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Designing for the common in precarious contexts

Notes from a feminist perspective

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"How to change the goals of human domination... involves acceptance of impermanence and imperfection, a patience with uncertainty and the makeshift".
(Ursula Le Guin)

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Abstract

This work presents a Feminist approach to Participatory Design focusing on provoking and subverting hegemonic narratives. Through Design Anthropology projects in the field of Active Aging, I aim at defining design tactics for making the Common visible.

The system design literature on Active Aging presents aging as a problem that needs to be fixed and it attributes to older adults aging negative stereotypes, promoting in this way ageism. This narrative is influenced by, as it informs, the EU policies that fund projects on the design of assistive technologies through a rhetoric of compassion towards those considered older people. At date, critical interdisciplinary approaches consider the concept of aging in modern societies as a bio-product of capitalism, since it is related to the end of a persons work life and therefore the end of her/his productive capacity. My thesis is positioned at the intersection between critical approaches and community-based Participatory Design, considering design as one of the practices for raising awareness and taking care of the common. The Common is the ensemble of material and immaterial resources that allow people to be tied together and it can be looked at in a positive and liberating way, in contrast with hegemonic and normative constraints, as the implications of active aging narrative. In my view Participatory Design is one of the approaches to subvert and rebalance power-relations, and for this reason I adopted it in my work.

Therefore, the leading research question is: *How can we learn to recognize the Common through a Participatory Design process?*

To answer this research question, Participatory Design is informed by Design Anthropology and Feminism. The former restitues the importance of anthropological reflexivity in the encounter with the Otherness and the in-depth empirical work of field-work. The latter provides an intersectional lens that offers the decisive lever to shift the focus from the homogeneous fictional image of the "older person, to the rich heterogeneity of human beings, that includes not just the age identity, but multiple identity layers (gender, ethnicity, economy, education...). This shift of focus has been done mainly through the deconstruction of negative aging stereotypes (ageism), predominant in the institutional narratives of Active Aging, whether they are in the policies, in system design literature or in peoples everyday life. In this way the shift of focus highlights the passage from the Active Aging perspective to the Common one, and from the user to the participants towards a collective dimension in which aging becomes a secondary element in favor of the Common, as relational quality and ability to cooperate and self-organize. For this reason the case studies presented are situated in community-based organizations of - in institutional terms - older adults. The case studies are settled in three different contexts and with different design ideas, as they emerge from ethnographic fieldwork: working on public mobility in a grassroots movement of seniors and pensioners in a mountain community; sharing knowledge and competencies in an annual laboratory on digital technologies

promoted by a social cooperative and organized by the university; improving communication and making compost in top-down senior social gardens, organized by senior social clubs and promoted by the local municipality.

The case studies presented are situated in precarious contexts, that is, in which the available resources are scarce, there is little or not institutional safety net and the only way for the design researcher (myself) to set a project is through building informal and trustful relationships with the participants, nurturing attachments and managing stereotypes that the participants may have about her.

The main contribution of my work is having elaborated guidelines that include relational movements and design tactics to re-frame hegemonic design contexts and empowering people that are involved in, to re-imagining themselves from users to participants and to be entitled and responsible to design their own technologies in their own means, to strengthen the Common that ties them together. The design processes that me and the communities realized are constituted by the relational movements of exploration, provocation, conflict, reflexivity and appropriation.

In contemporary times, where the Common is often dispossessed and converted to a product, and we are called to fight capitalistic forces to maintain the capacity of cooperate, the Common is often not evident in our everyday life. From my empirical work I elaborated three design tactics that can inform design projects that aim at making the Common visible, and these are: decolonizing hegemonic narratives, nurturing attachments with the people we designers work with, and creating contextual ethics to help us making decisions when encountering conflicts between ours and participants agendas.

Keywords: [Participatory Design, Feminism, Design Anthropology, Common.]

Statement of contribution

This thesis reports research principally done by myself, as a part of my doctoral studies. The research had been carried from November 2014 to January 2018. All the identities of the participants have been anonymized. Parts of these publications have been re-interpreted and rewritten in the dissertation; some passages have been quoted verbatim.

Parts of Chapter 2 were published as: Cozza, M., De Angeli, A. and Tonolli, L. Pers Ubiquit Comput (2017) 21: 607; and Tonolli, L., Teli M., Menendez Blanco M., Making Publics: hints for Recursivity, Workshop paper, PDC2016, Aahrus 2016.

Parts of Chapter 3 and 4 were published as: Linda Tonolli, Maurizio Teli, Vincenzo D'Andrea (2015) A Design Anthropology Critique of Active Aging as Ageism, Interaction Design and Architecture(s) Journal, 26: 95-113.

Chapter 4 includes paragraphs from: Michela Cozza, Linda Tonolli, Vincenzo D'Andrea (2016) Subversive participatory design: reflections on a case study. In Proceedings of the 14th Participatory Design Conference, Vol. 2. ACM, New York, NY, USA, 53-56; and paraphrased parts from the report: ACANTO WP1 User-centric design. D1.3, Antonella De Angeli, Maria Paola Paladino, Lynne Coventry, Stefano Targher, Andrew McNeill, Motivation and persuasion report, Submitted August 18th 2015, which I contributed to write.

Part of the Conclusion includes paragraphs from the workshop paper I presented at the 12th Conference of Design and Cooperative Systems (COOP 2016), as: Linda Tonolli, Researcher's relocations "in her own terms": repositioning meta-perspectives in the realm of (design for) ageing.

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Chapter 1

Introduction

The last few years have been characterized by a renewed attention to the politics of design. This interest pervades several domains, from traditionally politically engaged schools such as that of participatory design (e.g. [195]) to the more recent emphasis of social innovation in the field of industrial design (e.g. [149]). The attention to the politics of design reflects the concern of some scholars in the field of digital technologies towards the search for new form of social cooperation that can bring to a viable future (e.g. [102]). Politics is important in the evolving landscape of technology design as technology increasingly focuses on a variety of communal objects, leading beyond the workplace and individual experiences [53].

Participatory design (henceforth PD) is an approach to design systems together with the people that will use them in order to involve them in the decision-making process of the system and giving them ownership on the technology designed, re-balancing power-relations in favor of those that will use the technology [195]. In this context, a particular attention has been given to participatory design as a commoning practice, a practice that can nourish the common(s), articulated through concepts that include: publics, matter of concern, community-based PD, things and infrastructuring [154].

Beside the traditional legal conception of commons (with "s") elaborated by Elinor Ostrom, considered as shared natural resources [167] , and the recent conception of digital commons as intangible one, elaborated by Charlotte Hess [115] , an activist conception of commons considers them as a relational quality among a group of people [55], especially in contrast with the commodificaiton of common goods. This conception intertwines with the one of common (without "s"), initially promoted by Hardt and Negri [110], Hakken, Teli and Andrews [102] and Teli, Di Fiore and D'Andrea [208]. This conception goes beyond the relational quality of the commons, considering the common (without the 's') as what makes us human. Drawn from Hardt and Negri's definition [110], Teli et al argue that the common can be defined as the ensemble of the natural elements such as land, air and water, and of the immaterial or artificial elements that are cultural and social products, such as languages, ideas, affects, etc. The common, connects human beings and it is originally neither private nor public property, although this large ensemble of material and immaterial elements is embodied in the economy and in political regimes [206]. With the expression "nourishing the common", or "commoning", Teli et al refer to the whole set of practices that have the effect of allowing a growth of possibilities for

people to be connected by symbols and that preserve and nourish, literally, the material resources that allow people to be tied together in a positive and liberating way [206]. The relational quality of the common is the main distinction that Carlo Vercellone [216] explains in its online article between the naturalistic view of the commons by Ostrom and others, and the materialistic and relational view of the common by Hardt and others, which I consider in my research: "The Common is, therefore, the product of a social and institutional construct that elects it to this status. It does not refer to an essence that precedes it, but to the forms of governance and cooperation that ensure its production, reproduction and distribution" (ibid). Therefore, following a materialistic approach to the Common, "the ontological foundation, determined historically, of the current position of the Common, cannot be ascribed to the intrinsic nature of goods, but to the ability of labour to self-organize" (ibid.). Articulating on the relational nature of the common, Vercellone argues: "For those who approach the Common in the singular, the Common is neither a predetermined set of goods, nor a third intruder between State and the market, but a general principle of organisation for society...The "common" is a socially and historically determinate activity that continuously produces new institutions, and these are at the same time the conditions and the product of the "common" itself." (ibid.)

I advocate that although the common is a bound that tights us all as living beings in this planet ecosystem, a matter is becoming aware and recognizing that a 'thing' (a practice, an object) is a common. As Bollier says about the commons, we can argue its validity about the common: "The beauty of the commons is that we can build them ourselves, right now. But the bigger challenge is, can we learn to see the commons, and more importantly, to think like a commoner?" [55]. In this research I argue that something that is affected by a process of awareness can be called a "common-yet-to-be" when it is not recognized as a common yet. I echo in this Aristotele's metaphisical view on *dunamis* as potency and *entelecheia* as actuality, that describe the dialectic motus of a being (*ousia*) when it is not yet developed in something else (but it is able to) and when it is fulfilled. A "common-in-potency" or a "common-yet-to-be" aims at underlining the in-becoming, the continuous changing inner to a design process.

This thesis presents an investigation into community-based participatory design in the context of active aging, considering design as one of the practices for "nourishing the common" or "commoning". The common can be dispossessed or nourished. Dispossessed meaning enclosed and re-purposed in favor of the powerful (that being individuals or any social formation, from families to nation states). The verbalized expression "commoning" highlights that "nourishing the common" is a process. This process refers to the whole set of practices that have the effect of growing the possibilities for people to be connected to the material and immaterial resources that allow people themselves to be tied together in a positive and liberating way, in contrast with hegemonic constraints. An example of a dispossessed common is the Amazon forest, the biggest green lung on Earth, exploited by private corporations that destroy the forest for economic interests in agreement with local governments. An example of a commons that is nourished is the human knowledge that is shared through the Wikipedia platform, made by the people (organized in a complex structure of forums and a user reputation system) for the people (with access to a PC

and the Internet) [123]. Nourishing the common is a politically engaged practice since it involves decision making regarding the sustainability, management and accessibility of a common, based on ethical values that differ from context to context. Among the commoning practices, my research interest focuses on the design practices that propose participatory processes in precarious contexts, as I found them in doing fieldwork in community-based organizations. In particular, PD is one of the main approaches to subvert or rebalance power-relations and for this reason it is the one adopted here.

Within precarious contexts of design, I refer to the precariousness of projects based on informal and personal agreements, attachments and gains that intervene between designers and participants. What is precarious here is the encounter between the designers and the participants in the context of a design arena. On a subjective side, the designer is precarious in two ways: contractual precarity [163], [36] and existential precariousness [65] in the life of a design project. Contractual precarity influences the scarcity of economic and temporal resources, articulated in: time constraints to realize projects and provide outcomes to the hosting institution and funding body; limited funding for accessing facilities; hiring co-workers; and, building design artifacts and maintaining them after the contract ends. Precariousness, in Butler's analysis, describes human being's' condition of uncertainty and contingency, the fragility of human corporeal existence [65]. Although both of the concepts apply to this research, this thesis reflects on the existential precariousness of design projects. Design projects can be seen as symbols of the encounter with the "precariousness of the Other" [65], in this case being between the participants and the designers. This encounter calls for a reflection on an ethics that is contextual, especially when designing for the common and as a commoning practice. To better observe and experience the phenomenon of precariousness in participatory design, I moved my focus from exploratory institutionalized projects to design projects in which precariousness was more tangible to the participants and designers themselves and therefore, contexts in which design projects were based on informal and personal agreements between designers and participants. The design projects discussed in the three case studies had the absence (or only the loose presence) of an institutional safety net, that could intervene or negotiate in case of issues between the designer and the participants. If the absence of an institutional safety net put a design project at risk of being shot down (as occurred), it can also be the ground for a genuine collaboration, even beyond the institutional end of the project (aka when the designer's funding contract expires, and the designers leave the context).

Participatory processes can take place in institutionalized environments that present hegemonic narratives, in which the discourse about the common is not explicit. It is that very situation in regards to the case studies discussed here and which lay in the background of the active aging narrative. From empirical and related works, it emerged that this narrative is hegemonic and colonialist, as it influences the EU policies (at the highest levels of government) that fund projects on the design of assistive technologies through a rhetoric of compassion towards those considered elderly. Similarly, but at a lower level, this narrative influences the perception of aging (and persons categorized as "elderly" and therefore "older users"), in the minds of designers. Therefore, the research question of this thesis is framed as follow:

How can we learn to recognize the Common through a participatory design process?

To answer this question, as anticipated, I needed to consider also how to overcome situations of precariety of design, and as I anticipate here, in asking who the actors of this research are (myself, the participants, ...), I needed to consider also how to overcome intersectional stereotypes in doing research.

The case studies analyzed in this thesis have been carried out with local community-based organizations, in rural and urban areas. These community-based organizations (a movement, a community center, and two associations) define themselves as, and are founded on principles of, aging as identity classification. The term "community" here refers to Community-Based Participatory Design [87], that considers a community in three ways: in relation to geography, to identity and to interests and practice. DiSalvo et al. explain that among identities that bind a community, such as gender, sexuality, ethnicity or physical abilities, "age is one of the more common identity classifications, with projects developed specifically with the elderly or youth" [87, p.184].

