would privilege people with technological resources such as phone or tablet as well as those in the social situation of being invited to play the game as part of a public event. This could by default, de-privilege those homeless people who had no access to technology or had not been party to the game event, but who would be directly impacted the action.

Another ethical issue emerged in retrospect, that in fact, the concept of Kong might be detrimental to the idea of individual citizen responsibility for environmental issues such as declining material resources. Blaming the outsider, the giant ape, for the problems of the city and its citizens, and following a narrative of the urgent needing to contain its disruptive force might indeed deflect the sense of individual responsibility that the circular economy concept tries to reinforce. As well, there is the potential that combined with populist anti-immigrant rhetoric, that great ape could be misconstrued as symbolizing the migrant, and contribute negatively to the broader discussion of immigration and integration.

6.4.3.1 Environmental affordances and situatedness

The Games for Cities COST training school was very influential in shaping the next courses of research action and the direction of the PhD. First, the real experience in Amsterdam working in a Living Lab amplified the intuitions derived from the Lampedusa field research, and pointed to the real potential of in situ, face-to-face interventions. The techniques developed in the training school made concrete some practices of Critical and Speculative Design, framing them as game and play to introduce what was for me an entirely new aspect of design futuring (Coulton, et al., 2016; Halse, et al., 2010). By approaching the imaginary not as a story or an artifact, but as a game and its play, it returned focus to the social and psychological groundings of games research and suggested a bridge across the pragmatic and conceptual divide in futures research (Forlizzi, et al., 2018). The focus on the materialities of city gaming, and city-making through game and play similarly grounded the work as urban Interaction Design (Brynskov, et al., 2014) and explored aspects of 'hacking' the city (de Waal, de Lange, & Bouw, 2017) by appropriating existing social and technical infrastructures as play space to examine new practices in the environment. The training school demonstrated a new approach to research using game design as an investigative lens through which to make sense of the myriad complexities of the city (Schouten, et al., 2017) and the subsequent design interventions of this thesis, these techniques feature prominently.

Only through the unique combination of concentrated laboratory work and embodied urban investigation did it become clear the need to extend the material investigation with social perspectives. The realization of this was then brought about in a gameful approach, polling of participants' attitudes and perceptions of a social value inside a game. This in turn reflected the initial research phase of experience probes, the mapping exercise within the soundscape installation. The importance placed in the training school on situated, in situ investigations of the urban environment, and the clearly impactful results from even one week of design, testing and intervention factored heavily in the subsequent decision to halt the work with soundscape. Rather than attempting to encapsulate the design problem into a digital environment, Games for Cities demonstrated that technologies, if used at all, could be put to more significant and impactful use as tools and techniques for investigating design problems, and indeed social challenges, in the real world.

6.4.3.2 Agonism as game

This focus on people, and using game and Interaction Design to investigate the social situation and urban challenges from a socially situated perspective facilitated major pivot in the research. The conceptualization of research output shifted away from soundscape installation, constrained to the showroom, towards game and play intervention that could be initiated in the places and practices of a lived environment, the field. The Games for Cities experience reinforced ideas of challenging hegemonies through citizen participation, the re-appropriation and reinvention of urban spaces through game and play, and paying attention to socio-material affordances and the situation of the research in the real world. Most importantly, what became clear through Games for Cities is the nature of game to enact visions of potential futures, and the use of the particular engagement in game that is the Magic Circle to filter out noise that would normally hinder research in the wild. The multitude of random factors and uncontrollable variables of field research were tamed by the magic circle, and it became clear that a game could articulate citizens, society, values, goals, challenges and more, while traversing different locations, different experiences, and different times, including the future. This concept of using games as research artifact and intervention activity to collect data and produce knowledge fed directly into the development of the agonistic design strategies.

7 Theory to Practice: interventions

To begin testing the agonistic strategies, interventions were developed in three distinct sites, or communities, as described in Figure 7.1. The first intervention is of the academic and professional community in ICT and STEM, that is a community of practice that occupies many different physical spaces, whose members are bound together across time and space. This intervention specifically challenged the gender gap using agonistic perspectives. The second community examined was situated in a real-world neighborhood, Sincil Bank, in Lincoln, UK. This community is formed primarily by shared materiality of the urban environment and its varied political and social contexts. Agonism here was explored through stakeholder engagement and participatory urban planning, interacting with policy makers and the urban environment itself. The third community that was examined dwells on the online platform of commonfare.net, which is bound together ideologically, and though it references real-world people and practices, it is in fact a community that has no material form. Each of these unique sites of field elaborate agonism and design in different ways, and the particular experiences, successes and challenges of each project are presented here as counterpoints rather than comparisons. The three interventions took place in relative co-occurrence between 2017-2019.
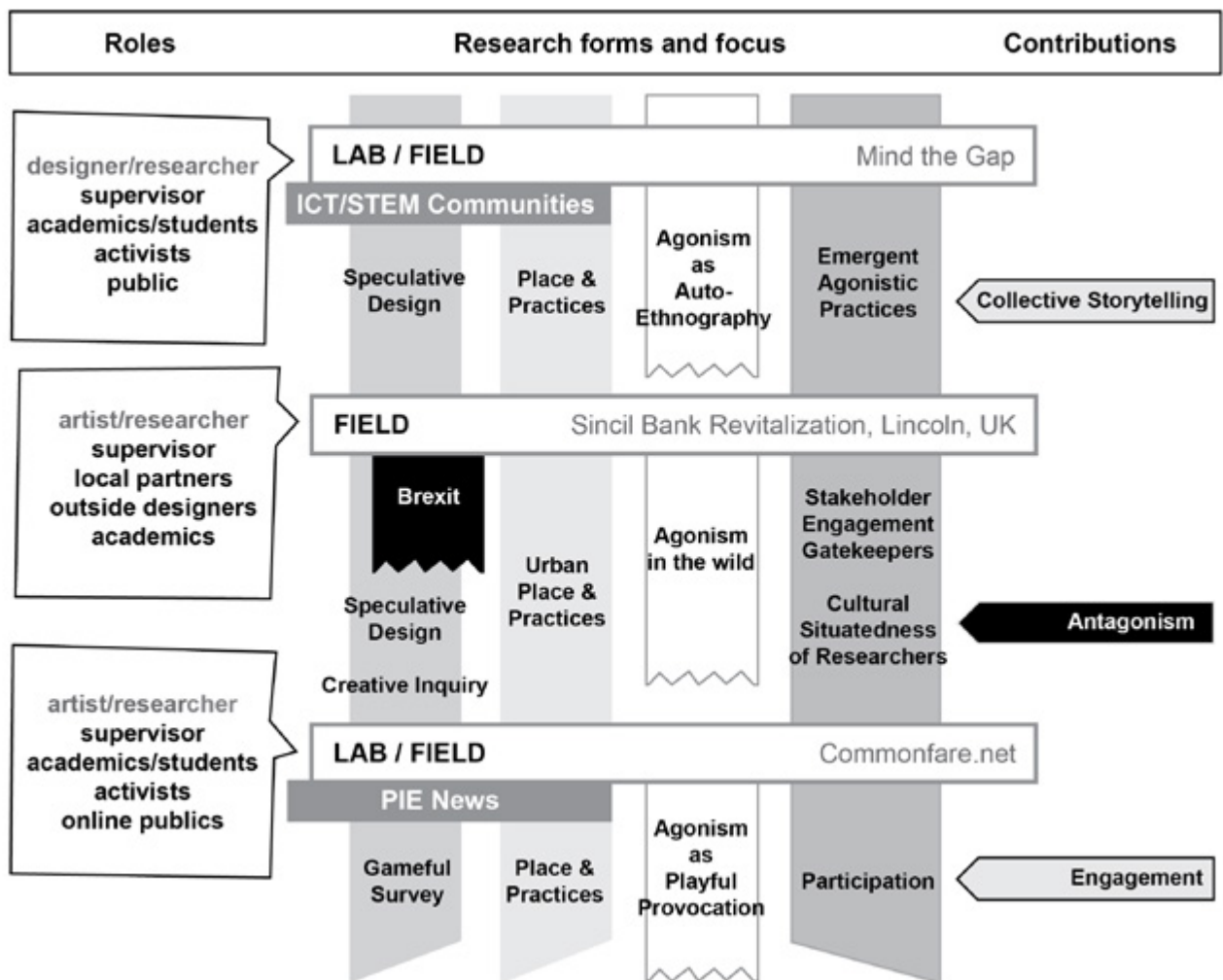

Figure 7.1 : Interventions

7.1 Intervention: Gender gap in ICT and STEM

This intervention addresses an existential conflict within the community of ICT and STEM (Science, Technology, Engineering and Mathematics) education and careers, that is the disparity between women and men in terms of employment, training opportunities, job security, pay and advancement potential. Figure 7.2 describes the intervention and outcomes, which used Speculative Design to perform an auto-ethnography enacted by members of the community under investigation. This intervention tested the strategies to incite agonism, developed the game as a research tool and allowed the experimentation with language analysis techniques in identifying emergent intersubjectivity, and began making sense of the storytelling experience and the collective narrative that was produced. In the following text LGBTQAI+ is used to reference a plurality of gender identities, Lesbian, Gay, Bisexual, Transsexual, Queer, Asexual, Intersex and all the others. These are also referred to as non-binary gender identities, in contrast to hetero-normative gender representations that are limited to Male and Female.
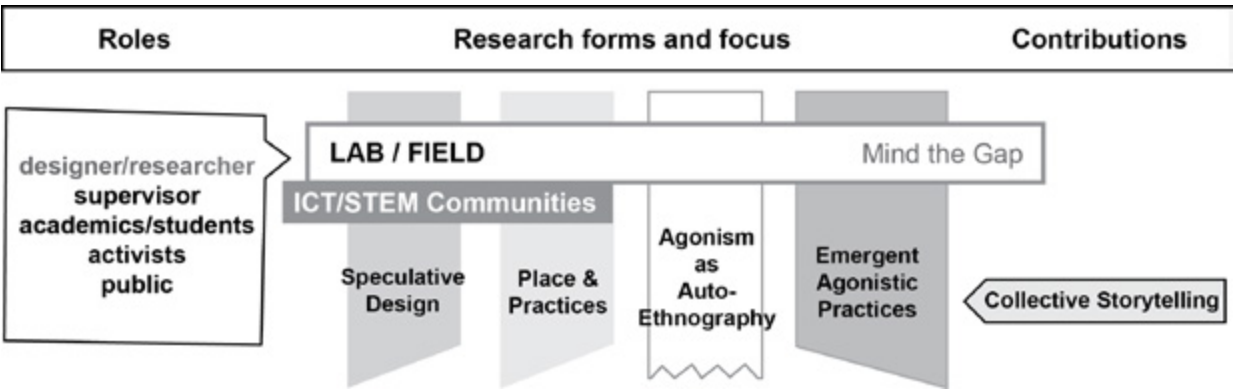

Figure 7.2: Intervention: Gender Gap in ICT and STEM

The study was initiated with a literature review that examined available statistics and reports concerning female participation in technology fields (Catherine Ashcraft & Eger, 2016; Johanna Weststar, 2015; Schlegel, 2015, 2016), investigations specific to ICT, Information & Communication Technology (Association for Computing Machinery, 2017; Clayton, Hellens, & Nielsen, 2009; Mason, Cooper, & Comber, 2011) as well as documentations of women's experiences in tech careers (Consalvo, 2012; LeFeuvre, 2016; Simard, 2008). In addition, first and second hand data was analyzed from the GARCIA project funded by the 7th European Union Framework Program (Schlegel, 2015, 2016). This review highlighted the diverse challenges facing women in technology fields and informed the development of the intervention.

7.1.1 Design Construction: Mind the Gap

Mind the Gap began using participatory methods (Muller & Kuhn, 1993; Spinuzzi, 2005) that engaged the community of research, its body of literature, and small groups of play testers and game design professionals to generate the game artifact (Fig. 7.3). The artifact was then further developed through ongoing co-creation (Prahalad & Ramaswamy, 2004; E. B.-N. Sanders & Stappers, 2008) by hundreds players over a year and a half, between March 2017 and August 2018. Consequently, the game artifact and rules evolved over time and two official releases. Here the second release, and current version of the game that is in circulation is described, and the progression of the game and its collective narrative is discussed in the following sections.

Figure 7.3: Mind the Gap

7.1.1.1 The game intervention

The game board resembled an urban train map, with a primary Career Line and a secondary Family Line (Fig. 7.4). Players were randomly allocated a Woman, Man or non-binary Rainbow player character (PC) and given a gendered play-piece (Fig. 7.5). Gameplay began at "Gender Central" with players taking turns to roll dice and advance on the Career Line. As players advanced, they drew from a deck of privilege cards, read the card aloud, and acting on the privilege or detriment suggested, moved their play piece forward or backwards. The design incorporated procedural rhetoric (Ian Bogost, 2007) that embedded disadvantages for non-male PC's within the game. Man PC's played with a six-sided die while Woman and Rainbow PC's used a four-sided die to reinforce the concept of gender gap. At first only Woman PC's were sent on the circuitous Family Line, to illustrate the career setback of childbearing that disproportionately affects women.
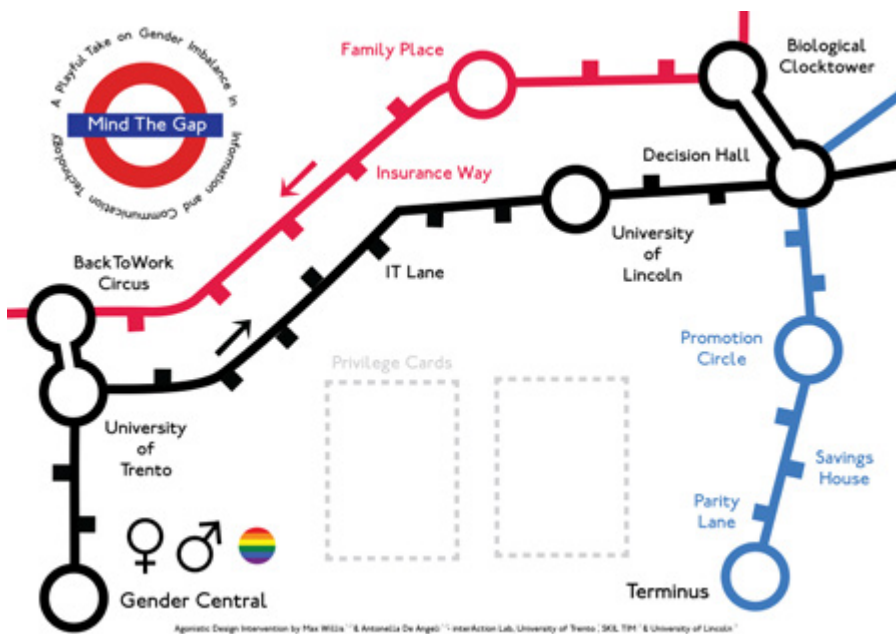
Figure 7.4: Game board

Figure 7.5: Gendered play pieces and dice

Throughout the gameplay, players were offered blank cards and invited to contribute new cards to the game. Each blank card had spaces for a short text, gender privilege score, and 'Gender', 'Age' and 'Location' information of the card author (Fig. 7.6).

Figure 7.6: Example game cards

7.1.1.2 Game design

The design of Mind the Gap began with a hand-drawn board and the creation of a set of seven seed cards that reflected some of the contexts elaborated in the initial literature review. Each of these cards contained a micro-narrative describing gender advantage or disadvantage drawn from the literature review. Three types of cards were instantiated, *context* cards (N=4), *mechanic* cards (N=2), and a *decision* card (N=1).

Context cards reported a scenario and gender-related privilege or detriment. They impacted gendered characters both negatively, for example, *"Your boss wants to date you, but you refuse. No promotion?* (Woman: -3, Man: 0)*"* and positively, *"Your mother went to work and father stayed at home,* (Woman: 3, Man: 1)"*. Mechanic cards introduced game rules to enact discrimination, *"Congratulations! You're having a baby. If you are a woman, go to Biological Clocktower and continue on the Family Line"* as well as empowerment, *"Women Unite! A new gender studies program starts at your University. Each female player roll the die, add the numbers and all advance together"*. The Decision card gave players a choice of actions stating *"Congratulations! You can have a promotion. Men plus 30% salary, Women plus 7% salary. Take the promotion or go back to Gender Central".*

Several play-tests with the seed cards were enacted by small groups of male and female ICT researchers at the University of Trento InterAction Lab who produced an initial deck of 21 cards (Fig. 7.7). All subsequent cards in *Mind the Gap* were participant-authored, leading to the collection of 234 contributions analyzed here.

Figure 7.7: Playtesting Mind the Gap

The first version of the game presented gender as a binary principle, with Woman and Man PC's, and was introduced at the Inauguration of the Eleanor Granville Centre of the University of Lincoln, UK in March of 2017. The second version of the game introduced the Rainbow PC, and was released for the 8th gameplay session, at ISAGA2017, International Simulation and Gaming Association Conference, in Delft, NL. This second release consisted of an updated game board and cards with option to score advantage and disadvantage also for the Rainbow gender. Subsequent game sessions continued to use the original binary cards, but the only blank cards provided were the updated diversity-inclusion version.

Play sessions were organized at poster sessions, demos and social engagements surrounding academic conferences, and a handful of informal gatherings over a period of over a year and a half (Fig. 7.8). Participants were overwhelmingly STEM academics, students and professionals. Based on the observation that one participant in every 5 tended to write a card so far the game has engaged around 1000 players. Of the 227 participant-authored cards examined here, 205 cards included the author gender, with 69% marked as female (N=157), 19% as male (N=45) and 1% alternative markings such as "x", "n" and "//"(N=3). The average reported age was 37 years; median age was 26 with 17 players aged 50 and above. Roughly 10% of card authors did not state gender (N=23) while approximately 19% of players did not state age (N=43). Venues (N=21) ranged from university conference rooms, workshop spaces and exhibition rooms to pubs and private living-room game night settings.
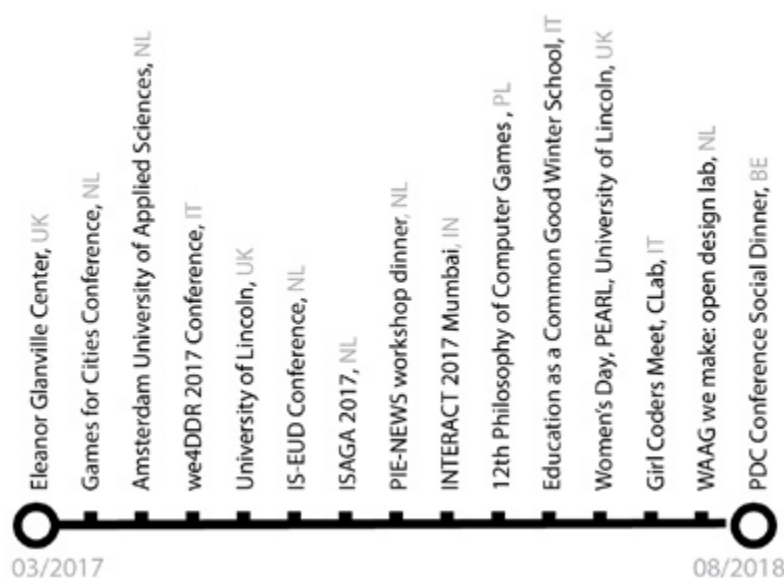
Figure 7.8: Principal gameplay venues

7.1.1.3 Gameplay

Participants were invited to play with a brief introduction that the game examined the gender gap in ICT and STEM and that the privilege cards had been authored largely by previous participants. The board was laid out on a table and gameplay was either seated or standing. Sometimes two or more game boards were active at neighboring tables and the cards shuffled between. Participation was entirely opt-in, and of all of the people who have come in contact with the game, only one (male) disputed the random assignment of roles, stating that he was only willing to play as a Man PC and eventually refusing to play at all.

Figure 7.9 (left): INTERACT 2016 Mumbai, India gameplay

Figure 7.10 (right): University of Lincoln, UK gameplay

Although groups usually formed in a circle around the game and took turns, often several participants played simultaneously, and newcomers to the game joined without waiting. Individual sessions lasted approximately 10-15 minutes, depending on engagement and environmental distractions, though often gameplay continued for an hour or more as camaraderie developed among participants and play turns devolved into storytelling and sharing (Figs 7.9 & 7.10). Many players, upon completing one round of the game, immediately played again, choosing an opposite gender PC, or returned after a time with friends and colleagues to play another round. A different mode of engagement emerged occasionally from participants who did not act as players, but who read through each card in the game, sometimes continuing long after the circle of active players had dispersed.

7.1.2 Evidence of emergent agonism

The intervention produced a wealth of data that was made available through field observations during the intervention, tracking the evolution of rule-changes, and systematic analysis of participant contributions, both individually and as a whole. Each card presented a small but rich set of data that was generated momentarily and traveled over time and space as it reappeared in the game and at various locations. Data included text micro-narratives, the numeric value of perceived advantages and disadvantages, and the demographic information of its author (Gender, Age and Location). All cards were transcribed and coded using atlasTi and excel, and they are presented here in the format: "Card text. (Woman, Man and Rainbow Advantage Scores) [Author Gender, Age and Location]". Not every card included all of this information and missing elements have been omitted, while misspellings and errant grammar remain unchanged. The determinants Female and Male are used here to describe players, while Woman, Man and Rainbow are used to describe the PC's.

The game cards, the collective narrative, the play of the game and the game itself are intrinsically linked, and the game is itself a heterotopia from which a diversity of meanings can be extracted. Therefore the intervention data is examined at varying levels of abstraction and granularity. Observations the level of the game describe the conceptual space defined by the game, its magic circle, and stabilizing effect of player-player-subject relationships. The level of gameplay describes situation, social interactions and formation of place through play, storytelling and dialogue initiated by the intervention. The level

of abstraction of the evolving collective narrative provides insights on the nature of engagement and emergent social identities among players, while analysis of the individual cards, rule changes, micro-narratives and gender privilege scoring opens a window onto players' individual perceptions. The abstraction level of card sequences exposes participants' stance and positioning. At the level of language form, the dialogic syntax of the card sequences evidenced the emergent intersubjectivity that lies at the heart of agonistic transformation.

7.1.3 Identities

Players exhibited emergent personal and social identities (J. C. Turner, et al., 1987) evidence of which can be seen in their insistence on a non-binary gender option, and their collaborative instantiation of gender swapping rules. Negotiation of another form of identity is also evident in the game in the crossovers between real world players, their player-subject, and the roles they play as PC's.

7.1.3.1 The non-binary option

The first version of the game presented gender as a binary, and cards presented only Man and Woman variables. (Fig. 7.11) The missing 'other' gender option was noted since the very first gameplay and LGBTQAI+ (Lesbian, Gay, Bisexual, Trans, Queer, Asexual, and all the other) identities emerged in the second game session. The initial card stating *"If you are homosexual you keep secret your private life.* (Woman: -1, Man: -1) [Female, 26, Trento, Italy]*"* was followed by *"You come out as a member of the LGTBQA+ part of society. If you are a woman -3, if you are a male you are slightly more accepted.* (Woman: -3, Man: -1) [Female, 25, Amsterdam, NL]*".* The dialogue then developed in detail with *"Your trans cousin picks you up from work. Before going to the park you have a drink at the cantine. When you go to the bathroom together, the janitor makes a scene, because your cousin did not transition visibly, yet. From today there are rumours about you.* (Woman: -2, Man: -2) [Male, 26, Germany]*".*
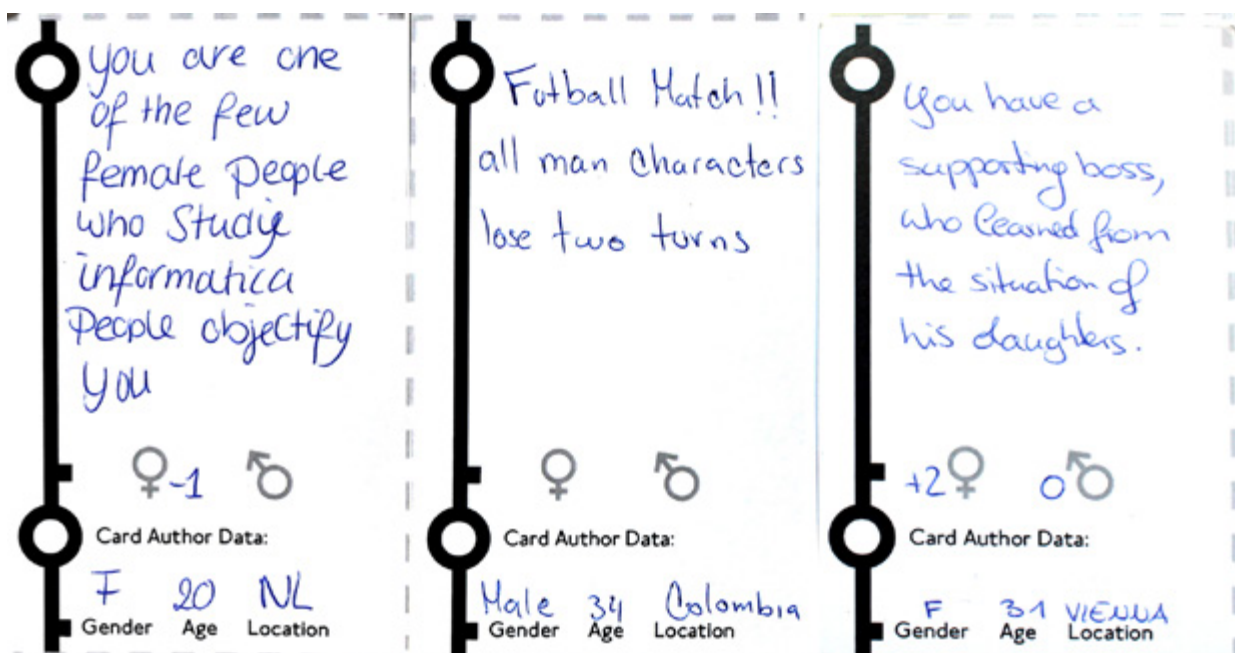

Figure 7.11: Example first generation game cards

Version 2 of *Mind the Gap* responded to recurring in-game discussions and the at times, vocal insistence of players that the game must include a non-binary gender option, and the Rainbow role was added to the game (Fig. 7.12). This elicited succinct expressions of personal identities that were previously untouched, as when one player received a Rainbow token as her random gender assignment and said "Finally! I get a role in a game that's really ME!" The Rainbow role greatly expanded discussion, and cards such as *"You are a computer programmer and at work they found out you are gay (if they didn't know before)* (Woman -1, Man -3, Rainbow 0) [Female, 37, Amsterdam}" began to populate the deck. The commentary in the cards reflected the diverse range of authors contributing to the game as in the following examples: *"You are transgender living in Malaysia. You're arrested by the 'religious police' for 'dressing like a woman'. rainbow go back to the start.* [Male, 39, Mumbai, India]*"* and "*You are gay in China. You know you will never come out. You stuck forever in Decision Hall. Rainbow: end.* [Female, 30, Lincoln, UK]*"* These elaborated specific challenges of non-binary identities from a wide range of cultural backgrounds.

Figure 7.12: Example second generation game cards

The expansion of gender identities on the cards, from binary in the first release, to inclusive of LGBTQAI+ identities in the second release clearly diversified the collective narrative. Among the contributions to release 1 only four out of 86 cards depicted LGBTQAI+ contexts (4%). In release 2 the contingent of LGBTQAI+ themed cards jumped to 16%, and in addition, a majority of all the cards were scored with a privilege or detriment for the Rainbow role (79%). Many players subsequently added cards not exclusively addressing to the Rainbow role, but their advantage scoring illustrated nuanced perspectives. These micro-narratives often subtly acknowledged the Rainbow identity and reflected a diffuse perception of disadvantage, as in the following examples, "*Your colleagues discover that you are dating a person who is half your age and start gossiping about you.* (Woman -2, Man -1, Rainbow -3) [Male, 44, AU]" and "*A war broke out in your adolescence. All genders move in reverse towards Gender Central n for number of turns. n=* (Woman 1, Man 2, Rainbow 3) [Male, 33, Serbia]*".*

7.1.3.2 Gender-swap

Role-play in the game was initially limited to the gender assignment as Woman or Man, that participants were given at the beginning of the game. This rigid categorization was soon challenged by one female participant who during the first play-test added a mechanic card *"If you are a woman, you may become a man. [Female, Trento, IT]"*. The following gameplay produced the more assertive directive, *"If you are a man player you now become a woman.* [UK]. The gender-swapping mechanics were widely appreciated in the game-play and similar cards appeared with new consequences such as *"All male players change to female players. [Female, 37, Lincoln, UK]"* and *"Decide to turn into a man (and increase your winning chances) and go to Gender Central or keep as a woman. [Male, 34, Colombia]"*.

