

# Negotiation of Values as Driver in Community-based PD

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## ABSTRACT

Community-based PD projects are often characterized by the meeting of conflicting values among stakeholder groups, but in research there is no uncontested account of the relation between design and conflicting values. Through analysis of three community-based PD cases in Denmark and South Africa, this paper identifies and discusses challenges for community-based PD that exist in these settings based on the emergence of contrasting and often conflicting values among participants and stakeholders. Discussions of participation are shaped through two theoretical perspectives: the notion of *thinging* and *design things*; and different accounts of values in design. Inspired by the concept of *design things*, and as a consequence of the need for continuous negotiation of values observed in all three cases, we suggest the concept of *thinging* as fruitful for creating productive agonistic spaces with a stronger attention towards the process of negotiating values in community-based PD.

## CCS Concepts

• Participatory design

## Keywords

Participatory Design; community; agonistic; values.

## 1. INTRODUCTION

The increased proliferation of information technology in everyday life provides new opportunities for working with Participatory Design (PD) in social services and civil society. This has given rise to community-based PD as a recently emerging field [10]. In contrast to for example the contained setting of a workplace, community-based PD takes place in unbounded, open community settings. For example, urban development projects [10] embracing the notion of citizens attached to emerging issues [9] rather than stakeholders representing fixed values; and addressing agency issues involving multiple parties. In order to handle the unbounded, open nature of these settings, the notion of *infrastructuring* have emerged as central to community-based PD. The heterogeneous nature of community settings requires a reformation of PD thinking as suggested by Bannon and Ehn [1], going beyond the traditional design project, acknowledging heterogeneity and conflicts of values, and new forms of participation and engagement. Infrastructure is not viewed as a substrate that other actions are based upon, but rather as an on-going appropriation between

different contexts with many different stakeholders and practices with negotiation of potentially conflicting agendas and motivations for participation. In community-based PD settings, contrasting and conflicting values are unavoidable and do not only need to be explicitly addressed in the PD process, but can act as drivers for PD negotiation processes. In this paper, the notion of *design things* [2, 11] is central to our understanding of how negotiation of values is driving design. The conditions for how different values come into play in PD processes have changed substantially over the last decade. In community-based PD, the need to handle dynamic, emergent and continuously changing values in dialogues, negotiations and interventions is a prevalent and inherent aspect of design.

In the following we first unfold our theoretical framing with a focus on *thinging* and *design things* [3, 11], and on the relation between *design* and *values*. Then we introduce our three community-based PD cases in Denmark and South Africa. The cases span across big social, political and cultural divides, but they have been selected based on the central role, that plurality of values have played in the design cases, and not because of cultural or other differences. The first case is an account of a PD project oriented towards home-based care solutions in a Danish municipality. The second case deals with the empowerment of citizenship for street people in the East City of Cape Town, South Africa. The third case is an account of a project establishing new formats for ad-hoc social interaction and new ways of providing services among senior citizens in another major municipality in Denmark. The subsequent analysis of the three cases is based on analytical concepts derived from our theoretical framing. Based on the analysis, we suggest a model for understanding how continuous negotiation of values and constant formations of new value sets take place, through *thinging* and the formation of productive agonistic spaces. We conclude that it is important to pay attention towards the process of negotiating values in community-based PD, and argue by pointing to our analysis how this negotiation of values can drive community-based PD projects forward.

## 2. THEORETICAL FRAMING

Community-based PD has posed new challenges for conditions for participation. We highlight two theoretical perspectives that inform our understanding of participation:

1) The recognition that design is a continuous activity, blurring the border between design and use; which has spawned ideas about meta-design, or 'design after design', and in particular the notions of *Thinging* and *Design Things*; and

2) The recognition that PD approaches have met severe challenges when applied in settings that bridge across, or involve, numerous value systems. Various perspectives and approaches have been discussed in research, but as yet there is no uncontested account of the relation between design and values.

These perspectives are elaborated in the next two sections, and then applied in our analysis of the three cases and in the final discussion.

## 2.1 Thinging and Design Things

Referring to Suchman's idea of located accountabilities in technology production [22] we should consider system design processes less as designers specifying needs and assessing outcomes, and more as shaping and staging encounters between multiple stakeholders or people. In essence, this understanding of the design process emphasizes people coming together to meet in a conversation, rather than following guidelines. Our work acknowledges participation as not only being a frame for design, but also an ongoing articulation process where the public forms a socio-material responsive entity [9]. Such a view on participation in design work is best described as infrastructuring, meaning "the work of creating socio-technical resources that intentionally enables adoption and appropriation beyond the initial scope of the design, a process that might include participants not present during the initial design" [9, p. 247]. Similarly, Ehn's [11] original work on *design things* refers to Latour's [18] notion of socio-material assemblies, and an early form of this 'collective of humans and non-humans' as the Thing, which in pre-Christian Nordic and Germanic societies were assemblies and places, working out disputes and making political decisions. A Thing can thus be considered both a space and a concept for negotiation. In the same way we see community-based PD projects as a space for negotiation of values - a space for *thinging*. Björgvinsson et al. [3] use Mouffe's [21] 'agonistic' approach, as a way of promoting a vibrant democracy, which 'does not presuppose the possibility of consensus and rational conflict resolution, but rather presupposes a polyphony of voices and mutually vigorous but tolerant disputes among groups united by passionate engagement' [3, p. 129]. This suggests that antagonistic value conflicts are transformed into a productive agonistic space in which fundamentally diverging values could co-exist. It resonates well with Le Dantec & DiSalvo's [9] work on the formation of publics in PD, as well as with JafariNaimi et al.'s [16] work on values in design, which we will return to in the next section of this paper.