Not by chance, drawing from societal changes in an aging population that is growing and consequently European policies designed to face these changes, my scholarship was provided by the project Active Aging @ Home. This project was a functionalist proposal in the field of Ambient Assisting Living (AAL) technologies for Active Aging [2], funded by the Italian Ministry of Education, University and Research (MIUR). With "functionalist" I refer to the definition by Liam Bannon and Pelle Ehn in the Participatory Design Handbook, "the technological imperative in work design, where work organization was planned by engineers whose priority was fitting people to the requirements of the technology, and not vice versa" [195, p.42]. For this reason, I worked with persons labeled as "elderly" for biographical evidence by their culture and welfare state and by their belonging to community-based organizations. The goal of my research call was to realize "a careful study on the contribution of ethnography for researching aging, looking both at social and technological aspects (...) aimed at defining an approach, on the one hand, respectful of the elders and, on the other hand, providing significant inputs for developing and implementing assistive technologies" (in Appendix the full text, A.1). In the early stages, however, my research took a very different path from the functionalist goal of my funding project. Although my contribution might have been unexpected for the project partners, I believe I remained loyal to my funding call (if we intend that "assistive" are all the technologies as tools). This choice was grounded in empirical, ethnographic explorations. Indeed, early fieldwork evidenced how social practices exceed the normative tension to institutionalize them [95]: the elderly did not recognize the image of aging depicted by normative and hegemonic narratives, which describes them and shapes institutions around them (including technological solutions).

My research work is articulated as followed: initially two exploratory works took place in a national and a EU project, in which I had a marginal role (Chapter 4); the first case study in a mountain community, that failed because me and the participants could not find an agreement on the project (Chapter 5); the second case study in a senior social centre, in a urban environment, where during a Digital Lab we co-designed and deployed Fucinaperta, a platform for sharing knowledge and expertise (Chapter 6); the third and last case study in two senior social gardens, where in the first garden I approached, the

design intentions failed and the project ended, while in the second garden we co-design and co-deployed a bio-shredder for making compost (Chapter 7).

In respect of the politics of Active Aging, the seniors I engaged with were already very active and proactive [212]. Therefore, it felt urgent and necessary to consider the *deconstruction and critique of aging stereotypes* in AAL technologies literature at first, a field that traditionally builds ICT functionalist solutions, and in empirical fieldwork at second. Unearthing the aging stereotypes that lay beneath the narratives in AAL technologies literature allowed me to deploy Participatory Design as a political approach more in line with the anthropological field-work. Still, I recognized that other fields of research such as Critical Gerontology have a perspective on aging closer to the daily life of the so-called elderly and in contrast with the abstract stereotyped user protagonist in AAL narratives (Chapter 2).

For a researcher it is important to ask 'who' in doing design research. Muller [162] advocates the importance of asking during Human-Computer Interaction research: "who is an organizational actor?" and "who are we as researchers and practitioners?" [162, p.448]. In contrast with the objectivity emphasized by traditional science, feminism proposes that we take a closer look at who the people involved in the production of scientific knowledge are. The reason for this is the acknowledgement that disclosing the singularity perspective of the researcher, coming from her background and identity, can be significant for the research question. Similarly, this self-positioning of "locating accountabilities" [201] helps to uncover cultural stereotypes that can affect the researcher's report, which cannot happen with the "voice from nowhere" perspective. This refers to the impersonal way of writing science, assuming that scientific knowledge is objective and not made by subjectivities temporally and culturally situated [108]. These reflections, embodied by feminist theory, have been inspired by anthropologists that questioned the authority of the representation depicted by their core research method, ethnography, in what is so-called reflexive ethnography [175], [98].

A little explored area in system design, which has been investigated by Critical Gerontology and STS studies [125], is the gender dimension of aging. Studies show that women "flourish" in later life, being more socially engaged and adapting to changes, while men tend to "perish" with retirement: they are more at risk of social isolation and are reluctant to admit being lonely [198]. Considering that a key trend of technologies for active aging are medicalized and individual, we could speculate that this seems to be mostly in line with the manly dimension, as other medical advancements for seniors have been proven to privilege a male dimension (e.g. Viagra, [125]). The result is that elderly women are underrepresented in system design. As seen in the field studies described here, elderly women gardeners I engaged with were often scarcely considered by the garden chiefs, and this, I suppose, contributed to legitimizing actions amongst their male peers (see Chapter 7). At the same time, elderly women gardeners fiercely argued their points in discussions in the first garden studied, even though they eventually lost their patience and gave up (see 7.2). On the other hand, at the second garden, the few involved in the workshop admitted their incompetency even though it was the same as their male peers, but they left the workshop earlier and were quiet and patronized during the discussions (see 7.3).

Detaching from functionalist narratives through ethnographic empirical work allowed

me to carry out a participatory design with local community-based organizations of seniors, looking at aging as a socio-cultural collective phenomenon. In criticizing the functionalist design of active aging technologies and active aging as a form of ageism, I considered ethnography as, mainly, instrumental to design, relocating it in its historical roots: Anthropology. An anthropological critique of (system and participatory) design and within doing (participatory) design can be considered to be standing for a Design Anthropology approach in Participatory Design (Chapter 3). Specifically, in dealing with hegemonic narratives such as that of active aging, the deconstruction of it leads to unearthing of the polyphony of the participants and the designers involved which can be better expressed through intersectionality.

I use intersectionality as a metaphor to look at the phenomena that are unfolding in the fieldwork of my case studies, looking at hegemonic narratives, how they are made and perpetuated, and how we can deconstruct them through a design anthropology perspective in participatory design. Intersectionality has its genealogy in law and social justice studies. Coined by Kimberlé Crenshaw in 1989 [77], a black feminist scholar in law, intersectionality is an expansion of feminist theory made possible by black feminists that protested in the exploitative working context in the US of the 1980's. Crenshaw created the concept of intersectionality after the exemplary case of Emma DeGraffenreid and several other black women that sued General Motors (GM) in 1976 for not having been employed as workers on the factory floor because they were black and female. The court rejected their instance, justifying that GM had black employees and female employees, but not *black female employees*. What the American justice system did not acknowledge was that all the black employees where men and that they worked on the factory floor and all the female employees were white and worked as clerks or in other office positions. This case showed the blindness of the justice system and the cultural context in recognizing that power struggles are given by multiple layers of a person's identity, in this case, the tension was based around the intersection between race and gender. Crenshaw describes intersectionality in the legal context of social injustice when more layers of power-dynamics intersect and create multiple layers of social injustice that are not recognized by the justice system: "what do you call being impacted by multiple forces and then abandoned to fend for yourself? Intersectionality seems to do it for me?" [76, min 07:30]. As intersectionality is a "prism" [76] and an efficient "metaphor" [15], I deploy intersectionality as a lens of analysis, as a focus of attention to look at "elderly" people not just through their aging layer. How feminism can benefit design anthropology is not yet extensively articulated, although some scholars highlight their connection with decolonizing feminist theory, such as Dori Tunstall [214].

Therefore, the answer to my research question is that an intersectional Design Anthropology approach in PD can be useful to deal with precarious contexts and hegemonic narratives when making politically engaged projects that nurture the common. The answer is articulated/systematized in an ecological contribution that shows what I learned, through what movements, and what design tactics can be used in future works. The contribution is here presented in a hierarchical order for clarity of the reader, although the way I learned and looked at the findings has been mainly chaotic and *a posteriori*, following more a thematic analysis approach than a hypothesis-testing one. At first, I

gained the learnings while I was doing fieldwork and design (see Section 8.1) ; during the second case study, at the senior social centre (Chapter 6) I have started to detect recurrent tactics that have been consolidated by the end of the last case study. Once the field design research ended, looking back at the data, I realized the presence of five recurrent movements in the design process that include the learnings and the tactics. I will start from the movements, briefly sketching them, moving to the learnings and finally to the tactics. I elaborate in depth on the movements, learnings and tactics in the Discussion (Chapter 8).

Five movements I found recurrent in my case studies that can be summarized as: 1.exploration, 2.provocation, 3.conflict, 4.reflexivity and 5.appropriation. They are relational movements between the designer and the participants with the objects of design. These relational moves are important to challenge the current narrative around a particular issue, such as the active aging narrative, or the client-customer approach of seniors and the consequently product design approach, and foster the creation of alternative agendas, making the common visible. Therefore,

1. Exploration: my exploration of the active aging narrative, of the seniors' points of view and of my precariousness as researcher. In the fieldwork, exploration is the relational movement that mainly happens at the beginning, when relationships among me, the participants, the context, start to be built, and fades out with the progression of the other movements.

2. Provocation: of the participants' points of view, of my precarious position in the case study, to the seniors, to my institution, provocation of the dynamic of delegation among seniors associations, that became obstacle of the participatory design process. Provocation occurs when I proposed a design intention that combines participants' agendas and desires with mine. Here is where I started to talk about the common with the participants.

3. Conflict: between me and the participants in the delegation *dispositif* and in building trust and mutual recognition. Conflict is a movement of tensions and negotiations between our different agendas, that when not solved, lead to the conclusion of the case study (as in the first case study, see Chapter 5).

4. Reflexivity: about trust and mutual recognition between me and the seniors, personal self-disclosure and re-location in the design context, shift of my and seniors' perspective from the user-centric design to the common-centric design. Reflexivity is the relational movement that take place when there is a mutual recognition between me and the seniors, and both parts understand the other's point of view.

5. Appropriation: of making the common visible in design as design approach, of contextual ethics depending on the setting, of getting ready for unexpected design implications, such as designing participation or designing a non-digital tool or put the germs for a community economy. Appropriation is the relational movement that makes design *things* at home and that make the design decisions taken until then feeling familiar by participants and me.

My contribution have been elaborated on over the course of the last three years and follow the incremental development of the case studies as the learnings from one case nurtured the development of the following one.

The research route crossed the collective deconstruction of ageism and of gender issues,

as shown in the second case study with a senior social center (Chapter 6), until the issue of elderly male participants' sexism and patriarchy in respect of the researcher (me), as explained in the third case study concerning social gardens (Chapter 7). This allowed for the making visible of the common from common-yet-to-be to actual-common, in increasing awareness in the participants that moved the commoning from one of the attachments to one of the gains. The commoning practices involved in this research are the sharing of knowledge and expertise through a digital platform (Chapter 6) and the management of the land and the relationships in social gardens through a mechanical compost shredder (Chapter 7).

I started with two exploratory works in two institutional projects on active aging (Chapter 4) in which I realized the necessity of *deconstructing normative aging stereotypes* and starting from *the participants' points of view for re-imaging the user*. These learnings constitute the basis for my methodological choices.

To start from the participants' points of view and the disclosure of alternative images of aging in contrast with the hegemonic ones of active aging, in the first case study I put myself in the familiar grassroots position that an ethnographer adopts when engaging with a community (Chapter 5). I learned that this grassroots approach becomes a precarious one if it is a designer approaching that same community in search of participatory design opportunities. Still, *the precariousness of the designer* shifts so as to have the quality to rebalance power-dynamics between the designer and the community. Participants need to be more proactive in the construction of a collective design project than they would be if involved in a fixed track institutional project where they are usually involved in the evaluation process. They need to see valuable gains (outcomes), allies, and attachments (affective bonds such as trust), that fit with their socio-cultural context. Building trustful relationships and negotiating gains are learnings that underlie the following case studies. Sharing the same values or the same geographical identity can be useful to build trust. Being a "stranger" in an isolated mountain community and a not well-identified student/researcher (where participants may be concerned about my motives and influence) from the university (a distant institutional body in the collective imaginary) were impediments to building trust, even if I lived in that village for over a year. In addition, the lack of introduction by an initial gatekeeper or anyone trusted by the community of seniors also meant that the starting point was a difficult one. One way to develop trustful relationships and attachments between participants and designers can be achieved through perseverance, long-term engagement, and one of the qualities of feminism: *self-disclosure*.

The second case study takes place in a senior community center run by a cooperative of social workers that had a long-term collaboration with my research group (Chapter 6). In agreement with other colleagues, I co-designed the digital technologies laboratory (which my research group organized annually) with the objective of challenging the normative narratives about the elderly. The strategy we followed had been proposed and negotiated with the participants. We provoked the standard approach of learning to use the computer without any specific purpose, with the method of starting with what participants already knew, their expertise and knowledge about a variety of topics and using the PC as a medium to share and exchange this expertise and knowledge. The position of us as de-

signers and of the project itself was less precarious compared to the first case study. Still, the only traction to continue the digital lab was the mutual interest of both participants and researchers, regenerated through time. There was an informal agreement between the social workers and the research group that was based on mutual trust. Having established a long-term attachment to the participants over the previous year, and between the participants and other colleagues in prior years, the challenge of participating to a digital lab was accepted by the seniors, that collaboratively developed a digital platform. The learning from this case study has been that *shifting the focus* of the design inquiry *from the user* identity *to the common* such as the human knowledge, allowed the re-imagining of the "seniors" in unexpected ways. The communication of their knowledge and expertise through the content writing and the co-design of the digital platform deconstructed aging stereotypes in their polyphony and *intersectionality*: not just as a matter of age, but also as a matter of gender, education, background and financial position.