The introduction of the Rainbow character further diversified the role play opportunities, with players creating cards such as *"GENDER TORNADO! MALE -> TURNS RAINBOW, RAINBOW -> TURNS FEMALE, FEMALE -> TURNS MALE. (Male, 35, Italy)"* and the game-changing *"Everyone in the game changes to rainbow role. (Female, 28, Italy)"*. During gameplay gender swapping cards were normally received with laughing. Players swapping from a Woman to a Man PC frequently exclaimed "Now I have the male privilege!" and exalted in advancing with the six-sided die. Male players who were forced to play as disadvantaged Woman PC's were often laughingly told by female players, "Now you know what it's like for a woman!".

7.1.3.3 Player and Player-subject

A further elaboration of identities in *Mind the Gap* was evident in the relationship between player and player-subject. Many cards blurred the lines between the two and engender deeper introspection during gameplay. Several of the gender swap cards were decidedly ambiguous in their instructions. For example, *"All male players change to female players. [Female, 37, Lincoln, UK]"* has been interpreted to mean that all current Man PC's should swap to Woman PC's and that all male players should now play as Woman PC's. This articulates a clear crossover between real-life identities and those emergent within the game. When gender swap was offered as a decision card, observers often exclaimed, "I wouldn't do it!". Many players declined the privilege of swapping to Man PC and continued to play as a disadvantaged Woman or Rainbow. Female players frequently turned down the advantage offered in the promotion card that gave a lower salary to women or refused the advantage that another card promised for performing a sexual favor on the boss. In these cases, gameplay was justified on declared real-world principles. Other players, however, would accept these scenarios as part of the game, one taking the promotion, saying, "You have to be realistic."

In many instances, players disregarded their PC gender role and followed the instructions on each card as their everyday gender identity. Female players in particular accepted disadvantages marked for Woman PC's, even if they were playing as a Man PC, and commented, "I would actually have to do that." Another entanglement of these real and game identities is illustrated by the instance of a participant who used the game structure to 'play' with gender identity. The writing read *"You are a LGBTQAI+ person and your colleagues are curious about you and your life. If you are LGBTQAI+ and you are comfortable +3, if you are not -3. [//, 26, Italy]"*. This is a context card that directs the in-game action of the PC, by querying a player's real, lived sense of self-confidence in their gender identity.

7.1.4 Dialogues

Player-initiated dialogues were a significant factor in gameplay that shaped the in-situ storytelling, guided the narrative and opened unexpected spaces for communication.

7.1.4.1 Storytelling

The context cards presented rich micro-narratives that, when read aloud, elicited much discussion, sharing of anecdotes and sometimes elaborate storytelling exchanges. The discussion engaged fellow players as well as the card author and at times, players pointed out the author data with comments such as, "Ah, this is from an Italian woman. That's why!" The hand-written and multicultural nature of the cards furthered discourse around the game board, as players sometimes struggled to decipher the handwriting or to interpret the logic in the advantage scores. In these cases, they invariably turned to another player for help, read the card again together to discern what was written or intended. Storytelling often addressed examples of personal life lived by the players or their significant others. When cards that lacked the Rainbow role were drawn for a Rainbow PC, for example, players discussed the appropriate action "How would this [scenario] affect a rainbow person?" and often realized that the cards that did not address non-binary identities in fact reflected real life perspectives that often do not take non-binary identities into account.

Mind the Gap has proved quite successful in initiating dialogue during gameplay. Each context card is comprised of at most a few lines of text, but they present rich micro-narratives that players relate to their own experiences and aspirations. Most frequently when a card was read aloud, what followed was a jovial combination of eye rolling, head shaking, groans, laughter, commentary, the sharing of anecdotes and sometimes elaborate storytelling among participants. Discussing a particularly curious card, players pointed out the gender, age or location data of its author with comments such as, *"Ah, this is from an Italian woman. That's why!"*. The hand-written and multicultural nature of the cards also furthered dialogues around the game table, as players sometimes struggled to decipher the handwriting, or to interpret the logic intended in the author's advantage or disadvantage score. When this happened, players invariably turned to a game neighbor and read the card again together, trying to discern what it says or means. When cards from the original deck, that lack the rainbow role, were played by a participant as a rainbow PC, players invariably discuss the appropriate action to take in the game, but commonly also asked, *"How would this [scenario] affect a rainbow person?"*

The dialogue between participants as generated by game and play is perhaps the most beneficial observable outcome of such design agonism. Indeed dialogue is a precursor to coming to understand someone other's ideas and perceptions, and *Mind the Gap* has seen hundreds of people from different social, cultural, academic and professional backgrounds wholeheartedly engaged in dialogue and storytelling around the issue of the gender gap.

7.1.4.2 The Collective Narrative

Looking more closely at the cards, their micro-narratives, and the subtext provided by the advantage/ disadvantage score, another form of dialogue can be seen as manifesting within the collective narrative. These dialogues play out across spreads of cards as they have been added to successive gameplay sessions, with players returning to and elaborating certain topics. At their best, these sequences point to the development of shared understandings, insofar as players are in agreement with each other in their statements. At the very least, these sequences portray the establishment of positions regarding others, through their contributions, actively taking a stance as 'speaker', or authors, in reference to others and the direction of discussion.

Following principles of Dialogic Syntax (Du Bois, 2014; Du Bois & Giora, 2014; Laury, 2005; Nir, 2017; Nir & Zima, 2017; Zima, 2013) these resonant (Nir, 2017; Valsecchi, 2016) aspects of the game cards' collective wordplay display signs of emergent intersubjectivity. A finer granularity may be possible with formal semantic analysis, yet dialogic syntax functions at a social, interactional level of intersubjective engagements. Table 1 below presents a sequence of cards presented in temporal order as they appeared in the game, through which participants elaborate on the theme of partnership and shared parental leave.

Table 1: Context cards as collective narrative

"You want to take shared parental leave. Man: your boss laughs in your face. Woman: your friends feel sorry for you going to work. (Woman: -2, Man: -2) [Female, 31, Lincoln, UK]"
"You decide to go part-time to look after children. If you're a man you're congratulated on a "brave" move, if you're a woman you're asked f you're not worried taking a step back in your career. (Woman: -2, Man: 1) [Female, 33, Lincoln, UK]"
"Your partner (male) decides to take over half of the child care. ~'half' added after (Woman: 2, Man: -1) [Female, 28, Vienna, AT]"
"You take shared parental leave. (Woman: -1, Man: 1) [Male, 29, Lincoln, UK]"
"Congratulations! You just had a baby with your female partner. Howevre, no time to enjoy. You get no free time (but serious lack of sleep)(Woman -2, Man 0)[Female, 34, Delft, NL]"
"You and your partner are having a baby. Because you live in Sweden, parental leave is supported for men and women. Plus: if men take parental leave the couple can take more months in sum.(Woman 1, Man 1) [Female, 37, Germany]"
"*You are having a baby and your wife is keen to carry on in work - so you go part time & so does she :-)* (Woman 3, Man 3, Rainbow 3)[Female, 50+, UK]"
"Having a Baby. Wife in better job so husband stays at home. Male goes to family place. [Male, 43, UK]"
"If you are at Biological Clock(tower) your partner offers to help & take care of the baby. Be happy and go Back to Work Circus :) (all genders circled) [Female, 27, Trento]"
"If you are a man and your wife is having a baby you can take only 3 days as a parental permission. If you are a rainbow they will laugh in your face. If you are a woman you will take 6 month but maybe you'll risk to lose your job. Good luck! (Woman: -2, Man: 3, Rainbow: 3*) [Female, 22, Trento, Italy]*"
"*You are project manager and you are tempted to hire a man, because he won't need to go on maternity leave. You are aware this is unfair. If also fathers would go on leave, you would not have the preference. Send one man to family place -> the one who needs it most.* [Female, 36, Netherlands]

Individually, these cards related personal-life challenges and potential outcomes, yet the sequence presented a collaborative reflection on the importance of partnerships and the perceived impact of shared parental leave. New statements resonate with previous records to articulate inequality, examine partnerships and policies, and relate to both positive and negative aspects. Instances of stance-taking, repetition of phrases, the interrelatedness of participant contributions and the collective focus on a particular topic illustrated participants' active engagement with, and responding to other players' viewpoints, an intimate activation of intersubjectivity.

7.1.5 Agonistic Space

Mind the Gap initiated a relaxed, social ambience, a third place that harbors several of the core attributes of the theoretical agonistic space: the successful incorporation of dissent, reconfiguration of power structures, and players' incitement to imagine potential futures.

7.1.5.1 Dissent

The most remarkable form of dissent in the game was the inclusion of the non-binary gender and the co-creation of this new form of being in the game. The dialogues in and around the game extended the conceptual space of the game to include wide-ranging discourse on gender identities. As an example of challenging, and overthrowing an existing hegemony, players' activism for gender diversity demonstrated the transformative potential of agonism and its potential to initiate real-world change.

Dissent was further articulated in various instances of transgressive play. This is evident in cards that employ sexist rhetoric, dissenting against the intervention explicit aim of sponsoring women's empowerment. Cards such as *"You wear an open shirt to an interview. (Woman: 1, Man: 0) [Female, 21, NL]"*, and *"You get reprimanded by your boss so you break down in tears. If you are a woman, get your own way. If you are a man, you are marked as not promotable. (Woman: 2, Man: -2) [Male, Lincoln, UK]* are some examples. These cards employ procedural rhetoric of their own in the advantage scoring and play as antagonistic to other players and to the artifact. One card in particular shows the transformative role of dissent and transgression in the game, *"Give your boss a blowjob and advance 6 places if you are a woman. 0 for man unless you do the blowjob. (Woman 6, Man 0) [Female, 47, UK]"*. This is one of very few decision cards and the only explicit context that has been added to the game. Many players refused the proposition outright, bystanders laughed and other players exclaimed to the effect "I wouldn't do it!" Some players accepted, stating, "I'll do it. It's just a game!" Each time this card is played, there occurred some excitement and consternation, even disbelief when a player agreed, and players often discussed whether the author was sharing her own experience, or was engaged in adversarial play, some players even reflected aloud whether or not this kind of play was appropriate, but without questioning the appropriateness of the card. Here dissensus is disrupting the politics of the social order, making the private public, talking about sex and submission in a new language of power that forces a renegotiation of roles and identities, challenging the status quo quite like Rancière suggests (Rancière, 2015).

Other cards use humor or absurdity to express dissent, such as *"Progressive Policy: the workplace is a pure meritocracy but you suck at your job. (Woman: -5, Man: -5) [Male, 35, NL]"* or the darkly reflective, *"If you are a man you must spend a year of your life in a university department with a lesbian, radical feminist director. (Woman: 1, Man: -3) [Male, Trento, IT]"*. Some authors played against the game, with cards such as *"You won your life (Woman: 30, Man: 30, Rainbow: 30) [Male, 28, Lincoln, UK]"* and *"You have an accident and you die. Moreover you are, restart the game. [Female, 24, Trento, IT]"*. These are antagonistic contributions whereby card authors forced an immediate end to a players' game, or an end to the game overall. Such dissent even manifested against redress of the gender gap, as in *"Congratulations! You're promoting gender equality! (Woman: -2, Man: -2, Rainbow: -2) [Male, 28, Lincoln, UK]"*.

These instances of dissent were significant in that the dissensus was enacted, not rejected; players did not simply quit playing, or refrain from adding a card as many other participants had done, but invested time and thought in adding a divergent perspective to the game. When these cards were subsequently

drawn, players altered, ended, or restarted their gameplay, acting out these contrary positions, often while questioning the dissent and its potential origins wondering: "Why did they write such a card?" Opposing viewpoints were thus folded into the gameplay, often starting a discussion on why some people seemed not to appreciate the game.

7.1.5.2 Challenging the status quo

As the game progressed, players increasingly used mechanic cards to confront the state of women's and non-binary people's disadvantage, and to envision a world of greater gender equity. One example, the mechanic card *"You have a supportive partner - on your next turn, roll both dice.* [Female, 31, Lincoln, UK]*"* accelerated a player's advance, addressing perceived home-life inequalities with a positive vision. The author appeared to have initially intended the card to support Woman PC's, and then crossed out the *'F'*, indicating her eventual determination to move the gameplay towards gender equity. Further examples of players posing direct challenges to societal norms and power relations are found in cards such as *"Why are men always expected to have a career. Housedad sounds nice…netflix…ahh.* (Woman: 0, Man: -1) [Male, 28, Amsterdam, NL] and the broadly empowering *"Just say No to all Rubbish jobs your boss asks you to do.* (Woman: 2, Man: 2, Rainbow: 2) [Male, 43, UK]*"*.

7.1.5.3 Potential futures

While challenging the status quo, many players imagined a different reality through the game, and altered contexts in the collective narrative. For example, "*Your salary has been re-evaluated finally same as your male colleagues.* (Woman: 2, Man: 0) [Female, Trento, Italy]" and "*Your company's social software expands rapidly due to inclusive design.* (Woman: 2, Man: 1, Rainbow: 3) [Male, 45, Amsterdam, NL]" elaborated on institutional changes. "*Your boss suggests you to reduce your work time to take care more of your children.* (Woman: 3, Man: 3, Rainbow: 3) [Female, 22, Italy]" reflected on personal life.

Other players enacted their ideas of potential futures by contributing new game rules, for example *"If you have been placed at biological clocktower, you can take a shortcut to the promotion circle path. Male and Female Both.* [Female, 41, Lincoln, UK]*"* This card resonated with others, and several elaborations on the theme appeared, such as *"If you are at Biological Clock(tower) your partner offers to help & take care of the baby. Be happy and go Back to Work Circus :) ~all genders circled.* [Female, 27, Trento]*"* and "*Your having a Baby! Go to biological Clocktower All roles. ~all genders circled.* [Trento, Italy]*"*. These stirrings of creativity and imagination towards gender equity represent visions of potential futures fostered within agonistic space.

7.1.6 Discussion and reflections on agonism

The many provocative and lively interactions that occurred around, and emerged within *Mind the Gap* attest to the effectiveness of Role Playing, Storytelling and the Third Place to foster agonistic thinking and behavior. *Mind the Gap* is an activity, collective storytelling and simultaneously is an artifact, a collective narrative. The analysis of the structures of participation and the remnants of engagement explicates concrete signs that intersubjectivity is incubating within the artifact and its experience. Players read other players' words aloud, digested each other's positions and related their own experiences and perceptions, thus enacting intersubjectivity. Player perceptions are recorded in the artifact as complex micro-narratives whose dialogic syntax (Du Bois & Giora, 2014) displayed clear resonances that indicate the emergent intersubjectivity (Nir & Zima, 2017) which again, is central to agonism.

7.1.6.1 Gameplay and game

By examining *Mind the Gap* as an experience and an artifact the emergence of the principles of agonism can be traced both in-situ, during the actual gameplay, and in the cards that comprise the game. Behavioral observations exposed a collective storytelling driven by the intervention; and the analysis of the cards revealed a collective narrative as an evolving co-created gender story. This progression resembled iterative design development, whereby players have expanded role-playing in the game, embraced gender swapping and the enactment of transgender identities. Players engaged not only with their own individual interpretations but acted to shape the experience of other players that opened an entirely new social dimension to gameplay. The game itself transformed to reflect this collaboration between players, past and present, and gameplay then embodied the expanded perspectives of the collective.

Game dynamics offered a structured interaction that established rules and norms yet allowed for improvisation and transgressive play. The tone of the cards was at times cheeky but never aggressive or violent as can be witnessed in many social media conversations on gender inequality. This behavior could have been influenced by gameplay contexts, players' social norms (Montano & Kasprzyk, 2015), and social desirability bias (Fisher, 1993). Certainly, social pressure exists to respond in a correct and sensitive manner, especially for males playing in academic or workplace situations or among colleagues. It must be noted that although in conversations humans in general prefer agreement (Pomerantz, 1984), under normal circumstances women need to work harder to achieve this agreeable status, as they are more expected to act agreeably and appear pleasant, for example by smiling (LaFrance, Hecht, & Paluck, 2003). Yet the creation of game cards was anonymous, and the dialogues between them formed asynchronously, out of step with co-present conversation. The role-playing in *Mind the Gap* appears to have encouraged many people to re-evaluate their perceptions, perhaps even to think of others as 'adversaries not enemies', thus fulfilling the agonistic principle of identities.

7.1.6.2 Intersubjectivity and its effect/affect

The activation of intersubjectivity through gameplay is consistent across varied situations and socio-cultural groupings that defined the gameplay sessions. The game space is stable, reproducible, and demonstrates the potential application of agonism to elucidate perceptions of people and publics in the wild (Brown, et al., 2011). Yet the processes that drive the game and engage players are grounded on the same intersubjective mechanisms that facilitate identity formation, empathy (May, 2017), individual and group associations (J. C. Turner, et al., 1987), and suggest that the potential of agonism in design is not only to examine, but also to influence attitudes and behavior.

It is well established that activating intersubjectivity to examine the emotions and perceptions of others can facilitate empathy towards that other (Batson, 2009; Belman & Flanagan, 2010). *Mind the Gap* potentially focused player empathy towards women by making visible many difficulties that women face in STEM and many game cards directly empower women in diverse situations, written by players of all genders. However, of greater significance is how some participants have manipulated the game and co-opted the rules to discuss gender on expanded terms, even challenging its binary implementation. A small group or players initiated what appears as a series of exercises for intersubjective engagement: they proposed non-binary contexts and mechanics, prompted other players' to examine LGBTQAI+ perspectives, and led them to symbolically act out discrimination and gender advantage. The emergence of this activist LGBTQAI+ agenda imparted a lived experience of real gender diversity in the game, and equalized non-binary gender status in the society of the game.

This remarkable result was quite beyond our expectations and in fact the juxtaposition of the Rainbow with the Woman and Man roles became an important feature of gameplay. During gameplay, players in the Rainbow role regularly addressed the ambiguity of playing with both the original and the Rainbow-inclusive cards, questioning how each and every scenario would impact an LGBTQAI+ person as compared to a Woman or a Man. In-depth discourse on consequences for male Rainbows and female Rainbows, intersectionality (McCall, 2008) and the complexities of transsexuality were introduced into gameplay. These concentrated efforts of intersubjectivity linking the Rainbow PC to real world LGBTQAI+ people and issues did not stifle or significantly divert the discussion away from women's challenges, rather they channeled a wider array of perspectives that illuminate the problems caused by systemic gender discrimination and the male behaviors that define the status quo. The development trajectory of the co-created artifact and the nature of discourse around gender itself were significantly altered through player collaborations, the manifestation of collective intentions and the liberation of new forms of identity that can be attributed to agonism.

7.2 Intervention: Neighborhood revitalization

This intervention examined agonism and design through a local urban regeneration project that revolved around ongoing participatory design and citizen engagement activities in conjunction with the City of Lincoln, outside design agencies, partners at the University of Lincoln and local stakeholders. Over a period 8 months that ran concurrently with the Mind the Gap intervention, the engagement provided an agonistic reading of a specific context: participatory urban planning amid social, political and material constraints, and demonstrated the potentials of agonism for in the wild applications when planning, enacting and reflecting with stakeholders. Figure 7.13 outlines this intervention, in which I played roles as artist and researcher, enacting Speculative Designs and creative inquiry towards the investigation of urban place and practices. The intervention made visible the fundamental aspects of stakeholder engagement and in particular, the engagement of so-called gatekeepers who could potentially open meaningful opportunities in the neighborhood. The influence of Brexit as the dominant socio-political narrative in that particular place, and the potentially antagonistic communication of my activist perspective in the research are noted in black.
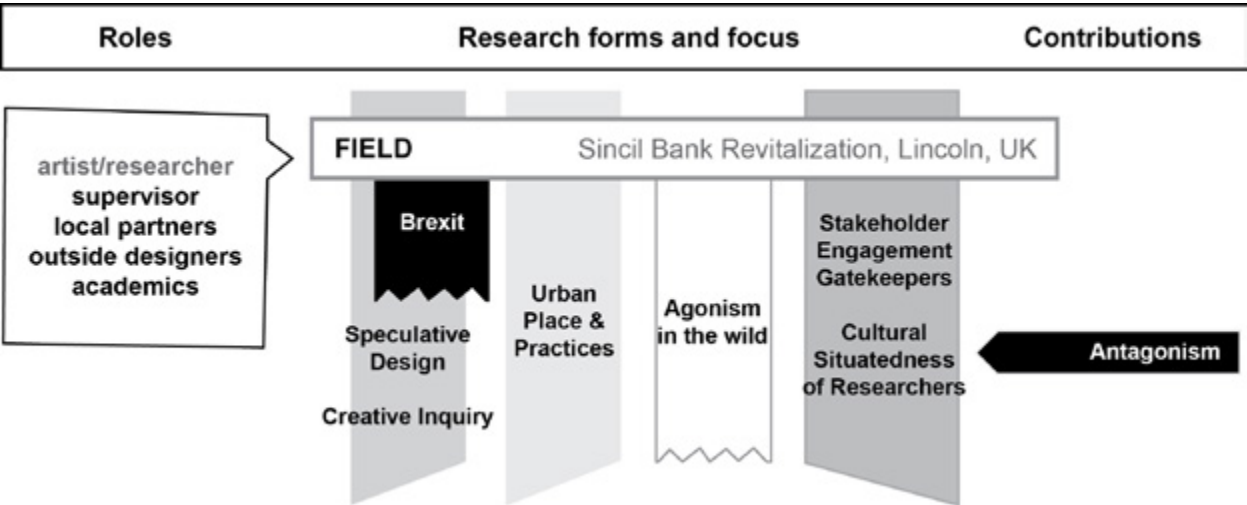

Figure 7.13: Intervention Neighborhood Revitalization

The focus on agonism and my own activist tendencies quickly revealed challenges within the project directly linked to migration, integration and the social, economic and political underpinnings of Brexit. In light of this the cultural situation of the research team deserves mention, as the group comprised myself, an international researcher from the United States, my Italian supervisor Antonella de Angeli, a Finnish professor Jussi Holopainen from University of Lincoln, and initially included Mark Mushiva, my Namibian PhD co-student, also from University of Trento, Italy. As a group this multicultural ensemble was applying distinctly Scandinavian Participatory Design concepts to a neighborhood in one of the most strongly Brexit-voting districts in all of the UK. The media-scape, political rhetoric and news reporting surrounding Brexit at the time was infused with antagonisms towards the increasing presence and visibility of new migrant communities in the UK, in particular from Eastern Europe. One local partner suggested that Brexit results in Lincoln city were 'not so bad' as in surrounding Lincolnshire, and at no point in the project exploration were the origins of participating researchers commented on as a benefit or hindrance. However in retrospect, our cultural situation was certainly influential in our continual re-assessment of outcomes and local partners' engagement, and eventually in the decision to end the cooperation altogether.
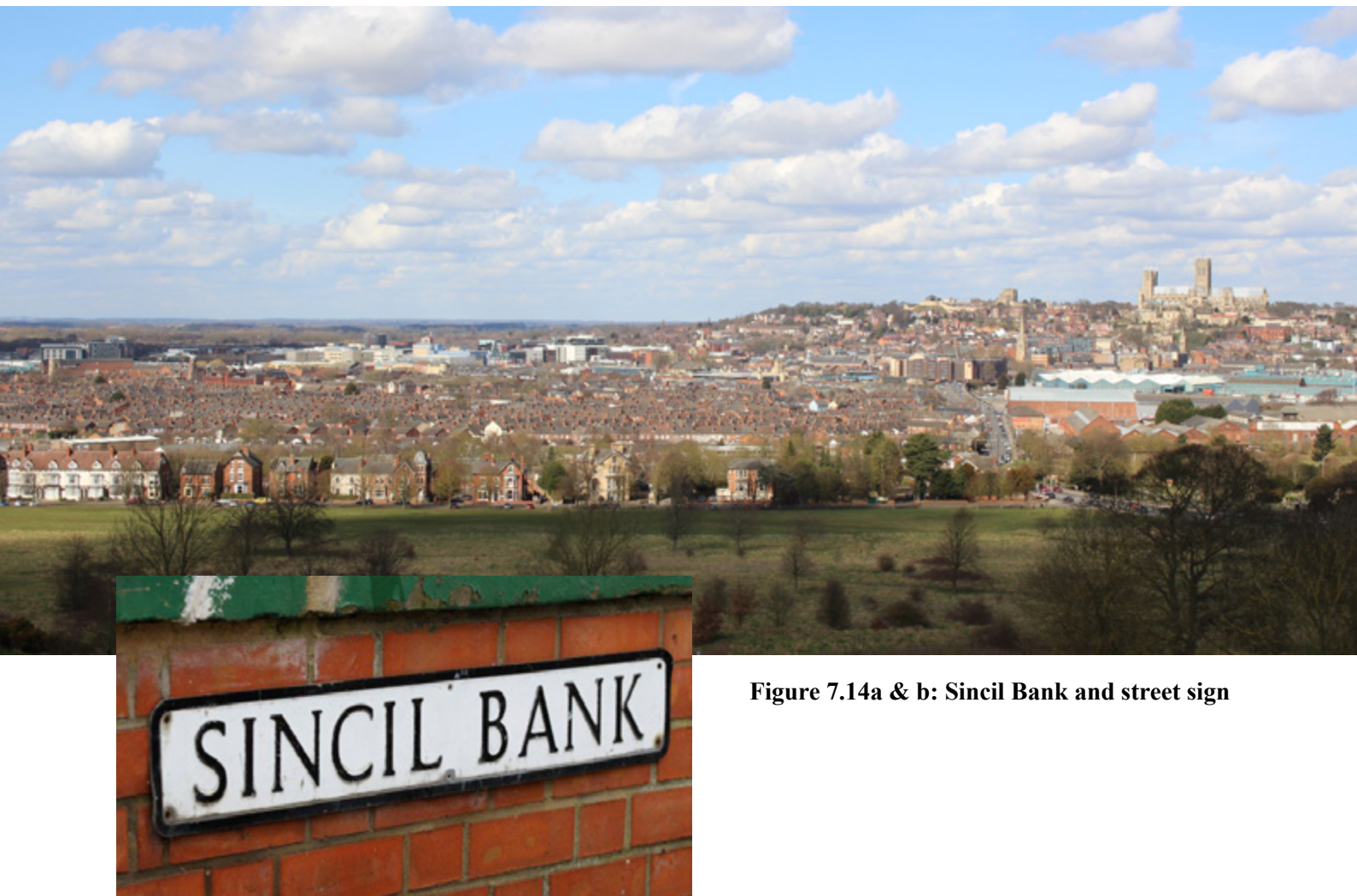

Figure 7.14a & b: Sincil Bank and street sign

## 7.2.1 Local situation and narrative analysis

The neighborhood at the center of the project is Sincil Bank (Fig. 7.14a), which is south of the Lincoln railroad tracks and east of the University of Lincoln, sandwiched between the commons green to the south, which can be seen in the lower part of Figure 7.14a, and the old town around the cathedral to the north, middle right in the figure. Sincil Bank was originally a planned development that housed workers from nearby factories, and is characterized by low, narrow row houses orientated for easy walking

access to the factories with a noteworthy lack of green spaces or play areas (Fig. 7.15a). Commercial activity is now largely concentrated on High Street on the western border of the neighborhood. The City of Lincoln had embarked on a neighborhood revitalization program that incorporated some citizen participation and had produced, through an outside contractor, a place-making document that outlined future development aims for Sincil Bank (Fig. 7.15b).