## 2.2 Values and design

Since Participatory Design is grounded in democratic ideals, any PD process intrinsically engages with values. In this paper we adopt the definition of values from Iversen et al. [15] because it has a broad theoretical grounding, and it is a fairly recent publication within the PD community. Using numerous sources, Iversen et al. [15] define values as being "enduring beliefs that we hold concerning desirable modes of conduct or end-state of existence in different situations, societies and cultural contexts" - [15, p. 89]. Values provide goals and act as guides in everyday life and towards long-term goals. Our set of values is fundamental to us as humans and help us determine what is for example preferable and not, or what we believe in or not [15]. Values, and its relation to design in broader terms, has been the subject for substantial research [16]. Different perspectives have been put forward on the agency artifacts have in our engagements with the world, regarding what we value in life and living. Others discuss to what extent artifacts embody the values of designers or users. Yet others emphasize the capacity of designers and publics to voice values in argumentation. However, according to JafariNaimi et al. [16], none of the positions put forward offers a definitive and uncontested account of the relations between design and values.

In the literature on values and design, a development can be traced from early approaches, focusing on identifying and applying universal values, towards more dynamic and relativistic

approaches, viewing values as emerging from the specific design setting at hand. One of the early dominating methodologies is Value Sensitive Design (VSD), originally proposed by Friedman, Khan and Borning [12]. It is "a theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process" [12, p. 349]. However, VSD has received a lot of critique (see e.g. [4, 8, 20]). Borning and Muller [4] discuss areas where VSD has overclaimed in research publications; one of them being the universality of values. More specifically they object to the suggestion of heuristic value sets from some VSD researchers, as being particularly relevant to design. However, they don't question heuristic value sets as such. Rather, they acknowledge their utility, but suggest that such value sets should be presented together with accounts of the culture and viewpoints under which they were developed. In contrast, LeDantec et al. [8] present a fundamental questioning of heuristic value sets, and how such heuristics privilege a discursive definition of values over the ones emanating from the context of design. JafariNaimi et al. [16] proposes an even broader critique of design approaches handling the relation between values and design. They raise the fundamental question of how values can inform design practice at all, since the same value may be appropriate in some situations and problematic in others, and points towards a more dynamic relation between values and design. This has been elaborated further by Iversen et al. [14, 15] who argue for how we can cultivate the emergence of values, that can be further developed and grounded during design, in a dialogical process. The dynamics of values correspond to the characteristics of community-based PD processes, where stakeholders change over time, political agendas are less outspoken, and future use practices may be only weakly articulated in initial design stages. Also, user values in PD processes have often been discussed in terms of democracy and the opportunity to influence design work. Iversen et al. [14] challenge this view when suggesting that values may be the *primus motor* in the design process. However, it has not been discussed how to stage ongoing design-in-use so that values become the driving force in the design work.

This brings us to the position we take for this paper. Critique of methodologies like VSD has promoted a shift from focusing on applying universal values towards an explorative stance, where values particular to the design situation, and its stakeholders, are discovered and acknowledged in the design process. We align with this critique of VSD and we argue that values can not only provide input to the design process, but also dynamically change during the process, and become the *driver* of the design process, which is the main point of this paper. JafariNaimi et al. [16] takes a first step in this direction in their critique of what is termed a two-step identify/apply logic. In the first step, values are identified and fully described, and in the second step they are applied to design practice, as exemplified in VSD. This logic rests on an assumption that values can be addressed separately from action. According to JafariNaimi et al. [16], in design practice the bearing of values is not a matter of definition, solvable in a formal account distant from the design situation. Rather, values and design are more intertwined than what the identify/apply logic suggests. Furthermore, in community-based design projects a shared set of values may not exist as the involved stakeholders and their involvement may be fleeting and represent diverse and even conflicting objectives and values (e.g. moral and ethics). Values, as we will exemplify in our cases may also vary for a participant or within a group of participants depending on the current state of affairs. In summary, within community-based PD there is a need for understanding the dynamics of values since usually the constellation of participating

stakeholders has not been set by pre-defined structural, economic and political agendas.

### 3. COMMUNITY-BASED PD CASES

The three cases, or settings for community-based PD, that this paper draws on, are situated in Denmark and South Africa respectively. Although the cases are vastly different by nature, they all acknowledge and support agonistic places as a resource in design and use. As we will see, the three cases support their participants in design, use, and ongoing design practices by supporting, rather than suppressing agonistic characteristics of collaboration. In the three cases values are neither shared nor converging, even if a better understanding of the other stakeholders perspectives may be a result. To a large degree, stakeholders keep their values throughout the projects and their collaborations. Our cases demonstrate how design interventions allow the participants to become aware of the other participants' set of values and stances towards the collaboration and work at hand. However, while a consensus and understanding may be worked out between the diverse stakeholder groups, this is not a stable arrangement over time. Our three cases are characterized by their dynamic inclusion and exclusion of participants, all bringing their own roles, stances and values into collaborations. As the actors change, so do the values represented within a collaboration, and consequently a new stable work arrangement must be worked out. The three cases are introduced and then analyzed and discussed in terms of how they shape agonistic spaces to handle dynamic values.

#### 3.1 Case 1: Healthcare in Denmark

In Denmark, municipalities provide social care based on a referral process and care is paid for through taxes. With a demographic change during the last decades, the public care sector is under strain as people live longer. In Denmark, one strategy to control the costs of care while providing a high quality of service is to invest in care-technologies that may support people to remain in their private homes as long as possible. In Denmark, the caring of an older adult living alone is often shared between formal and informal actors such as home care workers, family members and volunteers. In the depicted case, a system to support collaboration among these and other formal and informal care providers was developed, and later evaluated in two field trials [5, 6]. The project co-designed a tablet-based system to support communication and collaboration for the network of actors around older adults referred to municipality home-care; hereafter referred to as the *care network*.