At the digital lab, the group of participants was formed by women (except for two men), and through mutual self-disclosure between them and me, we developed relational attachments of affinity and empathy. *Re-positioning the activist PDer's position* is a significant finding learned from mutual self-disclosure, a feminist practice useful to reframe power-dynamics between participants and designers. The weekly workshops became a space to talk about aging as women, while participants' gains concerned learning and interpreting technology in their own terms. A gender perspective on aging neglected by participatory design was unearthed and with it the power-tensions between senior men and women and their different approaches to learning digital technologies. Even though it was made through a participatory process, the digital platform fell into disuse after the digital lab concluded and the social workers and my research group suspended their informal agreement.

The third and final case study took place in two recreational senior social gardens (Chapter 7). The two community-based organizations were approached not as "senior" organizations but as "gardening" ones. The shift of focus from the "older user" to the common was a methodological choice made a priori. Shifting from the person to the environment allowed the setting up of a discourse on the collective common that goes beyond those organizations. The person (and all his/her attributes that determine the typology of the user) is out of focus, the objective is not age-related anymore and what becomes central is *the environment and the relation that people have with it*. In particular, gardeners were trying to find a way to make compost collectively and to improve the communication and management of the social gardens they share.

Because of the initial precariousness of the project, trust and a shared agenda needed building. Re-locating my position as an activist researcher was required due to unexpected challenges. This operation led to two learnings. Indeed, I had to face *intersectional stereotypes* that senior men had with respect to me being female and the *ethical questions* that derived from them. The participatory design approach was initially perceived with skepticism and doubts and this contributed to the intersectional stereotype of a young and inexperienced female student. The balance between proposing a participatory agenda and dealing with the community hierarchies was precarious, and in the first garden, the access was compromised even though I was introduced by a respected gatekeeper who

was trusted by the community. In the second garden, the risk was the opposite, and being exploited as a service/product designer was a solid option when the gardeners felt overpowered in respect to me. I was ethically conscious that I had to "impose" a participatory process otherwise I would have gone against my agenda, and I would be forced to leave the project. I overcame the seniors' patriarchal stereotypes concerning me and I was able to build trust and gain recognition for my knowledge and competencies. Still, these stereotypes permeate the male female relationships among gardeners, and it remained a challenge involving a significant number of women. Nevertheless, we co-designed and deployed a power-crank compost-shredder. The gardeners acknowledged the value of co-design methods and recognized the compost as a common, which has environmental, social and economic implications. *Learning to recognize a common* is the learning of this case study. They became enthusiastic about their device, and we look forward to future developments and interactions with other gardens. While they were surprised by the co-design process, I had to be ready for the unexpected implications for design, acknowledging the necessity of changing the technological outcome from a digital one, in line with my funding project, to a mechanical one, in line with the needs and desires of the participants.

From the learnings gained I extracted three tactics that turn useful when doing projects that aim at subverting an hegemonic narrative in favor of a narrative of the common. These design tactics were recurrent in the case studies, and they are: 1.Decolonizing, 2.Nurturing attachments and 3.Creating contextual ethics.

1. Decolonizing: as the practical and reflexive act of acknowledgment and self-critique of what I represent in doing a PhD and what the institutional flag I carry to the fieldwork represents and how it affects the participants. Decolonizing is also the act of deconstructing and re-imaging normative narratives such as active aging, that affect the people that live in a state and capitalistic society. It is also the act I invited the participants to take towards their own ageist stereotypes and towards theirs over me, as a service-provider.

2. Nurturing attachments: as affective bonds, trustful relationships and mutual recognition, essential to build design projects and imagine alternative ways of conducting design projects, in contexts that are precarious because there is not any previous established relationship between the actors involved.

3. Creating contextual ethics: ethics that are not universal but are built locally, the ethical compass that I built on the way and helped me in taking decisions where the choice was not obvious (or it looked like). Contextual ethics are built during mismatches, such as those emerged in this research: conflicting agendas and narratives across the case studies, and patriarchal and paternalistic attitudes of senior gardeners towards me.

Finally, in the Discussion (Chapter 8) I discuss the answer to my research question, hence the usefulness of an intersectional feminist approach to participatory design, systematizing the contributions learned from the empirical work.

Chapter 2

Related works

This chapter presents the theoretical grounds in which the research question is settled. The chapter discusses and analyzes three research fields: Ambient Assisted Living (AAL) technologies for seniors, community-based Participatory Design with seniors, and Participatory Design as a commoning practice. The choice to include these fields is motivated by the unfolding of the main argument of this thesis, which is given by an incremental result that intertwines AAL, community-based PD and commoning. The ratio of moving from one academic domain to another follows the logical thread that goes from the subjects to the practices for commoning. This thread works well in the light of the dynamic process described in the introduction, namely, that my research funding came from a project with a functionalist rhetoric and functionalist goals and that, following this, doing ethnography in different contexts makes functionalist assumptions fall apart. Therefore, looking for a research domain to refer to, I found it in the community-based PD, specifically in PD as a commoning practice. In precarious contexts of design, designing as commoning permits the realization of projects, deconstructing the stereotypes of a user typology, and reinforcing a polyphonic and intersectional image of "the users", expressing the richness of their humanity. If the background of ICT design in the field of aging is active aging for AAL technologies, then it is necessary to look at what kind of image of the older user this field depicts. Unfolding aging stereotypes highlights how these are institutional-related (Section 2.1) and how the normative context is hegemonic towards the precariousness of the designer, also in community-based contexts of design (Section 2.2). Since shifting the design focus from the user to the common represents the way out of needing to navigate in precarious waters, then the third ground of research we move into is PD for the common. Since the shift of the design focus is given by the methodological turn of an intersectional Design Anthropology in PD, I discuss it in detail in the Methodology (Chapter 3) and the Discussion (Chapter 8).

2.1 Growing and becoming older in western societies. The politics of active aging

The growth of the aging population has led, in the past decade, to several institutional initiatives in the EU, especially with the goal of managing the welfare and pension systems.

Having more retired people than working people threatens the sustainability of the welfare state. The stereotypical association between retirement and becoming "old" is closed as it is normatively constructed (ISTAT data, [122]).

Maintaining a growing older population in wealthy socio-physical conditions has become a priority for EU agendas. In this way, the idea of 'active aging' or 'successful aging' has found large consent in European and national policymaking. This label was originally constructed by American Gerontology when the phenomenon of the 'baby boomers' arose (the demographic group born in the immediate post-WWII years in Europe and the US) [198].

At the time, pursuing voluntary and charity work gradually became the prescription for maintaining an active and social lifestyle in the US, and this concept was then adopted by the EU. The conception of voluntary work in the US, which historically was constituted in working activities done by low-income elderly people, gradually became non-paid work done by wealthy seniors [153]. Gradually, the US administration reduced the state aids to retirees and not being involved in voluntary work has become a stigma for people that, by choice or by constraints, do not adhere to the normative image of 'active' seniors [153]. Indeed, it has been shown that moving to a nursing home leads to a rapid decline of older people's health conditions [84], due to displacement from home and loss of motivation to stay fit, since there is no hope of leaving the nursing home alive. Before the Italian pension reform of 2016, the age that permitted access to retirement was 65, the same age that allowed access to "older age" economical and social benefits. Italy is the European country with the oldest population where the over-65 group represents 22,3% of the entire Italian population in January 2017 [122]. These data have been the justification for European and national investments in the development of ICT solutions for an aging population.

The meaning of Active Aging has been discussed for decades in academia and is generally defined as the ability of older adults to grow old while maintaining psychophysical and social activity [111]. This concept was born in Gerontology, as was its predecessor 'successful aging' [184]. Both concepts promoted later life as an active and positive period, presenting a positive image of aging that has been used when active aging was adopted by public bodies [166]. The EU Commission has decided and defined policies for implementing ICT solutions for "aging well" [221]. In 2007, the European Action Plan for Aging Well in the Information Society promoted a "new joint European research program raising over 1bn for research investment on information and communications technologies (ICT) targeted at improving the life of older people at home, in the workplace and society in general" [12]. In the design of technologies for active aging, Ambient Assisted Living (AAL) technologies play a prominent role [196].

In the field of active ageing, AAL technologies are described as playing a fundamental role and are indicated by public agencies as solutions to promote active aging and to "strengthen the industrial base in Europe through the use of ICT" [17], [12]. AAL are those technologies that interact with the environment to enhance the quality of life of users, with a particular focus on seniors. AAL technologies include smart homes, mobile and wearable sensors and robotics [176] but the definition is wide and its limits blurred. The concept of AAL is often related to that of "aging in place", which is the idea that people can have a better later life if they age at home, rather than in a nursing home,

and through this reduce the health care costs for older adults while creating new business opportunities.

In Vines et al [220] and in Cozza et al. [73] literature reviews, it is shown that the main design trend follows a homogeneous representation of older users. Indeed, most technologies are based on a stigmatized idea of the elderly: fragile, vulnerable, isolated and physically impaired. This view, coming from system designers and programmers, also affects the kind of involvement that seniors have in the design process: elderly people are usually not actively involved in the design process, but are asked to contribute in the evaluation phase, where they are simply asked to accept the technologies, with small scope for interventions. This design approach represents elders as problematic and incapable users, reiterates ageism in designing active aging technologies and contributes to seniors' rejection of technologies. Ageism is the practice of stigmatizing people categorized as "old" because of their age, treating them in an unfair or disrespectful way. Summarizing, AAL technologies for active aging do not cover the relational dimension of seniors, rather they are mainly related to an individual and medicalized dimension.

2.2 Technologies for Active Aging

In computer science literature, aging has often been portrayed as a problem which requires technological solutions [182]. The rationale is clearly stated: as people grow older, their physical and cognitive strengths fade out; technology provides the frame to support them at this stage of their lives. Recently, however, a few authors have challenged this rationale, warning us against stereotyping old age as problematic and challenging [182], [220] (as if other ages would not be as such). They argue that current research may easily lead to a reinforcement of ageism and possibly discrimination.

Research in computer science mainly addressed aging in connection with the development of assistive technology (AT). Beech and Roberts [47] identified three types of AT: supportive, responsive, and preventive technology. Supportive AT helps individuals to perform tasks that they may find difficult to perform on their own (e.g., medication reminder units). Responsive AT, based on detection and reaction, helps individuals to manage risks and raise alarms (e.g., panic buttons). Finally, preventive AT, based on prediction and intervention, mitigates dangerous situations and raises alarms (e.g., falls predictors). Ubiquitous computing research embedded AT design within ambient assisted living (AAL) projects. AAL refers to "information and communication technology-based products, services and systems to provide older and vulnerable people with a secure environment, improve their quality of life and reduce costs of health and social care" [67, p.253]. This view seems to chime in with the philosophy of "active aging", emphasizing the enhancement of quality of life of the elderly [165]. Some authors claim that Human-Computer Interaction (HCI) researchers have largely been concerned with the downside of aging [181]. Accordingly, they have contributed to the agenda which portrays the elderly as people in need of technological solutions, instead of promoting their engagement with a view to empowerment. Other researchers [220] supported this argument with a discourse analysis of 30 years of aging research published across the conferences sponsored by the ACM Special Interest Group on Computer-Human Interaction. These authors

demonstrated that the community has mainly described aging as a *problem* that can be managed with the help of technology. They attributed this tendency to the "prevailing societal and cultural attitudes (...) typically responsive to the aims of the funding bodies and governmental agencies that have commissioned the research" [220, p.2].

A literature review was conducted by Cozza, De Angeli and myself on the journal *Personal and Ubiquitous Computing* (PUC), from the inaugural issue of 1997 to 2014 [73]. This literature review is a response to the recent calls for critical reflection on design practices (e.g., [51], [192]). Our argument was built on different steps, drawing from our research experience. In this literature review published for a special issue of PUC, we reflected on how the articles published in it have discussed older users. We grounded our reflection on three themes (*paradigm, user,* and *context*) identified in our reading of the editorial of the inaugural issue, dating back to 1997, when the journal was called *Personal Technologies* [96]. At the time, personal technologies were emerging and forcing a paradigmatic change that the journal embodied.

The editorial attributed the emphasis on "personal" rather than "portable" technology to a new, more encompassing research agenda. This paradigm was defined as "extending the role of computers into perhaps the most personal of all areas of lifesocial interaction and personal relationships" [96, p.2]. The authors thus envisioned a new venue for scientific and technical articles related, not only, to the technological but also to the social implications of the "whole range of personal systems supporting mobile and interactive work and also being carried into domestic contexts to support home and social life" [96, p.1]. Moreover, the editorial posed a number of questions to the emerging field. Two of them in particular have influenced our reflection: "Who will the new users be?" [96, p.3] and "Where will the killer contexts be?" [96, p.3]. With reference to the first question, the authors suggest that "new user groups, such as families, children, students and the *elderly*, may become important. Which of these groups will drive the development of computing in the next millennium is a decisive factor, because products and services will be tailored to their own needs over and above those of other groups" [96, p.3, my italics]. Addressing the second question, the editors identified not only mobile technologies but also "more personal contexts", such as clothes and bodies, as new challenges to face in the field of personal technologies.