Figure 7.15a,b: Portland Street in Sincil Bank, Image from Place-making document

Using this place-making document as a starting point, an unstructured Discourse Analysis was initiated that examined design materials, reports of prior research in Sincil Bank, internet articles, data from the municipality, a citizen questionnaire that focused on the neighborhood, a summary of that questionnaire performed by the City Council as well as a sentiment map that had been produced through citizen consultation. A variety of official maps available through local police and municipality online data services were also examined. These plot disparities in income, employment, health, education, access to housing and other factors in the Indices of Multiple Deprivation (IMD) developed by Social Disadvantage Research Centre at Oxford University. Figure 7.16 is one such map that illustrates the increasing overall levels of deprivation in Sincil Bank and the stark division between other wards.
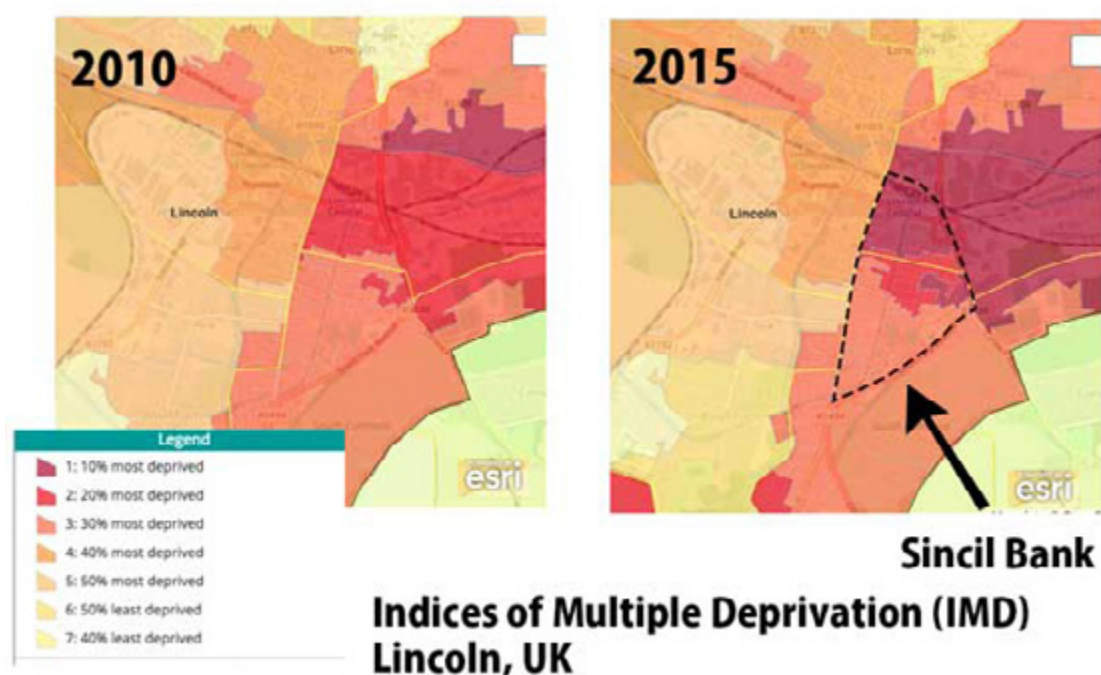
Figure 7.16: Deprivation levels in Sincil Bank Images: opendatacomunities.org

The Discourse Analysis also took into account official emails, face-to-face meetings and informal communications with city administrators, Community Officers, outside designers, citizens and local students, as well as feedback from a one-day workshop and exhibition held in the City of Lincoln that had been devised by the research group. All of these documents comprised a complex discourse that was examined for its constituent micro-narratives. These narratives were then formulated as statements and each was elaborated as speculative games and play scenarios. A design document was created that extended the discourse analysis by depicting a combination of storytelling, digital media, urban games and playful engagements to address the social, environmental, structural and systemic concerns that impact community and quality of life in Sincil Bank (Fig. 7.17). For each micro-narrative extracted from the discourse, we proposed a hypothetical urban intervention that elaborated potential citizen engagement around the narrative. These Speculative Designs offered ways to approach the challenges facing citizens, the town council, as well as potential inclusivity issues with their previous attempts at participatory design that had been revealed by the analysis. The design document was then presented to the Town Council in an official meeting by the research supervisor and subsequently became a focal point for discussions.

The micro-narratives drawn from the discourse were "The story of the bank.", "Young people lose enthusiasm for education.", "The story of the automobile and the city.", "Residence group has a meeting." And "People drink alcohol and hang out on the streets." The latter three narratives and proposed approaches are detailed in the following.

Figure 7.17: Design document example pages

7.2.1.1 The Bad Neighborhood

The dominant narrative both in the community itself and in the town proper is that "Sincil Bank is a deprived neighborhood." Sincil Bank is known as 'downhill', the poor area where the factory workers lived, as opposed to 'uphill', which encompasses the area on the hill around the cathedral that traditionally was home to clergy and upper class residents. Sincil Bank is also referred to as the 'Polish neighborhood' due to the large community of East European citizens living there. Nearly 60% of residents in the neighborhood are considered newly arrived migrant communities, or transient interim residents, including significant populations of Afghans and Bangladeshis who were referred to as 'all the people working in the restaurants' by one city administrator. There are reportedly more than 20 languages spoken in primary schools in Sincil Bank, and for example the online parental forms for schoolchildren in the greater Lincoln area are available in English, Polish and Latvian.

Figure 7.18: Graffiti and trash bins in Sincil Bank

The perception from within the community, and in the wider Lincoln area, is that Sincil Bank is not a great place to live. Contrary to police evidence, people thought that Sincil Bank has high crime rates, and made note of drug dealers on the streets and an overall atmosphere of unkempt decrepitude (Fig. 7.18). Therefore the main focus of all the initiatives proposed was to endeavor towards transforming this narrative towards "Sincil Bank is a great place to live."

Games and playful engagements were proposed to explore this narrative and focused on improvement initiatives in the neighborhood that could strengthen social ties, facilitate inter- group communication, beautify and upgrade the environment as well as provide inclusive, fun opportunities for young people to contribute. Through such initiatives, it was proposed, residents could develop a sense of pride, shared ownership and responsibility for their neighborhood, and the community actions could drive motivation to make it a better place. The attention of citizens from outside Sincil Bank would be also drawn to the areas' assets, that they might feel comfortable for Sincil Bank as a place that they regularly want to visit. It was strongly advised that any interventions should also include citizens and organizations of Lincoln, to strengthen ties between communities and to bring commerce from uphill residents and out-of-town tourists into Sincil Bank.

7.2.2 The city and the automobile

One of the more challenging narratives playing out in Sincil Bank is related to the historical shape of the neighborhood and evolving urban practices that define it as a place. That narrative was called "The Story of the City and the Automobile." Sincil Bank was designed for walking or bicycle access to essential services and the factories where most residents would have worked. In contemporary Sincil Bank, the employment provided by the factories has largely evaporated, and with the rising rate of automobile ownership, the tight urban space with narrow streets has an overabundance of cars (Figs. 7.19a,b). Car garages currently occupy the few spaces that might potentially be available for re-purposing as green areas. Residents complain that outsiders visiting Lincoln use Sincil Bank streets as 'free public parking', and there is widespread concern that some streets have become dangerous for children. Several streets are known as 'rat-runs' and are often full of fast-moving traffic, cutting from the High Street to the highway on the way out of town. The entire neighborhood is bordered on the eastern side by the three-lane Canwick road, where the walkability of the neighborhood is diminished.

Figure 7.19a,b Cars in Sincil Bank

These are all manifestations of deeper, systemic problems that are evident in the story of the city and the automobile. Addressing this narrative was particularly challenging as reconfiguring this aspect of urban environment would require changes in zoning, driving and parking practices, and potentially even car ownership. To be successful, participation of both residents and visitors arriving from outside would need to be secured. The change or closure of roads to reduce traffic flow or restrictions on parking would also likely have negative consequences for some residents, and could impact on economic input from visitors, for whom adequate parking is essential.

The story of the city and the automobile is one that clearly depicts hegemonies of power in the urban environment and the changing face of an urban environment has significantly impacted quality of life and mobility for residents. Yet many of those residents who are car owners and drivers also have children who are also affected, which demonstrates how the various identities and practices are interlinked in shaping this particular problem.

As an agonistic approach, a concept of re-appropriating public space through play was imagined to temporarily empower residents and young people to take control of the streets. A framework for an urban play initiative was proposed, based on projects by Oliver Bishop Young (Fig. 7.20a) and Santiago Cirugeda (Fig. 7.20b). The idea for Sincil Bank was that filling some busy side streets with children at play could draw attention to parking issues and potential alternative uses of public spaces. The administrative contribution would be that city should provide residents with mid-term permits for rubble skips to be installed in strategic parking places and streets, as well as the provision of said dumpsters. Citizens would be invited to design, decorate, and use the dumpsters, which would stand for six weeks and be used as community play space. An additional digital layer of engagement was proposed, that each physical dumpster could be emblazoned with a digital marker, through which citizens could vote and share their ideas on the best dumpster idea using a mobile phone. This game and play concept has been successfully employed in the UK and Spain to allow citizens to take control of the story of the city and the automobile and temporarily change the narrative, the use of space, and challenge the dominance of cars in what is ostensibly a residential place.

Figures 7.20a & b: Skip Conversions. in the UK (left) :and Spain (right)

Discussion on this form of intervention proved difficult to advance, in particular as city officials insisted that any change to roads or traffic were the responsibility of municipal traffic authority and beyond their control. It was suggested that given a long enough time in advance, it might be possible to arrange the closure of one particular street for at least part of one day, as had been done in the past to allow for a community street fair. However longer-term interventions would likely not be considered due to the perceived challenges of inter-agency cooperation, and the limited time-frame of my own participation due to the exigencies of the PhD study.

7.2.3 Creative inquiry: urban drifts

This narrative of the automobile and the city was taken up in a creative inquiry that built on traditional city-making practices of Flânerie and Dérive, or Urban Drifting. Where previously a literature review has framed the CDR phase, here the research introduces artistic practices and takes an art-historical perspective to ground the constructive activity. Flânerie is a kind of participatory urban wandering introduced in the 1860's when the effects of urban living and the transformations in societies due to industrialization were becoming starkly apparent, incidentally it was around this time that the neighborhood of Sincil Bank was constructed. The activity of the flâneur was to wander the city as a somewhat passive, somewhat participating creative investigator, whose intention was to turn the everyday practice of walking into a living performance of civic engagement. Dérive is a similar practice promoted by Situationist International and COBRA, two urban arts collectives that were active in Paris, Amsterdam and Berlin after World War 2. These groups comprised of theorists, artists and architects who interpreted dérive as urban drifting, performative wandering as an investigation of urban life and challenge to hegemonies of power evident in the socio-material configurations of the city. Their collaborations spawned some foundational performance artworks and a new field of psychogeography.
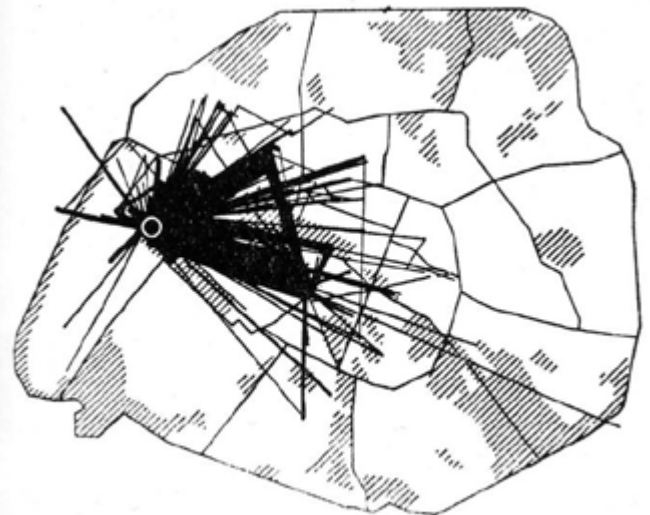

Figure 7.21 (left): Psychogeographic Maps of Paris

Figure 7.22 (right): Student's path in the neighborhood

This investigation of the emotions, sensations and ambiences of places in the city made visible how maps influence both the shaping of the urban environment and the citizenry's understanding of it. For example Guy Debord's 1955, "Psychogeographic Guide to Paris" (Fig. 7.21) isolated the emotional and social characteristics of favored Paris neighborhoods, and remapped them showing the traces between ambiances. Paul-Henri Chombart de Lauwe's 1957 map of the 16th arondisment, (Fig. 7.22) showing the movement of a student in one year as well pointed out the unique shape of a lived environment from an individual's perspective. These constructions aimed a critique at the maps and plans of contemporary architects and city planners and suggested that citizens were being overlooked as the urban environment was being developed around them. As such, they provided some relevant background materials upon which to develop creative inquiries in contemporary Sincil Bank.

To investigate the neighborhood of Sincil Bank, the concepts of flâneurie and derive were updated with a bicycle, satellite tracking device, and open source mapping application to enact gps drawing as new way of experiencing the city (Figs. 7.23). A planning map provided by the municipality that identified potential bicycle freeways was used to create preliminary sketches and the freely available Openfietsmap routable cycling map was loaded into the mapping program and installed on the gps device. Although this map is highly accurate, the final gps drawings differed somewhat from the original map sketches as the actual street layout and public access in the real urban area deviated substantially. In addition, as the accuracy of the device was impeded at some points in the neighborhood, either by inclement weather or urban structures, tracks were at times offset by several meters (Fig. 7.24-7.26).
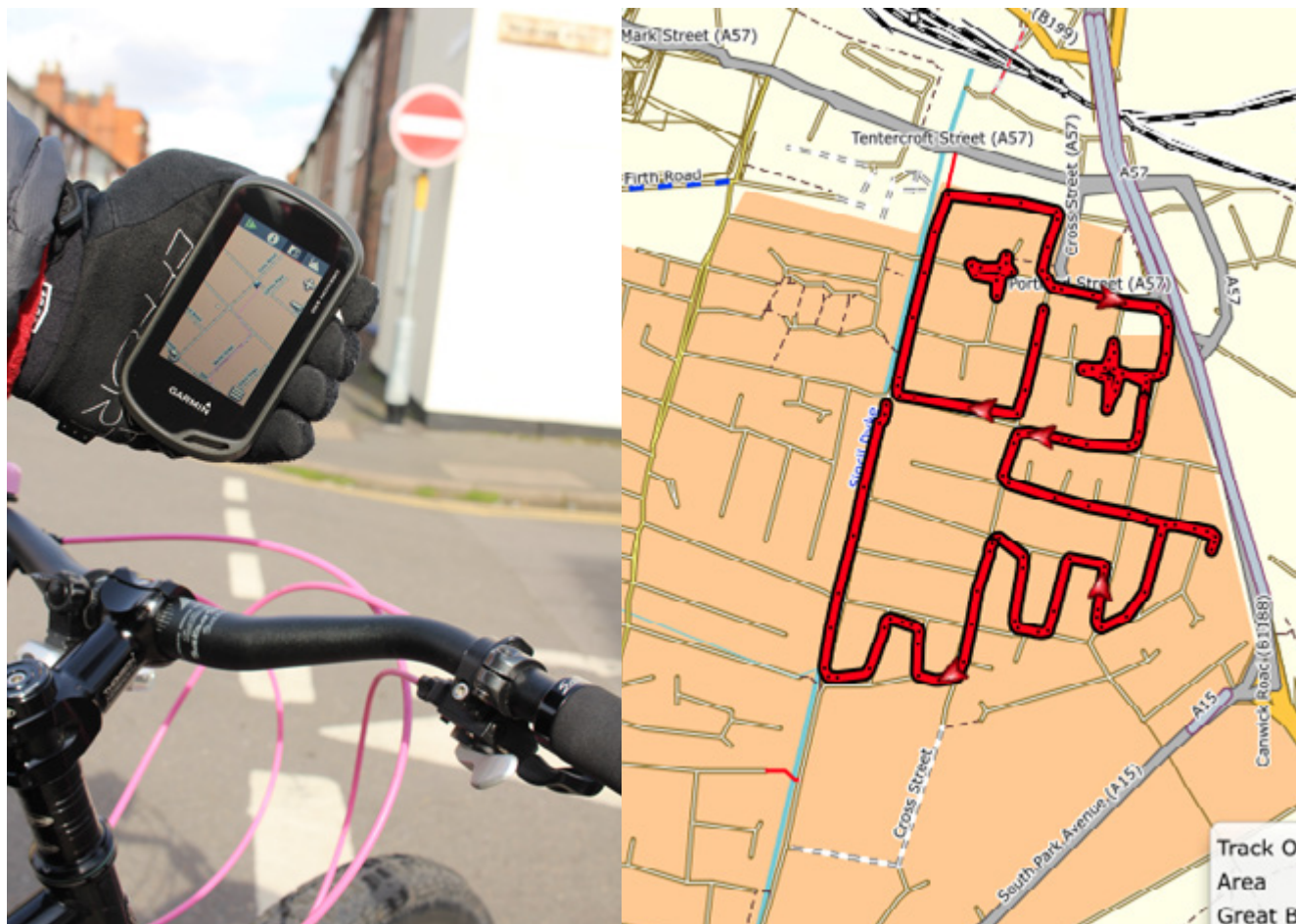

Figure 7.23: Bicycle, GPS device; Figure 7.24: GPS dog trace

As drawing was not always possible using one continuous trace, gps images were created through series of movements: the track was initiated, and cycling/drawing commenced, stopping occasionally to refer to the original sketch. As each line was completed, the track was saved to the device, and a new line started. After each drawing was enacted completely, the entire set of tracks/lines was downloaded to the mapping software, edited slightly for clarity, then exported as a named gpx track. The final gpx tracks for a series of drawings were then compiled for upload to be made publicly available online, as a repository for the basis of an urban game or street play event. Once online, the tracks could be displayed on any mobile device using the web browser, and could be followed using a free web map interface by members of the public.

The most striking reflection on these dual activities of defining and following gps pictures was the sharp attention that was drawn to personal security and the very real traffic dangers in Sincil Bank. Foremost among these security issues is the multitasking that is required to actually create, or follow a gps map, as focusing too much on the gps device or mobile phone while cycling proved to be potentially quite dangerous. This was obvious to me as well as to bystanders: once while the drawings were being scoped, a young child, himself riding a bicycle called out "Be careful, Mister!"

Whether the activity is done on foot, and in particular when enacted on the bicycle, following lines on a map is markedly different when the action is translated to the real environment. In some areas of this neighborhood there is relatively little traffic and a pedestrian or cyclist can follow the tracks or draw at leisure. However, quiet areas are bordered by the notorious 'rat runs' where traffic can suddenly increase. The physical layout of the neighborhood Sincil Bank, in a stark grid with sharp corners and few open spaces, makes it particularly difficult to see traffic from either direction upon emerging from side streets onto more trafficked arteries.
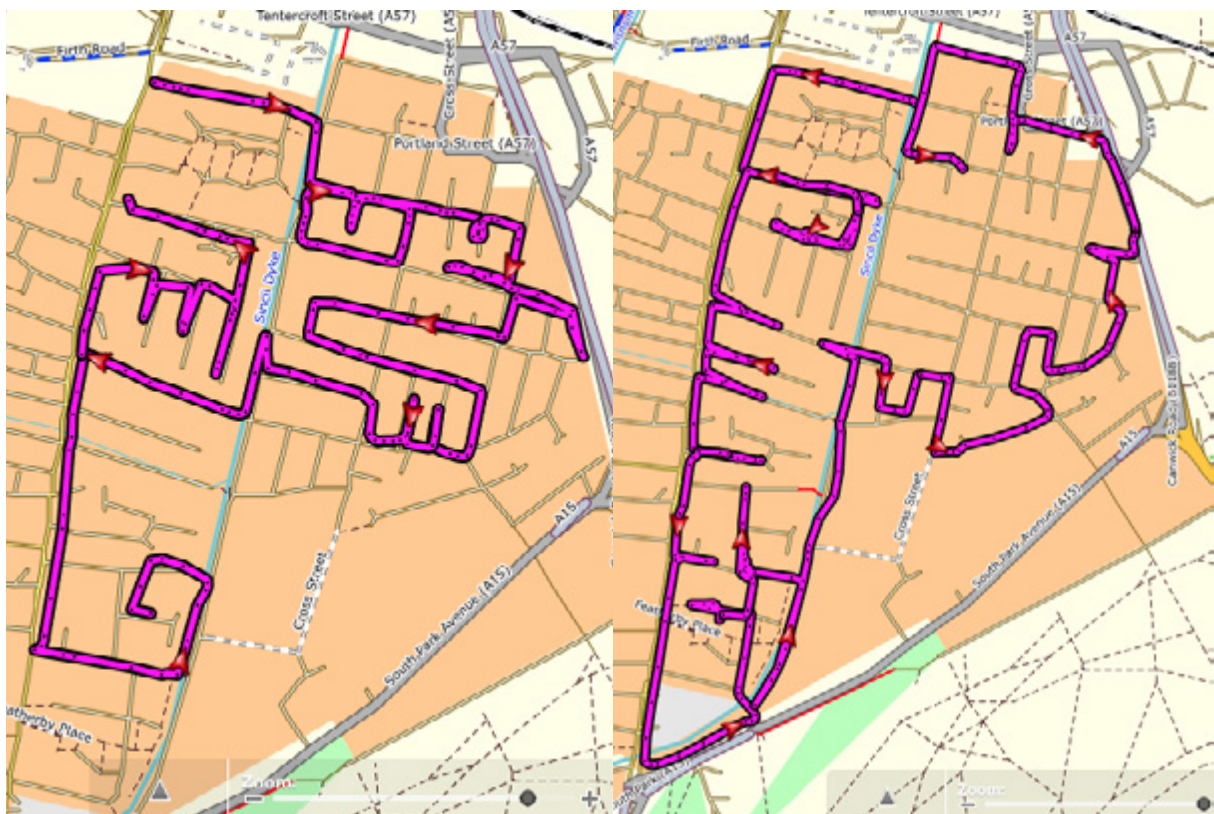

Figures 7.25 & 7.26: GPS lizard and elephant traces

These issues introduce some challenges to the implementation of gps drawing as a public game activity, for even as the activity makes visible the challenges that traffic poses to pedestrians and cyclists in this neighborhood, that traffic poses a direct threat to the participant in action. The argument for redirecting traffic and potentially changing driving practice to make the place more safe and playable, especially for the children of Sincil Bank is certainly made visible through gps drawing. However staging it as a public engagement, particularly one that children might participate in could prove dangerous.

Another element that was illustrated by this approach to creative inquiry, and imagining the activity as a form public participation, is the potential for misuse or appropriation by citizens. One of the challenges of developing expressive systems that are open to the public is the likelihood of eventual adversarial play. Some players will inevitably play 'against' the system, whether this is by bending rules, finding loopholes, hacking or using the game itself for unintended purposes. Inappropriate contributions to

such a game, for example one in which citizens were invited to upload their own gps images, could be problematic in particular when facilitating engagements that are openly promoted or supported by public institutions (Figs 7.27, 7.28). Further creative inquiry, and artistic license, revealed the ethical concern that any public game must provide a safe space, free of aggressions and welcoming to all who wish to participate. As with agonistic space proposed in the political philosophy, some policing of the public expressions would become necessary. Most importantly it must be made clear that hate speech or deliberate triggering in any form is unacceptable.

However, the act of playing against the system can manifest in many different ways, and the emergence of the profane in public forums is to be expected. And while this kind of behavior may seem to run contrary to the intended use of the artifact or public system, it is in fact an important marker of the adoption of an artifact and its use into the public consciousness. Instances of people re-purposing the system, hacking or appropriating it in a creative, unintended manner are evidences of that artifact becoming a resource within the public sphere, a tool for self-expression. This reflects the delicate balances required in generating agonistic spaces, policing for hate speech but not engaging in censorship, and the need for the agonistic respect so often absent from political discussion.
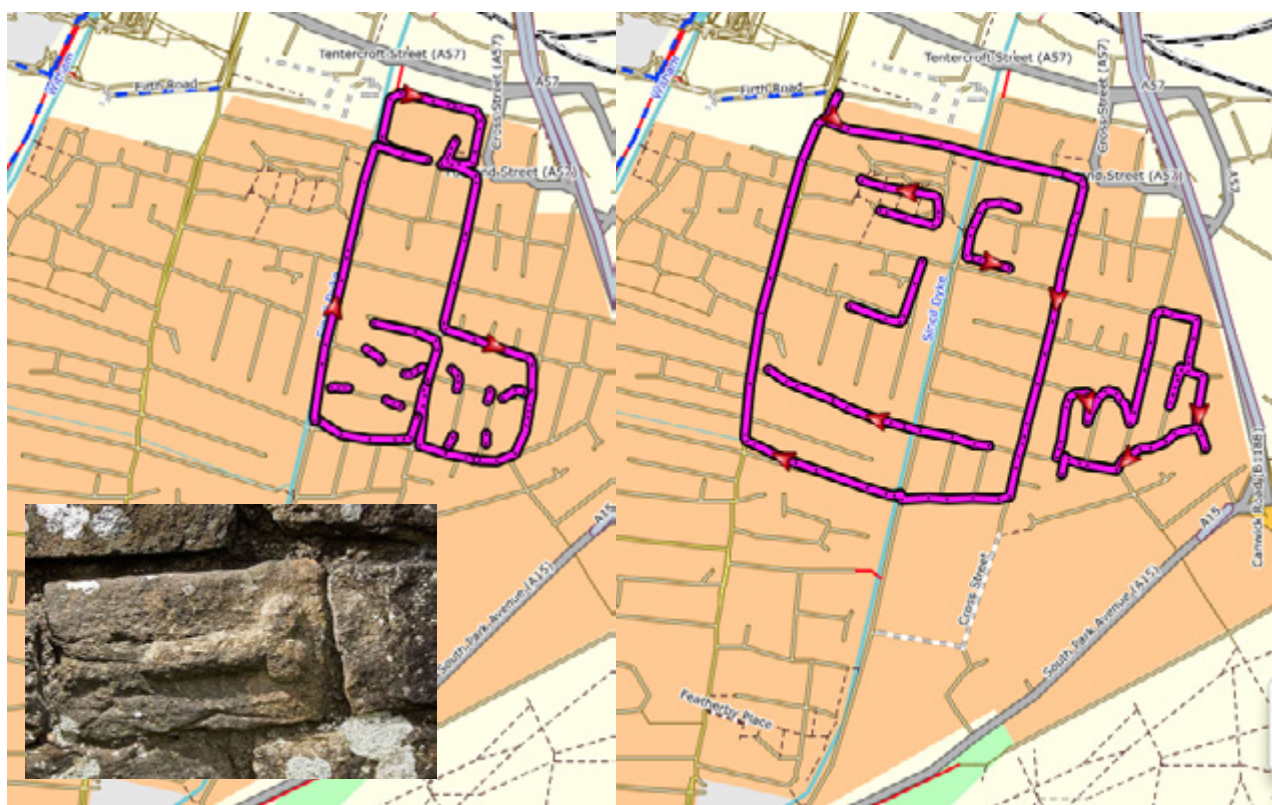
Figure 7.27: GPS dick pic and phallus carving on Hadrian's Wall photo: english-heritage.org.uk
Figure 7.28: Dissenting middle finger

Some critical reflection on the inclusion of such crude imagery in the concept document describing GPS drawing that was eventually shared with local partners, and in my PhD thesis is perhaps in order. In retrospect, I acknowledge these as an explicit reminder of my own male privilege and tacit participation in the hegemony of male dominance, potentially a reaction to the perceived official disinterest in exploring alternative forms of participation in Sincil Bank, even my artist's voice dissenting the constraints of formal research publication. Yet when the idea of encouraging citizens to conceive their own images in a public intervention was floated, more than one colleague spoke to the effect that 'They're just going to draw dicks.' And in fact such imagery is not without cultural and historical precedent, as more than 50 phallus carvings were left by the Romans along Hadrian's Wall, constructed in the 2nd Century A.D. some distance north of Lincoln (Fig.7.27 insert).

7.2.4 Residents group has a meeting

Returning to the micro-narratives, one in particular is potentially most impactful and at the same time most sensitive: "Residence group has a meeting". This narrative was identified as an extremely problematic aspect of the citizen engagement in the neighborhood. The place-making research and subsequent planning and expenditure decisions of the City Council strongly reflected the experiences and concerns voiced through the regular Residents' Group meetings. These meetings were the main mechanism that community members had to engage with planners and policy makers, and it was from these meetings that the primary concerns of residents were queried. The municipality clearly understood that having such a forum for discussion was essential to community building, however it quickly became apparent that these meetings were not well attended. When pressured about who in fact was participating in the meetings, and whose voices were being included in the planning discussions, city administrators eventually revealed that there were five or six elderly British people who attended regularly and there was little or no communication with residents of other demographics.