The home is per se a private space, owned and controlled by its inhabitant(s). However, regarding home-care work, where one or more of the home's inhabitants are dependent on professional and/or informal care support, the home can no longer be considered a pure private space. It becomes a shared, hybrid space with different people requiring, and even enforcing, access based on their professional role, work schedules or informal agreements. When the home becomes a place for professional care, it is also a workplace enforcing workplace regulations and laws, including ergonomic considerations for the workers and workplace safety rules. Such laws and regulations may require changes in furniture and restrictions within the home (e.g. smoking restrictions due to environment regulations for the professional care workers) [13]. The transition from a private home to a more open, hybrid, space in itself embeds tensions and changes for many care network participants. The older adult must accept that unknown people enter the home, and even assist in intimate care.

The project work was based on Participatory design activities, and the project included diverse participants and roles in the design

work. Participation also became a key component in the developed system, where the diverse care network members should collaborate around the care of an older adult. However, the care network of different care receivers may look very different. Some older adults get much support from their adult children, while others do not. For some people a friend, a neighbor or volunteers from an NGO are central for their well-being. All these network participants bring values to the collaboration and while forming stable work arrangements (i.e. articulation work) it is important to understand that each participant also bring values that remain unchanged in the collaboration. It was not realistic to include all possible care network members in the design process since not all actors were defined by, and located within, organizational boundaries or otherwise easily identified and recruited. Furthermore, each care network's needs are as different as its care receiver and its individual members, making it hard to design a solution that would fit all current and future needs. Hence, to design a collaborative platform also required the project and its participants to acknowledge that different values exist and give room for that diversity. Also, a task that may seem simple and quick from one member's perspective may be challenging for others. For example, family members failed to understand why the professional care workers did not change a broken light bulb – a needed and fairly quick task to do. However, care workers were not allowed to change the light bulb, since it was not only outside the care workers work description, but also against their work safety rules. Additionally, from the family's perspective, changing a light bulb would only take a few minutes – no longer than sitting down and having a chat with the older adult (another thing also often brought up as missing). The care workers however had a very tight schedule, and staying five minutes extra per client, would mean working maybe up to an hour extra a day. Furthermore, different values among the care network participants also emphasized the importance of boundary control. When the relationship between an older adult and his or her children for example is disharmonious, boundary control becomes an important issue [7]. The formal and informal care providers also took very diverse stances to the care activity, and hence to the collaboration. These diverse stances were discussed for example at workshops where different stakeholders were represented (see Figure 1). On the one hand the homecare workers expressed a need to take on a professional role to protect their integrity and be able to provide intimate care in an effective and least humiliating way. On the other hand family members often engaged in care activities out of love and kindness. Volunteers represented a third entity that acted within a separate organization with its values, but also bringing their personal beliefs and values. In the design work, it became a key issue to acknowledge and give room for all these diverse care network participants in the collaboration. The above examples acknowledge the value of collaboration, but also the need of boundary control and to allow diverse care network members to keep values and stances throughout collaboration.



Figure 1. Different participants in a design workshop.

The outcome of the project was a collaborative service that the diverse network participants could interact with through a calendar-type interface. The collaborative system allowed all members of the care network to understand what must be done to assist the care receiver and, from time to time, negotiate who would take on what tasks (standard and more sporadic). The design thus provided the diverse actors with a tool that allowed them to collaborate across organizational borders and values.

The homecare case and its design activities cannot simply be defined as activities that occur in a public space, and hence, not in an agonistic public space. Rather, this case is more of an agonistic semi-public, or hybrid space where a defined, but highly heterogeneous and dynamic group of people must collaborate. These people come with different objectives, stances, motivations, and rationales for their actions and, therefore, it may be hard for care network actors to understand each other's actions. The tablet-based collaborative system is a tool for boundary control and negotiation; an enabler of continuous *thinging*. The system is co-designed as a frame for collaboration, but each care setting is unique regarding the care receiver's situation, the composition of the care network, and the needs and possibilities of its members. Consequently, in each care network the system will be used differently. The tablet-based system can hence be perceived as an agonistic space for working out needs, actions and activities for a specific care network and its diverse members.

### 3.2 Case 2: Empowering citizenship for street people in East City, Cape Town

There is a large, diverse population inhabiting the streets of the East City in Cape Town, South Africa, some of them criminals. Part of this population is a marginalized group of people that are established, living from informal work 'under the radar', imposing no threat to city visitors, but mistakenly regarded by business owners and municipal authorities as criminals. This case describes a community-based PD initiative, aiming to change the entrenched values of business owners and municipal authorities, to recognize these informal workers as citizens. Some of these informal workers are homeless, or what is referred to as 'rough sleepers', others have a place to stay. Many are alcoholic, and have various forms and degrees of social problems. However, a common denominator is that they are all part of a long established street culture, making a living from informal income generation through various activities interwoven with the network of formal businesses (shop owners, pubs, retailers) in the East City. The South African economy holds a large informal segment of individuals and businesses with an income below the level at which they become liable to pay tax. Common informal income generation activities are for example: *parking guard* (i.e. informally looking after parked cars in a parking space or outside a pub, to avoid break-ins in exchange of a tip from the car owner) or *packer* (i.e. packing goods for transport to the local market, or unpacking received goods for a company).

Apart from the informally working street people, there is also a fair amount of pickpockets, street robbers and gangsters operating in the East City. This continuous presence of crime has entrenched values among business and property owners, as well as municipality representatives, casting all people living in the street as a security threat to ('true') citizens, that should be eliminated. Consequently, the municipality has taken action to improve security by setting up local security operations with the mandate to use force, backed by municipality by-laws, and paid by levies from local businesses. The by-laws are manifestations of a value system shared by the political majority in the municipality and local business organizations. Sometimes the by-laws induce milder

conflicts. For example, the by-law against loitering has forced informal workers to negotiate their sheer right of presence on a daily basis. Informally employed packers waiting outside a company to unpack goods for an expected delivery were often wrongly accused of loitering by security guards posted at a station in the same street. Following street community practice, the street people would normally resolve such conflicts by convincing the security guard about their right of presence, and establishing an informal agreement to this effect. However, the security company would deliberately rotate the guards, prohibiting them from working more than one month at the same station, thereby disrupting continuity in such informal agreements. But there has also been more dramatic clashes induced by the by-laws. The security organizations have regularly performed raids or 'cleaning operations', typically at night, where homeless people have been removed from the streets by force. These operations may be targeted at gangsters and criminals temporarily operating in the area, but they directly encroach on the private lives of established community members in the same streets, including informal workers that are rough sleepers. In essence, these people are established community members of the East City, but not formally recognized as citizens of this area, and consequently treated at best as unwanted, and at worst as criminals, by authorities. Hence, there is an open conflict and unequal power relation between informal workers on the one hand, and owners of business and property, municipality representatives, and to some extent people formally working and living in the city center, on the other.