2.2.1 Review methodology

This theoretical framework motivated our systematic review of the *Journal of Personal and Ubiquitous Computing* that [220] did not consider in their review. We searched the Scopus database, which indexed only the current name of the journal from vol. 5(1) Feb. 2001 to vol. 18(8) Dec. 2014. We used the Collins Thesaurus for identifying the synonyms of the search keywords: *Elder(s)* (older person and senior), and *Elderly* (geriatrics, old people, OPAs, old-aged person, old-aged pensioner, pensioner(s), retired people, senior citizens, and wrinkles). The search was restricted to keywords, titles, and abstracts. The procedure was repeated on the *Journal of Personal Technologies* (1997-2000) in the Springer database.

No results were retrieved from the journal of *Personal Technologies*. A 45-article pool was retrieved from the PUC journal. All articles were reviewed, and nine of them were

Tot. paper reviewed (1997-2014)	On individual dimension and medicalization	On collective dimension, sharing and interaction	On studying system requirements and system evaluation
34	19	4 (of which one is an editorial)	11

Table 2.1: Main research trends in PUC on active aging

N. papers that present a user involvement of seniors	Preliminary user study (for user requirements)	Evaluation	Field study
13	5	8	2

Table 2.2: Frequency and type of interventions in which seniors have been involved in the design process (more types of intervention can occur in the same paper).

discarded, as aging was not their main focus. These papers indeed mentioned older people as one of the potential user groups, but they did not elaborate on age-related issues. The selection was run independently by me and another author of the review, who later met to reconcile. A final pool of 34 papers was used for the analysis. They were coded using the software ATLAS.ti, following the thematic analysis [63]. Paradigm, user, and context were used as main categories for the analysis. These main categories have been respectively articulated. The paradigms considered socio-technical, functional and hybrids (a mix of the two). The kind of user involvement was distinguished between informative, consultative, participative and absent. Finally, the context in which the technological solution was situated: indoor or outdoor. Yet, for the purpose of this chapter, I will consider only the category of user with the stereotypes and the involvement that this implies. For the full analysis, please refer to [73]. We noticed a prominent attitude to design for an individual medicalized user (Table 2.2.1).

In addition, with few exceptions, the process of designing AAL technologies is affected by negative aging stereotypes. The study also highlighted little use of qualitative methods, such as ethnography. This literature review shows the dominant functional attitude expressing a techno-centric perspective on ICT for seniors. The functionalist approach follows "the technological imperative" [39], according to which people and organizations should fit into the technologies, and not vice versa.

Here, the users, rather than providing useful feedback to improve the technology, are mostly involved in the evaluation stage where they are called to test acceptance and adaptability to the new system (Table 2.2.1). In this context, what emerges is the assumption that seniors are seen as problematic users because they are unfamiliar with technologies, such as in [99], [105], [136]. For example, Hamill [105] argued that seniors are not familiar with the personal computer because "it arrived too late in their working lives". Seniors are represented as disadvantaged with respect to technologies and their limited technological skills are intrinsic. From the systematic meta-review, other characteristics emerged as attributed to older users, such as vulnerable, technologically incompetent, mentally

and/or physically impaired, childish and asexual. In addition, gender is not considered as a relevant characteristic.

2.2.2 User

This line of inquiry concerns the understanding of older people as technology users. Following this line, we identified two main themes describing how older people were portrayed in the research (stereotypes) and the types of methodologies which inspired user research (involvement) [225]. Stereotypes are cognitive structures containing knowledge, expectations, and beliefs about what other people should be like and how they ought to behave [106]. While the term often evokes negative connotations, stereotypes serve at least two useful functions in tasks involving social cognition, including design. Firstly, they allow humans to categorize similarities and differences between themselves and others, favoring in-group cohesion and a sense of identity. Secondly, they act as judgmental heuristics, saving time and cognitive effort. Stereotypes, however, are often derogatory towards members of out-groups and are an important aspect of prejudice, discrimination, and hostility towards other people [37].

2.2.3 Stereotypes

As age (along with race and gender) is a primary social category, age stereotyping is automatic or formulated too quickly to be thoughtful and deliberate [50]. Research in social psychology contends that age stereotyping starts from a general categorization based on physical traits (grey hair, hair loss, hearing loss, and poor sight) and then articulates into a number of specific stereotypes, depending on the personality traits and behavior considered. Lack of competence (being it physical, social, or emotional) is a distinctive attribute of age stereotyping applied to interpret the behavior of older people in several life domains. On a positive note, older people are often perceived as warm. Stereotypes, be they positive or negative, are a simplification of the real world. In fact, one socio-technical article stresses that "older people are not a homogenous group: they do not live in the same places, they do not have access to the same resources, and they do not have the same abilities" [52]. Similarly, in another article, we read that a design-for-all approach may be inappropriate given that each person has specific needs [173].

The review revealed that older people's heterogeneity is largely ignored, mostly among functional studies. When considered, heterogeneity relates to diseases, capabilities, and habits and serves a functional purpose. In [146], for example, we found a reference to the concept of elderly "heterogeneity", followed by the technical proposal of "adaptation". In the introduction, the authors claim that most technological applications are either too general or too specific. Indeed, each older person has specific health concerns, capabilities and habits, and the deployment environment may be different from one instance to the other. Similarly, the needs of older people evolve over time and so does the deployment environment. Therefore, proposing an overly general or specific application is not a satisfying solution as it may lead to a rejection of the application by the final user or an inadequate deployment. This work is interesting, but it only proposes a technological solution to compose and modularize the complexity of the context of use, disregarding

the socio-technical implications of heterogeneity.

Reductionism is common among the articles, which presented nuanced versions of the negative side (incompetent) and the positive side (warm) of the stereotype. McLean [155] noticed that many studies are focused on negative stereotypical attributions such as frailty, dependence, inactivity, incompetence, and high resource consumption (e.g., [94]). For example, Vergados maintained that "the elderly population can be practically considered as a pool of patients" [217, p.575] treating "elderly" and "patients" as synonyms throughout the paper. This vision associates aging with an increase in costs [129], [222] and considers technology as a primary means to reduce the economic impact of the aging population. For instance, building on the stereotype which attributes memory lapses to stable conditions in older life, Szymkowiak et al. [205] suggested the development of several electronic memory aids. In this work, they echoed Vergados specifying that such technology was targeted to "non-average (population), e.g., the elderly or memory-impaired users" [205, p.2].

Only a small number of studies (e.g., [29]) moved away from the negative stereotype of senior life, exploring its more positive aspects, which include fun. Vanden Abeele and De Schutter's work [29] is particularly interesting, as it presented a digital game aimed at facilitating knowledge transfers between youngsters (aged between 7 and 10) and seniors (aged 65 or older). The game was designed with a player-centered approach, involving seniors and youngsters throughout the entire process.

2.2.4 User involvement

An important theme concerns the level of user involvement, considering older people and other stakeholders who are influenced by technology at use or design time. Drawing upon an extensive literature, Iivari and Iivari [119] define user involvement as one important dimension for evaluating methods and approaches of system development. They argue that user involvement is a "state reflecting the importance and the relevance a user attaches to a given system" [119, p.133].

Enquiring into the text and asking how users were involved in the design process, we analyzed the papers according to the user role. Following Damodaran [80], we differentiated between an informative role (users act as providers of information and as objects of observation), consultative role (users are allowed to comment on predefined design solutions), or participative role (users actively take part in the design process and can make decisions about solutions). This categorization suggested that the research presented in the PUC journal is often satisfied with an informative and a consultative user involvement. In fact, among the few socio-technical contributions, we found only one exceptional narrative about participative users' roles [159].

Many studies embracing the functional paradigm adopt an informative role. Here, involvement is usually restricted to data collection through interviews and observations, as in Blythe et al. [52]. In some articles, older people are not involved, and researchers use information generated by "surrogates" such as research colleagues (e.g., [129]), students, mannequins (e.g., [79]), and other people contacted through convenience sampling (e.g. [112]), involving older people's friends and family members. Except for the mannequins used in physical probes, all other surrogates are assumed to have, or to be able to acquire,

a good understanding of the users and their habits.

At times, the consultative and the informative roles coexist in the same article, as in [224], where older people were involved in an ethnographic study using a cultural probe to gather information on memory sharing activities at home (informative role). In a successive study, seven younger participants were recruited to interact with a prototype to evaluate usability. The authors justified their methodological choice stating that it was the first user study with the prototype. As a consequence, they preferred to involve "participants who are more likely to learn quickly and be flexible" and, more importantly, they needed "users who would not be confused or distracted by the system delay" [224, p.320].

The paper by Mikkonen and colleagues [159] is the closest to the Scandinavian tradition of participatory design. The authors presented a concept study aimed at finding out the key service needs of older people. These needs were gathered from the final users and from the experts applying participatory design approaches in the ideation sessions. However, the authors specified that the services created and tested in their study were dealt with only at the conceptual level. This is a frequent limitation of research pursued from a socio-technical perspective [131].

2.2.5 Consequent implications for design

The data highlighted from the literature review can be included in a wider framework, considering that designers are a social group significantly different from the social group represented by elderly people. Wilkinson and De Angeli [225] track statistics of the attributes of ICT designers. The percentage shows that the profile emerging from this group is represented by a 40-year-old, upper-middle class, white man. According to the psychology of stereotypes, the perception of the "otherness" is as strong as the social group is different from the "other" one [50]. Stereotypes acquire a negative connotation when they become stigmas or discriminatory prejudices. When stereotypes become a design attitude, they lead to a problem-solving approach, which of course implies that there is a "problem" and there are "problematic" users [73].

Research focusing on observing the social dynamics between designers and older adults during a design process, shows that older participants do not align to the researchers' negative stereotypical view about themselves and consequently refuse to use the technologies designed for them [170]. When contributing to the design process they react without recognizing themselves as "old" and so as potential final users, but rather position themselves as "helpful" in designing technologies for the wellbeing of "other" older adults [164]. Older adults openly report feeling threatened at times as "if because you're retired your brain has gone", suffering patronizing attitudes from the researchers [70, p.22]. In fact, both the Anthropology of Aging [185] and Critical Gerontology [198], including interdisciplinary encounters [170], have stressed that seniors should be considered as active subjects, and they have already stressed the importance of being "anti-ageist".

Wilkinson and De Angeli [225] describe the process of design failures that involve older users and designers, as reiterative circles of missteps. The mismatch between stereotypes of designers and perception of the self by the seniors suggests that active aging is a form of ageism.

Moreover, there is also research showing that older adults are as digitally capable as other "user groups" [188], [204]. This, however, depends on how the technology is designed. Computer usability is not universally intuitive since computer interfaces are metaphoric: the graphics objects such as the desktop and the folders and files for system storage or the concept of the account, the login or the password, are culturally situated metaphors. Computer metaphors are not natural nor neutral, since metaphors are agreements in terms of meaning, negotiated in specific cultural contexts. Metaphors dramatically change from one culture to another [93]. In addition, for this reason, an anthropological approach is needed to understand seniors imaginaries and possible "user requirements".

To summarize the discussion on the narratives on active aging, what I argue is that the active aging discourse is a form of ageism. From an anthropological perspective, the mismatch emerging between many design interventions and seniors' reactions, suggests that seniors can be approached not as a social group labeled by age, but by focusing on what they do in terms of activities. Re-locating seniors in the complexity of their contexts, with their own cultures, a constellation of references, practices, and values can be unearthed and understood through an anthropological gaze to the field [60].

In conclusions, AAL technologies for active aging do not cover the relational dimension of seniors; rather they are mainly related to an individual and medicalized dimension. What results is that the seniors are marginalized in the design process. Indeed, the majority of the articles reviewed describe a user involvement only during the evaluation process. Adopting an anthropological perspective helps to approach seniors "in their own terms", understanding the complexity of the context in which they live, their constellations of meanings, practices, and values. Or, more simply, understanding their culture. This section analyzed and critiqued a normative approach to active aging. Moving forward, the next section looks at approaches in participatory design that start from the seniors' points of view, moving from those that are closer to system design and active aging to those that go towards commoning design.

2.3 Shifting the focus from the user to the common

2.3.1 Community-based Participatory Design with seniors

Over recent years, a number of scholars from different disciplines, such as Participatory Design [58], Sociology [164], Psychology [191], Science Technology and Innovation Studies [169], and Gerontology [125] have paved the way for a new discussion about the relationship between aging and technology. Scholars aligned with social gerontology research have been among the most critical voices [127], [169], [220]. These scholars have provided the intellectual tools to criticize mainstream computer science research, which portrays technology as a solution to many age-related problems. While arguing that this problem-solving perspective reinforces negative stereotypes about older people, they have emphasized heterogeneity and agency as important characteristics of those categorized as "older users".

The new movement challenged the mainstream stereotype of older people as socially, politically, and economically inactive subjects, in other words, as a burden on society.

This opinion has been present in aging policies in North America and Europe over the last decades [49], inspiring a "rhetoric of compassion" [68] which emphasizes the need for inclusion of, and equal opportunities for, older people. As mentioned, in Europe, the trend dates back to the early nineties when the European Commission funded a series of initiatives for counteracting the effect of its rapidly aging population [158], [221]. The rhetoric of compassion has affected the aging European debate ever since, establishing a consolidated vision of the elderly as people requiring specific policy responses and technological solutions to help alleviate their problems.