From a Participatory Design standpoint, we suggested that in such a diverse community as Sincil Bank, a variety of strategies to communicate between and engage citizens could be examined. For people who are not drawn to, or have little faith in a community meeting, other forms of participation might be explored. City administrators, community officers and researchers all agreed that the best practice would be to include the ideas and contributions of various social groups and individuals, and allow a conversation between as many of the stakeholders as possible.

Figure 7.29: mock-up of mobile game play

To address this issue a simple location-based urban game concept was imagined through which citizens could comment on issues dear to them, and administrators could engage with the collective expressions and perceptions of their publics (Figs. 7.29). This speculative "game the bank" platform would serve as a community chatter app: citizens could mark problem areas on an interactive map, and comment, rate, sort, and adjust suggestions for action. Such a gameplay would bring people together to discuss outside of the spatial and time constraints of the Residents Group meeting, as the mobile game could be always-on.

Figure 7.30: Mockup of residents group meeting discussion

The aggregated contributions and collectively negotiated challenges, as well as suggestions for solutions, could then be examined in depth during Residents Group meetings in concert with city officials (Fig.7.30). The idea here was that, with a small investment in technology such as a web-based mapping and commentary app, the city could potentially engage many more people in the discussions.

Enthusiasm for this concept was lukewarm, and although for the remainder of our interaction with the Lincoln City Council and its Community Officers the idea of engaging as many residents was revisited repeatedly, there was no movement in this area and the collaboration eventually stagnated. There was some skepticism on the part of the community officers who repeatedly stated that they 'go door to door, meeting people' and that was the only way to engage local residents. Direct criticisms of one external design group's impromptu 'pop-up' design studio ideas were voiced which doubted that short-term street interactions could indeed prove meaningful. Although there was an acknowledgment that any way to get more people to engage in the community development plans would be helpful, the ideas of using game and in particular role-playing as a way to engage people was strongly resisted.

Another aspect of participation was revealed through this proposal, when it was revealed that in the neighborhood various ethnic communities were already self-organizing. These included a Polish Residents' Group that held regular meetings, an annual Polish beer festival that was being planned, and an Afghan culture organization that organized after-school language meet up. We repeatedly suggested that any community or design project could try and engage these groups, as their existing infrastructures could help reach more people. Although the municipality officials suggested they had a list of contact-persons for these cultural organizations, multiple attempts to find more details and reach out to these organizations were rebuffed, in emails, official meetings and direct personal communication. It was later revealed that cooperation was contingent on the town council's successful application for funding through the Migration Mitigation Scheme. A review of this funding mechanism's guidelines pointed out that, contrary to previous UK government's focus on integration of newly arrived communities, the focus had shifted to managing the impact of these new communities on local, established British residents. Overall it seemed that the potential of a technological and game play solution to expand participation in the residents' group meeting was a low priority, and there were clearly many other narratives feeding into the discourse, the most prominent and devastating story being, "Britons voted narrowly to leave the European Union."

7.2.5 People drink alcohol and hang out on the streets

Another narrative that relays an especially problematic situation in Sincil Bank is, "People drink alcohol and hang out on the streets." While for some residents this is part of their regular practice, others perceive it as unpleasant or intimidating, and contributing to the overall degenerate look and feel of the area. A closer look at this narrative reveals it may be less a problem with spatial practice, rather a challenge of inter-group communication. Public drinking is in itself is a form of social engagement and encouraging citizens to utilize available public spaces is indeed good practice in community building. The conflict here seemed to be between residents who share the same space yet perceive, inhabit and perform it differently. In addressing such concerns the research returned to the examination of empathy and intersubjectivity. Resolving these issues could conceivably begin by encouraging people to interact and talk to each other, find the similarities between themselves, and begin to understand how the others think and feel.

Another intervention was sketched with the objective to create a way for people to connect around the social activity of drinking, and encourage intergroup communication to alleviate stressful encounters on the street. The idea was to first run a public perception survey around the question "What kind of Beer do You Like?" which would be enacted through a preliminary gameplay engagement. Results from this first step would be taken forward, building a partnership with local brewery to create The Bank beer, a special brew for the Sincil Bank community (Fig. 7.31). The proposal included workshops and local training courses for youth to learn brewing business skills, and followed a similar project that had been initiated some years before along parallel lines. The Bank beer would be brewed, special labels printed for a gameplay event, potentially using the beer bottle as an interaction device. The event would be held in a public space in Sincil Bank, giving away free beer as a most simple and accessible form of citizen engagement.

This concept of a public drinking game speculated that by encouraging people to drink with strangers, the issues of shared public space and practices could be examined. Longer-term development could include the creation of a Sincil Bank brewery to provide a useful skills- and training opportunity for youth and underprivileged citizens, potentially even becoming a source of revenue to support community-driven projects. When presented to the Council meeting, this idea was initially well received by some, even enthusiastically by other council members.

Figure 7.31: Concept sketch of The Bank Beer

However the discussion that followed revealed sharp differences concerning the possibility of incorporating public drinking into an officially sanctioned event, and questioned if it was appropriate to address the inter-group conflict of public drinking with more public drinking. Other government agencies and initiatives were already active in attempting to address the problem of binge-drinking that affects Lincoln, and some councilors felt this particular problem was either already being dealt with, was too sensitive to even broach, or that any initiative such as The Bank beer project would be counterproductive. Thus discussion of the intervention proposal went no further.

7.2.6 Reflections on antagonism

Stakeholder engagement is of course a primary factor in the success of any Social Design and Participatory Urban Planning initiative, and clearly the research approach here was inadequate. The application of agonism did indeed draw out conflicts and deep rooted problems that background the Sincil Bank revitalization project; it illuminated challenges not only in the neighborhood but in how the city council was approaching citizen participation. However, many of the ideas generated as agonistic in theory turned out to be antagonistic in practice, when speculation turned to actual implementation in the wild. The gatekeepers in this case, those city officials and community officers whose cooperation the research and supervisor were trying to secure, appeared threatened by the activist approach. Their reaction to these confrontational ideas and alternative approaches can perhaps be understood as a social responding to perceived threat or aggression, but this knowledge does little to facilitate communication needed to develop the design cooperation.

One important takeaway from this phase of the research was the realization of the necessary counterbalance between agonism and antagonism. The city officials were part of the hegemonic power structure that agonism questioned, and they resisted overthrow. They acknowledged the challenges, but clearly did not appreciate many of the design suggestions, in particular that more should be done to engage the migrant communities in planning processes, and that the composition of their Residents' Group might be interfering with the consultation process, as a few elderly British voices were speaking for a much more diverse community than their voices could honestly represent. Our activist overtures were then likely antagonistic to the local officials and did not facilitate agonistic respect, or even good communication.

Over time the engagement revealed multi-layered hierarchies that were being confronted with no meaningful effect. For example, during the six to eight months in which the design research was being conducted, the primary city council was constantly searching for funding. Initially, proposals were being written towards lottery cache for community development projects, then the application was for the Migration Mitigation Fund, at a later point, another potential source of funds was named as the precursor to collaboration. At each juncture the gatekeepers stated that only after funding was secured could a meaningful talk of cooperation ensue. The impression given was that the rejuvenation effort was at the mercy of funding agencies, and officials were powerless to proceed. Similarly, when approaching the subject of temporarily rerouting traffic, city officials expressed that it was beyond their powers to make this happen, even suggesting that communication with the traffic board was simply too fraught. This revealed at the very least, the perception, or projection of powerlessness on the part of the city administrators, who insisted that their finances and operations were constrained by higher authorities.

Another hegemony was exposed within the urban environment and reflects again on the socio-material situatedness of the research, that is the primacy of the car and the power and control that traffic exerts on pedestrians. The creative inquiry of bicycle gps mapping was in theory a fun, creative way for citizens to investigate their neighborhood and engage in the discussion about car parking, traffic, and the materialities that shape life in the streets. In practice, the activity turned out to be so dangerous because of the traffic, that it was entirely unrealistic to propose such as a public activity. While the creative inquiry and design speculations elaborated the hegemony of the car and driver over all other identities in the neighborhood, they led to no meaningful challenge to the status quo.

In both of these situations, whether approaching the city council, or the car owners and drivers, it was clear that agonism would have no real effect unless the conversation was being had with the right people, and that everyone involved was in fact willing to explore new approaches. Applying the theory of agonism did not immediately overthrow the hegemony, or even pose real challenges to the status quo, and much more would need to be done to develop relationships, with the gatekeepers in particular, to have a real impact. The results in this case reflected one of the main takeaways from the initial Lampedusa fieldwork, that the disconnect between outside investigators and the locals who own the challenges on the ground must be bridged, and as a field researcher I must develop better communication to build these bridges.

7.3 Intervention: commonfare.net

The final intervention of this research applied the concept of agonism to a third kind of community, the emergent online platform commonfare.net, which due to its nascent state, I considered to occupy both Lab and Field contexts. This work was shaped around a playful provocation that examined some of the approaches to knowing, and understanding online interactions, exploring the links between real-world community and emergent platform society (de Waal, et al., 2017). This phase of the research returned to the original investigations that questioned how HCI research examines lived experiences of digitally mediated environments, as in the first research trajectory with the soundscape installation. In this case, the community itself is an online entity. This intervention, outlined in Figure 7.32, deployed a gameful survey as a playful provocation to examine the digital place and the practices of its inhabitants. Although the engagement elicited only limited participation, a variety of issues were made visible through the unique lens of agonism as a playful provocation. Most important among them is that when applying agonism to any community, the biggest challenge will always be participation and engagement.
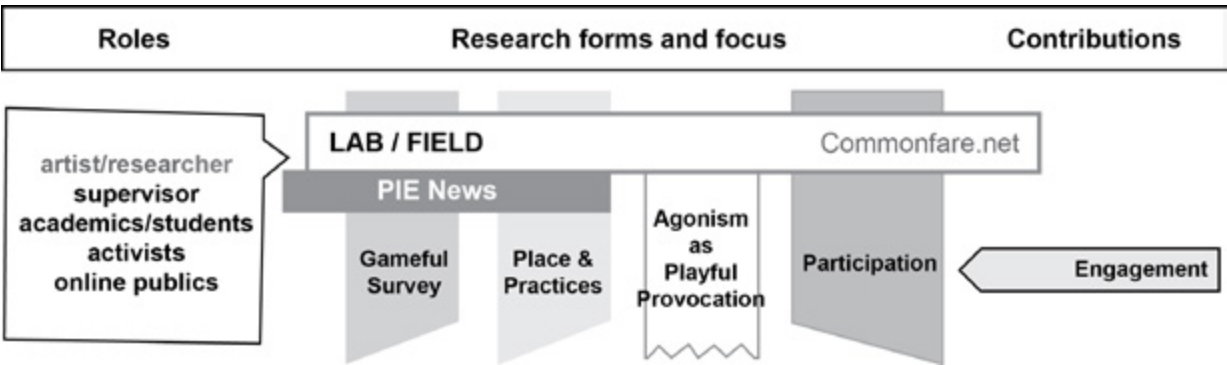

Figure 7.32: Intervention commonfare.net

7.3.1 PIENews and commonfare

Commonfare.net is a digital platform initiated through the Horizon2020 project PIENews, Poverty, Income and Employment News. The aims of PIENews are to improve lives and wellbeing of the 'new poor' (Bauman, 2004), people who statistically may not be impoverished or necessarily require welfare assistance, but whose lives are considered precarious, challenged by difficulties of finding adequate employment, lack of savings, overwhelming debt, and exclusion from social safety nets (Botto & Teli, 2017). These precarious people include, for example, migrants, seasonal workers, and those experiencing downward social mobility, and also young people who are no longer in education but have difficulty finding work, as well as freelancers and people with alternative lifestyles that are incompatible with mainstream employment and welfare. PIENews partners in the Netherlands, Croatia, Italy and the UK contributed to the scaffolding of participation and technical implementation of the digital platform that became commonfare.net (Lyle, Sciannamblo, & Teli, 2018).

The commonfare.net platform incorporates information about social welfare programs, storytelling to share experiences and best practices, and an experimental digital currency that explores informal economy and offers a universal basic income through its Commoncoin (Figures 7.33a-c). Commonfare. net lacks a physical place, and differs significantly from the academic community, built on shared experiences in education and practice, and from a real-world community that has at its most rudimentary, the shared experience of the same urban materialities to draw people together. However, real-world events and organizations are the backbone of commonfare.net networking and growth, and the majority of contributions to the platform relate actual projects, events, demonstrations, festivals and programs that citizens in respective countries can access in person. The shared values and aspirations of its constituent members, known as commoners, give commonfare.net its ground, and the practices of storytelling and support of alternate forms of economic citizen engagement shape the community. This emergent and gradually developing platform is a laboratory for social experimentation guided by its founders and the online representations, and their reflections of real-world participation and activities present a unique field for research.
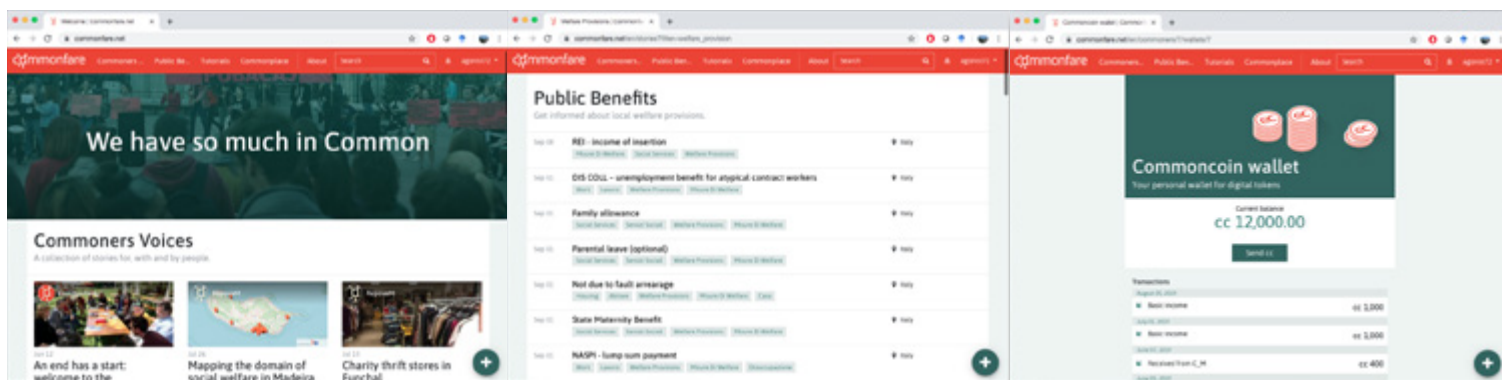

Figure 7.33a,b,c: Screencaptures of commonfare.net

7.3.2 The gameful survey

During the field work in Lincoln, UK, one of the stances taken by local partners was that the research team could naturally help design and implement a community survey, and it was suggested on multiple occasions that the easiest path towards collaboration was that we update the Citizen Questionnaire that had been run several years prior. A gameful survey concept was developed as a free google form that incorporated some of the role-play and storytelling aspects of the agonistic design strategies into a community questionnaire. The objective was to stimulate intersubjectivity and examine individual and social identities (Tajfel & Turner, 2004; J. Turner, 1999) as well as introduce some activist and self-reflexive themes into the relationship between researcher and the subject being questioned. Although the gameful survey concept was never implemented in Lincoln, the approach laid the groundwork for the investigation of this other form of community, commonfare.net.

When examining the commonfare and PIENews one of the most challenging aspects is identifying the place of this community. The issues taken up on the digital platform are all related to the social, political and material aspects of a lived citizen experience, but the community itself has no physical commons. The community of STEM could be said to have a commons in its digital publishing and journals, but it also has a shared material experience of universities and industry places. The conferences that bring researchers together physically for workshops, paper presentations and seminars very often constitute third places where community is enacted materially, with both formal and casual elements. In the community in the neighborhood of Lincoln, the most obvious unifying element is a shared experience of the place, and to varying and lesser extent the community is drawn together around ideologies and practices. To the south of Sincil Bank neighborhood in Lincoln is a place that's actually called

the commons, a green park and play field relatively free for everyone in the community to use. In the digital community of commonfare, though there are occasional networking events in each of the partner countries, the place of the platform itself is intangible, its representations carry no visual cues of a lived environment, and there is no embodiment of commoners within the digital space beyond a profile photo. The content available on commonfare and the PIENews project deliverables described a nascent community of activists and independently minded social organizers who were actively involved in each their own real-world communities. Their stories involve social welfare, economic innovation, challenges of urban life, political action and participation. The site shows some evidence of shared practices, but the common thread that seemed unite the community together is an ideology, or advocacy for new interpretations of democracy and economic liberation.

Among the commonfare site contents is a close attention to the migration issue, and one of the targets of the PIENews project is represented in the personas that were developed of potential commonfare. net commoners. These personas and scenarios involving them included several migrant personalities, people dealing with issues of integration and welfare, and for example coordination between social organizations and migrant communities. Many of the good practices highlighted by commonfare and numerous stories on the site describe social programs for migrants and new community arrivals, as well as current events that reflected on migration stances such as the closing of the ports in Italy to new migrant arrivals. Commonfare stories also expressed attention to urban community projects focused on appropriating urban public space, squatting or reusing urban infrastructures for independent citizen-driven projects, political demonstrations and precarity, one of the main investigative themes of PIENews. Upon reflection, the gameful survey, though developed for a concrete, lived environment appeared to be touching on issues that had substantial crossover with those of this digital commons. The determination was made to approach the online community with the gameful survey, and begin to examine how the agonistic investigation of social, political and material challenges derived from the lived environment might apply to the platform community.

The survey has three parts, the first collected demographic information that interlaced social-activist themes inspired by the PIENews in the questioning. The second part introduced role-playing, asking participants not only what their opinion, but asking them to speak for the members of other groups as well. Survey questions were illustrated by myself with hand-drawn comic figures, graphics and photographs, and the formal nature of the survey form was infused with gameful perspectives (I. Bogost, 2016; McGonigal, 2015). This intervention was titled "*Who's playing Who*" as a play on words that suggested the survey was a kind of game, alluded to the role-playing element, and hinted that each survey participant was in some way, 'being played', which in English can mean being tricked, taken advantage of, or deliberately cheated. The actual survey is online and can be accessed at https://goo.gl/forms/NcWDD5Q0PSuUeM5v1 Readers are invited to play through the survey to the end, at which point the collective results become available.

7.3.2.1 Who's Playing Who?

The gameful survey begins like a conventional data collection tool, asking general demographic data of respondents, such as age and gender. The question of heritage queried potential cultural differences through different foods and the question that followed, about skin color, was abstracted with an intentionally difficult-to-interpret band of colored figures (Fig. 7.34).
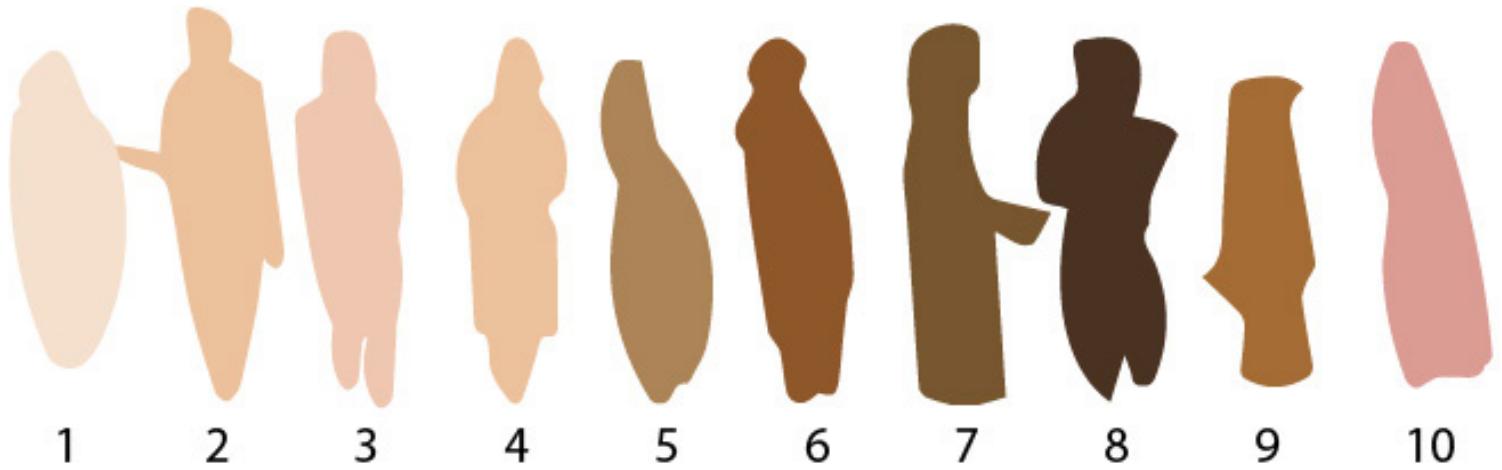

Figure 7.34: What color am I?

After the section on demographic data, the survey asked participants if, and where they felt 'local'. Then questioning turned to values, asking '*How rich am I?*" and building on some of the commonfare research into precarity, prompted respondents to evaluate their richness not only in terms of money, but also culture, food, social and time values (Fig. 7.35a,b).

Figure 7.35a,b: Gameful values questions

The survey then asked about group affiliations, and respondents were prompted to choose as many relevant groups to which they belonged. Comic caricatures, hand drawn by myself, accompanied each group, and there were many overlaps between the figures represented in the different groups to demonstrate that a person can have multiple affiliations (Fig. 7.36).

Figure 7.36 A selection of roles

The role-play section of the survey asked questions of the participants in two parts. First, questions were phrased as 'speak for yourself' and asked opinions on a topic, with input as multiple choice or check boxes that included a place for a text entry, 'other' possibility for answering. In the second part of each question, respondents were asked to answer for each of three different groups, to 'speak for the others'. This multi-part questioning is illustrated by the question about traffic and cars in Figures 7.37a & 7.37b (following page).

The questions distilled many of the citizen, urban and design issues that were elaborated in the previous intervention. In addition to the question about cars, participants were asked whether thought the city administrator's recent investment of 12,000 euros in a cctv system to control illegal trash dumping was a good investment, and asked to speak also for the local business owners, city administrators and the youth groups. A public drinking question was asked, whether it was social, or antisocial from several perspectives, and participants were prompted to answer also for the elderly, families, and uptown visitors. An urban planning solicited suggestions to upgrade a participant's neighborhood, and answers voiced from the perspectives of local business owners, hipsters and urban elites, as well as commonfolk.

Figure 7.37a (above): I speak about the cars

Figure 7.37b (right): I speak for car owners

Figure 7.38: The migration question

The last role-play scenario asked a question about migration, querying the player's opinion and what they would say for life-long locals, researchers and academics, and second-generation immigrants (Fig. 7.38). The first questions in the series were multiple choice or check boxes, while the migration question allowed for a free-form text response. This part of the gameful survey then asked participants to speak on this issue for the life-long locals, researchers and academics, and second-generation migrants groups. The final section of the survey offered two follow-up questions, one asking participants to share something about their neighborhood, and the other, asking what question they would like to add to the game. Upon completing the survey, respondents then had the opportunity to view all the other responses to the survey. These anonymous results were presented through as a series of graphs and charts, including the individual text entries, in an automatically generated googleforms response page. An example in the results for the CCTV investment is shown in Figure 7.39 on the following page.

I speak for the CITY ADMINISTRATORS: Was this a good investment?

45 responses

- ● yes
- ● No
- ● i dont know
- ● i dont care
- ● the money could be better spent (write how in 'other')
- ● Spending for CCTV means having someone monitoring the footage and archiving them; it could have been used for more proactive and positiv...

11.1%
8.9%
75.6%
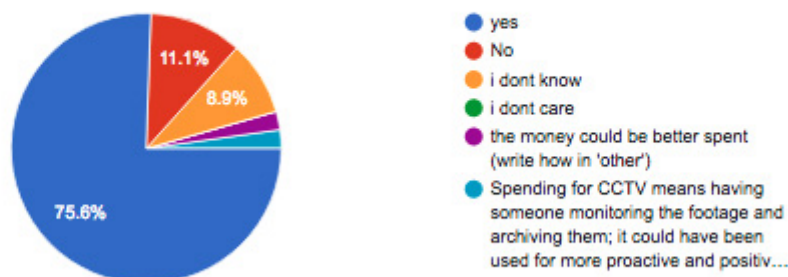
I speak for the YOUTH: Was this a good investment?

45 responses

- ● yes
- ● No
- ● i dont know
- ● i dont care
- ● the money could be better spent (write how in 'other')
- ● Organize engaging and entertaining events on the environment
- ● "I will segregate so I won't get caught" isn't really a good way of teaching ki...

33.3%
11.1%
28.9%
20%

Figure 7.39: Googleform results

7.3.3 Reflections on approaching community

Who's playing Who was introduced through a commonfare.net story that was posted on the site's commoner's voices page. This blog-style format is the main avenue for participation and expression on the platform; the survey introduction story can be found at https://commonfare.net/en/stories/who-s-playing-who. The story spoke from my first-person voice as a researcher, and asked readers to consider how we make and take surveys. The narrative described the positioning of researchers or organizations conducting such surveys, suggesting that everyone, whether asking or answering questions, is too involved in their own story to be objective. The story introduced the idea of building personas, a common practice in sociological and design research, that reduces groups to fictional portraits which then serve as a basis for a researcher or designer's imagination. It also elaborated my personal observation that commonfare stories share some common elements, but represent a fractured community comprised of people with conflicting interests. A few of the experiences I had while taking part in commonfare.net development were related, as was the framing of the exercise as "Game-based Knowledge Elicitation". The commonfare story was relatively short, around 500 words, interspersed with several cartoon images used in the survey, and at the end, readers were invited to follow the link and participate in the survey *"Who's playing Who?"*

The commonfare.net story was shared on the commonfare facebook page, on my personal facebook page, via email invitation through the consortium of PIENews mailing list and through 13 private messages to a variety of design and academic contacts. This outreach elicited several facebook and private message shares as well as two detailed email communiqués. The final total of 46 responses were too few in number to make any concrete conclusions as to the gameful survey method, or the perceptions of the community of participants, and no attempt was made to compare results with any other questionnaire format. However, the exercise revealed some valuable insights into the gameful technique and the presence and absence of the agonistic markers relating to identities and dialogues. Observations of participants engaging with the survey, and feedback from colleagues, did suggest the emergence, or potential for agonistic space.

7.3.3.1 Results overview

Who's Playing Who collected a total of 46 responses, whose average age 34.2 years of age and whose reported gender included 24 Males, 14 Females, 4 non-binary people and 4 persons who preferred not to state their gender. Based on an analysis of the skin color graph, 6 people of color participated. Of the 46 respondents, 37, (80%) claimed to have lived somewhere as a non-local and 17 of them had lived in multiple places. Only 8 participants claimed never to have lived somewhere as a nonlocal, and one participant did not answer this question. One group featured prominently in the demographics, with 37 people responding that researcher/academic or student was their job. Slightly fewer, 35 people (76%) stated researchers/academics or students as their group identity. A general overview of the demographics suggested that the community of participants was overwhelmingly white European researchers, academics and students who have experienced living abroad, or at least in another city than where they feel local.

All 46 participants answered the questions age, gender, values and community identity for themselves, and the vast majority "spoke" both for themselves and for the other roles in the questioning. Very few questions were left unanswered; occasionally a participant declined to answer for one role or another. One participant commented on the stereotyping of the proposed groups while answering the questions. In the wrap-up, two participants commented on the stereotyping when asked what question they would add to the game. One participant there suggested allowing players to propose other personas, another suggested the possibility to dispute the questions. Several participants directly referenced the survey itself, but all other players engaged in the gameful survey without explicit reflection on the activity.

Everybody answered all or most of the other multiple choice and check-box "speak for the others" but when it came to the final role-play "*There are more and more migrants in the neighborhood. What should we do?*" some participants stopped responding after speaking for themselves. Two players expressly rejected the premise of 'speaking for others' in this space although in previous responding with multiple choice or check-box, they had answered for the others. Most of those participants who stopped responding to questions after speaking on migration for themselves also did not respond to the final two questions "*What question would you add to the game?*" and " *Tell us something about your neighborhood."* This may indicate survey fatigue rather than an aversion to the questioning, as the text input admittedly requires more time, engagement and motivation to complete.