As mentioned above, the main goal was to support the recognition of informal workers as regular citizens and community members in the East City. In the project we collaborated with two partners: a local NGO with experience from several projects involving street people in the East city, working to improve neighborhood communication; and a newly started local buy-back center paying cash for recyclables. The long-term goal of the buy-back center was to build a network of informal workers contracted as designated waste collectors for local businesses in the East City. This would provide these informal workers with an additional source of income, but also to aid the recognition of them as regular citizens. Being well networked with street people in the neighborhood, the NGO was able to promote engagement in waste collection (see Figure 2). As researchers, we set out to explore how we could improve communication between waste collectors and local businesses producing waste, seeking to change the values of business owners towards recognizing street people as citizens. The design outcome was a smartphone 'app' that allowed local businesses to post messages about waste ready for collection, which was then relayed to the waste collectors through the buy-back center.



Figure 2. Guided walks introduced us to informal workers in the East City of Cape Town.

The ‘app’ thus supported timely collection of recyclables for waste producers, and improved the efficiency of income generation for the waste collectors. In summary, this case presents a setting characterized by large social divides, unequal power relations, and multiple stakeholders with highly conflicting values, where community-based PD has been employed with the intention to cater for informal workers as highly marginalized stakeholders.

### 3.3 Case 3: Designing for ad-hoc social interaction in an urban park in Copenhagen

The third case was part of the SeniorInteraction - *Innovation through dialogue* project [6, 19], designing service innovation in elderly care in Copenhagen. As in case 1, this initiative was grounded in a need for finding new ways of maintaining the quality of public care for elderly with a reduced care budget. The project involved senior citizens, municipality partners and small businesses. It explored how to design new service models, delivering public services to networks of self-facilitating senior citizens instead of to the individual citizen. The project chose a design laboratory approach, implying open collaborations between many stakeholders sharing a mutual interest in design within a particular field, but bringing diverse and sometimes conflicting values. The open collaborations meant that “what” was being designed was not predefined at the outset. Rather, it was co-designed by the participants, and experimented with and rehearsed through imagined futures as the process went along. The core activities in the design laboratory were a series of co-design events that became agonistic public spaces in which *thinging* of values played out.

The project was set up as a long-term design laboratory divided into three phases: In a *first* phase seniors were mobilized for the project and invited to take part in a series of three workshops. The first round of workshops resulted in a number of possible use scenarios for technologies with potential to support a possible infrastructure for community building as part of a horizontal service model. In the *second* phase the scenarios formed the basis for prototyping in the senior participants’ everyday environments; i.e. rehearsing a possible future with prototypes of technology-based service concepts. The *last* phase included living labs, where seniors in their everyday life and local environment lived with and explored concepts and technologies supporting the new service model. During the design events, design researchers, senior citizens, industrial partners and municipality partners co-designed services supporting community building. In the analysis of the case we demonstrate how different values influenced the design. In the Urban Park living lab (see Figure 3) our design explorations aimed at designing an infrastructure for facilitating and sustaining an ad-hoc community for outdoor activities. We wanted to explore if and

how we could establish an infrastructure for extending Urban Park meetings in time and place, and for continuing the ad-hoc community of the seniors after design researchers and municipality leaving the project.

Technology explorations of location-based apps like the netværkszonen-app and blogspot.valbyparken.dk, and playful explorations of games and exercises in the Urban Park scaffolded the design of a sustainable infrastructure for continued ad hoc participation. The underlying idea behind the design explorations in the living lab was that design happens in use, rather than before use, through the rehearsing of new practices of community-based outdoor exercising by the participants.



Figure 3. A community-based design laboratory activity.

As we point to in the analysis of the Urban Park case below, design researchers, senior citizens, industrial partners and municipality partners each entered the project with different motivations for participation. This revealed conflicting values as well as resistance towards participation during parts of the design process, and required a continuous negotiation of these values. One obvious value conflict was the implicit public sector agenda about reducing costs of a growing population of senior citizens towards the senior participants’ strive for a good elderly life based on life-long taxpaying to the public sector. This is a very distinct value conflict, played out in everyday politics and media between elderly associations and public administration and politicians responsible for public budgets in the ageing area. As illustrated in the analysis below, the design events in the Urban Park unfolded in an agonistic public space, playing out thinging of values more or less explicitly.

## 4. ANALYSIS

Based on the description of the three community-based PD cases and their diverse settings, we analyze the cases from the

Case	Stakeholders	Initial value	Manifestation	Design intervention	Changed value	Manifestation
Cape Town	Local business owners	Informal workers not recognized as citizens	By-laws on loitering and ‘cleaning operations’	Field study of informal workers and app development	Informal workers partially recognized as citizens	Local businesses utilize informal workers for waste collection
Healthcare DK	Municipal care workers (CW)	NoK has unrealistic expectations, and do not understand our work and role	Spoken and unspoken conflicts and trust issues	PD process and co-design of collaborative platform	NoK have a better understanding of our work and priorities	Constructive dialogue in PD activities
	Next of kin (NoK)	CW do not understand the real care needs			CW do what they can to address care needs (with available resources)	NoK learned about prof. Care work and municipality routines
Urban Park DK	Municipality representative (MR)	Healthy aging’ regime will reduce public costs	Official national and regional elderly policy	LivingLab and design-encounters to development (app for) ad-hoc communities.	Ad hoc social interaction as alternative approach to ‘healthy aging’	MR establishes ad hoc social networks in other urban parks