Among the above-mentioned disciplines that challenge ageism in policies and technology, Participatory Design particularly privileges the empowerment of the agency of the people considered those entitled to make decisions about the design of the technologies they will use. With PD, I refer to a design approach developed in the context of Scandinavian trade unions in the 1970s, which aimed at improving the quality of life of the workers in the workplace. This could be achieved with the collaboration between system designers and workers, in the improvement of working machines. Lately, this methodology has been exported outside the workplace, leading to collaborative methods of design [195]. In Participatory Design there is an increasing research line that tries different ways to develop technologies for aging well, engaging seniors in various ways along a co-design process. Drawing upon the heterogeneity of aging [220], [199], [139] (and of design researchers) implies enacting heterogeneity also in design strategies.

Such a form of PD works more closely to system design, involving seniors only marginally in co-design processes. Joshi and Bratteteig [124] explain a project done in a Norwegian residence for elderly people involving the making of a digital broadcasting radio. In the paper, it is not clear who initiated the project (the designers or the residence or the elderly people), but the aim was to prevent usability problems given by the national shift from an analogic to a digital broadcasting radio standard. They show that seniors with limited capacities for participation feel more comfortable and performative in making judgments on a prototype rather than co-designing it and so they are primarily involved in a consultative role of testing different buttons through the design process. The freedom of the seniors involved at this stage of the project - an issue discussed by the designers - enabled them to skip workshops, due to health issues or personal choices.

Similarly, Vines and colleagues [218] engaged with seniors from a senior national association, in re-thinking and re-designing the check system from a paper-based one to a digital-based one, according to British policies. Despite the anti-ageist view of the authors, the participants' involvement is limited, probably also due to their reluctance to accept a new check system. Seniors disliked any solution proposed by the designers that substituted the old paper check system, and they expressed their preferences on the solutions proposed, only enacting a consultative and critic role and evaluating two different prototypes.

Rogers and colleagues [182] worked in Britain with seniors that live outside a retirement home and show that they can be very creative in co-design prototypes using a Makey-Makey (an electronic invention tool and toy). The workshop participants, having been asked to interact with the Makey-Makey, found strategies for use and possible applications in real life, especially designing games to play with their grandchildren. This confirms

what Neven also reports [164]: seniors are willing to help more if they are designing for 'others' rather than for themselves.

Focusing on personal subjectivities, Leong and Robertson [135] use participatory design workshops to empower seniors to express their values and views about aging. In this case, PD techniques are used as meta-design tools to enable people to articulate their constellations of meaning about how they age and of relations with the self, family and friends and communities. The authors also unearth what the means of technology are from seniors' perspectives. As PD techniques, they ran pilot workshops of speed-dating as a playful ice-breaking tool to allow participants to make acquaintance with each other. This set the conditions for the following activity, in which seniors brought personal artifacts and, through them, discussed personal experiences of aging.

Others moved their attention from the subjects to their practices. Researchers have conducted design work with seniors considering them not in their singularity but in how they are part of communities, nodes in a constellation of relationships. As anticipated in the Introduction 1, articulating PD by considering design "with, for and by communities" [87] is an object of inquiry of Community-based participatory design. Community-based PD [87] is a branch of participatory design that works outside the workplace with communities. It considers a community in three ways: in relation to geography, to identity and to interests and practice. DiSalvo et al. explain that among identities that bind a community, such as gender, sexuality, ethnicity or physical abilities, "age is one of the more common identity classifications, with projects developed specifically with elders or youth" [87, p.184].

For instance Brandt and colleagues [60], approach aging as a collective phenomenon, considering it as a "situated" phenomenon in communities of practices. They coined the term "situated elderliness" to argue that the context and the situation in which a person enacts categorizes that person as elderly, whether this person agrees or not. Brandt and colleagues worked with a Danish senior community center and discovered that even though their members were tagged as elderly, they had a rich spectrum of different opinions about how they perceived and enacted their elderliness, and consequently, how they perceived the usefulness of technology.

Botero and Hyysalo [58] discuss the design in a daily practice context. They offer a community-based PD account with a Finnish co-housing residence that has a clear agency. The project started from the senior inhabitants of the co-housing residence. They engaged with the researchers in a 9-year project to improve the organizational and communicative aspects of the co-housing. The result was a construction of a community calendar (via Intranet) and the designers' attempt to propose a video connection to welcome the guests that ring the bell. In respect of this latter design implication, the seniors preferred to adopt a simple mobile phone that is passed through the residents on a schedule-base. Participants and researchers developed a trustful long-term engagement that remained open for future collaborations.

Shifting the attention from the subjects to the practices of a community, we also find community-based PD projects in which seniors are key actors in the design process and yet they are still not considered as such. For instance in the works of Bidwell, Winschiers-Theophilus and colleagues [48], [226], in which a Namibian rural community engaged in a

project on digital preservation of their oral knowledge. The elders of the community play the role of primary stakeholders and decision-makers, and in this case, it is evident how the conception of aging is cultural. The seniors are only a narrow part of the community and yet have a political and dominant role in the project. Regardless of their age, they are not considered as a user group, but they are participants, part of a community that shares a common issue of herbal lore preservation.

Moving from PD works that are closer to system design, PD works closer to community-based PD shows that deconstructing the contextual stereotypes that affect a user category, allows for the opening up of new discourses that are disjointed from the stereotypical characteristics of a certain 'user group'. Moving from a user perspective grounded in post-Fordist consumer categorizations of market-segments, to a community and then common perspective has a twofold benefit. First, it opens up a design space where power-relations among actors and with technology can be rebalanced. Second, the recognition of a commons and its nurturing are empowering for the people involved and for the common itself that still recognizes the biographical and intersectional characteristics of the people involved (such as age, gender, background...) but they stop being the motivations for design. For this reason, Participatory Design is a promising methodology to promote an agenda of designing as a commoning practice.

2.3.2 Participatory design as commoning

Participatory Design is an approach to designing systems together with the people that will use them, to involve them in the decision-making process of the system and to give them ownership of the technology designed, re-balancing power-relations in favor of those that will use the technology [195]. The last few years have been characterized by a renewed attention to the politics of design. This interest pervades several domains, from traditionally politically engaged schools such as that of Participatory Design (e.g., [195]) to the more recent emphasis of social innovation in the field of Industrial Design (e.g., [149]). The attention to the politics of design reflects the concern of some scholars in the field of digital technologies towards the search for new forms of social cooperation that can bring about a viable future (e.g., [102]). Politics is important in the evolving landscape of technology design as technology increasingly focuses on a variety of communal objects, leading beyond the workplace and individual experiences [53]. In this context, particular attention has been given to participatory design as a commoning practice, a practice that can nourish the common(s), articulated through concepts that include: publics, matters of concern, community-based PD, things, and infrastructuring [154].

In technology design, some scholars have recently discussed the concept of public, understood as a group of people concerned about an issue who get together to take care of the issue. Part of this literature has paid particular attention to the processes of infrastructuring [71]. In this work I refer to design as depicted in the infrastructuring debate: a motivated transformation of the world [172], artfully integrating practices, people, and artifacts [201] while establishing a network of decisions [8] on the future thing that constitutes the artifactual object of design [92].

In this framework, I leverage the work of participatory design as commoning practice [207], which expanded the attention to public formation brought to the fore by Le Dantec

and Di Salvo [81]. In particular, I highlight how the articulation of the existing "matters of concern" [132] leads to a conceptualization of digital technologies. Embracing the design process as a "matter of concern" [35] implies recognizing the intrinsically political aspects of design, and its participation in the definition of a social agenda, rooted in questioning the *status quo* and transforming the world. Therefore, the public formation does not only entail the engagement of people with a particular issue but also with the object of design.

Drawing upon the lessons learned from anthropologist Christopher Kelty on Free and Open Source developers [128], this engagement can sometimes be perceived as "recursive", because the people engaged with the issue are also concerned with supporting their means of existence as a public. Under this view, the design process becomes a collective inquiry on the "invisible mediated structures around them [=people]" [138], intervening directly on "structuring future social relations" [ibidem] in which, according to the foreseen recursive character of the public-in-formation, people appropriate the results of a design project in order to sustain the results themselves. In such a way, the design process constitutes the basis for nurturing social collaboration and social relations, promoting recursion and nurturing the common [206].

Besides the traditional legal conception of commons, considered as shared natural resources [167], and the recent conception of digital commons as intangible ones [115], an activist conception of the commons considers them as a relational quality among a group of people [55] especially in contrast with the commodification of common goods. This conception intertwines with the one of common, initially promoted by Hardt adn Negri [110] and, in participatory design and social informatics, by Hakken, Teli and Andrews [102] and Teli, Di Fiore and D'Andrea [208]. This conception goes beyond the relational quality of the commons, considering the common (without the 's') as what makes us human. The common can be defined as the ensemble of the natural elements such as land, air, and water, and of the immaterial or artificial elements that are cultural and social products, such as languages, ideas, affects, etc. The common, connects human beings and it is originally neither private nor public property, although this large ensemble of material and immaterial elements is embodied in the economy and political regimes [110]. With the expression "nourishing the common", or "commoning", Teli [206] refers to the whole set of practices that have the effect of allowing a growth of possibilities for people to be connected by symbols and that preserve and nourish, literally, the material resources that allow people to be tied together in a positive and liberating way.

I argue that, although the common is a binding that ties us all as living beings in our planet's ecosystem, an important matter is becoming aware and recognizing that a 'thing' is a commons. As Bollier says about the commons, we can argue its validity about the common: "The beauty of the commons is that we can build them ourselves, right now. However, the bigger challenge is**:** can we learn to see the commons, and more importantly, to think like a commoner?" [55]. In this research, I advocate that something that is affected by a process of awareness can be called a "common-yet-to-be" when it is not recognized as a common yet. In this, I echo Aristotle's metaphysical view on dynamic as potency and *entelecheia* as actuality, which describes the dialectic motus of a being *(ousia)* when it is not yet developed into something else (but it is able to) and when it is fulfilled. A "common-in-potency" or a "common-yet-to-be" aims at underlining the

in-becoming, the continuous changing inner to a design process.

This interdisciplinary literature review has been an incremental process through this research. Examining AAL literature has been enlightening in knowing and deconstructing hegemonic narratives in academia that are influenced **by** and influence**,** European policies on a macro level. These narratives are then reflected in the construction of a European and Italian discourse on aging in the cultural contexts of the every-day. Acknowledging these narratives has been an incremental work in parallel with the empirical work done during fieldwork.

We have seen that even among seniors, PD for commoning happens with people not disabled and not hospitalized. In addition, in choosing my case studies, I chose contexts in which people are not hospitalized, despite many of them having health issues. The question remains open about how people hospitalized, or generally inaccessible because of cognitive impairments, such as dementia or alzheimer**s** (e.g., [114], [59] and [124]), can engage with a PD as commoning.

Chapter 3

Methodology

In this chapter, I describe the methodology I used and in which I situate my contribution. The chapter is divided into four sections: the first section discusses the methodological approach; the second section explains the methods applied; the third section describes which techniques were adopted and for what purpose; in the last section the methodology, methods, and techniques are systematically laid out, for each of the case studies, in a narrative table that illustrates the procedures that were followed. Finally, a descriptive time-line provides a temporal visualization of the incremental learnings, which constitute the elements of an intersectional Design Anthropology approach to Participatory Design.

To answer the research question of this work,

How can we learn to recognize the Common through a participatory design process?

I propose a design anthropology critique of active aging as ageism in the design of information technologies for seniors. With ageism, I refer to narratives coalesced around the label "active aging" in European policies and system design that focus on seniors as a homogeneous group of people in need of help (Chapter 2)

While doing my research, I gained a Design Anthropology perspective on active aging, I was able to contrast the institutional and system design narratives with the narratives that unfolded as a result of the fieldwork. This was key to opening up a discourse on the common, re-framing the "users" not just as elderly people. In this research, seniors are considered, not only by the aging marker, but also by restituting the richness and complexity of their identities (and the researcher's) as intersectional [77], hence formed by different layers such as age, gender, educational level, regional origins, etc. In this sense, what Design Anthropology means for me adheres to what Faye Harrison describes as a decolonizing anthropology agenda: "demystifying hegemonic ideologies and producing/co-producing forms of knowledge that can be useful and potentially liberating for the world's dispossessed and oppressed" [113, p.8].

Now, I move on to explain why I chose a Design Anthropology approach with an intersectional focus in Participatory Design as an epistemological framework in my research. Drawing from this, I illustrate the methods (ethnographic and design) and the techniques (interviews, workshops, etc.) to which I referred.

In the narration of the "otherness", the construction of stereotypical views to interpret the world has been addressed by anthropologists within post-structuralism, since Edward Said's, [186] critique of the construction of eastern exoticism (Orientalism), as a hegemonic

and Eurocentric lens. I take a narrative strategy similar to the one of Said, defining as "Ageism" the hegemonic, designer-centered lens on seniors. In taking that position, I engaged in a reflexive stance, following Paul Rabinow [175] in *Reflections of fieldwork in Morocco*. For Rabinow, the construction of the alterity can be read as a hermeneutical cycle of interpretation of meanings, the exploration of the other as an aspect of self-knowledge: "the comprehension of the self by the detour of the comprehension of the other" [175, p.5]. The construction of ageism is then recognized as a negative encounter with the "otherness" of the seniors. Leveraging the anthropological gaze to recognize seniors as active subjects situated in a cultural and social context opens up a space for forms of technology design that involve the seniors, not only as testers, but as full participants in the design process, in the tradition of Participatory Design [197].