7.3.3.2 Emergent agonism in the gameful survey

The examination of emergent agonistic practices, the results of following strategies for Identities, Dialogues and Agonistic Spaces in *Who's Playing Who* provided mixed results. There are some evidences of different ways that players and the artifact might be engaging in identities and dialogues, but the role-play is enforced by the gameful survey, and there was no agency afforded to players to develop or participate differently in the experience, except for simply not answering questions, or answering falsely. In addition, as the survey was online and administered remotely, there is no way to know if during gameplay agonistic space manifested in their immediate environment.

7.3.4 Identities

Although players could not direct their play with identity, some observations do indicate the gameful technique impacted players self-concept in the act. For example, the skin color exercise was challenging for many, and those players who were observed playing the survey would hold their arm up to the screen asking "*What color am I?*" In the results section at the end of the survey, the values are completely obfuscated in the generic colors of the googleforms pie chart (Fig 7.40). The irony that this rendered meaningless the question and the self-reflection on skin color was commented on by several players. In this way the procedural rhetoric that challenged the focus on differentiating people based on their skin color was enacted, and then vocalized by participants. This can be interpreted as a sign of agonistic practice emerging through the activity and a momentary overthrow of the hegemony of racial discrimination and its constitutive act of profiling.
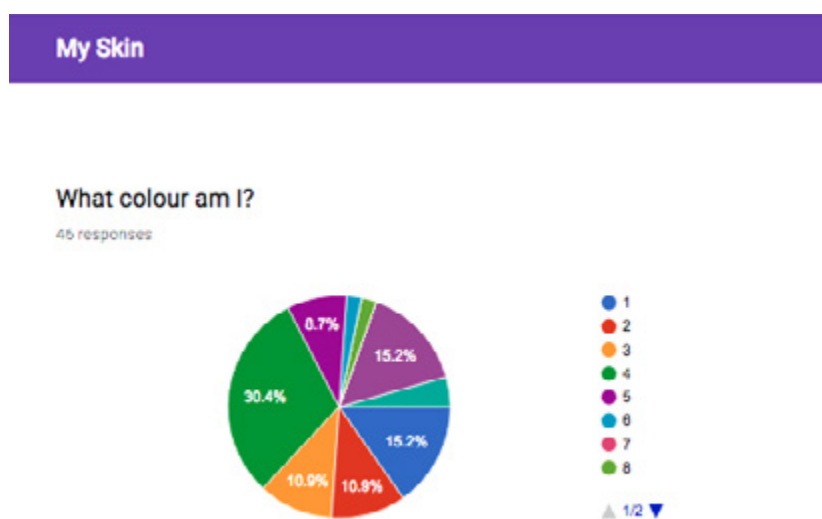
Figure 7.40: Skin color googleform result

The values questions were also tricky for some, and players who were observed vocalized both curiosity and confusion as they reflected out loud on the concepts of values. Some people appreciated the community identity exercise with the images, smiling as they scrolled through the many comic image representations to find a likeness of themselves. Three people commented directly on the generalizations as stereotyping a potentially heterogeneous group. One senior researcher challenged the precepts of the elderly, for example, saying it was not possible to define such a group under one label. That same participant, however, readily answered for the hipsters, saying that of course that group is always the same. One player said the game should have the possibility to suggest new personas, a suggestion that points that the lack of agency to determine roles and not simply choose from a set of possibilities was recognized by the some participants.

The individual, social and other identities are embedded in the gameful survey, and the creation of new identities or the shaping of existing personas is not possible due to lack of agency afforded to players. Therefore it is not possible to determine if this identity elicitation is really developed as participatory enaction or simply a follow-through of the procedural rhetoric in the gameful survey. While some stances can be identified in the survey results and clustered as general positions, the small sample size renders any subsequent reflections on the perceptions of participants insignificant. However one comparison between responses provided in the role-play on the migrant question does suggest that the gameful format was potentially illuminating identities, my own and those of the researchers, academics and students who participated, people who incidentally might themselves use personas and surveys in their future work.

For example, 19 respondents took a stance of welcoming, helping, or respect for migrants. Some perspectives are responding to migrants, suggesting for example we should *"learn languages"* or *"Getting to know them."* Others speak in more pragmatic terms, *"Help them integrate in our society in order to create a vibrant and lively space of exchange and mutual learning."* 29 respondents took positions around integration and inclusion. Some suggested that communities should provide spaces for expression or better services to accommodate migrants or facilitate integration, though most expressed general preferred outcomes without providing concrete examples. Taking a different stance, 8 respondents spoke for themselves in terms of forcing or shaping migrants' behavior, for example *"Respectfully make them join the community, help them integrate but with severe rules (migrants must respect the community too)", "... Let them socialize and let them feel part of our community… Tell them to be respectful with the place they live... "*, and *"If they merge with our culture they are welcome, otherwise I would prefer not to have them around."* Of these 8 perspectives, 3 belonged to researchers or academics , 4 from students and one retired / part time worker.

No judgment is being made here on these participants or their perspectives, however what was noted is that of these people, when answering for the role of researchers/academics only one continued in this forcing or shaping stance with *"The migrants shouldn't stay here of they're not useful."* The rest either adopted an integrating stance or claimed *'I don't know"* and one stated *"Can't speak for others on this issue."* These examples demonstrate how through the questioning, some identity disconnect has been achieved, as participating researchers and academics when speaking for themselves sometimes took a less accommodating stance towards the migrant. Yet when questioned for their self-proclaimed role as a researcher, such stances were communicated less freely. This examination of a handful of responses within a gameful situation of course does not speak for any community of researchers or academics, only exposes the potential of the role play to break apart perceptions of identity and examine individual and social concepts of identity through a discourse analysis perspective.

The majority of participants were themselves researches/academics or university students, and most had lived somewhere else than was their homeland. Yet a distinct impression within responses of the migrant as the outsider was fortified by the predominance of the words 'they' and 'them' found in 57 percent of replies to the migrant question. The intention to draw a parallel between the privileged mobility of a funded researcher and the exigent mobility of a migrant, or even vaguely connect the two went unrealized, even though many respondents had experienced life as migrants or were in fact members of EU citizen immigrant communities within their own neighborhoods. This suggests a need for deeper reflection, and an agonistic point of view might better ask, "What makes a migrant a migrant?" What is

it that differentiates privileged traveling academics in their perception of migration, is it the voluntary aspect of their movement, the experience in between, or perhaps their reception upon arrival? Simply asking where people feel local and if they have lived anywhere else was not enough to unpack the concept of migrant, or investigate our own privilege as researchers and academics.

7.3.5 Dialogues

Although the core of the material and the questions of the survey were developed from media, interactions and related positions that other people had articulated, the survey did not initiate dialogues between participants. The answers, or feedbacks from the rest of the community of players only became available to players after completing the survey. And while responses were too few to make sense of this initial trial, one form of dialogue did begin to emerge, within the community of players, as the concept of role-play in a survey met some resistance from other researchers who disagreed with the practice or its intentions. The gameful survey accentuates the persona issue through role-play, as a commentary on research practices and researcher identities. Several academics responded within the game by challenging that perspective, not in the easiest way by simply not participating, but by writing their comments on the idea of stereotyping as entries to the survey.

This reflection on the work with personas was only preliminary, but certainly deserves further attention. When researchers use generalizations of stakeholders in the process of design, it is called creating personas, yet when challenged in the act of gameful survey participation, some of those same researchers who might use personas noted that it was in fact stereotyping. This result was more along the lines of the provocation that was intended, yet seems also to have gone largely unnoticed, and when it was examined, feedback appeared as criticism of the game design/er rather than introspection and dialogue.

7.3.6 Agonistic Space

For the most part the survey was undertaken as an individual experience, even on the handful of occasions when it was introduced and administered in person. On these occasions one or more persons were introduced to the survey and some completed it as part of an ongoing discussion. In almost every observed case, for the skin color question, participants would hold their arm up to the screen and vocalize "What color am I?". This enactment of the investigation, engaging physically with the digital screen, is the beginning of performative place-making that is derived directly from the survey experience. In that moment the action is demonstrating the hegemony of color. On the question of which groups a person belongs to, player attention appeared fixed as they scrolled through the caricatures looking for likenesses and labels that matched their own self-concept. This reflected the original study of soundscape installation and the continuum of immersion and reflection that was revealed. At times, the facilitation made for a humorous, amicable atmosphere around the survey, at other times participants were wholly engaged in the survey on their device. If and how often other participants took the survey in a social setting, and if the stirrings of agonistic space were identifiable there and then is unknown. As for the signs of agonistic practices that can identify agonistic space, several researchers did dissent or challenge the status quo in the final part, when asked what question they would add to the game. There they questioned the nature of the questionnaire or the perceived stereotyping, however this kind of feedback was infrequent.

Who's playing Who? approaches the challenge of learning and knowing about this community online that has no physical presence, and exposes some potentials of agonistically designed tools. Yet it also demonstrates that without the mediation of a facilitator or the social aspects of a proper game, the experience could be more playful than gameful and it was missing the collective, shared activity in the moment of enaction. This was something that was in fact commented in the ethics committee discussion of the overall research, that we cannot know the effects of individualized participation and its abstraction through the online application. This absence of co-presence among embodied subjects is one of the complications of uncovering the community of commonfare.net and of platform societies overall.

7.3.7 Reflections on commonfare

Community engagement is the key in any of these Participatory Design projects and is not unique to Social Design. Getting people to participate is the biggest challenge of the commonfare project, as are overcoming language differences and the displaced, asynchronous participation of community members. This research contribution to commonfare.net was limited by my not yet having learned how to communicate with commonfare; for example the length of the story, the timing of its release, the stance taken as critical researcher, writing in first person all likely had some impact on participation and engagement with the survey. While the intention to introspect as researchers, examining how we ask questions, questioning the questioners, did show signs of activation, it was simply not a developed enough response to say that this in any way reflects the community values or practices on the platform. Commonfare is an unique experiment, one that has only nascent social norms, and the practices of commenting, forming groups, storytelling, and starting discussions are not yet widely adopted. Yet getting to know the community and understanding who are its actual members is one step towards shaping future engagements and encouraging the use of the tools provided there.

In this respect, the Constructive Design Research has come full circle, as it began its research trajectories with an investigation of a digitally mediated experience, and returns to the digital environment in its final intervention. Both environments are significantly shaped by the real world, yet the engagement online and with the digital still present the same challenges. The difference is that in the beginning, investigations were focused on the effect of the digital mediation, whereas in the end the research is examining aspects of participants' experience and their perceptions in the real world, only questioning through the digitally mediated environment. As a look towards a potential future research in this area, the thesis interventions conclude with another Speculative Design. In this a translation of the gameful survey into a real-world urban game *"What makes a Migrant?"* can be imagined as played in groups on the street (Fig. 7.41a&b).

With this the research expands on one of the original inspiring discussions on second and third wave HCI (Bødker, 2006, 2015), trying to understand socio-technical experiences, to what I believe is the next wave HCI, the investigation of human experiences in the lived environment, using socially orientated ICT artifacts and participatory Social Design practices.
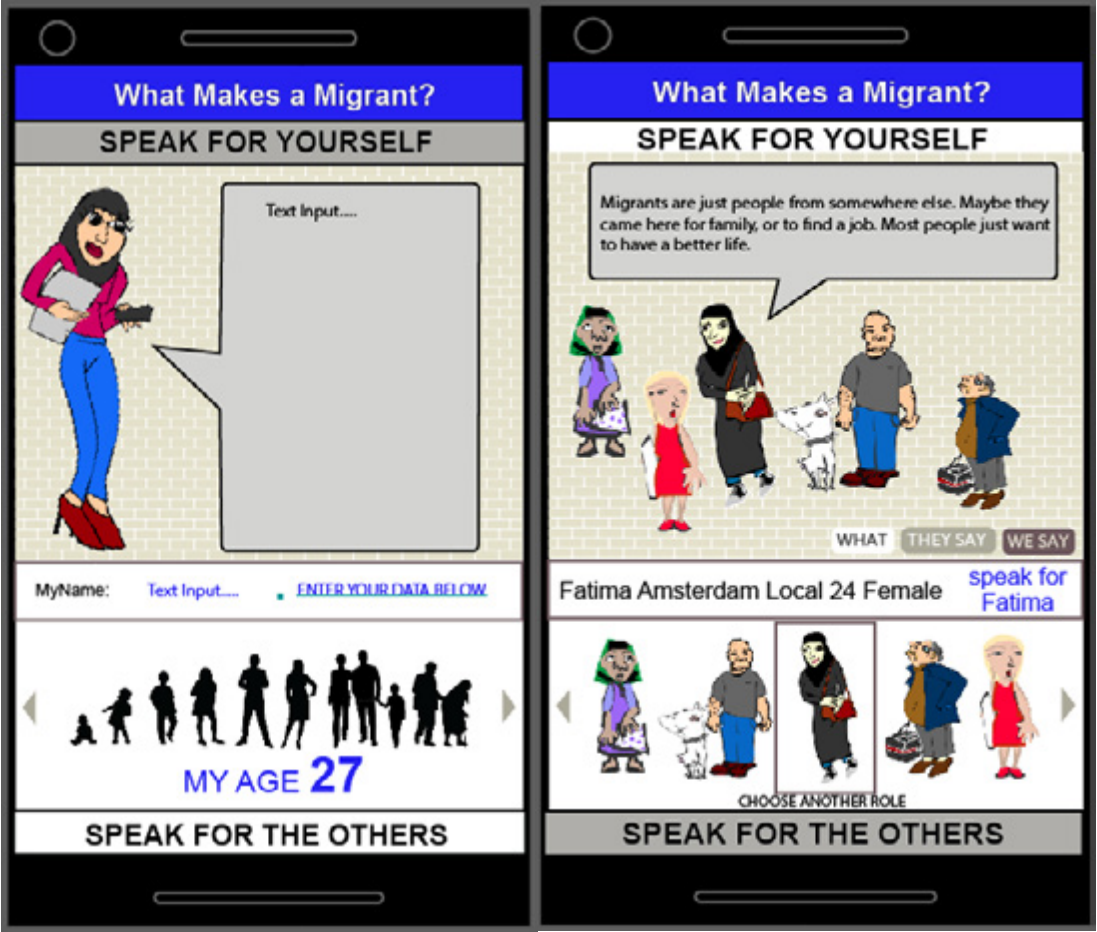
Figure 7.41a,b: Speculative Design game sketch, *What makes a Migrant?*

8 Discussion: on agonism and design

Agonism has been defined first through a review of literature as a particular configuration of participation, a form of discursive engagement that embraces conflict. An examination of the political discourse pointed to three main principles that comprise agonism: Identities, Dialogues and Agonistic Space. Through Constructive Design Research and a series of explorations and reflections, these three principles were elaborated into design strategies based on game and play mechanics. Role-playing would investigate Identities, Storytelling would drive Dialogues, and the Third Place would be arranged to manifest Agonistic Space. These agonistic design strategies were then tested in a series of interventions that attended to contentious issues in three distinct communities. The perennial problem of the gender gap was examined in a community of practice that is ICT and STEM. Issues associated with participatory planning, the material hegemonies of urban environments, and European migration were examined in a community in Lincoln, UK. Finally, the challenge of engaging and understanding a community built around a shared ideology was approached in the online platform commonfare.net. Each intervention applied the theory into practice, and that practice again contributed to an evolving understanding of agonism, continuing the recursive processes of Constructive Design Research.

In this discussion, some of the experiences and outcomes of this research are elaborated and interpreted, beginning with answers to the research questions proposed in Section 2. This is followed by a description of challenged status quo within my research, a model of agonism, and reflections on the emergence of agonistic practices situated in the three communities that have been investigated. The three contributions of this work are then reviewed, with attention to how each participate in the ongoing research discourses within HCI and Interaction Design.

8.1 RQ1: What are some of the key principles of agonism?

Agonism is alternative form of democratic participation, an arrangement of communication, interaction, social, political and material engagements. It offers three main principles to transform polarization and conflict into a collective, productive discourse and a creative, potentially transformational force. These principles are the investigation of individual and social identities, the engagement of people in dialogues, and construction of agonistic spaces that aim to challenge the status quo. Through enacting these principles, agonism aims to instill respect for ones adversaries, decrease polarization in public debate, incorporate dissent into public engagement, and allow participants to challenge the status quo and enact the overthrow of hegemonies of power that control and limit their lived experiences. Agonism achieves this by inspiring participants to imagine preferred realities, or potential futures and encouraging them to act to implement these futures.

These are, however, lofty ideals and the expectation that the simple design of an artifact or experience using an agonistic template can institute agonism would be misguided. The experiences of this PhD research show that these works need be facilitated, performed, even, and agonism must be nurtured through a delicate balance of mediation and emancipation. The agonistic principle of Identities emerge with only slight coaxing, while Dialogues often take greater consideration and focused participation. Agonistic Spaces are most challenging of all, as they often appear as transient, and leave only traces rather than concrete evidences of their existence. Together these principles do form a potent and transformational matrix that can radically reshape interactions, and do indeed allow for challenges to the status quo, and the imagination of potential futures. Yet their implementation in design is not

my any means straightforward, and successful outcomes are very much reliant on the situation of the intervention, quality and integrity of participation and indeed, the willingness of designers and publics to take on new forms of participation.

8.1.1 Identities

The works of this thesis, both the research trajectories that illustrated key concepts and the interventions that test the design strategies have revealed the strong influence of the Identities principle. Delving into the various identities of stakeholders if of course essential to Social Design. The idea of engaging empathy for the other in design process is essential to new design practices, for example Design Thinking (Kimbell, 2011). Yet the Identities principle of agonism requires us to go further, to enact ourselves as the other, and engage in a discourse with ourselves as their counterpart. These identities are not only meant to be imagined, but to be performed, so that people can come as close as possible to the other, and strengthen intersubjectivity as the root of agonism.

Where the political theory calls for thinking of others not as enemies, but as adversaries, the gameful enactments of this design practice has participants, albeit temporarily, being these other adversaries. In the instance of Mind the Gap, participants took a basic game frame and instituted this practice by themselves, co-creating elaborate mechanisms for players to experience as the other. In the instance of the Sincil Bank investigations, the principle of Identities manifested quite differently, elaborating the positions of various stakeholders within social, political and material hegemonies. There, the structures that were in place did not facilitate participants so much to become the other, rather the research's explicit acknowledgment of these other identities helped to map the lines of conflict, potentially revealing its origins. The most difficult elaboration of Identities came in the third intervention, online in the commonfare community investigation. And while this work was only tentative, one identity in particular, my own, a researcher and academic, became immediately involved in dissenting self-reflection, very much an agonistic practice.

8.1.2 Dialogues

The agonistic principle of Dialogues was similarly manifest, yet strongly situated and more dependent on my facilitation of the intervention. The political theories call for agonistic respect, an acknowledgment of all as equal partners in the engagement, and a ideal discourse in which everything is open for discussion, even the discussion itself. This emerged to some extent in the role-playing game, in as far as participants debated and discussed, rather than argued around the game table. Yet this agreement was universally observed around that game, surely driven by the appreciation for the potential it provided for non-male voices to express, and by the much larger proportion of non-male players who engaged and contributed to its development. The situation of gameplay and its introduction and facilitation by myself in part were responsible for the excellent results. In the Lincoln neighborhood, engaging with city officials and community officers, and online at commonfare, such a free and open dialogue did not appear. The game and play techniques unearthed challenges that were not immediately welcomed into the discussion of neighborhood rejuvenation, although the gameful attitude of the survey did seem to encourage participation that could in future be examined more thoroughly on commonfare. In both cases, the facilitation did not engage stakeholders in participation sufficiently enough to effect the dialogic transformations of agonism.

8.1.3 Agonistic Space

Of the three principles, Agonistic Space is the most difficult to describe and detect. Mind the Gap does display characteristics of agonistic space through its outcomes, such as the challenging of status quo, incorporation of dissent and the many references to creative solutions and potential futures that were created by participants. Less apparent was the creation of agonistic space in Lincoln. Yet commonfare, examined through the lens of agonism, could itself be seen as an agonistic space. Certainly with its activist ideology, internal networking capability, and alternative currency system it confronts hegemonies on several fronts. Yet while it has many of the requisite communication systems in place, and storytelling, commenting and dialogic interactions are all possible, these are not yet widely practiced. Its members may have some shared sense of community in their platform society, but this is not yet expressed widely through participation, what is equally essential to sustaining agonistic space.

The key to unlocking this unique agonistic space may be Identities, as the three principles of agonism have been observed as inter-operational. The identities of current users are difficult to define, many participate anonymously, and the identities of potential future users are undefined. The interactions on the site do not readily investigate new identities, or new forms of being, nor is the concept of commoner organically grown from its user base, rather derived from an academic concept of communing and the commons. In this case, as in the real world neighborhood in Lincoln, agonism enabled visions of potential futures but has not manifested any real change. Beyond the academic environment within which I have some agency to arrange infrastructures, facilitate gameplay, and actively shape an agonistic space, results can be quite limited. These reflections on agonism will do little to incite or transform existing communities if they cannot influence the development of technological and social infrastructures. However they do point to unique insights available to agonism when employed towards the understanding of communities and socio-technical systems, and offer some suggestions for future development of the online platform commonfare.

8.2 RQ2: How can agonism be instantiated in design practice?

The three principles of agonism have been transformed through the processes of Constructive Design Research into actionable design strategies to tackle challenging issues, contested spaces and wicked problems. These strategies inform the development of interventions and are based on game and play mechanics. To examine identities, strategies of role-playing and perspective-taking are employed. To facilitate dialogues among participants and between researchers, institutions and contexts, the strategy of storytelling is implemented. And the generation of agonistic space is guided by the strategy of arranging convivial, emergent and collaborative ambiences of the third place. Taken together, these agonistic design strategies can inform the planning and development of socio-material configurations that incite agonistic practices among participants and enact this new form of democracy.

8.2.1 Identities as Role-Play

The investigation of identities through role-play was quite successful and its efficacy was demonstrated in a variety of results. First, participants embraced role-play and this in itself seemed a main motivator for people to engage in the interventions. When invited to speculate in *Mind the Gap,* players seized on the agency of the game to elaborate new role-playing rules spontaneously. First allowing, and then forcing others to change roles, a complex system of participant-authored role-play dynamics emerged in the game.

This completely changed the nature of the engagement and the direction of the collective narrative. Role-play in Mind the Gap had the effect of initiating perspective-taking for male players to experience from women's perspectives, and for everyone to enact transsexual identities. Real-world transformation of participants' perceptions and performance of identity through the role-play in the game has of course not been established. However, several of the people intimately involved in facilitating gameplay sessions, including myself, have realized that their perception of gender and identity has been greatly expanded through this research and practice. In particular, observance and attention to the male-dominated oppression and toxicity of our own academic situations were accentuated through the association with this research work and the various discussions that arise from it. One disadvantage of such reflexivity in the work with agonism, investigating my own academic community, is that I became acutely aware of the gender gap, its omnipresence and wholly negative, undermining effects on female and LGBTQAI+ colleagues, which contributed some considerable stress to the practices of my research.

When used as a sensitizing concept in the analysis of stance and narrative construction, identifying roles and hierarchies, the role-playing that examines identities was also influential. In particular as international researchers who were examining migrant and local identities, pointing to the challenges facing people with extra-British identities in the Lincoln environment imbibed the entire engagement with strongly political overtones. The focus on role-playing forced a reflection on the larger narrative of Brexit that was playing out. This aspect of the investigation made visible the intricate layering of political power that contributed to the prevailing social narrative, to the situation and performance of my own identity as artist and design researcher within it.

The elaboration of identities in the online community proved to be the most difficult. Although some of the facilitators and several of the respondents to the gameful survey were known to me, overall it was challenging to make sense of who had participated. The individual nature of the gameful survey experience restricted social interaction, which was at odds with the other interventions in which social identities came to the fore. However, feedback from several researchers who had reflected on the technique, and observations from a handful of instances of people taking the survey suggested that indeed, there was some deeper introspection happening. While people were playing the survey, they vocalized the questions "How rich am I?…in food?…in culture?.." and as the survey continued "…ok, now I speak for the city administrators…" Though this might be expected from the interaction proposition made explicit by the gameful survey, their vocalization does give some sense that participants were actively engaging the concept. In particular the role of researcher / academic, as played by researchers and academics, offered some initial insights to the effect of this identity juxtaposition within the survey. The concept of ordinary people stereotyping as opposed to researchers developing personas, while only tentatively revealed, suggests that with some more attention, this agonistic play on identities can provide useful reflection on research practices. As this aspect is where the dissenting voices were heard, it alludes to the interconnected nature of the three agonistic design principles and the strategies devised to implement them.

8.2.2 Dialogues through storytelling

The design strategy of initiating dialogues through storytelling intended to foster agonistic respect, to engage a plurality of voices as an agent of change. The shaping of conversations around an optimal dialogue enacts the potential future of mutual free expression, and where there was conflict, it manifested in creative and constructive fashion. The research demonstrates how such storytelling can engage people in the agonistic encounter, and also how the focus on narratives in infrastructuring design interventions offers meaningful insights on a conflict and its possible resolutions. Dialogues also play a pivotal role in the research, as narratives from Critical Discourse Analysis were constructed anew in the research as Speculative Designs. Engagement with the real and imagined game artifacts drove discussion and exposed issues on many levels, mediating dialogues between players within gameplay, among stakeholders discussing an issue through the lens of a game, even between disciplines as game and research outcomes contributed to broader academic discussions.

The discourses that have emerged through these interventions have been examined not only for their structural components and their contents, but for how people in a situation use these dialogues to do things, their discursive practice. In this respect, analysis of stance and positioning are only being employed at a very introductory level, inspired by discourse analysis techniques borrowed from other research communities such as linguistics and cognitive narratology. Likewise, dialogic syntax and resonances are only superficially expressed, as a methodology and practice is cobbled together from a variety of disparate source materials. These aspects of language analysis show real promise for expanding the methodology, and will require much greater attention in future. Their presence and role in this thesis signal an advocacy for greater integration and interdisciplinarity in design research.

8.2.3 Agonistic Space as a Third Place

Creating agonistic space by utilizing aspects of the third place is a strategy of arranging, facilitating, and nurturing the formation of a particular collaborative environment. This is not informal, as at home, nor is it ruled by the stricter social norms of the workplace. Rather, it is convivial, relaxed, and social while remaining pointed, and focused as a social, political and artistic place of muses. Every example of such spaces in the literature, and the hints of agonistic space that have been seen in this thesis work, have been fleeting and temporary. This agonistic, third place emanates around a *Mind the Gap* game instance, with people talking and sharing, laughing and reflecting on lived experiences even as life continues in the conference venue, bar or workshop space where the game is situated. However the effect of agonism on the space and place of the real world is more difficult to determine and to sustain. While its potential can be seen in many places, and hints of the imminent arrival of agonistic space can be discerned in the other research activities, these are always in contention with some status quo, be it the materialities of the city that relegate creative inquiry on the bicycle to the dangerous fringes, or the immaterial, dis-embodied and anonymous citizenship of the fledgling digital community that resists community and participation. Yet the message from this thesis is that yes, agonistic spaces can be initiated through design, and when for a time they do manifest, they very much match the creative possibilities claimed by the political rhetoric of agonism.

8.3 RQ3: How can agonism in design be evaluated?

Throughout this thesis the principles and strategies of agonism have been applied in a variety of ways, each delivering unique insights and evidences of emergent agonism. However the evaluation of the principles that are central to the design theory is strongly related to successful project outcomes, which are then indicative of successful strategies. Useful results are contingent on participation and engagement of people and the social, political and material situations of each intervention which can be highly variable. Two main approaches to evaluation have been undertaken that look for evidence of emergent agonism. The first technique has been to examine aspects of language, in particular Dialogic Syntax, and identify the emergent intersubjectivity that underpins agonism. This provides a reference to the efficacy of the design principles, as each is derived from a form of interpersonal communication to which intersubjectivity is central. The second technique is to examine outcomes of agonistic encounters through behavioral observation and analysis of the artifacts produced through design interventions. This approach aids in making visible the existence of agonistic space, as it extracts instances and sequences of activities attributed to agonistic space in the theory. This second technique also elaborates on research outcomes that have been directly influenced by the agonistic approach and the practices, theories and analysis techniques explored through CDR. These approaches and their primary evidences of the manifestation of agonism through design are discussed in the following.