Table 1. Example values from the three cases and their transformation.

perspectives of values and thinging. The values have been identified and interpreted based on multiple sources, including manifestations in stakeholder actions, policy documents, etc. As illustrated in each of the three cases, instead of considering conflicting values among project participants as something to be resolved, we point out how ongoing negotiation of diverse values can drive community-based PD projects forward. Table 1 exemplifies values in the three cases, and how they are manifested and transformed through a design intervention, leading to shifted values. All cases are characterized by being political communities or publics characterized by heterogeneity and differences, with no shared and explicit object of the design process, and therefore in need of an infrastructure to deal with disagreements among partners on values. In other words, agonistic spaces in which project participants can engage in negotiations or *thinging* of their conflicting objects of design and underlying values.

#### 4.1 Danish healthcare case

The Danish healthcare case does not represent a typical agonistic public space, as described by Ehn [11] and Björqvinnson et al. [3]. The home is for example not a public space, but private, and only to some degree public at times. To further ‘open up’ the home, the communication, coordination and other collaborative activities among the care network members are not limited to the inside of the care receiver’s home, but rather physically distributed. There are phone-calls, physical meetings, letters, emails and, later on, interactions through our designed system – all ongoing and both dependent on, and centered on the home and its care receiver. However, the tablet-based app materializes an agonistic space where the care network members can communicate and negotiate roles and values. What characterizes this agonistic space is that some of its boundaries are well-defined while others are not; referred tasks must be performed according to external, national laws and municipality standards, while other activities and ways of collaboration are negotiated through a network internal process over time. Each care network will also define its own boundaries through the negotiation process itself.

When analyzing the case in detail, one can identify numerous, sometimes aligned, sometimes conflicting, and sometimes simply diverse set of values among the involved care network members. The values that the diverse care actors brought to the collaboration in the project were often different and so were their motives to participate, both in the design work and future care negotiation. The *municipality* participated in the collaboration as member of a large, national-funded research project. They had an interest in exploring possibilities with new technologies and new ways of working within homecare. They fully engaged in the collaboration, and were very happy with both the project and its results. However, after the project they did not find a way to continue working with the tablet and the notion of care networks. The *municipality homecare workers* represent a professional, paid group of care providers. As such, they assume a professional stance towards the task at hand and the relationships they have with other members of a care network. A number of national legislation and local rules define what they can, and cannot do, within a home. A homecare worker may for example not be allowed to change a light-bulb, because climbing a ladder may be against work safety legislation. While the care workers were overall positive to the project, they took a rather defensive stance towards for example next-of-kin at workshops. The immediate family of a care receiver, the *next-of-kin*, may take many stances towards the relative in need and the provision of care. Some families invest heavily in the care and care collaboration while others may not be present at all. Many act out of love, or a need to ‘pay back’ for help given while they were younger. Others,

in disharmonious families, may not engage at all, or maybe shouldn't be involved. Where a positive relationship do exist, and next-of-kin have the resources and interest to care for their relative, their focus is on that person only. In contrast, a single care worker may visit up to 10 care receivers a day to perform different care related tasks. Tending for one person, and knowing all the ins and outs of that person, makes highly personalized care possible. However, while this care is an outcome of the best intentions, it is created based on what the relatives believe is best. Their stance is constructed with one person in mind and is not necessarily well aligned with the identified needs and strategies of the municipality referral process, something that may challenge their collaboration with the municipality homecare workers.

Another group is the *volunteers*. Volunteers may interact with one or many care receivers, and they are usually organized through NGO's or religious organizations. In our study, volunteers did not perform dedicated care tasks such as cleaning or medical care, but rather offered either social functions like visiting an older adult for a talk or help with doing physical exercises. Volunteers, and the organizations (usually NGO's or religious organizations) they represent, are often interested in direct help, such as providing social contact to a lonely older adult. That does not mean that they are interested in investing time in developing technology for care network collaboration, or collaboration per se. Many NGO's also have specific rules limiting what a volunteer may do, to protect the volunteer and the care receiver, but also out of political motives. An NGO may for example act as a lobby organization to ensure that the rights of older adults are safeguarded and that there are no cutbacks on public services for older adults. Hence, while they provide volunteers, they have no interest in having them perform tasks they believe is the municipality's responsibility. Finally, and easily overlooked when analyzing the participants in PD and collaborative work, is us, the *design researchers*, with a perspective different from the other participants. To start with, the researchers were not part of any care network and hence not envisioned as users of the designed system. The researchers' motives were to work with, and research, Participatory Design and processes during and after the project's initial design period.

One can argue that the participants that actively engaged in the initial design work to develop the tablet-based app (municipality care workers, municipality administrative leaders, family members, ICT developers and design researchers) did so, on a general level, due to some shared overall set of values, similar to those of VSD [4, p. 1125]. The reality was however more complex than what can be addressed taking a VSD stance to the design and use of a care network support system. As exemplified above, in the care network diverse and at times conflicting values and needs emerged (sometimes temporarily) that influenced not only the design process but also a future day-to-day use of the designed system. Some people have a professional role and reason to participate in a collaborative care network. They are paid labor that act within the political and economic boundaries of the municipality, caring for many older adults. Their engagement and possibilities to act are strongly influenced by the assessment of the older adults and their needs (i.e. the referral process). Family members may act out of love or a perceived need to ‘pay back’ for help given when they were younger. Their engagement and motivation derives from a personal relationship and they care for only one person. While the referral process guarantees a minimum level of care and quality of life, next of kin may both identify and value other aspects of care. They can see the individual from a personal, lifelong relationship rather than a person that is referred to some specific care tasks at specific times of the week. Volunteers may act out of political or