The mismatch on the "otherness" between seniors and researchers is part of any prolonged encounter between different subjects, like that which takes place in a design process, and in fact, it was encountered in the field studies I conducted. *A Design Anthropology perspective on Participatory Design does not eliminate the mismatch but move it to the center, as a way of improving relations and practices.* The combination of Design Anthropology and Participatory Design is pragmatically convenient. In fact, the attitude to ageism becomes problematic when imported into the design and the implementation of new technologies, leading to design failures, both regarding usability and domestication, and regarding successful products [225]. From an anthropological perspective, the mismatch emerging between many design interventions and seniors' reactions, suggests that seniors can be approached differently from a social group labeled by age. Instead, a constellation of references, practices and values that can be unearthed and understood through an anthropological gaze to the field, which focuses on what activities seniors take part in, can locate the complexity of the context and with, its own culture [60].

In Design Anthropology, the stress is on Anthropology, instead of Ethnography, to emphasize its ability to provoke designers, rather than to inform them [130]. For example, two projects that move a provocation through Design Anthropology are those of Elizabeth Tunstall and Yoko Akama et al. Tunstall [214] moves a critic to Design innovation, as the use of design to generate new business outcomes. Akama et al. [32] argue for the need to design disruptions as political awareness, possible from the encounter between Design Anthropology and Participatory Design - that has a long tradition of disruption. Tunstall advocates for a Design Anthropology as a decolonizing methodology, that aims at recognizing the dynamic character of a culture and a system of values, its fluidity among different cultural systems, never boundary defined and the capacity to create new recombinations of values by a group of people [214, p.240]. With this approach she criticize the IDEO and Rockefeller Foundation's initiative and imperialistic narrative of the *Design for Social Impact How-to Guide* as example of design innovation. Instead, she shows how she developed a project with the Australian Aboriginal art-making communities, to support Australian Aboriginal arts, co-designing new forms of technologies, business and service models to face the commodification of Aboriginal artists.

In Akama et al. the encounter between Design Anthropology and Participatory Design is meaningful as Design Anthropology can make PD aware of invisible disruptions that happen in a design process, in the complexity of the settings and the stakeholders that

participatory design has to face since it came out from the workplace, its traditional environment and ICT solutions, its traditional outcomes. Also, a Design Anthropology approach highlights "the need to disrupt the designer-researcher in order to surrender to contradiction and contingency as part of future-making" [32, p.132]. In her vignette, Akama acknowledge how she and her team had to surf and negotiate between power-tensions when working with Aboriginal and Torres Strait Islanders (ATSI), on a platform to collect stories to sustain nation-building that the Australian government does not recognize. Indeed they faced tensions of whose participants were entitled to tell stories on behalf of their community, who decides what cultural relevance they have, who will own the stories once they are on the platform.

I selected these two examples to show how design anthropology can be already very close to participatory design, even without framing it within (e.g. Tunstall). Nevertheless, there are many other examples of design anthropology projects that are more speculative and in which the designer-researchers are less involved in a participatory process [103], [140].

3.1 Methodological approach

3.1.1 Ethnography in Design Anthropology

The use of ethnography in IT design has been mainly instrumental in pursuing what Dourish [90] critically calls "design implications". Nevertheless, pioneering research in PD has explored different applications of ethnography and design, which Blomberg and Karasti [51] categorized as: *Ethnography and Participatory Design in reflexive relation; Ethnography as a component of Participatory Design methodology; Ethnography to inform design.*

These intentional differences have been transferred to the discussion about Design Anthropology, yet translating them in practice remains challenging. As Wendy Gunn and Jared Donovan clarify in the Introduction of *Design and Anthropology*: "Doing anthropology of and for design gives focus to the present world of the user, or what designers need for design. Doing Design Anthropology *with*, in contrast, requires that we engage *with* (and build relations between) peoples and the designer. Doing anthropology *with* requires practitioners to consider ongoing continuity between past, present and future temporalities" [89, p.9].

The core of ethnography is participant observation, and through this, a central element in ethnography is building trustful relationships with the informants and this is the first step to accessing their points of view. Ethnography focuses not on losing these minor local details in favor of broader generalizations and in this way, it focuses on restoring scientific status to subjectivity. Then, it draws general theories without losing their original background, in an ongoing process of developing meaning and interpretation [98].

This process lets the informants become active participants in the reconfiguration of their requirements and the design process. Participatory Design follows and integrates ethnography, enabling the participant to take part in the design process actively. This method of user empowerment is essential to realize technologies that address the user's

needs. As for ethnography, in PD, the research is conducted not on the participant, but *with* the (potential) user.

Therefore, what can anthropology add to ethnography in PD may be of importance. Through the 1980s anthropologists and ethnographers such as Blomberg and Karasti [51] advocated the adoption of a more reflexive approach of ethnography in conjunction with actor-network theory, reflecting on the process of design and the corporate system within which they worked. This research direction called for the need to go beyond ethnography as a simple tool of knowledge of the world. An insightful ethnography cannot be realized without relocating its anthropological framework, focusing the attention on those "crumbs" that fall during the research. Also combining those small crumbs, the anthropological research generates general meanings and interpretations.

3.1.2 Design Anthropology in Participatory Design

Relocating ethnography in its anthropological roots seems a matter of negotiation of temporality and duty to the institutions with which the researchers collaborate, and are employed by. For this reason, design anthropology "is not and cannot be ethnography" [120]. Since it enacts a deep hermeneutical process of reflexivity on and through the multi facets of research and design, the boundaries of which are blurred. The capacity of anthropology to make the familiar unfamiliar, and the unfamiliar familiar, is a capacity of taking distance from the "otherness" that permits the interaction with Participatory Design at different levels of engagement, making PD familiar and unfamiliar. Therefore, Anthropology can be relocated as an Anthropology *within* Participatory Design, and, an Anthropology *of* Participatory Design. Embodying an anthropological lens is an invitation to participatory design to re-consider itself critically as a cultural process or a performance.

Anthropology *within* Participatory Design triggers negotiations on what "participation" means and how it is performed by the actors involved (designers, participants, stakeholders, etc.). Anthropology within PD suggests possible changes in the final goal: from product design for active aging to a critical IT design, considered as a cultural phenomenon. The plus of "participatory" in design is to propose design as a participatory and reflexive conversation. Anthropology of PD follows the path traced by Suchman [203]and Blomberg and Karasti [51], eliciting PD as a cultural process and triggering reflections on its applicability in contexts culturally different from the Scandinavian one. In this way, reflexivity becomes a practice performed by researchers and informants, explicitly participative, *within* and of participatory design.

In a Design Anthropology approach *in* Participatory Design, reflexivity becomes the style of participatory design: involving the participants (or letting the participants involve the design anthropologists) in negotiations where there is an awareness of personal and cultural meanings, imaginaries and expectations. The design process and the context are made visible, achieving a more authentic point of view from the participants' perspective. In this context, a critical anthropology *of* design acquires meaning. As Lucy Suchman argues: "I believe that we need (...) a critical anthropology *of* design (...) [it] requires, among other things, ethnographic projects that articulate the cultural imaginaries and micropolitics that delineate design's promises and practices" [203, p.3].

The necessity for a Design Anthropology that looks at an anthropology of design as its way of creating is to relocate the design in the micropolitics of the context. Indeed, participatory design presents dynamics of power that depend on the context in which the process happens. For example Tone Bratteteig and Ina Wagner explain how in their experience of over 20 years in PD projects, power-dynamics had a dominant role [61].

Situating Participatory Design in context allows us to go beyond the political imprinting of a practice of undefined democracy, making it intimate and personal, relocating practitioners and participants in their living context, recognizing that a political process begins, at the first instance, on a personal level. If the personal is neglected and excluded from the design process, for the sake of impersonal and artificial objectivity of the research (Donna Haraway called it "the voice from nowhere" [108]), micropolitical dynamics remain underneath, emerging as incomprehensible and unsolvable design problems such as issues of power, decision-making and expectation.

An anthropological approach unearths the dynamics in a specific context as well as the blurring borders of the context itself. The passage from anthropological descriptions to design prescriptions is not straightforward and neither is it always necessary. What anthropology brings to attention in the design process is the process itself, including the dynamics of power between the actors involved (designers, co-designers, stakeholders, the university institution, etc.) and their decision-making [61]. These reflections occur on the way to achieving a final design result, but do not take part actively nor are critically examined by the participants in the design process.

3.1.3 The "culture" problem in Participatory Design and the reason for a feminist intersectional prism

This shifting of viewpoints opens up a post-colonial horizon in Participatory Design, considered as a culturally-located practice. Pelle Ehn, representing a Scandinavian approach to Participatory Design, describes PD as a "democratic and participatory process". Since then, it has been considered by scholars as "the" Participatory Design method but is in crisis when it is applied to contexts significantly distant from that of the original culture of PD [126],[214]. Due to this, PD must adapt itself to the context and, furthermore, open a window to the micropolitics of the situated social environment where the design intervention aims at being. Participatory Design as Design Anthropology becomes a lens through which it is possible to understand the context by interacting with the participants. It also allows for an understanding that the designers are part of the context and that they reflexively bring their own micropolitics - or, for instance, that from the academia they are a part of, [206] - into the design process, but that designers are influenced as well by the dynamics enacted by the participants.

I follow Kjaersgaard's and Boer's [130] and Smith's and Kjaersgaard's [197] suggestions for considering Design Anthropology as cultural critique. I advocate for a design that needs to be critical, not just for the sake of an academic discourse but also with a broader perspective to be developed with the potential users/informants.

Aging is a very self-reflective phenomenon, and when it is investigated emphatically, research inquiry is continuously confronted with researchers' biographical experiences, their relationships with grandparents, relatives, loved ones, etc., how researchers deal

with death, and so on. Behind any scientific achievement, there are always personal biographies. Being aware of this does not mean diminishing scientific rigor, yet allows for the diminishment of the distance between scientific findings and real-life contexts, relocating the former in the latter, and making them, thus, more applicable in every-day life. Moving from the particular to the general, examining institutional and personal narratives with an anthropological lens, I agree with Cristhine L. Fry [97] when she argues that: "Old age itself can be seen as a new cultural space and a byproduct of the forces of globalization" [97, p.194]. Consequently, active aging is also a product of capitalism in which being "active" alludes to being "productive" and that this activity can be measurable by technologies for wellbeing, such as AAL technologies. It is still an individual concept of aging, built on the idea of quantification of human life. What the micro-narratives unearth is an invitation to shift the attention to a more social and collective dimension, more complex than a singular person, thus more difficult to measure quantitatively.

A feminist approach is particularly suitable for criticizing the stereotypical user of active aging [43], [202] since it focuses on the theory of the difference [141] and also shares elements in common with technology design [42]. Even if "feminism" is misunderstood in the public realm as in academia, considered as a singular perspective and "labeled extremist, unpalatably political, and anti-male" [43, p.iii], feminist principles are embodied in IT design, though they are not explicit. For example, Shaowen Bardzell [42], keynote speaker at the Participatory Design Conference 2014, lists six feminist "qualities" of interaction design: pluralism, participation, advocacy, ecology, embodiment, and self-disclosure. I suggest bringing Bardzell's perspective on feminism to participatory design with seniors, starting from (but not limiting to) gender. In fact, gender as a cultural and social product is a useful "ax of inquiry" [30] to be considered to investigate users' diversity in design models and the usefulness or harmfulness of ICTs [69].

There are affinities between feminist gerontology and post-colonial inspired design anthropology of active aging. Both, as inspired by critical theories (feminist and post-colonial theory) challenge stereotypical views of aging. A feminist approach has the value of focusing on the intersectional context of aging, starting from gender. Quoting Ruth E. Ray "the study of aging (...) is a woman's issue", and referring to demographics: "Currently, women make up 63% of the people over 65 in the United States and close to 75% of the elderly poor" [177, p.674]. Furthermore, Ray points out that the primary caregivers are and will remain predominantly female (including professionals and informal caregivers, such as wives, daughters, etc.).

Although there are many "feminisms", a common pattern in feminist theory is to deconstruct the category of "woman" (as well as that of "man"), analyzing it as a cultural product that is performed through norms, practices, and narratives. Therefore, a feminist inquiry unearths attributes and power structures, such as age, ethnicity, class, and race.

A feminist post-colonial approach is a powerful combination to challenge active aging (doing design anthropology of and with seniors) and participatory design (doing design anthropology of and with the designers). Indeed this approach aims to boost agency [202] among seniors and thus to enhance their proactive and critical participation in designing with and for them. Finally, this approach helps the designers to relocate themselves

reflexively, as subjects in a complex world.