8.3.1 Signs of Intersubjectivity

The identification of emergent intersubjectivity among participants within the design interventions offers the clearest evidence of the workings of agonism and design. Games, storytelling, Interaction Design, the Third Place and almost every other aspect of agonism, and all of the constructions of the design research are socially situated (Dourish, 2001; Suchman, 1987), take their meaning from interacting with others, and are closely linked to intersubjectivity (Dennen & Wieland, 2007; Ho & Lee, 2012; Jackson, 2002). The primary focus of identity in this thesis is social and emergent within the immediate interactions and context, dependent on the identity and participation of co-present others (Bucholtz & Hall, 2005). Thus the signs and signals of intersubjectivity indicate that participants have entered a fluid state of identity and self-concept in relation to the other. As individuals need first to connect to others and begin to engage with their ideas and positions before any transformation such as enemy to adversary or agonistic respect can develop, finding the markers of intersubjectivity is fundamental. The primary means of identifying intersubjectivity in this thesis is language analysis, (Gillespie & Cornish, 2010) and in particular Dialogic Syntax (Du Bois, 2014; Du Bois & Giora, 2014; Laury, 2005).

This aspect of analysis yielded its clearest results in the gender investigation and *Mind the Gap*, which produced not only a wealth of participant observations during gameplay but also a written collective narrative. This co-created artifact displayed many resonances, phrases and expressed ideas that are repeated and reorganized through sequential communication (Valsecchi, 2016). While resonances commonly are identified in spoken conversations between individuals, in *Mind the Gap* these resonances 'played out' over time, as participants shared their ideas in the game cards, and subsequent players enacted those ideas, and authored new cards, referenced the initial ideas, updating them and the collective narrative. In these resonances, players mimicked earlier participants' concepts and phrasing, took their ideas and interpreted them with some added nuance, or completely reworked them.

Examination of the resonances also opened up aspects of stance and positioning (Kärkkäinen, 2006; Nir, 2017). A player could be observed as responding to a concept or context of a card that was played, or a conversation that had developed within the gameplay. Yet their own contributions, written during or shortly thereafter, also revealed how they took a position within that situation relative to the other player(s). This display is a level deeper than simple intersubjectivity, showing how individuals' articulation of an idea is in some way reflective of their perspective of the other (Kärkkäinen, 2006). Whether that perspective was in harmony with the other or spoken from a dissenting voice, intersubjectivity is still in play (Matusov, 1996), mediating between a participant and their other on a foundational level.

These stances, however, also relate to participants' own positioning in relation to the collective narrative. When participants created a card, then went back and edit it, for example to make it more inclusive, this suggests that they were actively digesting and developing their ideas and contributions. This stance-taking was also evident as participants reflected in their texts on the game, or the situation of gameplay. The entire engagement is social, interactional, and as the game itself is almost entirely participant-authored, the engagement in gameplay and with the collective narrative is engagement within the shared world of the game, even as each card is explicitly marked with demographic data as the contribution of one individual.

8.3.2 Emergent agonistic practices

While the identification of intersubjectivity and its potential influence is complex, explication of emergent agonism is more straightforward. This analysis also examines language yet is focused on what is being shared and its overall effect on the flow of interaction. The isolation of particular behaviors and interaction outcomes serves here as evidence of participants' adoption of agonistic practices, the socially informed and situated actions that reflect the principles of agonism, that are reflected in outcomes attributed to agonistic space. These are available in examination of the research trajectories, but are more concrete in the intervention results.

Essential to agonism is plurality, and each aspect of this thesis was attentive to the plurality of voices that could potentially contribute in each trajectory and intervention. Conscious effort was applied in field studies and Critical Discourse Analysis, the development of narratives and self-reflection on the research, to the roles and identities of participants and in particular marginalized, or less vocal members of society. In the gender studies, the voices of LGBTQAI+ members of the community are heard loud and clear, as are female voices that have long been suppressed. However the engagement falls short of truly engaging male voices, a sign that a stable pluralism has not been completely secured. Similarly, in the Lincoln intervention the voices of migrant and transient citizens were not in the end party to the urban planning discussions. However, this attention to the plurality exposed the main elements of conflict within the Lincoln intervention, as a direct result of agonistic perspectives applied in conducting the research. In the work with the online community commonfare, the potential for a plurality of voices exists, as it is a free and open platform, yet there are some obstacles to securing a plurality. These obstacles potentially include the language of the site, the necessity to sign up and log in to share and comment, platform fatigue, and a lack of Interaction Design on the site towards communicating the incentives that should in theory motivate people to join and participate.

The agonistic practice of incorporating dissent has been identified in a number of the playful engagements in this thesis. Transgressive play in Mind the Gap is manifest in many instances, when people used humor, irony, and sometimes quite calculating gameplay contributions to voice their dissent. Disruption was at times directed at the game, and several people added odd cards, and afterwards laughed, "You're not going to like what I wrote." Other times dissent was focused at the concept of gender gap itself, penalizing players simply for focusing on the gap. Further aspects of dissent emerged when women players added distinctly sexist perspectives that were in fact, sexist against woman. Whether this dissent was explicit or not, these expressions against the flow became part of the gameplay, as they reappeared in the collective narrative, were played, discussed, and included as non-destructive contributions. Similar dissenting perspectives can be identified in the preliminary results of the gameful survey. Within the responses, there are a number of comments on the stereotyping of the game, not only refusals to answer but text contributions that directly refute the premise of grouping people together and answering for the others. Though these voices are dissenting, they are still contributing meaningfully to the thing, and participants' need to express dissonance is realized, enacted and accepted as agonistic practice.

Challenging the status quo and imagining potential futures are perhaps the most transformational potential outcomes of agonism in design, and the interventions provided ample evidence of both. However also important are the futures perspectives brought out through the practice of agonism as a design research perspective. Investigating Identities, Dialogues and Agonistic Space in the project development in Lincoln, for example the Critical Discourse Analysis and extraction of narratives, the agonistic perspective very quickly elaborated on the status quo, identifying numerous conflicts and hegemonies from the resource materials. For example while the research pointed to some conflict between divergent perceptions of public drinking, and the Speculative Design was proposed to approach the problem, city officials decried that problem was simply too sensitive to touch, and that another department was running an initiative that would deal with a similar problem of binge drinking. Here agonism exposed the powerful as powerless, as the decision-makers on city council retreated from an acknowledged, real problem with the excuse that another more powerful department was in control of that issue. In a related fashion, the game and play concepts that involved diverting traffic even on one street for one day were dismissed because another department was in control of traffic and it was too difficult to secure their permission. While it must be said that these local officials surely know their communities and the parameters of what is possible as sanctioned activity, the agonistic perspective pointed directly to actions that could be taken to investigate the issue, confronting the hegemony of perceived public order, and as discussed earlier, the power of car ownership to shape and control the behavior of citizens.

8.4 Challenging design research status quo

The initial investigations of this thesis began from the perspective of design, asking why, how and to what extent the concept of agonism could inform design. I set out to define the new practice of Agonistic Design and construct for it a methodology based on one prominent rhetoric of agonistic political theory, that the primary task of agonistic pluralism, and thus the design objective, was to transform antagonism into agonism (Mouffe, 2009). A model of Agonistic Design (Fig. 8.1) was developed that aligned the three principles of Identities, Dialogues and Agonistic Space with the three design strategies of Role Play, Storytelling and the Third Place. I was working on assumptions gleaned from Design Thinking (Plattner, Meinel, & Weinberg, 2009) and Human Centered Design (IDEO, 2009) that hail empathy as core to design participation, and surmised that as agonism and the agonistic space are inherently social engagements, the focus on empathy to mediate communication and alleviate conflict would serve agonism's pro-social aims. My own experiences with co-creation and my practices of Interaction Design, theatre, game and play, and the social psychology perspectives of my supervisor provided ample support for this approach: Role Play is closely associated with perspective-taking, a fundamental practice related to empathy towards others (Davis, et al., 1996); narrative and storytelling intersect with empathy and could be essential to personal development (Gallagher, 2006; Keen, 2006); the Third Place is all about conviviality, collaboration, and collectivism (Memarovic, et al., 2014; Oldenburg & Brissett, 1982; Soukup, 2006), all of which can be related to empathic communication.
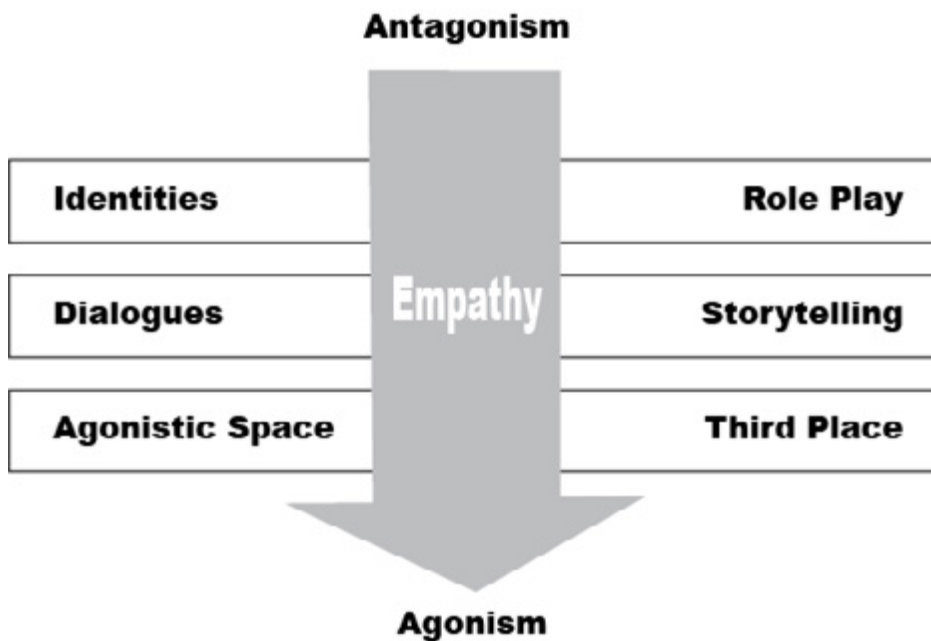
Figure 8.1: Initial model of Agonistic Design

As the research delved deeper into the complicated arguments surrounding agonism, and speculation began on how these arguments would play out as design, it was perhaps inevitable that the agonistic and critical perspectives would challenge my own status quo, and force a re-orientation of what the research was about, and what constituted a meaningful contribution. In retrospect the choice of Constructive Design Research as the research methodology was imminently suitable, as CDR itself is something of a challenge to the status quo of social, science and technology research. Rather than levering theory to establish a design paradigm, the research trajectories forced a cyclical re-evaluation of both theory and practice that radically transformed my perspective. This challenged the status quo of my design research in three ways, questioning the initial rhetoric concerning antagonism, exposing the fallibility of empathy in design participation, and reconfiguring my role as design researcher altogether.

The investigation upended the central premise of transforming antagonism into agonism by establishing that antagonism may actually be a partner to agonism in challenging the status quo. Antagonism spurs activism, and agonistic outcomes can be antagonistic to the status quo, thus its eradication or complete transmutation into agonism could be detrimental. More importantly the exclusion of antagonism in an agonism-only environment would itself create a new hegemony that might need be overthrown, which is anathema to agonism (Rancière, 1999) and contrary to a critical approach.

The elaboration of agonism forced a reexamination of empathy and the aims of emotional alignment through empathy-inducing engagements, be it in the design process or as an intended outcome of participation in system or artifact. Critical readings of empathy from the current social psychology discourse (Batson, 2009; Cuff, et al., 2016; Gallese, 2003; D. Grynberg & Konrath, 2013a; Keen, 2006; May, 2017; Zahavi, 2001) revealed a pluralism of definitions and conflicting or contrary evidences as to its functioning, measurement and even its very existence. The outcome was that much of the emphasis on empathy in design literature was placed into question, even as the critical approach made visible the underlying mechanism of intersubjectivity, upon which empathy and indeed all social interaction, even identity itself are reliant.

The agonistic approach facilitated precisely the paradigm shift called for in co-creation, from ego-centric to eco-centric (Peschl & Fundneider, 2014), which for me was away from the perspective of an individual artist and my contribution to design research, towards a perspective that includes myriad design and research communities as well as society itself, and what new understandings we can arrive at together. The original project, 'On Agonistic Design' was an attempt to claim another new named style of design (AD), yet its elaboration invited critical reflection on the plethora of design configurations as Adversarial Design, Value-Sensitive Design, Human Centered Design, Design Thinking, Social Design, Design for Social Innovation, Co-Creation and many others. This left the impression that design scholarship applies new names and acronyms equally for fundamental innovations as for what can appear to be incremental advances or reinterpreted business and marketing strategies. The transformation of this thesis to 'On agonism and design' is an acknowledgment that real agent of change is design research, in which I am but a participant, even as this expansion on the understanding of agonism has been made possible in part by my own unique perspectives, tacit knowledge and individual creativity. The main thesis contributions then centered on elaborating the concept of agonism, and the Constructive Design Research processes which facilitated a greater understanding of the political theory as grounded in human intersubjectivity through its operationalization in design practices.

There are indeed implications for design that stem from this work, and the strategies developed are themselves useful contributions, documented and reproducible techniques that can be implemented by others to potentially foster agonistic practices in any form of design. However I recognize the greater importance of shifting my research perspective, not trying to develop my design practices by examining agonism, but adding to the understanding of the concept of agonism, by examining my design practices. This strong self-criticism exposed my initial approach as inadequate, even as it is widespread in HCI scholarship, that is borrowing concepts from other disciplines such as social psychology and political theory to support an ego-centric contribution, a new named design form. What I have managed to do in the end, congruent with resonant co-creative perspectives (Rill, 2016), is to adopt an eco-centric perspective, and focus on what design and design research can add to the understanding of agonism. This restructuring of my own participation in research and design is for me an important professional and personal achievement.

8.5 A model of agonism

These challenges to, and eventual overthrow of the status quo led to the development of a model of
that describes some aspects of agonism and revolves around intersubjectivity (Fig. 8.2). The model
represents an interpretation of agonism, the theory, and portrays how identities interact with each other
through dialogues, while dialogues strengthen intersubjectivity and contribute emergent social identities.
Dialogues contribute to the formation of agonistic space, and an agonistic space further engages people
with those dialogues. Participant identities inhabit and simultaneously create agonistic space, and the
nature of agonistic space in turn affects how participants perform their identities. These processes are
reciprocating and recursive, and all manifest on the self-other continuum that is intersubjectivity.
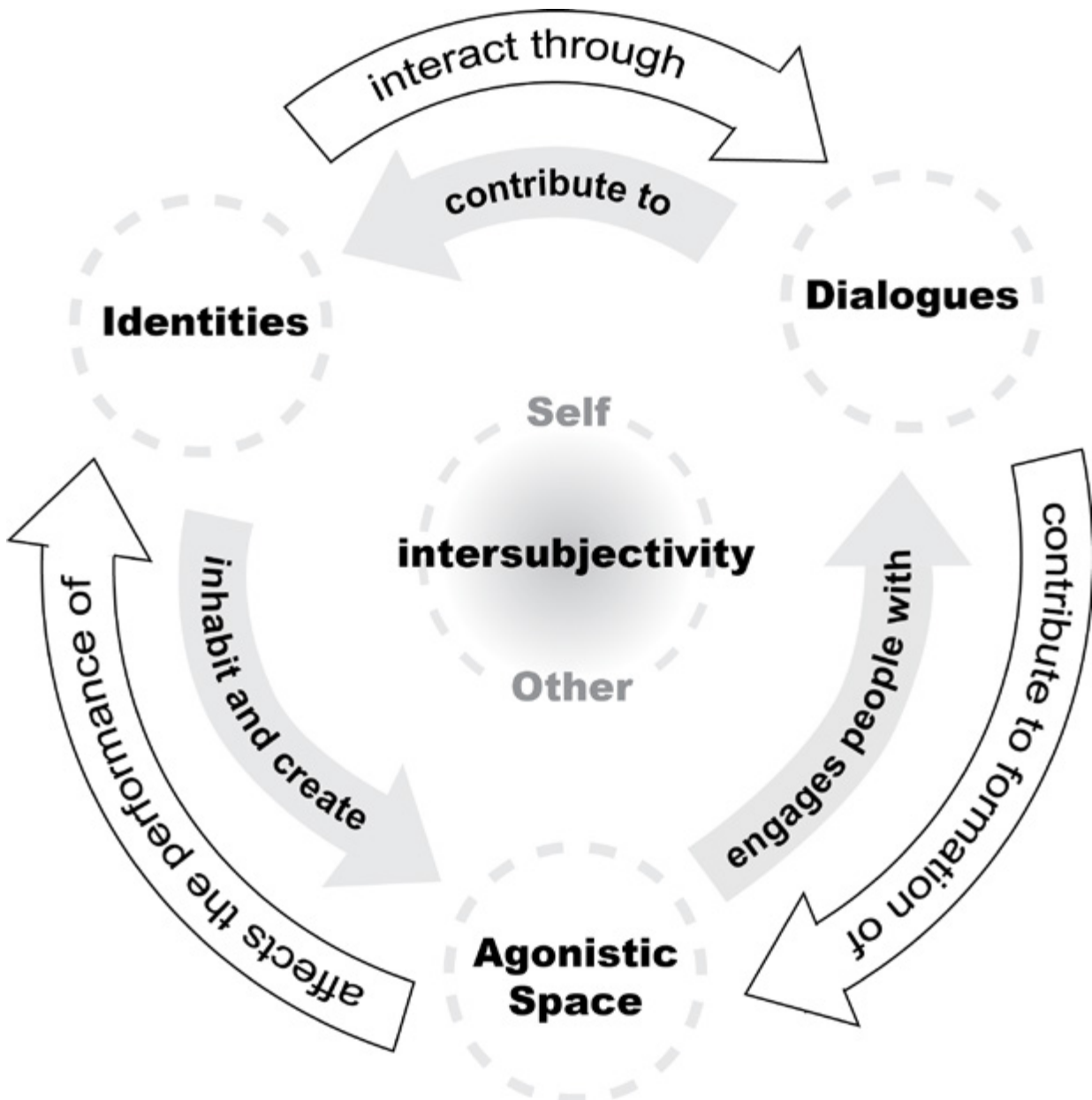
Figure 8.2 A model of agonism

There are likely additional facets of agonism that have not been identified and explored here. Therefore this model represents one interpretation of agonism, rather than a comprehensive overview. However, it presents those aspects that have been identified in a form that can be used by other researchers and designers, lay people and professionals alike, in approaching intra-group, and inter-group interactions and addressing conflict within them.

Notably, the model of agonism does not suggest any potential pro-social or progressive social outcomes, as these may or may not emerge from an agonistic shaping of participation. Agonism offers powerful insights into framing engagements, yet outcomes will be largely dependent on the composition of groups, disposition of participants and the situation and mediation of Identities, Dialogues and Agonistic Space. Agonism displays a potential to engage publics towards a strengthening of collective ideas, and agonistic design could well be (mis)used to solidify and express the racist, homophobic or otherwise anti-social collective narratives of certain groups. Indeed the work with Mind the Gap and investigation of gender identities examines the issue from just one side of the conflict, as it mostly engaged members of the STEM academic community who are already primed towards the discussion of diversity and inclusion. The agonism functioned internally, beginning to draw out many of the criticisms and issues through elaborating people's lived experiences, but did not necessarily challenge the status quo that impedes non-male participation in STEM, and partly absent from the discussion are the community members, be they male, female or rainbow, whose attitudes and behaviors perpetuate the discrimination, inequality and harassment at the heart of the problem.

8.6 Three communities

The framework for agonism and design, with its strategies of Role-Play, Storytelling and the Third Place, was applied as an intervention to three distinct communities. Each intervention followed different trajectories and aims, yet each elaborated on agonism theory and examined its practice in the real world. The light shed by agonism on each community reflected their unique compositions. One community is a community of practice formed around shared experiences and spaces of ICT and STEM. Another community is that of a concrete city neighborhood, where the shared materiality of the urban environment binds people together. The third community is an online platform, a collection of people and organizations from the real world seemingly bound by ideology in a virtual environment. Each site of intervention, each community offers a unique setting and circumstance, and each intervention provided differing evidences that agonistic strategies can achieve meaningful results, sometimes in quite unexpected ways.

8.6.1 Communities of practice: ICT and STEM

The excellent results of the design intervention in examining the community of ICT and STEM were likely in part related to the fact that it is my own community, or at least a community of which I consider myself a member. This is the academic, professional and social environment that I inhabit, and from whence this research has emerged. Myself as researcher, my supervisor, co-students and colleagues have some collective, if not unlimited agency to impact this community. We have access to infrastructures and can appropriate and organize space, set up workshops with students and colleagues, attend seminars as a group and apply to lay out demos and posters of the game, arrange to hold talks and game sessions at the conferences which serve as our Third Places. We have some control over the environment and can to an extent, create the necessary ambiance, engage people through the performance of the intervention, and facilitate the agonistic space and its outcomes. In this community, the design strategies incited those agonistic practices that the research had expected to emerge, and more. These include the creation of new identities in the game, deeply revealing interactions and storytelling dialogues, the absorption of dissent and transgressive play into the community of play, challenges to the status quo and imagination of, then real activism towards potential futures of diversity born of the collective consciousness. This example in a somewhat controlled environment delivered on the promises of agonism.

The main drawback is that as the research clearly elaborates, ICT and STEM suffer from the gender gap and discrimination, and the challenges of these communities are also represented in my research practice. It has been difficult getting men to play, and when they do play, they are less inclined to contribute to the thing. The storytelling and narratives driving the intervention are dominated by women, and to a lesser but very present extent, LGBTQAI+ voices. The generally progressive and inclusive stance of the collective narrative is likely influenced by social factors in play, and people may be answering to the game what they perceive is a correct answer, rather than their own genuine perspectives. This can especially be the case when the gameplay intervention is held at a conference on gender equality, the opening of a gender research center, or on a few occasions when gameplay was entirely among women. Yet while that space may be perceived as oppressive for men, and the agonistic space has not included them fully, the tension of imbalance is also approached by women as they insert explicitly sexist or anti-feminist card scenarios that counter the dominant narrative. Regardless of its inability to yet broaden the discussion to a plurality of genders, the activism taken on by those players who transformed the game with their contributions, rule changes, dissent, and challenges to the status quo of binary gender identity give ample evidences of the real impact and transformational potential of

agonism. This intervention saw players challenge the status quo internally, and within the game there is some significant change towards diversity and inclusion. Although this cannot be said yet to impact the external, lived experiences in ICT and STEM, the intervention has in fact begun to exert its influence externally. *Mind the Gap* has been taken and played autonomously in venues such as the Waag Society and the STEMM Equality Congress, both in Amsterdam. Additionally the game has been translated into Mandarin by the Taiwan National Science Education Center, for use in an exhibition on gender and technology in Taipei (Figs. 8.3a & b).
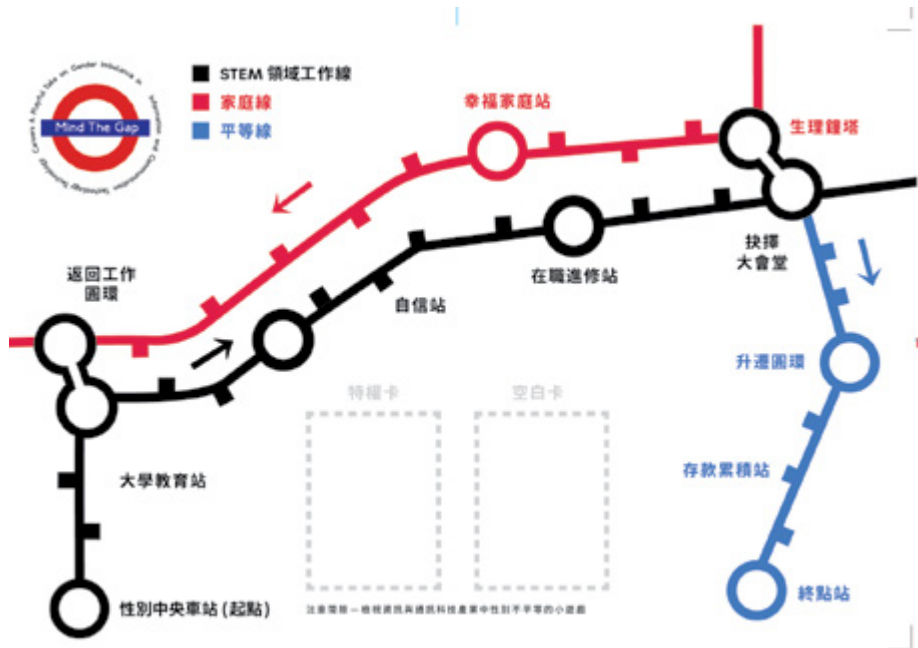

Figure 8.3a: Traditional Mandarin game board

Figure 8.3b: Traditional Mandarin game cards

8.6.2 Urban community: material, social and political

The strategies for agonism applied to participatory urban planning project initiated a very different exploration that had at its heart tensions between design and the city, between designer, administrator and citizen. This community is a real-world, urban neighborhood, shaped first by the shared materiality of the city, and by various social and political conflicts and interactions. The approach to infrastructuring following agonistic strategies exposed multiple layers of hegemony and challenges in the immutable environment of the city. Used here as a research tool, agonism focused attention on inequalities within the participation that the municipality was proposing. On an international level, agonism elaborated the conflict between the overarching dark influence of Brexit and more egalitarian European values of cooperation and inclusion. On a very local level it made visible tensions between different practices of city-making and citizen participation. As one community officer lamented, an outside design agency can't come in on the weekend and say they know the neighborhood with their pop-up studio on the High Street. "We go door to door." she said.

Regardless of the challenging nature of the urban community and pressures from outside, the project did not lead to a fruitful collaboration, and demonstrated the potential for agonism in practice to become antagonism. In the delicate relationship between the university, municipality, city and community officers, the research may well have been too explicitly activist in nature. Though they were posed as activities of self-reflection, game concepts that were presented were likely perceived as antagonistic to the officials, as they reflected on a serious public drinking problem, exclusion of extra-British voices, the poor communication between communities and for example, and the expenditure of thousands of pounds on a surveillance system it was not clear the community actually wanted. The research stalled in bringing the discourse forward, and if the length of time between email responses can be considered a discursive aspect of language, it was clear in the end that the agonistic project did not capture the community gatekeepers' attention or imagination. It is of course another great irony of Brexit that a stunted investigation within a community in the UK midlands could eventually be incorporated into the gameful survey to elaborate shared experiences in the very European community of commonfare.net.

8.6.3 Platform community: commonfare.net

The application of agonism to this third community yielded again very different results, and even as the investigations reported here are preliminary and ongoing, the particular nature of agonism and design provides some insights into this community that has no place of its own. Commonfare.net is a community that can be best described as formed of an ethos of collectivism. Though the individual commoners and organizations contributing to the community have physical operations in their locales, the community itself is an immaterial platform society. The application of agonism here was a utility test for tools such as the gameful survey to gain understanding of an anonymous citizenship. Yet in as far as participation was and is driven by academics and researchers, the gameful survey immediately displayed its potential to reflexively approach one's own research practices with a critical viewpoint. The gameful survey began to elaborate on the identities of participants as well as researchers, accentuating a problematic stereotyping in research practice, that of building personas, that certainly requires more attention in the future.

Commonfare is a nascent community, with currently less than 1000 members, and although its systems of participation are in place, the behaviors and practices intended by its founders have not yet become established as norms. While potential for dialogue exists, in storytelling, commenting, and discussions, very few commoners engage with the tools provided for this. Though tutorials on the site explain the concepts, and some examples of the possibilities are shown, the communication through the use of commoncoin, and the sharing of welfare information are not widespread. In this situation, it is of course challenging to learn who, and what make this community, and the gameful survey garnered limited results. However it is clear that I have not yet learned how to communicate with the commonfare community, to engage people there, or how to use the language of storytelling on the platform myself, to incite other commoners to dialogue. This is one of the greatest challenges of developing the platform, driving participation and engagement, and the agonistic design experiments here exemplify the difficulty of examining a community, and contriving its agonistic third place, in the virtual environment that lacks face-to-face engagement, or meaningful representations of our shared space and real-world interconnections. Engaging with commonfare is one aspect of this thesis that has not been properly explored, even if the agonistic strategies displayed some potential to examine identities, initiate dialogues and generate agonistic spaces there.