religious beliefs, to both provide and receive company, to be a contributing part of society (if for example newly retired) or simply out of the wish to do something good for a fellow person. When volunteers are part of a larger organization, like an NGO, there are also rules of engagement and conduct with the intention to safeguard both the care receiver and the volunteers. An NGO may also have a political agenda where volunteers provide social company to older adults, but are careful to avoid care tasks that may be provided for via the referral process. If the NGO volunteers start performing such tasks, this could lower the provided quality of referral-based care over time, as these tasks may no longer be visible as needs. All these different roles and stances come with different values and views on the needed collaborative effort, and indeed on the care required. It should be pointed out that the care network is far from a stable arrangement. Some of its members may change over time, and so do their role and importance in both provision and negotiation of care. For example professional care workers may switch clients or change career. Similarly, an active family member may move further away from their aging parent and hence get a less important role in the day-to-day care. Emergent needs may involve specific professional or informal actors for shorter periods of time that change the size of the care network, its overall collaboration, what must be negotiated and how.

Rather than hiding or suppressing these differences, trying to follow predefined template ways of working, the collaborative tablet-based platform (and the design of it) helped to make these agonistic values visible, and to make individual stances understandable, for the diverse care network members. As pointed out earlier in this paper, values do not only act as input to an initial design process, but also change dynamically during the process. As with the care network app, the values of the care network and its individual members can even become the very object of design. In this case, the dynamics of values became important as they were not 'pre-set' but rather something that emerged through negotiations, and based on an infrastructure supporting ongoing design through use. These negotiations are local, as each care network is as different as its members and these members may change over the course of time.

## 4.2 Empowering citizenship for street people in East City, Cape Town

In the Cape Town case, there are two main value sets. On the one hand there are the values of *informal workers*, living in and off the streets of the East City. On the other, there are the values of *local business and property owners*, *municipal authorities*, with their associated *security organizations*, and *people formally working and living in the city center*. There was not only a large social divide between these two groups, but also an extremely unequal power relation. The *informal workers* had for long been established in the area, both as workers and residents; yet many *business owners* regarded them as loiterers and squatters. In addition, since both employment and housing arrangements most often are informal, as mentioned above the *municipality*, and the *security organizations* operating in the inner city, backed up by some of the *local businesses*, did not recognize the informal workers as citizens of the East City. Consequently, in this case study they are not just weak stakeholders, rather they have no voice at all to defend their stake in matters that affect them, other than possibly the few local businesses that do employ informal workers. In summary, in Mouffe's terms [21], the setting is best described as an antagonistic conflict between these two value sets with no rational solution.

The project established a *thing* engaging the *buy-back center*, *informal workers*, *NGO representatives*, *researchers* and *local*

*business owners*. The *NGO representatives*, with long experience from working in the area, had the important role of mediating between the *buy-back center* and the *informal workers*, to convince the latter about the opportunity of exchanging recyclables for cash. The *buy-back center* established contracts with *local businesses* to have *informal workers* collect recyclables. Finally, we as *researchers* developed a mobile app that allowed *local businesses* to signal that recyclables were ready for collection, and that allowed *informal workers* enrolled as waste collectors to work more efficiently. The *informal workers*, successfully performing this function, helped to change the perception of themselves by *local businesses* (although some of these businesses still paid levies to the security organization authorized by the municipality).

The participants in this *design thing* came with different perspectives, intentions and values. The *buy-back center* had experience from other settings, where they had successfully started recycling operations creating income for local street people. With this perspective, their intentions were to recruit informal workers as waste collectors, thereby contributing to recycling as well as income generation for people in need, based on values related to sustainability and social uplifting. However, their lack of understanding for the conditions of informal workers living in the East City streets limited their capability of realizing their intentions. The *informal workers* entered this design thing with skepticism towards collecting waste from local business owners. Being denied recognition as citizens of the East City, often manifested through intimidation by security organizations, their values were dominated by mistrust and disempowerment. Drawing on the substantial experience from earlier projects, the *NGO representatives* negotiated between the buy-back center and informal workers, overcoming their distrust, and engaging them in recycling, in order to indirectly promote their recognition as citizens. The values of the *NGO representatives* were thus based mainly in political convictions to curb social inequalities. As researchers, we entered into a close collaboration with the *NGO representatives* and the *buy-back center*, to apply community-based PD approaches to empower the informal workers. Our engagement was rooted in traditional PD values related to empowerment. However, failed attempts to employ traditional PD techniques, and intense learning about the conditions for *informal workers*, shifted our perspective from a focus on engaging informal workers in design, to promoting communication between *informal workers* and *local business owners*. Finally, the *local business owners* entered the process with entrenched values about street people in the East City, including informal workers, as a threat to security, and indirectly to their business. As a result of design interventions in the project, they changed their values and perception of the *informal workers*.

As described above, the starting point for the project was an antagonistic conflict characterized by social division, power inequality and mistrust. In the project, the design initiatives were conducive to transforming this antagonistic conflict into an agonistic space for negotiation. The setting up of the buy-back center operation, and the gradual engagement and recruitment of informal workers mediated by the *NGO representatives*, was a first step in this direction. The next step was introducing the mobile app designed to support communication between waste collectors and local businesses, to make waste collection more efficient. We observe that the conflicting values were an important driving force in this process. The informal workers, enrolling as waste collectors, promoted themselves as established citizens, and indirectly shifted the perspective and values of local business owners towards a higher degree of recognition. Consequently, the transformation of the antagonistic conflict led to a state where the values, we would

like to describe as agonistic values, were acknowledged and did not hinder collaboration. However, we recognize this state as being highly volatile. A change in price for recyclables, disruptions in performance of waste collectors, or a change in a by-law (all far from unlikely disturbances) could quickly disrupt this state, calling for new interventions and negotiation of values. In summary, the clear need for handling value dynamics in this case, may be rooted in large social divides and unequal power relations.