In this context, feminism in its intersectional articulation is a strategy to reveal multiple layers of cultural and power-dynamics. Only from their recognition does it become possible to deconstruct them. Feminism shares with post-colonialism the critique of the pre-existing power structures, historically and cross-culturally patriarchal. I applied an intersectional focus doing Design Anthropology in PD since PD as a field of inquiry suffers from a superficial concept of what "culture" means [101]. As an experiencing phenomenon, culture requires being more deeply articulated if we aim at challenging hegemonic narratives and at creating spaces for commoning practices. In PD, culture is mainly considered as a monolithic, empirical concept, not variable, or even in a Manichean form of the western-non western contexts [101]. Problematizing culture in PD becomes necessary in order to deconstruct hegemonic narratives and face strategies to cope with the precariousness of informal projects, yet to also do design as a commoning practice. Problematizing culture as a monolithic concept opens up to conceiving it in anthropological means - culture can be defined through multiform and unstable phenomena, but not as a stable and empirical unit.

I deploy intersectionality as a lens of analysis, as a focus of attention to look at "elderly" people not just through their aging layer. How feminism can benefit design anthropology is not yet extensively articulated, although some scholars highlight their connection with decolonizing feminist theory, such as Dori Tunstall [214]. Looking at active aging with an intersectional lens, I moved the discourse about design anthropology and intersectionality outside their traditional and historical contexts, such as post-colonial discourses in ethnic minorities and so-called developing countries [121]. It has been discussed by Jeoffrey Bardzell and Shaowen Bardzell how in ICT design, "the user is a discursive construct" [41], concerning the attribution of different characteristics functionally chosen to shape a user group, often for economic purposes. This research aimed at working with seniors in a different way: applying a critical perspective on the elderly, considered as user market segments, shifting perspective from the singular persons to their interdependencies and matters of concern as intersectional identities in complex contexts.

My attempt to answer my research question is that a Design Anthropology approach in Participatory Design with an intersectional lens can be useful to make politically engaged projects that nurture the common. I aimed to investigate how participatory design can make politically engaged projects that nurture the common in institutional environments when the anthropologist-designer is operating in precarious conditions. I have previously argued that PD as commoning is a strategy for balancing power and decision-making and for self-reflexive re-imagination of people that use technologies. In the next section, I explain the methods adopted: ethnography and co-design.

3.2 Methods: Ethnography and Co-Design

3.2.1 Ethnography

The methods used in this research are ethnography and co-design. In the following section, I will give an account of those two methods, and subsequently, they will be articulated in techniques, describing how I apply them in my research.

In Anthropology, ethnography has a double meaning: as an epistemological process and as a literary genre [44, p.295]: "Ethnography (in both senses) may profitably be envisioned as one point of an anthropological triangle. The other two points are comparison and *contextualization*. Together, the three points of this triangle define the operational system by which anthropologists acquire and use ethnographic data in writing ethnographies (...) This anthropological triangle of ethnography, comparison and contextualization is, in essence, the way in which socio-cultural anthropology works as a discipline to explain and interpret human cultures and social life" [44, p.295]. The ethnographic work presented in this thesis focused more on contextualization, especially when adopting design techniques, and on comparison, especially when gathering different images of aging (in urban and rural areas, in gender-diverse groups). Both contextualization and comparison contribute to describing the learnings in progression (see timeline in Figure 3.1).

Ethnography as a form of writing is conditioned by the process of knowledge construction represented by the abovementioned anthropological triangle. "As a written account, an ethnography focuses on a particular population, place and time with the deliberate goal of describing it to others." [44, p.296]. As a process of knowledge, ethnography is composed of different parts, which are summarized here:

- *Getting access to and setting the fieldwork*: this requires the negotiation of one's presence and one's reason to be hosted in a particular setting. Historically, fieldworks took place in "exotic" communities (see for instance the works of Malinowski [148], Mead [157] or Levi-Strauss [145]). Nowadays it can be in a workplace in a financial building ([209]) moving between different geographical areas (multi-sited fieldwork), following organ trafficking smugglers ([190]), etc. The crucial actors of getting access to the fieldwork are the gatekeepers: persons that sympathize with the anthropologist and that somehow have a relevant role or have a reputation inside the particular setting that the anthropologist aims at gaining access to. Gatekeepers are often curious and savvy persons, capable of critical reflection on the cultural and social setting they are part of. There have been academic discussions on the fact that the field is not a fixed entity that the anthropologist simply has access to, but that the field is continuously re-defined and negotiated [34]. While I acknowledge the open-endedness of fieldwork, it has been useful for me thinking of it as a phenomenological construction of how I perceived a particular cultural environment, especially while I was doing it. Therefore, I consider fieldwork as a phenomenological construction useful for orientating and for building constellations of meanings, as well as for taking practical choices that situate the researcher in the every-day participant observation work, especially in building trustful relationships of mutual respect. For instance, in setting the fieldwork with the second garden community (see Chapter 7), I carefully declined the offer of "friendship" from the carpenter. Similarly, I had to prevent, in strong terms, a master's student that was participating in the workshops from accepting lifts from the participants or calling them to arrange independent meetings. I chose not to be involved in friendship type relationships but rather to keep a professional level of engagement in order to maintain the mutual respect that I had barely gained in the previous months of negotiations. Not engaging in friendship relationships with the participants allowed me to keep an independent position, avoiding tricky situations such as taking one side instead of another in case of arguments between the participants.

- *Doing participant observation during fieldwork*: participant observation is the skill and practice through which anthropologists acquire information that is then translated into field notes. In anthropology participant observation means observing a cultural phenomenon with the eye of a stranger while practicing and performing it. The knowledge of a cultural practice is gathered by experiencing it. This leads to making familiar what is unfamiliar, understanding the otherness through the body and the embodiment of unfamiliar practices. Vice-versa, participant observation leads also to make unfamiliar what is familiar. For instance, while I was working with the participants of the Digital Lab, observing them in doing on-line research, I realized how cultural situated the metaphors represented by the icon buttons recall a specific cultural background - that of the generations that worked in offices and with PCs. For instance, a floppy disk that means 'save file' or a lens that means 'search' look trivial and familiar, until when they are made unfamiliar through the encounter with the other. In the same way, the unfamiliar logical process through which the participants accessed a web page became familiar since it made perfect sense: double-clicking to open a browser link in the "on-line dimension" since in the "desktop dimension" everything is opened with a double-click. After all, how can one distinguish between on-line and off-line dimensions if the lab PCs are always connected to the Internet?

- *Writing ethnographies*: In *The Interpretation of Cultures* (1973) [98] Clifford Geertz discusses jotting and the making of "thick descriptions", referring to the process of writing ethnographies and building interpretations of cultures. There are mainly two levels of writing: jotting or scratch notes and field-notes. Quick scratch notes are taken during fieldwork whenever it is possible, depending on the situation. For instance, it was often not possible to make scratch notes while I was running a co-design workshop or while I was gardening, but it was easy to do so while I was facilitating the Digital Lab or while I was attending the lessons at the University of the third age, in the mountain community. When it was not possible to make scratch notes, a useful trick was recording voice-notes with my smartphone, as soon as I was alone (inside my car or walking to my office). The in-depth type-up of field-notes from scratch notes is carried out afterwards, as soon as the ethnographer has a quiet moment to reflect and re-read the scratch notes. Margaret Mead warned of the importance of writing descriptive field-notes before the scratch notes become "cold", even after one day [44, p.296]. While taking scratch- or field-notes, it is important to consciously mark personal statements (feelings or inferences) (e.g.: "that man has a sexist attitude to me because...") as distinct from phenomena descriptions (e.g. "most of the participants arrive in time at the workshop, bringing some drink and dessert"), still reminding that even "objective" descriptions of a phenomenon come from a voice.

3.2.2 Co-Design

Co-Design is the set of techniques for designing collaboratively. While co-design is a set of techniques, participatory design is an approach, a politically engaged practice [195]. Co-design can be considered as a set of techniques as well as a process for planning and ideating things in collaboration with stakeholders. It is the collective labor of making abstractions into concrete things that have purposes according to the will and desires of

the people that made those things. For this reason, a co-design process is incremental and iterative in going from techniques that facilitate the emergence of ideas (e.g., brainstorming sessions) to techniques that gradually make those ideas concrete (e.g., low-, mid- and high-fidelity prototyping). Co-design shares its techniques with User-Centric Design and Design Thinking (see, for instance, scenarios, personas, user journey maps), [183]. When co-design techniques are chosen and performed with a politically engaged participatory design approach, designers pay particular attention to the decision-making process and the empowerment of those stakeholders that would not usually be empowered in a traditional User Experience design process but would only be consulted [61]. Nevertheless, this is often not enough to guarantee a successful participatory design process, since what participation means it is a cultural matter, and it can be different between the stakeholders of the same project. In the same way, agendas can be different, hidden and even conflictual among designers and stakeholders. As mentioned above, anthropology approaches a context aiming to not actively modify it (there are specific ethical guidelines from AAA [1] and ASA [11]) even though instances for a "militant anthropology" rose up in the last decade, advocating anthropologists to take actions in particular fieldworks involving subjects such as organ-trafficking [189]. Instead, co-design approaches a field with the specific intention of making interventions on it, involving the people that live and interact with it. Therefore, co-design techniques need to be adapted to the context of use in order to be effective and understood by the participants [137].

The value of designing a future technology with the prospective users has been recognized for its empowerment of users in deciding how technological choices will affect their life [100]. In this research, I try to push this empowerment to its extreme, starting from a powerless position and putting "in danger" the realization of the projects by giving the participants the free will to abandon/reject it. I explored and challenged whether or not a technological deployment is needed, keeping in mind Robertson and Wagner's ethical warning: "Does a design method, tool or process deal with a justified loss or change of design focus, for example when participants identify problems that require non-information technology solutions while the process was initiated to design information technology?" [195, p.82]. This is evident especially in the social garden case study, where we co-designed a mechanical power-crank compost-shredder instead of a digital technology.

The outcomes are different in the three case studies, depending on their setting conditions, the degree of freedom of the participants and the capacity of the researchers to negotiate and to engage in a political design process. The choice of the co-design techniques has been led by the context and by the incremental experience of trial-failure-trial. Cultural power-relations, given by age, gender and background differences between me and the participants, were involved in the choice and in the effect of the techniques. For example, involving seniors in creative activities using creative design materials (such as post-its, colorful markers and posters) can be seen as a designer's paternalistic attitude to the seniors, that feel they are being treated as children or "as at school" (Giorgio, the garden chief of the first social garden, see Chapter 7). This reaction from the male garden chief led to changes in the following workshops and the second social garden: the colorful markers and posters were substituted with professional pencils for technical drawing and white A4 sheets; the collective posters filled with post-its by the participants were sub-

stituted with one poster filled with post-its by a master's student. The consequence was a verbal and relaxed collective relief of the participants that felt freer to talk and discuss without worrying about their handwriting on small pieces of paper. The choice of deconstructing the rhetorical creativity of the traditional interaction design tools and promote a more technical and engineering aesthetics generated a more professional appearance in my design activity that contributed to being recognized by the gardeners as "the expert in the field".

Yet, activities that are even more creative and artistic, such as the collage session or the scenarios during the Digital Lab (Chapter 6), can be successful - after some initial distrust and perplexity - in contexts where the designers established trustful relationships and emotional gains with the participants, who are more inclined to experiment with activities that they would not normally perform.

Nevertheless, in the workshops run during the exploratory work done in the Suitcase project (see Chapter 4), the participants did not complain about the techniques but about their effective empowerment value in the decision-making process. The lead researcher - a young female researcher - ran a user journey map, a scenario, and a bodystorming prototyping session, with the participant's collaboration. The participants raised a critique against the impossibility of influencing the pre-commercial procurement process by participating in the design workshops [75].

In conclusion, I can infer from the evaluation focus groups from the Digital labs and the reactions of the garden chiefs and gardeners (manly men), that elderly women are more inclined to experiment and try activities they are not proficient at, since they have been told their entire life that they are not good enough. Instead, senior men find putting themselves in unknown experiences more challenging, since they would feel uncomfortable and not in control of the situation, as they are used to. Making the situation more work-like allows men to recognize it as familiar and they are therefore more comfortable with it.

In the next section, I will explain why I chose those specific exploratory work and case studies, as the intertwining of my research question and my epistemological approach (Section 3.3). Then, I provide an overview of the techniques adopted (Section 3.4). and a description of the procedures followed for each exploratory work and case study is provided. Finally I describe the learnings from each exploratory work and case study (Section 3.5), that will be discussed in the Discussion chapter (Chapter 8).

3.3 Choice of the exploratory work and the case studies

This section provides an overview of the exploratory work and the case studies, highlighting the choice of them in relation to the methodological approach and the related works (Chapter 2), why they are interesting, and what the objectives and learnings were.

3.3.1 Acanto, a European project

My involvement in Acanto project (A CyberphysicAl social NeTwOrk using robot friends) was from March to April 2015. According to the *economy of research*, I gained access

to this project because it was a pre-commercial procurement project managed by part of my research group and it was proposed to me by a researcher to assist her in interviews and workshops. The *institutional objectives* of the project were in line with the normative narrative of active aging. Indeed: "the main objective of the project is to develop a sustainable socio-technical environment in which new services for citizens can effectively grow, along with business opportunities to private and public organizations" [24].