8.7 Limitations

This thesis employs a variety of techniques whose prior art has been more sketched than defined, including the unconventional Constructive Design Research methodology that was used undertake the research and the game and play as Speculative Design that is practiced in the three interventions. As design practices and creative inquiry, these require less formal introduction, yet several of the other methods discussed are well established and the limitations of this thesis' implementations deserves mention. These include the two interpretations of Discourse Analysis and the existential question of serious games research, concerning the real-world value of data extracted from a game.

8.7.1 Discourse Analysis

This thesis has employed two distinct forms of Discourse Analysis, Dialogic Syntax Analysis that looks at forms and structures of language in interaction and Critical Discourse Analysis (CDA) that examines a body or archive of text and various symbolic representations. Dialogic Syntax itself is an emerging theory that lacks a significant literature resource to background it, but regardless of this, it is understood that a 'proper' analysis would necessarily include domain experts from linguistic communities as well as for example, gender, migration, urban studies and political science. Such an undertaking might also require a much larger corpus of texts, the archiving and investigation of said is beyond the time and labor constraints of this thesis

Critical Discourse Analysis in this thesis also constitutes a creative practice, in the extraction of narratives as an outcome. These narratives describe certain strains of discourse, but are shaped by the activist, interventionist intentions of the research. In keeping with basic principles of Critical Theory (Horkheimer, 1972) critical is that which seeks emancipation and liberation from hegemony and oppression. In this respect, the narratives that have been extracted from the Critical Discourse Analysis must be acknowledged as constructions, influenced and selected by a creative practitioner, even as they serve the purpose of agonism to investigate hegemonies and imbalance of power.

8.7.2 Game data as real data

The primary data used in this thesis as evidence of emergent intersubjectivity, and therefore proof of the functioning of the strategies for agonism, comes from a game. It is well understood that one unique aspect of game, is that it is in fact, not the real world, and the premise of game producing valid outcomes for understanding the real world is strongly contested. Research into the dependencies between in-game experiences and real-world behavior is nascent (Baranowski, et al., 2008; de Gortari & Griffiths, 2012), and clearly the actions and moral judgments taken by players within a game can diverge from those of a player's real life identity and behavior. Yet the analysis of gameplay in the gender study, and to a lesser extent in the gameful survey, suggests that the agonistic approach affords significant overlap between players' everyday identities and their player-subjects within the game. As data was collected from the magic circle (Huizinga, 1955), somewhere on the continuum between real and imaginary, and likewise between individual and social, it represents players' identity precisely in the negotiated space between self and other. In this space, traces of reflection abound (Willis, et al., 2017). These remnants clearly reflect the negotiation of identity and perspectives between people, recorded momentarily within the game play situation, and they mesh with the diversity of perspectives and stances derived from other forms of discourse. As such, it is my position that they are representative of real people, in the real world.

8.7.3 Face-to-Face engagement

One of the major limitations of the study in Lincoln's Sincil Bank was the inability of the research to actually connect with the local people. The conditions there posed social, political, and material challenges and a direct intervention on the streets without official cooperation between University and local partners was deemed potentially too disruptive to the balance between University and local partners. The immediate revelation of the Critical Discourse Analysis was that a multitude of voices and languages that could be found on the street were not party to conversations that directly influenced planning decisions. Although communication channels were open with the city administrators and the local community officers, the project's reach did not eventually extend to include ordinary citizens.

This places further emphasis on the need to find new ways of approaching these engagements, such as the Hackable City (Cristina Ampatzidou, 2015) which encourages the social engagement phase much earlier in a design process. Examined through that method, this research appears to have defined and visualized the problem space, but faltered where it should engage. However, the thesis interventions continued by examining avenues of expression on commonfare, which is just such a platform as called for in the Hackable City that could facilitate the representation, ideation, action and eventual institutionalization of these new processes of change. This is certainly an area of important future research, developing commonfare and all of its agonistic potential as a tool for collectivism and communication within real-world communities such as Sincil Bank.

9 Research as a dialogue

This PhD thesis makes three contributions to HCI and Social Design, each of which can be situated within another analysis of discourse, that is the essays and expressions presented one of our community's foremost publications, ACM Interactions. This bimonthly collection of essays, reviews and reminiscences serves as a bellwether for HCI and Interaction Design and reflects a strong component of Social Design within. The publication provides insights into the current discussions and investigations of our top theorists in a less technical format that is accessible to practitioners all levels of experience and expertise. The printed artifact that sits on our coffee tables and gives the material some shape, transforms the academic content into an informal discourse, which I actively digest and dissect for inspirations. The contributions of this thesis are presented in the following as engaging with this community resource, and with the ideas of influential thinkers that have found their way onto the pages of Interactions, and into our own discourses of research, theory and practice.

9.1 Agonism for design

The primary foundational contribution of this thesis is the elaboration on the theory of agonism as relates to design and the investigation of three of its core principles: Identities, Dialogues and Agonistic Spaces. A set of practicable, reproducible strategies and functional mechanisms to foster agonism are defined and a participatory development process is described to enable others to facilitate agonism in their fields. In addition, a detailed documentation of the discovery process has been presented through which Constructive Design Research is employed to specifically develop the political theory of agonism into a design practice complete with functional, impactful and reproducible, or at least reconfigurable examples.

This work is engaging directly with the dialogue between Liam Bannon, Jeffery Bardzell and Suzanne Bødker, writing in Interactions 2018, *Re-imagining Participatory Design,* (L. Bannon, Bardzell, J., and Bødker, S., 2018) and their appeal for a return to the activist, democratic roots of participatory design, and in particular their call for 'more pluralistic conceptions of what counts as research' and the explicit operationalization of alternative democratic theories as design methodologies. As a contribution to this discourse, this thesis offers an operationalization of agonism, and the initial results from melding agonism and design support their suggestions that the work of design can drive us in new directions.

9.2 Game and play as design speculation

Another, practical contribution of this thesis is in the elaboration and concrete examples of game and play as design speculation. This practice was first experienced through the research trajectory of Games for Cities, elaborated and applied during the thesis investigations, and updated in an ongoing dialogue with practicing colleagues. The constructive aspect of game making was demonstrated in the gender gap study in which participants played a game that helped them imagine a preferred reality, and many took advantage of agency provided in the game to agitate toward that potential future. The speculative aspect of imaginary game instances was explored, to extend Critical Discourse Analysis and examine participatory urban design, and to approach new ways of knowing the citizenship and community of a platform society.

This work incorporates a diversity of perspectives from communities of game design, social psychology, cognitive science, linguistics and political philosophy among others, to approach the critical and constructive design paradigms. As such it responds directly to another thread in the contemporary discourse within our community Jeffery Bardzell's reply **"*Design researchers need a shared program, not a divorce"*** (J. Bardzell, 2019) to an earlier article by Jodi Forlizzi, John Zimmerman, Paul Hekkert and Ilpo Koskinen, *"Let's Get Divorced: Constructing Knowledge Outcomes for Critical Design and Constructive Design."* (Forlizzi, et al., 2018) While that discourse exposes divisions and contradictions among divergent theories and practices of design research, this thesis work demonstrates one aspect of the shared program that Bardzell expounds, and promotes the role of game and play speculations to bridge critical and constructive design approaches.

9.3 Mind the Gap

A third, more concrete and humanistic contribution of this thesis is the game *Mind the Gap.* Positive feedback from so many participants has reinforced our conviction that Social Design can touch peoples' lives, and we have observed the transformational potentials of agonistic space that emerges from the game and its gameplay. What began as a design sketch, but its agonistic shape became co-creative, collective and the artifact is deeply introspective of ICT and STEM communities. It elucidates the shared experiences of gender discrimination and the many challenges facing people in the expression of their identities and at the same time shows the collective intention to make our world a better place, allowing for each individual to express themselves freely, and encouraging others to try and understand those diverse perspectives. Observing the development of the collective narrative, and witnessing the activist elements in our community changing the society of the game towards diversity, inclusion and equality has been one of the great privileges of this PhD.

This aspect of the thesis is also responding to concerns voiced by Carl DiSalvo and Christopher A. Le Dantec in their article *Civic Design,* (DiSalvo & Dantec, 2017) which is demanding civic activism, calling not only for a rethinking, a remaking of research methods, but for new ways of living. *Mind the Gap* is just such an activist approach that reimagines gender research as a playful collaboration, and describes a new way of living in the celebration of diversity that this community-driven game has become.

9.4 Conclusion

During the years of this thesis development the social, cultural and political discourse in Europe was dominated by Britain's potential exit from the European Union, Brexit. The shock 'leave' result in June 2016 followed an extremely divisive campaign that was dominated by anti-immigration rhetoric and populism propagated by mis- and dis-information that reflected the most egregious impacts of ICT. Brexit revealed deep-seated polarizations and socio-political conflict quite of the kind that agonism should confront and overturned long-held assumptions about the coherence of the European project. Shortly thereafter followed the 2016 general election in the United States, which delivered a similarly stunning rebuke to the ideals of progressive, liberal democratic politics and a continuing political stalemate in which opposing sides act as enemies intent on destroying the other. That these situations have been entered into *through democratic processes* reiterates the arguments of agonistic political theorists, that societies and individuals need to reevaluate democratic participation and actively strive towards new forms of cooperation and collectivism, to turn this existential conflict that threatens to destroy our democracies into a creative, transformational resource. From these exigencies the conscious decision was taken to harness the opportunities and resources available to me during the PhD in the service of social activism, Social Design and this exploration of agonism. This kind of research is also a product of its time, when the extreme challenges of our social, political and material lives push both research and practice in search of new solutions and new methodologies for social transformation.

This thesis contains some important voices that need to be heard, speaking on controversial issues of gender identities, European migration, urban and citizen participation that I have tried to handle with proper sensitivity. Some of the results of the thesis investigations, however, expose the danger of approaching the issues with too strong an activist voice, that the message may have been interpreted as antagonistic, rather than agonistic. In these cases, no actual change or meaningful dialogues between all stakeholders was accomplished. Yet agonism's investigation of power and hegemony has also revealed the need at times for such an antagonism, to act against the status quo. These issues are strongly reinforced by unjust hegemonies that stifle those important voices. Agonistic theory suggests that both agonistic and antagonistic voices should speak in strong opposition to these hegemonies, and it is clear we still need to learn how to harness this dual perspective constructively, to support Social Design in making the world better place, and our societies more tolerant and inclusive. I strongly believe that agonism is a movement in the proper direction, and can contribute to the discovery of the new languages, the new dialogues, new art, design and research that we will need to construct a better future.

10 Bibliography

Aarseth, E. (2014). I fought the law: Transgressive play and the implied player. In *From literature to cultural literacy* (pp. 180-188): Springer.

Adamo, G., Mushiva, M., & Willis, M. (2017). Persuasion and Empathy in Computer Games, An Ontological Perspective. In *The 12th International Conference on the Philosophy of Computer Games*. Kraków.

Aristotle. (330 BC). *The Poetics*. Mineola, New York: Dover.

Arnab, S., & Clarke, S. (2017). Towards a trans-disciplinary methodology for a game-based intervention development process. *British journal of educational technology, 48*, 279-312.

Association for Computing Machinery, C. o. W. i. C. (2017). ACM-W: Supporting, celebrating and advocating for Women in Computing. In A.-W. C. J. Tims (Ed.), (Vol. 2017): ACM-W.

Auger, J. (2013). Speculative design: crafting the speculation. *Digital Creativity, 24*, 11-35.

Auger, J., Hanna, J., & Encinas, E. (2017). Reconstrained Design: Confronting Oblique Design Constraints. *Design+ Power. Nordes, Oslo*.

Bang, A. L., Krogh, P., Ludvigsen, M., & Markussen, T. (2012). The role of hypothesis in constructive design research. *The Art of Research*, 1-11.

Bannon, L., Bardzell, J., Bødker, S. (2018). Introduction: Reimagining Participatory Design—Emerging Voices. *ACM Trans. Comput.-Hum. Interact., 25*, 1-8.

Bannon, L., Bardzell, J., and Bødker, S. (2018). Reimagining participatory design. *interactions, 26*, 26-32.

Baranowski, T., Buday, R., Thompson, D. I., & Baranowski, J. (2008). Playing for real: video games and stories for health-related behavior change. *American journal of preventive medicine, 34*, 74-82. e10.

Bardzell, J. (2019). Design researchers need a shared program, not a divorce. *interactions, 26*, 22-23.

Bardzell, J., & Bardzell, S. (2013). What is "critical" about critical design? In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 3297-3306). Paris, France: ACM.

Bardzell, J., & Bardzell, S. (2015). Humanistic Hci. *Synthesis Lectures on Human-Centered Informatics, 8*, 1-185.

Bardzell, S., Bardzell, J., Forlizzi, J., Zimmerman, J., & Antanitis, J. (2012). Critical design and critical theory: the challenge of designing for provocation. In *Proceedings of the Designing Interactive Systems Conference* (pp. 288-297): ACM.

Barry, M. (2014). Please do touch: Discourses on aesthetic interactivity in the exhibition space. *Participations: Journal of Audience and Reception Studies, 11*.

Batson, C. D. (2009). These things called empathy: eight related but distinct phenomena. In J. E. a. W. E. I. Decety (Ed.), *The social neuroscience of empathy.* (pp. 3-16): MIT Press.

Bauman, Z. (2004). *Work, consumerism and the new poor*: McGraw-Hill Education (UK).

Beersma, B., Bechtoldt, M. N., & Schouten, M. E. (2018). When Ignorance Is Bliss: Exploring Perspective Taking, Negative State Affect and Performance. *Small Group Research*, 1046496418775829.

Belman, J., & Flanagan, M. (2010). Designing games to foster empathy. *International Journal of Cognitive Technology, 15*, 11.

Benhabib, S. (1992). *Situating the self: Gender, community, and postmodernism in contemporary ethics*: Psychology Press.

Bilda, Z., Costello, B., & Amitani, S. (2006). Collaborative analysis framework for evaluating interactive art experience. *CoDesign, 2*, 225-238.

Björgvinsson, E., Ehn, P., & Hillgren, P.-A. (2010). Participatory design and democratizing innovation. In *Proceedings of the 11th Biennial participatory design conference* (pp. 41-50): ACM.

Björgvinsson, E., Ehn, P., & Hillgren, P.-A. (2012). Agonistic participatory design: working with marginalised social movements. *CoDesign, 8*, 127-144.

Blumer, H. (1986). *Symbolic interactionism: Perspective and method*: Univ of California Press.

Blythe, M. (2014). Research through design fiction: narrative in real and imaginary abstracts. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 703-712). Toronto, Ontario, Canada: ACM.

Boal, A. (2000). *Theater of the Oppressed*: Pluto Press.

Boal, A. (2006). *The aesthetics of the oppressed*: Routledge.

Bødker, S. (2006). When second wave HCI meets third wave challenges. In *Proceedings of the 4th Nordic conference on Human-computer interaction: changing roles* (pp. 1-8). Oslo, Norway: ACM.

Bødker, S. (2015). Third-wave HCI, 10 years later---participation and sharing. *interactions, 22*, 24-31.

Bogost, I. (2007). *Persuasive games: The expressive power of videogames*: Mit Press.

Bogost, I. (2016). *Play Anything: The Pleasure of Limits, the Uses of Boredom, and the Secret of Games*: Basic Books.

Botto, F., & Teli, M. (2017). PIE News. A public design project toward commonfare. *The Journal of Community Informatics, 13*.

Bowers, J. (2012). The logic of annotated portfolios: communicating the value of 'research through design'. In *Proceedings of the Designing Interactive Systems Conference* (pp. 68-77). Newcastle Upon Tyne, United Kingdom: ACM.

Brandt, E., & Binder, T. (2007). Experimental design research: genealogy, intervention, argument. *International Association of Societies of Design Research, Hong Kong, 10*.

Britannica, E. E. (2008). Agon. In (Vol. 2018): Encyclopædia Britannica, inc.

Bronack, L. A. A. a. S. (2011). *Serious Educational Game Assessment: Practical Methods and Models for Educational Games, Simulations and Virtual Worlds*. New York: Springer.

Brown, B., Reeves, S., & Sherwood, S. (2011). Into the wild: challenges and opportunities for field trial methods. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1657-1666). Vancouver, BC, Canada: ACM.

Bruun, A., & Ahm, S. (2015). Mind the Gap! Comparing Retrospective and Concurrent Ratings of Emotion in User Experience Evaluation. In J. Abascal, S. Barbosa, M. Fetter, T. Gross, P. Palanque & M. Winckler (Eds.), *Human-Computer Interaction – INTERACT 2015: 15th IFIP TC 13 International Conference, Bamberg, Germany* (pp. 237-254): Springer International Publishing.

Brynskov, M., Carvajal Bermúdez, J., Fernández, M., Korsgaard, H., Mulder, I., Piskorek, K., Rekow, L., & De Waal, M. (2014). Urban interaction design: Towards city making.

Bucholtz, M., & Hall, K. (2005). Identity and interaction: A sociocultural linguistic approach. *Discourse studies, 7*, 585-614.

Campesi, G. (2011). The Arab Spring and the crisis of the European border regime: manufacturing emergency in the Lampedusa crisis.

Candy, L., Edmonds, E. A., & Ascott, R. (2011). *Interacting: art, research and the creative practitioner*: Libri Publishing Faringdon.

Candy, L., & Ferguson, S. (2014). Interactive Experience, Art and Evaluation. In L. Candy & S. Ferguson (Eds.), *Interactive Experience in the Digital Age: Evaluating New Art Practice* (pp. 1-10). Cham: Springer International Publishing.

Carr, B. (2001). Pity and Compassion as Social Virtues. *Philosophy, 74*, 411-429.

Carr, K. E. (2017). What is an agon? Greek philosophy. In *Quatr.us Study Guides* (Vol. 2018).

Casey, E. S. (1996). How to get from space to place in a fairly short stretch of time: Phenomenological prolegomena. *Senses of place, 27*, 14-51.

Catherine Ashcraft, B. M., & Eger, a. E. (2016). Women in Tech: The Facts. 2016 Update, See what's changed and what hasn't. In: National Center for Women & Technology (NCWIT).

Chamberlain, A., Crabtree, A., Rodden, T., Jones, M., & Rogers, Y. (2012). Research in the wild: understanding 'in the wild' approaches to design and development. In *Proceedings of the Designing Interactive Systems Conference* (pp. 795-796). Newcastle Upon Tyne, United Kingdom: ACM.

Clayton, K. L., Hellens, L. A. v., & Nielsen, S. H. (2009). Gender stereotypes prevail in ICT: a research review. In *Proceedings of the special interest group on management information system's 47th annual conference on Computer personnel research* (pp. 153-158). Limerick, Ireland: ACM.

Cole, R., Purao, S., Rossi, M., & Sein, M. (2005). Being proactive: where action research meets design research. *ICIS 2005 Proceedings*, 27.

Coluccello, S., & Massey, S. (2007). Out of Africa: The human trade between Libya and Lampedusa. *Trends in Organized Crime, 10*, 77-90.

Connolly, W. E. (2013). An ethos of agonistic respect: William E. Connolly. In M. Wenman (Ed.), *Agonistic Democracy: Constituent Power in the Era of Globalisation* (pp. 99-136). Cambridge: Cambridge University Press.

Consalvo, M. (2012). Confronting toxic gamer culture: A challenge for feminist game studies scholars. *Ada: A Journal of Gender, New Media, and Technology*.

Cook, D. (2012). Loops and Arcs. In (Vol. 2016).

Cooley, C. H. (1902). Looking-glass self. *The production of reality: Essays and readings on social interaction, 6*.

Coulton, P., Burnett, D., & Gradinar, A. I. (2016). Games as speculative design: allowing players to consider alternate presents and plausible futures.

Cristina Ampatzidou, M. B., Froukje van de Klundert,Michiel de Lange,Martijn de Waal. (2015). *The Hackable City: A Research Manifesto and Design Toolkit*. Amsterdam: Amsterdam Creative Industries Publishing, Rose Leighton.

Csikszentmihalyi, M. (1994). *Flow: The Psychology of Optimal Experience*. New York: Harper Collins.

Cuff, B. M., Brown, S. J., Taylor, L., & Howat, D. J. (2016). Empathy: a review of the concept. *Emotion Review, 8*, 144-153.

Cuttitta, P. (2014). 'Borderizing'the Island Setting and Narratives of the Lampedusa'Border Play'. *ACME: An International E-Journal for Critical Geographies, 13*.

Dahlberg, L. (2005). The Habermasian public sphere: Taking difference seriously? *Theory and Society, 34*, 111-136.

Davis, M. H., Conklin, L., Smith, A., & Luce, C. (1996). Effect of perspective taking on the cognitive representation of persons: A merging of self and other. *Journal of Personality and Social Psychology, 70*, 713-726.

de Gortari, A. B. O., & Griffiths, M. D. (2012). An introduction to Game Transfer Phenomena in video game playing. *Video game play and consciousness. NY: Nova Publisher*.

De Vignemont, F., & Singer, T. (2006). The empathic brain: how, when and why? *Trends in cognitive sciences, 10*, 435-441.

de Waal, M., de Lange, M., & Bouw, M. (2017). The hackable city: Citymaking in a platform society. *Architectural Design, 87*, 50-57.

Dennen, V. P., & Wieland, K. (2007). From interaction to intersubjectivity: Facilitating online group discourse processes. *Distance Education, 28*, 281-297.

Deveaux, M. (1999). Agonism and pluralism. *Philosophy & Social Criticism, 25*, 1-22.

DiSalvo, C. (2010). Design, Democracy and Agonistic Pluralism. In *DRS2010 Design Research Society*. Montreal.

DiSalvo, C. (2012). *Adversarial design*. Cambridge, Mass.: MIT Press.

DiSalvo, C., & Dantec, C. A. L. (2017). Civic design. *interactions, 24*, 66-69.

Doherty, M. (2008). *Theory of mind: How children understand others' thoughts and feelings*: Psychology Press.

Dolan, J. (1993). Geographies of Learning: Theatre Studies, Performance, and the" Performative". *Theatre Journal, 45*, 417-441.

Dourish, P. (2001). *Where the action is : the foundations of embodied interaction*. Cambridge, Mass: Cambridge, Mass. : MIT Press, c2001.

Du Bois, J. W. (2014). Towards a dialogic syntax. *Cognitive Linguistics, 25*, 359-410.

Du Bois, J. W., & Giora, R. (2014). From cognitive-functional linguistics to dialogic syntax. *Cognitive Linguistics, 25*, 351-357.

Dunne, A. (2008). Hertzian tales: Electronic products, aesthetic experience, and critical design.

Dunne, A., & Raby, F. (2001). *Design noir: The secret life of electronic objects*: Springer Science & Business Media.

Dunne, A., & Raby, F. (2013). *Speculative everything: design, fiction, and social dreaming*: MIT press.

Duranti, A. (2010). Husserl, intersubjectivity and anthropology. *Anthropological Theory, 10*, 16-35.

Edmonds, E. A. (2014). Human Computer Interaction, Art and Experience. In L. Candy & S. Ferguson (Eds.), *Interactive Experience in the Digital Age: Evaluating New Art Practice* (pp. 11-23). Cham: Springer International Publishing.

Elsden, C., Chatting, D., Durrant, A. C., Garbett, A., Nissen, B., Vines, J., & Kirk, D. S. (2017). On speculative enactments. In *Proceedings of the 2017 CHI conference on human factors in computing systems* (pp. 5386-5399): ACM.

Ertner, M., Kragelund, A. M., & Malmborg, L. (2010). Five enunciations of empowerment in participatory design. In *Proceedings of the 11th Biennial Participatory Design Conference* (pp. 191-194): ACM.

Fairclough, N. (2001). Critical discourse analysis as a method in social scientific research. *Methods of critical discourse analysis, 5*, 121-138.

Falzon, C. (2006). *Foucault and social dialogue: Beyond fragmentation*: Routledge.

Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of consumer research, 20*, 303-315.

Flanagan, M., & Nissenbaum, H. (2007). A game design methodology to incorporate social activist themes. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 181-190). San Jose, California, USA: ACM.

Forlizzi, J., & Battarbee, K. (2004). Understanding experience in interactive systems. In *Proceedings of the 5th conference on Designing interactive systems: processes, practices, methods, and techniques* (pp. 261-268). Cambridge, MA, USA: ACM.

Forlizzi, J., Zimmerman, J., Hekkert, P., & Koskinen, I. (2018). Let's Get Divorced: Constructing Knowledge Outcomes for Critical Design and Constructive Design Research. In *Proceedings of the 2018 ACM Conference Companion Publication on Designing Interactive Systems* (pp. 395-397). Hong Kong, China: ACM.

Foth, M., Agudelo, L. P., & Palleis, R. (2013). Digital soapboxes: towards an interaction design agenda for situated civic innovation. In *Proceedings of the 2013 ACM conference on Pervasive and ubiquitous computing adjunct publication* (pp. 725-728). Zurich, Switzerland: ACM.

Foucault, M. (1982). The subject and power. *Critical Inquiry, 8*, 777-795.

Foucault, M., & Miskowiec, J. (1986). Of other spaces. *diacritics, 16*, 22-27.

Fricke, W., & Totterdill, P. (2004). *Action research in workplace innovation and regional development*. Amsterdam ; Philadelphia, Pa: Amsterdam ; Philadelphia, Pa. : John Benjamins Pub., c2004.

Friis, P., & Larsen, H. (2006). Theatre, improvisation and social change. *P. Shaw & R. Stacey. Experiencing Risk, Spontaneity and Improvisation in Organisational Change: Working Live. New York: Routledge*, 19-43.

Frögård, M. (2016). Negotiating matters:-supporting agonistic pluralism in community planning. In *ServDes. Service Design & Innovation Conference.*

Fuchs, T., & De Jaegher, H. (2009). Enactive intersubjectivity: Participatory sense-making and mutual incorporation. *Phenomenology and the cognitive sciences, 8*, 465-486.

Gallagher, S. (2006). The narrative alternative to theory of mind. *Radical enactivism: Intentionality, phenomenology, and narrative*, 223-229.

Gallagher, S. (2009). Two problems of intersubjectivity. *Journal of Consciousness Studies, 16*, 289-308.

Gallese, V. (2003). The roots of empathy: the shared manifold hypothesis and the neural basis of intersubjectivity. *Psychopathology, 36*, 171-180.

Gasparini, A. (2015). Perspective and use of empathy in design thinking. In *ACHI, The Eight International Conference on Advances in Computer-Human Interactions* (pp. 49-54).

Gaver, W. (2007). Cultural commentators: Non-native interpretations as resources for polyphonic assessment. *Int. J. Hum.-Comput. Stud., 65*, 292-305.

Gaver, W. (2012). What should we expect from research through design? In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 937-946). Austin, Texas, USA: ACM.

Gaver, W., Boucher, A., Pennington, S., & Walker, B. (2004). Cultural probes and the value of uncertainty. *interactions, 11*, 53-56.

Gillespie, A., & Cornish, F. (2010). Intersubjectivity: Towards a dialogical analysis. *Journal for the theory of social behaviour, 40*, 19-46.

Graedel, T. E. (2011). The prospects for urban mining. *Bridge, 41*, 43-50.

Grynberg, D., & Konrath, S. (2013a). The Positive (and Negative) Psychology of Empathy.

Grynberg, D., & Konrath, S. (2013b). The Positive (and Negative) Psychology of Empathy. In D. P. Watt, J. (Ed.), *The Neurobiology and Psychology of Empathy*: Nova Science Publishers, Inc.

Grynberg, S. K. D. (2013). The Positive (and Negative) Psychology of Empathy. In D. P. Watt, J. (Ed.), *The Neurobiology and Psychology of Empathy*: Nova Science Publishers, Inc.

Guetto, R., & Azzolini, D. (2015). An empirical study of status exchange through migrant/native marriages in Italy. *Journal of Ethnic and Migration Studies, 41*, 2149-2172.

Habermas, J. (1990). *Moral consciousness and communicative action*: MIT press.

Habermas, J., Lennox, S., & Lennox, F. (1974). The public sphere: An encyclopedia article (1964). *New German Critique*, 49-55.