### 4.3 Designing for ad-hoc social interaction in an urban park in Copenhagen

During the Urban Park living lab different participants had different values and motivations for participating. This required constant negotiation - a thinging of values playing out during the design events - as part of the design process bringing the project forward. Or put in another way; the thinging of values in the agonistic public space seems to be a necessary constructive driver in co-design projects.

Throughout the co-design events all participants were engaged in activities that focused on mutual experimentation with the design concepts oriented towards facilitating new communities as a platform for public service in the ageing area. During these events the participants' different values and motivations in the project were revealed and made explicit, which spurred negotiations of different and often conflicting values between participants.

The *municipality participants* were driven by a political agenda to come up with a new service model to decrease public service costs and at the same time address issues of social interaction and loneliness among senior citizens. This was articulated already at the project set-up, and at this stage enunciated as a potential value conflict towards the *senior citizens* who - represented by their national age association - feared a cut-down of existing services as a consequence of the project. Furthermore, activities in the Urban Park living lab had to be aligned with community procedures and regulations. This implied that any design decision, which in some way related to and potentially could challenge or change existing practices and regulations had to be confirmed by municipality authorities. Examples of such could be activities jeopardizing existing safety or insurance procedures or activities putting extra workload on already overworked *health professionals*.

The *senior participants* invested their time, energy, trust and experience in the project driven by a variety of expectations, values. Some of the senior participants already knew each other from exercising contexts in another part of the city. They saw the Urban Park initiative as a welcome new approach to outdoor exercising. This was well aligned with the values implicitly part of the public 'healthy aging' strategy, but in conflict with values of *independence* and *authority* striving for an ad hoc oriented social senior-life. The playful and competition-oriented outdoor format further seemed to attract male seniors, whom usually not signed up for conventional fitness programs or the like. Other senior participants were joining because they lived in the local neighborhood. Even if not articulated, some senior participants were taking part based on the 'healthy aging' regime, which for some seniors often revealed a conflict with values of *acknowledgement* of the right for being lazy or laid-back after a long working life. Some of these were even referred to the Urban Park living lab by the municipality health-center as rehabilitation treatment. For some seniors the technology explorations represented a positive possibility for familiarizing themselves with smart-phone and web-blog technologies. For others it created quite some resistance as they felt uncomfortable with the smart-phone based technology, most of them being used

to feature phones, only making phone calls and sometimes text-messaging. Finally, as mentioned above the 'senior union' being a strong political voice, warned about the potential of having cut-downs on public budgets for elderly service as a consequence of projects like this changing service provision towards less individual service.

The Urban Park living lab had two *industrial partner participants*, both with a business agenda based on market economy values. *Humanconcept* who inspired and coached the outdoor exercises, had a goal to develop an exercise concept for self-facilitated groups of seniors in alternative environments like urban parks, public squares or similar (as opposed to indoor fitness centers, municipality senior centers etc). This business concept was supposed to consist of an app (based on the *netværkszonen*-app), which together with consulting and coaching made up the business model targeting public institutions. *SnitkerGroup* had a less significant business investment in the project. Their main role was to do a formal benchmark evaluation of quality of senior life in the municipality before and after the project, based on an existing evaluation method from the company. In this kind of research/co-design project, value conflicts are often related to timing of activities. Most small enterprises need to have a fast investment revenue, and will thereby often be pushing for final solutions rather than keeping the design space open for a long time.

The *design research participants* included 'conventional' academics with a motivation of developing new knowledge around design methodologies and design for social innovation; an artist group contributing to design of playful artifacts to stage and support community building; and design students participating, e.g. as part of thesis work. Since the overall methodological approach of the project was exploratory, the design researchers strived to keep the design space as open as possible using sketching, prototyping and iterative rehearsing of use practices related to the new service concept for community building.

The very nature of the explorative design approach created value tensions towards especially the *Humanconcept* business partner. They were keen on pushing for a business concept and product ready to market as soon as possible. The conflicting value propositions related to this became the core of ongoing value negotiations - thinging - between the design researchers and the business participants. The constructive output of this thinging in an agonistic public space, was a continued exploration of methodological approaches on how to allow *Humanconcept* to develop their business idea and survive even if a final business concept could not be made until the end of the project. These negotiations were driving the business partner to come up with new ideas for consulting services to be utilized in other settings during the project period, and that transformed the antagonistic value conflict into a productive agonistic space in which fundamentally diverting values could co-exist.

Another example of conflicting value propositions requiring continued negotiations - thinging - was the positions between the senior citizens refusing to be part of the 'healthy aging' regime as they - or at least some of them - considered this to be a hidden agenda aiming at cutting down elderly service on public budgets, and on the other hand the municipality partner, who despite all good intentions still acted in a political atmosphere of a need to find solutions to the growth on public expenses in the care and health area. The constructive output of this thinging in an agonistic public space was the kind of trust-building between the municipality partner and senior citizens despite the articulated conflicting values. This trust-building lasted months and years, and grew



slowly as the representative from the municipality partner demonstrated understanding and empathy towards the senior citizens even if these conflicted with the adverse values of the official policy in the municipality. For the municipality it became an important experience for doing co-design with citizens in other areas characterized by participants forming an agonistic democracy in public spaces, as also reported in Malmö Living Lab experiences by Björgvinsson et al. [3].

As we have demonstrated in the Urban Park case, the plurality of values has been surfaced and negotiated in several ways and thereby constructing a productive agonistic space in which thinging of values has been driving the project forward while allowing diverse values to co-exist and constantly being reshaped.