Habermas, J., McCarthy, T., & McCarthy, T. (1984). *The theory of communicative action* (Vol. 1): SciELO Brasil.

Hadjilouca, M. (2015). Enhancing Active Co-existence and Social Engagement. In *11th European Academy of Design Conference*. Boulogne Billancourt, France.

Halse, J., Brandt, E., Clark, B., & Binder, T. (2010). *Rehearsing the future*: The Danish Design School Press.

Hansen, L. K. (2005). Contemplative interaction: alternating between immersion and reflection. In *Proceedings of the 4th decennial conference on Critical computing: between sense and sensibility* (pp. 125-128). Aarhus, Denmark: ACM.

Harrison, S., & Dourish, P. (1996). Re-place-ing space: the roles of place and space in collaborative systems. In *Proceedings of the 1996 ACM conference on Computer supported cooperative work* (pp. 67-76). Boston, Massachusetts, USA: ACM.

Heimgärtner, R., Tiede, L.-W., & Windl, H. (2011). Empathy as Key Factor for Successful Intercultural HCI Design. In A. Marcus (Ed.), *Design, User Experience, and Usability. Theory, Methods, Tools and Practice: First International Conference, DUXU 2011, Held as Part of HCI International 2011, Orlando, FL, USA, July 9-14, 2011, Proceedings, Part II* (pp. 557-566). Berlin, Heidelberg: Springer Berlin Heidelberg.

Herman, D. (2008). Narrative theory and the intentional stance. *Partial Answers: Journal of Literature and the History of Ideas, 6*, 233-260.

Hernberg, H., Maz, R., & #233. (2018). Agonistic temporary space - reflections on 'agonistic space' across participatory design and urban temporary use. In *Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial - Volume 2* (pp. 1-5). Hasselt and Genk, Belgium: ACM.

Hillgren, P.-A. (2013). Participatory design for social and public innovation: Living Labs as spaces for agonistic experiments and friendly hacking. *Public and collaborative: Exploring the intersection of design, social innovation and public policy*, 75-88.

Hillgren, P.-A., Seravalli, A., & Agger Eriksen, M. (2016). Counter-hegemonic practices; dynamic interplay between agonism, commoning and strategic design. *Strategic Design Research Journal,; 9 (2): 89-99 May-August 2016*.

Hillgren, P.-A., Seravalli, A., & Emilson, A. (2011). Prototyping and infrastructuring in design for social innovation. *CoDesign, 7*, 169-183.

Ho, K., & Lee, Y. C. (2012). The quality of design participation: Intersubjectivity in design practice. *International Journal of Design*.

Holland, A., & Roudavski, S. (2016). Mobile gaming for agonistic design.

Honig, B. (1992). Toward an agonistic feminism: Hannah Arendt and the politics of identity.

Honig, B. (1993). *Political theory and the displacement of politics*: Cornell University Press.

Höök, K., Sengers, P., & Andersson, G. (2003). Sense and sensibility: evaluation and interactive art. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 241-248). Ft. Lauderdale, Florida, USA: ACM.

Horkheimer, M. (1972). *Critical Theory: Selected Essays*: Continuum.

Howarth, C. (2006). A social representation is not a quiet thing: Exploring the critical potential of social representations theory. *British journal of social psychology, 45*, 65-86.

Huizinga, J. (1955). *Homo Ludens: A Study of the Play-element in Culture*: Beacon Press.

Humphreys, M. W. (1887). The Agon of the Old Comedy. *The American Journal of Philology, 8*, 179-206.

Husserl, E. (1931). *Cartesian meditations: An introduction to phenomenology. 2015 ed.*: Springer Science & Business Media.

IDEO. (2009). *Human Centered Design: Field Guide*: IDEO.

Jackson, M. (2002). *The politics of storytelling: Violence, transgression, and intersubjectivity* (Vol. 3): Museum Tusculanum Press.

Jacucci, G., Spagnolli, A., Chalambalakis, A., Morrison, A., Liikkanen, L., Roveda, S., & Bertoncini, M. (2009). Bodily Explorations in Space: Social Experience of a Multimodal Art Installation. In *Proceedings of the 12th IFIP TC 13 International Conference on Human-Computer Interaction: Part II* (pp. 62-75). Uppsala, Sweden: Springer-Verlag.

Jacucci, G., Wagner, M., Wagner, I., Giaccardi, E., Annunziato, M., Breyer, N., Hansen, J., Jo, K., Ossevoort, S., Perini, A., Roussel, N., & Schuricht, S. (2010). ParticipArt: Exploring participation in interactive art installations. In *2010 IEEE International Symposium on Mixed and Augmented Reality - Arts, Media, and Humanities* (pp. 3-10).

Jaffe, A. (2009). *Stance: sociolinguistic perspectives*: OUP USA.

Johanna Weststar, Marie-Josée Legault. (2015). Developer Satisfaction Survey 2015 - Summary Report. In: International Game Developers Association | igda.org.

John Waterworth, D. F. (2005). Dealing with user experience and affective evaluation in hci design: A repertory grid approach. In *CHI'05 Workshop on Evaluating Affective Interfaces - Innovative Approaches*.

John Zimmerman, Jodi Forlizzi, & Evenson, S. (2007). Research through design as a method for interaction design research in HCI. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 493-502). San Jose, California, USA: ACM.

Kahneman D., R. J. (2005). Living, and thinking about it: Two perspectives on life. In N. B. B. K. F.A. Huppert (Ed.), *The science of well-being*: Oxford University Press.

Kärkkäinen, E. (2006). Stance taking in conversation: From subjectivity to intersubjectivity. *Text & Talk-An Interdisciplinary Journal of Language, Discourse Communication Studies, 26*, 699-731.

Katherine Isbister, K. H., Michael Sharp, Jarmo Laaksolahti. (2006). The sensual evaluation instrument: developing an affective evaluation tool. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1163-1172). Montreal, Quebec, Canada: ACM.

Kaufman, G., Flanagan, M., & Seidman, M. (2016). Creating stealth game interventions for attitude and behavior change: An" Embedded Design" model. *Transactions of the Digital Games Research Association, 2*.

Keen, S. (2006). A theory of narrative empathy. *Narrative, 14*, 207-236.

Keshavarz, M., & Maze, R. (2013). Design and Dissensus: Framing and Staging Participation in Design Research. *Design Philosophy Papers, 11*, 7-29.

Kimbell, L. (2011). Rethinking design thinking: Part I. *Design and Culture, 3*, 285-306.

Knops, A. (2007). Debate: Agonism as Deliberation – On Mouffe's Theory of Democracy*. *Journal of Political Philosophy, 15*, 115-126.

Knutz, E., Markussen, T., Thomsen, S. M., & Ammentorp, J. (2014). Designing For democracy: Using design activism to re-negotiate the roles and rights for patients. In *Proceedings of the DRS Conference*.

Kögler, H.-H. (2012). Agency and the other: On the intersubjective roots of self-identity. *New Ideas in Psychology, 30*, 47-64.

Köppen, E., & Meinel, C. (2015). Empathy via design thinking: creation of sense and knowledge. In *Design thinking research* (pp. 15-28): Springer.

Kors, M. J. L., Ferri, G., Spek, E. D. v. d., Ketel, C., & Schouten, B. A. M. (2016). A Breathtaking Journey. On the Design of an Empathy-Arousing Mixed-Reality Game. In *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play* (pp. 91-104). Austin, Texas, USA: ACM.

Korte, G. v. v., & Ferri, G. (2018). Research Through Game Design. Interactive Stories from a Submerged Amsterdam. *Ocula, 19*, 110-128.

Koskinen, I. (2016a). The Aesthetics of Action in New Social Design . . In *Design Research Society 50th Anniversary Conference* (pp. 27–30).

Koskinen, I. (2016b). Agonistic, Convivial, and Conceptual Aesthetics in New Social Design. *Design Issues, 32*, 18-29.

Koskinen, I., Binder, F. T., & Redström, J. (2008). Lab, field, gallery, and beyond. *Artifact: Journal of Design Practice, 2*, 46-57.

Koskinen, I., & Hush, G. (2016). Utopian, molecular and sociological social design. *International Journal of Design, 10*, 65-71.

Koskinen, I., Zimmerman, J., Binder, T., Redstrom, J., & Wensveen, S. (2011). *Design research through practice: From the lab, field, and showroom*: Elsevier.

Kouprie, M., & Visser, F. S. (2009). A framework for empathy in design: stepping into and out of the user's life. *Journal of Engineering Design, 20*, 437-448.

Krogh, P. G., Markussen, T., & Bang, A. L. (2015). Ways of Drifting—Five Methods of Experimentation in Research Through Design. In (pp. 39-50). New Delhi: Springer India.

Kurniawan, S. (2004). Interaction design: Beyond human–computer interaction by Preece, Sharp and Rogers (2001), ISBN 0471492787. In: Springer.

LaFrance, M., Hecht, M. A., & Paluck, E. L. (2003). The contingent smile: a meta-analysis of sex differences in smiling. *Psychological bulletin, 129*, 305.

Larsen, H., & Friis, P. (2018). Improvising in Research: Drawing on Theatre Practices. In *Collaborative Research Design* (pp. 341-375): Springer.

Laury, R. (2005). Dialogic syntax and the emergence of topics in interaction–an initial exploration. *Revue Tranel (Travaux neuchâtelois de linguistique), 41*, 165-189.

Lefebvre, H. (1974). *The production of space*. Oxford ; Cambridge, Mass: Oxford ; Cambridge, Mass. : Blackwell, 1991.

LeFeuvre, N. (2016). *Contextualizing Women's Academic Careers: Comparative Perspectives on Gender, Care and Employment Regimes in Seven European Countries*. Italy: Garcia Project.

Light, A. (2015). Troubling futures: can participatory design research provide a generative anthropology for the 21st century? *Interaction Design and Architecture (s), 26*, 81-94.

Little, A. (2007). Between disagreement and consensus: Unravelling the democratic paradox. *Australian Journal of Political Science, 42*, 143-159.

Lovett, M. K. (2008). *Creative intervention through video action research and pedagogy*: University of Illinois at Urbana-Champaign.

Lyle, P., Sciannamblo, M., & Teli, M. (2018). Fostering Commonfare. Infrastructuring Autonomous Social Collaboration. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 452): ACM.

Macaulay, C., Jacucci, G., O'Neill, S., Kankaineen, T., & Simpson, M. (2006). The emerging roles of performance within HCI and interaction design. In: Oxford University Press Oxford, UK.

Majkowski, T. (2016). King Solomon's Mines (cleared). Cartography in digital games and imperial imagination. In: Jagiellonian University, Poland.

Manfredini, M., Gharaghooshi, F. Z., & Leardini, P. (2017). Instances of emerging agonistic spatialities in the contemporary city the production of differential geographies in the public space of Istanbul. *Asian Journal of Humanities and Social Studies (ISSN: 2321–2799), 5*.

Manzini, E. (2013). Making Things Happen: Social Innovation and Design. *Design Issues, 30*, 57-66.

Manzini, E., & Rizzo, F. (2011). Small projects/large changes: Participatory design as an open participated process. *CoDesign, 7*, 199-215.

Mariani, I. (2016). Games telling stories of and for social innovation.

Markussen, T. (2013). The disruptive aesthetics of design activism: enacting design between art and politics. *Design Issues, 29*, 38-50.

Markussen, T., Bang, A. L., Pedersen, P., & Knutz, E. (2012). Dynamic Research Sketching:–A New Explanatory Tool for Understanding Theory Construction in Design Research. In *The Design Research Society 2012 International Conference* (pp. 1126-1143).

Märtsin, M. (2010). Identity in dialogue: Identity as hyper-generalized personal sense. *Theory & Psychology, 20*, 436-450.

Mason, R., Cooper, G., & Comber, T. (2011). Girls get it. *ACM Inroads, 2*, 71-77.

Massey, D. (2010). *A global sense of place*: Aughty. org.

Mateas, M. (2000). A neo-Aristotelian theory of interactive drama. In *AAAI Spring Symposium on Artificial Intelligence and Interactive Entertainment*. Palo Alto, California, 2000.

Mattelmäki, T., Vaajakallio, K., & Koskinen, I. (2014). What happened to empathic design? *Design Issues, 30*, 67-77.

Matusov, E. (1996). Intersubjectivity without agreement. *Mind, culture, and activity, 3*, 25-45.

May, J. (2017). Empathy and intersubjectivity. In H. Maibom (Ed.), *The Routledge Handbook of Philosophy of Empathy*: Routledge.

McCall, L. (2008). The complexity of intersectionality. In *Intersectionality and Beyond* (pp. 65-92): Routledge-Cavendish.

McGonigal, J. (2015). I'm not playful, I'm gameful. *The gameful world: approaches, issues, applications*, 653-658.

McNay, L. (2014). *The misguided search for the political*: John Wiley & Sons.

Melotti, M., Ruspini, E., & Marra, E. (2018). Migration, tourism and peace: Lampedusa as a social laboratory. *Anatolia, 29*, 215-224.

Memarovic, N., Fels, S., Anacleto, J., Calderon, R., Gobbo, F., & Carroll, J. M. (2014). Rethinking third places: contemporary design with technology. *The Journal of Community Informatics, 10*.

Menendez-Blanco, M., Bjorn, P., & Angeli, A. D. (2017). Fostering Cooperative Activism through Critical Design. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (pp. 618-629). Portland, Oregon, USA: ACM.

Menendez-Blanco, M., Bjorn, P., & De Angeli, A. (2017). Fostering cooperative activism through critical design. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (pp. 618-629): ACM.

Merleau-Ponty, M. (1942). La structure du comportement.

Merleau-Ponty, M. (1945). Phénoménologie de la perception. *Libraqire Gallimard, Paris*.

Mihai, M. (2014). Theorizing agonistic emotions. *Parallax, 20*, 31-48.

Milgram, P., & Kishino, F. (1994). A Taxonomy of Mixed Reality Visual Displays. *IEICE TRANSACTIONS on Information and Systems, E77-D*, 1321-1329.

Miron-Shatz, T., Stone, A. and Kahneman, D. . (2009). Memories of yesterday's emotions: Does the valence of experience affect the memory-experience gap? *Emotion, 9*, 885--891.

Mitgutsch, K., & Alvarado, N. (2012). Purposeful by design?: a serious game design assessment framework. In *Proceedings of the International Conference on the Foundations of Digital Games* (pp. 121-128). Raleigh, North Carolina: ACM.

Montano, D. E., & Kasprzyk, D. (2015). Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. *Health behavior: Theory, research and practice (*

Mouffe, C. (2000). Deliberative democracy or agonistic pluralism.

Mouffe, C. (2007). Artistic Activism and Agonistic Spaces. *ART&RESEARCH, 1*.

Mouffe, C. (2009). *The Democratic Paradox*. London; New York: : Verso.

Mouffe, C. (2014). Democratic politics and conflict: An agonistic approach. *Political power reconsidered: state power and civic activism between legitimacy and violence*, 17-29.

Mulgan, G. (2006). The process of social innovation. *Innovations: technology, governance, globalization, 1*, 145-162.

Muller, M. J., & Kuhn, S. (1993). Participatory design. *Communications of the ACM, 36*, 24-28.

Mummery, J. (2016). *Radicalizing Democracy for the Twenty-first Century*: Taylor & Francis.

Munthe-Kaas, P. (2015). Agonism and co-design of urban spaces. *Urban Research & Practice, 8*, 218-237.

Murray, J. H. (1997). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*: The Free Press.

Neuman, W. L. (2001). Fear of the "Alien Other": Cultural Anxiety and Opinions about Japan. *Sociological Inquiry, 71*, 335-356.

Nir, B. (2017). Resonance as a resource for stance-taking in narratives. *Functions of Language, 24*, 94-120.

Nir, B., & Zima, E. (2017). The power of engagement: Stance-taking, dialogic resonance and the construction of intersubjectivity. *Functions of Language, 24*, 3-15.

Norman, D. A. (2004). *Emotional Design: Why We Love (or Hate) Everyday Things*: Basic Books.

Norman, K., Renshaw, M., Mowles, C., Larsen, H., & Tucker, P. (2015). Patient Falls Decrease As Conversation Deepens. In *4Th Participatory Innovation Conference 2015* (pp. 217).

Oldenburg, R., & Brissett, D. (1982). The third place. *Qualitative sociology, 5*, 265-284.

Orsini, G. (2015). Lampedusa: from a fishing island in the middle of the Mediterranean to a tourist destination in the middle of Europe's external border. *Italian Studies, 70*, 521-536.

Park-Fuller, L. M. (2003). Audiencing the audience: Playback theatre, performative writing, and social activism. *Text and Performance Quarterly, 23*, 288-310.

Peschl, M. F., & Fundneider, T. (2014). Theory U and Emergent Innovation: Presencing as a Method of Bringing Forth Profoundly New Knowledge and Realities. In *Perspectives on Theory U: Insights from the field* (pp. 207-233): IGI Global.

Pink, S. (2009). *Doing sensory ethnography*. London ; Thousand Oaks, CA: Sage Publications.

Pink, S. (2011). Images, Senses and Applications: Engaging Visual Anthropology. *Visual Anthropology, 24*, 437-454.

Plattner, H., Meinel, C., & Weinberg, U. (2009). *Design thinking*: Springer.

Polaschek, D. L. (2003). Empathy and victim empathy. *Sexual deviance: Issues and controversies*, 172-189.

Pollock, D. (2006). Marking new directions in performance ethnography. *Text and Performance Quarterly, 26*, 325-329.

Pomerantz, A. (1984). Agreeing and disagreeing with assessments: Some features of preferred/dispreferred turn shaped.

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of interactive marketing, 18*, 5-14.

Rancière, J. (1999). *Disagreement: Politics and philosophy*: U of Minnesota Press.

Rancière, J. (2004). Introducing disagreement. *Angelaki: journal of the theoretical humanities, 9*, 3-9.

Rancière, J. (2015). *Dissensus: On politics and aesthetics*: Bloomsbury Publishing.

Rill, B. (2016). Resonant co-creation as an approach to strategic innovation. *Journal of Organizational Change Management, 29*, 1135-1152.

Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy sciences, 4*, 155-169.

Riva, G., & Mantovani, F. (2014). Extending the self through the tools and the others: a general framework for presence and social presence in mediated interactions. *Interacting with Presence: HCI and the Sense of Presence in Computer-mediated Environments*, 9-31.

Roskamm, N. (2015). On the other side of "agonism":"The enemy," the "outside," and the role of antagonism. *Planning Theory, 14*, 384-403.

Sanchez, E. (2011). Key criteria for game design. A framework. In.

Sanders, E. B.-N. (2003). From user-centered to participatory design approaches. In *Design and the social sciences* (pp. 18-25): CRC Press.

Sanders, E. B.-N. (2005). Information, inspiration and co-creation. In *Proceedings of the 6th International Conference of the European Academy of Design*: University of the Arts Bremen.

Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design, 4*, 5-18.

Sanders, L. (2001). Collective Creativity. *LOOP: AIGA Journal of Interaction Design Education, December*.

Schaap, A. (2016). *Law and agonistic politics*: Routledge.

Schechner, R. (2004). *Performance Theory*: Routledge.

Schegloff, E. A. (1992). Repair After Next Turn: The Last Structurally Provided Defense of Intersubjectivity in Conversation. *American Journal of Sociology, 97*, 1295-1345.

Schlegel, F. (2015, 2016). UNESCO SCIENCE REPORT, Towards 2030. In D. E. Susan Schneegans (Ed.). Paris: United Nations Educational, Scientific and Cultural Organization.

Schmitt, C. (2008). *The concept of the political: Expanded edition*: University of Chicago Press.

Schön, D. A. (1983). *The reflective practitioner : how professionals think in action*. New York: Basic Books.

Schouten, B., Ferri, G., de Lange, M., & Millenaar, K. (2017). Games as strong concepts for city-making. In *Playable Cities* (pp. 23-45): Springer.

Schutz, A. (1967). *The phenomenology of the social world*: Northwestern University Press.

Seago, A., & Dunne, A. (1999). New methodologies in art and design research: The object as discourse. *Design Issues, 15*, 11-17.

Sengers, P., Boehner, K., David, S., & Kaye, J. J. (2005). Reflective design. In *Proceedings of the 4th decennial conference on Critical computing: between sense and sensibility* (pp. 49-58). Aarhus, Denmark: ACM.

Sengers, P., Boehner, K., & Knouf, N. (2009). Sustainable HCI meets third wave HCI: 4 themes. In *CHI 2009 workshop* (Vol. 4).

Sengers, P., & Gaver, B. (2006). Staying open to interpretation: engaging multiple meanings in design and evaluation. In *Proceedings of the 6th conference on Designing Interactive systems* (pp. 99-108): ACM.

Sicart, M. (2011). *The ethics of computer games*: MIT Press.

Siegel, D., & Dray, S. (2019). The map is not the territory: Empathy in design. *interactions, 26*, 82-85.

Simard, C. (2008). *Climbing the technical ladder: Obstacles and solutions for mid-level women in technology*: Michelle R. Clayman Institute for Gender Research, Stanford University, Anita Borg Institute for Women and Technology.

Simonsen, K. (2007). Practice, spatiality and embodied emotions: An outline of a geography of practice. *Human Affairs, 17*, 168-181.

Smyth, J. M., & Stone, A. A. (2003). Ecological Momentary Assessment Research in Behavioral medicine. *Journal of Happiness Studies, 4*, 35-52.

Soukup, C. (2006). Computer-mediated communication as a virtual third place: building Oldenburg's great good places on the world wide web. *New Media & Society, 8*, 421-440.

Spinuzzi, C. (2005). The methodology of participatory design. *Technical communication, 52*, 163-174.

Stenros, J. (2014). Behind Games: Playful Mindsets and Transformative Practices. In S. P. W. a. S. Deterding (Ed.), *The gameful world : approaches, issues, applications* (pp. 201-222). London, England The MIT Press.

Stephan, W. G., & Finlay, K. (1999). The Role of Empathy in Improving Intergroup Relations. *Journal of Social Issues, 55*, 729-743.

Stokes, B., O'Shea, G., Walden, N., Nasso, F., Mariutto, G., Hill, A., & Burak, A. (2016). Impact with Games: A Fragmented Field. In. Pittsburgh, PA: ETC Press. Retrieved from http://gameimpact.net/reports/: Games for Change.

Suchman, L. A. (1987). *Plans and situated actions: the problem of human-machine communication*: Cambridge University Press.

Swain, C. (2007). Designing Games to Effect Social Change. In *Situated Play - Digital Games Research Association (DiGRA2007)*.

Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior.

Tambakaki, P. (2011). Agonism and the reconception of European citizenship. *The British Journal of Politics and International Relations, 13*, 567-585.

Tan, E. (2017). *PLAY THE CITY: Games Informing the Urban Development*. Netherlands: Jap Sam Books.

Tanenbaum, J. G., Antle, A. N., & Robinson, J. (2013). Three perspectives on behavior change for serious games. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 3389-3392). Paris, France: ACM.

Teli, M., De Angeli, A., & Menéndez-Blanco, M. (2018). The positioning cards: on affect, public design, and the common. *AI & SOCIETY, 33*, 125-132.

Topinka, R. J. (2010). Foucault, Borges, heterotopia: Producing knowledge in other spaces. *Foucault Studies*, 54-70.

Turner, J. (1999). Some current issues in research on social identity and self categorization theories. In N. Ellemers & R. Spears (Eds.), *Social identity: context, commitment, content* (pp. 6-34): Wiley-Blackwell.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*: Basil Blackwell.

Valentine, L. (2011). Craft as a Form of Mindful Inquiry. *The Design Journal, 14*, 283-306.

Valsecchi, F. a. P., Serena and Tassi, Roberta and Chueng-Nainby, Priscilla (2016). Resonances:listening tools for transcultural storytelling. *Proceedings of the Design Research Society Conference 2016. Proceedings of DRS 2016. Design Research Society.*

van der Voet, E., Huele, R., Koutamanis, A., van Reijn, B., van Bueren, E., Spierings, J., Demeyer, T., Roemers, G., & Blok, M. (2017). Prospecting the urban mine of Amsterdam.

Van Dijk, T. A. (1993). Principles of critical discourse analysis. *Discourse & society, 4*, 249-283.

von Savigny, E. (1998). *Ludwig Wittgenstein: Philosophische Untersuchungen* (Vol. 13): Walter de Gruyter.

Wakkary, R., Odom, W., Hauser, S., Hertz, G., & Lin, H. (2015). Material speculation: actual artifacts for critical inquiry. In *Proceedings of The Fifth Decennial Aarhus Conference on Critical Alternatives* (pp. 97-108): Aarhus University Press.

Wallace, J., McCarthy, J., Wright, P. C., & Olivier, P. (2013). Making design probes work. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 3441-3450): ACM.

Westphal, M. (2014). Applying principles of agonistic politics to institutional design. In *ECPR General Conference* (pp. 3-6).

Willis, M., De Angeli, A., & Zancanaro, M. (2017). Experience Probes: Immersion and Reflection Between Reality and Virtuality. In (pp. 253-262). Cham: Springer International Publishing.

Winn, B. (2007). Design, play, and experience: A framework for the design of serious games for learning. . *Handbook of Research on Effective Electronic Gaming in Education.*, 1010-1024.

Wittgenstein, L. (2010). *Philosophical investigations*: John Wiley & Sons.

Wittgenstein, L., Anscombe, G. E. M., von Wright, G. H., Paul, D., & Anscombe, G. E. M. (1969). *On certainty* (Vol. 174): Blackwell Oxford.

Wright, P., & McCarthy, J. (2008). Empathy and experience in HCI. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 637-646). Florence, Italy: ACM.

Yamamoto, A. D. (2017). Why agonistic planning? Questioning Chantal Mouffe's thesis of the ontological primacy of the political. *Planning Theory, 16*, 384-403.

Young, A. L., Peyton, T., & Lutters, W. G. (2013). Understanding situated action in ludic ecologies. In *Proceedings of the 6th International Conference on Communities and Technologies* (pp. 100-109). Munich, Germany: ACM.

Zahavi, D. (2001). Beyond empathy. Phenomenological approaches to intersubjectivity. *Journal of Consciousness Studies, 8*, 151-167.

Zhou, Q., Valiente, C., & Eisenberg, N. (2003). Empathy and its measurement. *Positive psychological assessment: A handbook of models and measures*, 269-284.

Zima, E. (2013). Cognitive Grammar and dialogic syntax: exploring potential synergies. *Review of Cognitive Linguistics. Published under the auspices of the Spanish Cognitive Linguistics Association, 11*, 36-72.

Zimmerman, J., & Forlizzi, J. (2008). The role of design artifacts in design theory construction. *Artifact: Journal of Design Practice, 2*, 41-45.

Zimmerman, J., Stolterman, E., & Forlizzi, J. (2010). An analysis and critique of Research through Design: towards a formalization of a research approach. In *proceedings of the 8th ACM conference on designing interactive systems* (pp. 310-319): ACM.

Zwaan, S. (2014). *To do media archaeology.*

11 Ethical approval

UNIVERSITÀ DEGLI STUDI
DI TRENTO

COMITATO ETICO
PER LA SPERIMENTAZIONE CON L'ESSERE UMANO

DATA	**18 ottobre 2018**
SEDE	**Sala degli Stucchi - Rettorato - Via Calepina, 14 – Trento**
N. ordine del giorno	**5**
PROTOCOLLO N°	**2018-020**

Sono presenti alla deliberazione:

ANGELI Silvia	Componente	AG
BONFIGLIOLI Claudia	Componente	P
BRANZ Fabio	Componente	AG
CASONATO Carlo	Vice-presidente	AG
DENTI Michela Alessandra	Componente	P
DORDONI Paolo	Componente	P
NOBILE Mauro	Componente	P
VEDOVELLI Iva	Componente	P
ZAPPATERRA Fabrizio	Presidente che presiede	P

Protocollo 2018-020

Titolo: **"Game-based intervention for knowledge elicitation"**

Responsabile: **Max Willis**

Il Comitato Etico per la sperimentazione con l'essere umano, dopo aver esaminato la documentazione relativa allo studio in oggetto, non ha individuato specifici problemi legati ad attività che implichino rischi per il benessere psico-fisico dei partecipanti, né problematiche connesse al trattamento dei dati.

Di conseguenza, per quanto di propria competenza, non ravvisa la necessità di emettere un parere etico.

Il Presidente _____   Il Segretario _____