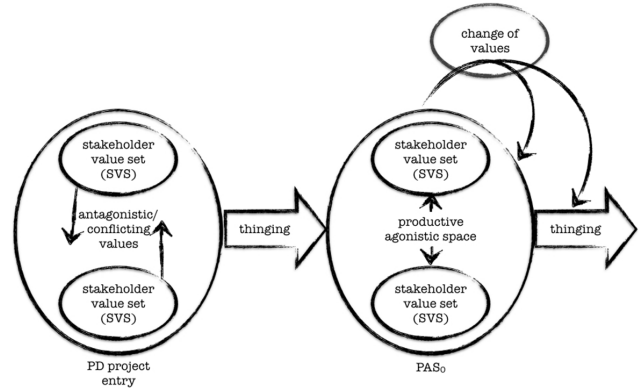
## 5. DISCUSSION AND CONCLUSION

A core characteristic of our selected cases is that values have been continuously negotiated, through thinging, constructing a productive agonistic space. When entering the cases, we have observed stakeholder value sets that were in conflict, sometimes of an antagonistic nature. In the design process, encounters between stakeholders have then formed ‘design things’, gradually developing an agonistic space for negotiating these conflicts. Thus, thinging of values has been driving the project forward while allowing a plurality of values to co-exist and being constantly reshaped in a productive agonistic space (see Figure 4).

Although the cases differ in character, they all demonstrate transformation through thinging as depicted in Figure 4. In the *first* case, we identify how the values of the municipality care workers towards the care receiver are in many instances very different from those of the care receivers’ family, volunteers or the volunteers’ organization. In many ways, the diverse stakeholders’ difficulties in collaborating to provide good quality care for the older adult derive from difficulty to understand the other person’s or organizations roles, decision structure and standard procedures. This directly influenced the design process and the developed system. In the *second* case, there was an open conflict between value sets of the *informal workers* in the streets of the East city, Cape Town, and the entrenched values of *local business owners*, wrongfully regarding the *informal workers* as loiterers and a security threat. Analysis of the project results demonstrate how interventions could form an agonistic space where *informal workers*, now in the new role of waste collectors, could shift the values of *local business owners* towards an increased recognition of *informal workers* as citizens of the East city. In the *third* case, we observed how the *municipality* was driven by a political agenda to introduce initiatives decreasing public service costs while the *senior citizens* - represented by their national age association - feared a quality decrease of existing services as a consequence of the project. The municipality arrived at a changed value, as they acknowledged ad hoc social interaction as an alternative approach to ‘healthy aging’. This was further manifested through establishing of ad hoc social networks in other urban parks.

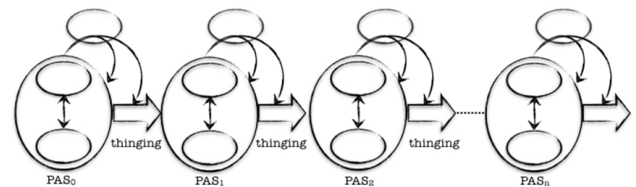
We understand negotiation of values as a mutual trust-building and learning process that, through thinging, forms a precondition for the co-existence and reshaping of values in an agonistic space. In the healthcare case, getting to know work regulations of caretakers would help care-receivers and their families to understand why care workers at times perform tasks that seem irrational from the family’s perspective. Likewise, an investment from the care workers side in understanding the viewpoints of the care receiver’s family could help to increase the quality of care, or at least, enable a shared understanding within the care network of the perspectives and values at play. In the case of informal workers in Cape Town,

local businesses would learn that street people could successfully collect recyclables from local businesses, and consequently revise their perception. Similarly, informal workers seemingly changed their perspective of local business owners, though more difficult to substantiate. In the case of the urban park the municipality representatives was confronted with the senior citizens’ desire to not always follow the ‘healthy-aging’ regime, while the design researchers had to revise their conception of the seniors’ readiness to use smartphone technology in rehearsing new exercising practices in the park.



**Figure 4. Thinging: initial value conflicts -> ‘Productive Agonistic Space’ (PAS<sub>0</sub>) with changed values (see Table 1).**

Although the proposed model in Figure 4 captures the dynamics of value negotiation, we also recognize that all three cases remain in a relatively volatile state after our interventions. For example, in the healthcare case, the introduction of a new caretaker or new work regulations would still have potential effect on the stakeholder value sets. Similarly, in the case with informal workers in Cape Town, a decrease in prices paid for recyclables, or a new by-law introduced by the municipality, may also spur new frictions between established values. Consequently, although not directly observed in our cases, we would like to suggest that the agonistic space achieved through ‘thinging’ cannot be expected to remain productive over time. To describe community-based PD that involves negotiation of values, we need to acknowledge that the plurality of values is dynamic and constantly re-shaped, thus potentially shifting the agonistic space (see Figure 5).



**Figure 5. Dynamics of stakeholder value sets through ‘thinging’ in productive agonistic spaces (PAS) over time.**

To summarize; we consider negotiation of values, through thinging in agonistic spaces, as an important and continuous driver in community-based PD. In line with Ehn [11] and Björgvinsson et al. [3], we identify the notion of ‘thinging’ as viable for understanding community-based PD in settings with multiple stakeholders and plurality of values. Through our cases, we also demonstrate how a plurality of dynamic values can be a driving force in design. Kapteinin & Bannon [17] describe how user-centered design of technology unavoidably will change the practice which the technology is part of, which may unveil new possibilities spurring the next design cycle, leading to further changes in practice, and so on. Adapting a similar analogy to community-based PD, we argue

that the driving force in design is rarely a shared vision among stakeholders of a future made possible through design activities. Rather, the driving force in our cases has been a plurality of dynamic values, and a continuous negotiation of values in agonistic spaces; not to reconcile value differences, but to reshape and achieve a productive co-existence between them, allowing new practices among project participants to form. Thus, various external factors may shift stakeholder value sets to a point where intervention through thinging is needed to transform the design situation into a new productive agonistic space, as depicted in Figure 5. Although clearly more research is needed into the dynamics of negotiating conflicting values in community-based PD, our aim has been to contribute to understanding these dynamics, and to indicate some directions for future research in this area.

## 6. ACKNOWLEDGMENTS

We like to direct our gratitude to all case participants and current and former colleagues that have contributed to the three cases.

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