My research objectives were, firstly, understanding the institutional narratives of a pre-commercial procurement project with older adults, and secondly, understanding conflict relations between the partners of the projects: the university and the company involved in the production of the prototype and the institution managing the procurement process. Indeed the researchers involved had little space for action or for effectively contributing to the project, since the main design decisions had been taken by the industrial stakeholders far before the involvement of the university. The *design implications* according to the project's aim were to develop a smart home framework and a fall-detection device.

3.3.2 Suitcase, a pre-commercial procurement project

My involvement in the Suitcase project (SUstainable, Integrated and Territorial CAre SErvices) was from June to August 2015. According to the *economy of research*, I gained access to this project since it was an H2020 project managed by part of my research group, and I was asked by a professor to find persons among my local network to interview. Also in this project, the *institutional objectives* were in line with the normative narrative of active aging. Indeed: "...The ACANTO project aims to develop a portfolio of technical solutions (...) More specifically, our goal is to spur older adults into a sustainable and regular level of physical exercise under the guidance and the supervision of their carers" [27].

The project aimed at building a robot-walker for socializing in shopping centers and airports, "a robotic friend (the FriWalk) that supports the user in the execution of daily activities that require physical exercise and an intelligent system that recommends activities that a senior user perceives as compelling and rewarding" [27]. Aesthetics, playfulness and wellbeing were the attention points in designing future technologies for aging "actively" elaborated on by the researchers through my interviews.

My research objectives shared those of my colleagues: to understand what can encourage seniors into sustained and varied physical and social activity. What emerged from the interviews were the first germs of gender and aging perspectives among the interviewed seniors.

3.3.3 Case studies: overview

A summary table (Table 3.1) is provided below to give an overview of the contexts of the case studies. Each context will be described more in detail in the following chapters.

Communities	**Type of organization**	**Use of digital technologies**	**Needs/desires (preliminary user requirements)**
Movement of seniors and pensioners	Volunteering association managed by the participants	Low (not inducted, seniors find alternative strategies to communicate to each other)	Geographical mobility (in common with the other citizens of the mountain village)
Senior community center	Institutional (created by a social cooperative, power dynamics and decision-making follow a top-down approach)	Medium-high (yet often inducted or offered by the community center program)	Sharing knowledge, mutual learning (among seniors, and from the senior community center)
Senior social gardens	Volunteering associations managed by the participants	Garden 1: Low (use of the smart phone by some of the gardeners, but not for the garden) Garden 2: Medium-Low (basic use of smart phones, rare use of computers - only for reception of the periodical bulletin)	Communication for maintaining the gardens, eradication of snails, better soil, making compost

Table 3.1: Summary table on the community-based organizations

3.3.4 The Movement of seniors and pensioners

The fieldwork with the Movement of seniors and pensioners took place from March 2015 to January 2016. According to the *economy of research*, I gained access to this association since I was living in the same mountain village.

At the beginning there were no *institutional goals* in the project. Soon after I had been involved with other stakeholders, a local politician attempted to include my project in her political agenda. No researchers had ever worked with the local elderly community before so it was not clear what the position of a PhD student was.

My research objectives were, firstly, to conduct an ethnographic exploration, aiming at understanding the daily life of seniors, in comparison with the "active aging" label. Secondly, finding participatory design opportunities with the movement of seniors and pensioners.

3.3.5 The senior social center

The second case study took place over two years in a senior social center in an urban area. The fieldwork was articulated during two annual editions of a Digital Lab: the first Lab edition from December 2014 to May 2015, and the second Lab edition from October 2015 to June 2016.

According to the *economy of research*, the *Digital Lab edition 2014-2015* was a research space initiated and maintained by my research group two years before and for this reason I was able to acquire access, together with other PhD students.

The *institutional objectives* were articulated by the social workers of the center and by my research group. The request from the social workers was to teach the elderly to use personal computers. Through them, the seniors asked to focus the Lab on digital media production (writing articles, editing photos, making and editing videos). My research group's agenda was to maintain good relationships with the community center to keep it accessible as a space for research.

My research objectives were to investigate the relationship seniors have with technologies. This had been done through the production of individual videos made by participants that had learned video-making through participatory video.

According to the *economy of research*, the *Digital Lab edition 2015-2016* was a field maintained by my research group and I was familiar with the context and the participants thanks to the previous Lab edition. The institutional objective was the same as the previous edition: to teach the elderly to use personal computers, but this time with the perspective that some elderly participants would become tutors for their peers at the conclusion of the Lab.

My research objectives, this time, were provoking and challenging a normative narrative of fear and dependency from the technology with the idea that technology is a medium to share and to nurture the common, independently from the biographical age of its users. The common in this case was what the participants knew: their expertise and knowledge.

3.3.6 The senior social gardens

The third case study took place between two senior social gardens, located in urban areas. The fieldwork was articulated with two garden communities: the first garden from June 2016 to February 2017, and the second garden from January 2017 to November 2018. The total involvement with the social gardens during the PhD (since it is still ongoing) is one and a half years.

According to the *economy of research*, I gained access to the *first senior social garden* through a participant that I met during the Digital Labs, at the senior social center. Introducing me to the social garden, she became my gatekeeper.

Instead, I gained access to the *second social garden* via a telephone call to the garden chief. I presented myself as a researcher doing a study on social gardens and management of technologies, and he was curious about my project and sensitive to technologies as a result of previous employment.

There were not *institutional objectives* in either of the social gardens. No researchers had previously worked with the gardeners or with the senior association the gardens are part of.

My research objectives were the same for both of the gardens: to challenge a participatory design process as a practice for nourishing the common, beyond the elders as user group. Once ageist narratives are challenged, what follow are new stereotypes to deconstruct (gender stereotypes among elderly men, patriarchism in gender as well as in power-dynamics). The objective was to re-image the elderly as a user group open to other discourses: learning to see the common and learning to nourish a commons.

3.4 Techniques and procedures

This section aims to explain how the techniques are intertwined and why I chose to use them.

3.4.1 Ethnography

Data collection:

- *Field-notes from participant observation:* to understand every-day practices by performing and experiencing them (learning by doing), and to observe the difference between what people say and what people do as a gap that denotes intersectional frictions in people's agency.

- *Semi-structured interviews:* to gather individual narratives and points of view.

- *Questionnaire:* to collect initial responses about how the design process was proceeding and what "sharing" meant to the participants (Chapter 6). It was performed on-line in order to save time during the weekly workshop and to leave it as voluntary.

- *Focus groups:* to gather collective narratives of a group and to evaluate the Digital Lab under different themes.

Semi-structured interviews and focus groups were ancillary to ethnographic and design activities to extract and go in-depth with specific themes that have been unearthed from field-notes.

Data analysis:

- *Thematic analysis:* used to analyze field-notes, interviews and the focus groups, highlighting the recurrent themes and how they entangle.

- *Narrative analysis:* used to analyze field-notes to look at how the thematic nodes articulate through time.

- *Qualitative text analysis:* to understand the institutional narratives and key points about the mountain community (5) through the critical reading of their periodical community magazine and the analysis of its materiality as a cultural artifact.

3.4.2 Co-Design

- *Participatory Video:* to foster mutual learning among peers during the first Digital Lab (Chapter 6), to facilitate group building, to make participants understand video-making technologies in their means, to enable each participant to make her/his videos and to create her/his storytelling [143].

- *Collage:* used as an individual activity even if it was undertaken with the whole group of participants of the Digital Lab. To unearth and share a collective imaginary about how a PC and the Internet are interpreted (Chapter 6).

- *Collective writing:* a significant technique for participants' self-disclosure. To enable participants to negotiate in the decision-making about their group identity in respect of a wide audience (during the second Digital Lab, Chapter 6) and used to make a collective self-description of the Digital Lab. Collective writing was used to write the "Declaration of Responsibility" at the second garden (Chapter 7), to make participants responsible over the collective use of a potentially dangerous machine (the bio-shredder). In the same garden, collective writing was later used to write a flyer notifying other gardeners that from 2018 there will be a bio-shredder available at the social gardens.

- *Scenarios:* as narrations describing human activities or tasks that allow "exploration and discussion of contexts, needs, and requirements" [183, p.371]. They were used to stimulate collective thinking and problem solving, imagining hands-on simulations regarding the situations that precede the interaction between humans and technological artifacts (Chapters 4 and 6). Scenarios were also used to generate ideas about how the space and the management of the gardens could be improved (Chapter 7).

- *Probes:* used as a provocation for discussion about technologies. This technique was used in the last workshop of the first senior garden. The probes represented alternative technologies to those available in the mainstream, chosen to stimulate a debate about technologies gains and losses (Chapter 7 with the first senior social garden).

- *Low-fid* and *high-fid prototyping:* co-designing wireframes ("a set of documents that show structure, content and controls", [183, p.405] of the digital platform and of the compost-shredder was crucial in making the future technologies imaginable and tangible, proving to the most skeptical that the perspective designed technologies were feasible (Chapter 6 and 7).

- *Participatory deployment:* in the second garden, participants built the safety structure that makes the shredder usable (Chapter 7). The participatory deployment aimed to share responsibility and commitment, and to challenge the product/service designer

view. The deployment produced a strong feeling of empowerment among the participants and pride in their design.

- *Testing evaluation:* dedicating a period for testing (one workshop for the digital platform, four weeks for the shredder, see Chapter 7), allowed participants to strength their group building, empowering them on design choices but also making them self-conscious of the design choices they previously took. The process from the paper-based prototypes to the final artifacts was revealing for the participants in acknowledging how a participatory design process works and unfolds, from vagueness, mess and abstraction to clarity and tangibility.

In the following subsections, I illustrate the procedures for each case study and exploratory work.

3.4.3 Acanto

In the Acanto project, the *techniques* that I used with the post-doc researcher included semi-structured interviews during home visiting and two evaluation workshops. In particular, three were home visits with respective interviewees, performed to evaluate a smart home system installed by the industrial partner. We then organized two evaluation workshops on the fall-detection device. At the first workshops, five seniors participated (2 females, 3 males, age range 66-76), while the second workshop was joined by six seniors (1 male, 5 females, age range 66-85).

The *outcomes* from the techniques involved were the giving of space for raising conflicts by the elderly participants in respect of the commercial decisions taken without involving them. Consequently, some of them felt to be part of a fake collaborative process.

3.4.4 Suitcase

In the Suitcase project, the *technique* that I used was semi-structured interviews. This project presents a psychological HCI perspective. Indeed, the ten semi-structured interviews I conducted followed a script of questions elaborated on by the Italian and the UK academic partners, based on the Integrated Behavior Model (IBM). This model focuses on unearthing personal behaviors eliciting the interviewee's attitude, perceived norm and personal agency of that behavior [161]. I interviewed a pool of ten persons via semi-structure interviews (6 females, 4 males, average of 50 min each). The interviews specifics and the interview script can be found in the Appendix (A.2 and A.3).

The *outcomes* from the interviews were the unearthing of the first germs of gender and aging perspectives among the interviewed seniors.

3.4.5 The Movement of seniors and pensioners

With the Movement of seniors and pensioners, the *techniques* adopted have been participant observation, ethnographic field-notes, informal interviews and formal and informal meetings. My involvement was mainly in participating as auditor at the weekly meetings of the University of the Third Age, which took place in the Community Hall of the mountain village. Afterwards, I had been invited for coffee by some of the seniors at their

homes. During this case study, and thanks to my relationships with the Movement, I gained access to some of the houses of the seniors when I asked to interview them for the Acanto project.

The *outcomes* from this fieldwork were that the case study closed due to institutional impediments and because of issues with participants' delegation of decision making to leadership. Therefore, the *design implications* that emerged from participants' needs and desires were unable to be developed.

3.4.6 The senior social center

During the Digital Labs the *techniques* deployed were multiple, depending on the research objectives of each edition.

At the *Digital Lab 2014-2015*, each weekly workshop was divided into an explanatory part of a topic done with a frontal class setting, followed by hands-on practice. During this edition, 20 workshops were run with a group of, on average, 15 participants. Co-design workshops in mutual learning of Participatory Video were performed. Other PhD students and I were running the meetings, while we deployed participant observation and ethnographic field-notes were deployed.

The *outcome* for this Lab was the elicitation of a process of self-reflexivity about aging, active aging and technology among the participants.

The *design implications* were the production of individual videos, made by participants that had learned video-making through Participatory Video.

At *Digital Lab edition 2015-2016*, some of the weekly meetings were dedicated to explain technical topics through frontal classes. Most of the meetings were organized as co-design workshops, working in groups developing and structuring the contents participants wanted to share. Beside this, other *techniques* were involved: a creative writing session, an on-line questionnaire, scenarios, prototyping, testing evaluation and evaluation focus groups. While running the activities with other PhD students, I was doing participant observation and taking ethnographic field-notes. At the beginning of the Lab, one on-line questionnaire was proposed to understand the concept of sharing participants' views and twelve of these were completed. Nineteen weekly meetings were organized and alongside them there was a co-design workshop of the digital platform (for 2 hours with 9 participants) and an evaluation workshop (for 2 hours with 10 participants). At the end of the Lab, I asked colleagues of mine that did not participate in the Lab to run two focus groups for evaluating the participatory process performed during the Lab. The focus groups lasted two hours and ten participants were able to join (see Appendix A.10 for the focus group script).

There were three *outcomes* for this Lab: first, deconstructing stereotypes on aging with seniors; second, challenging ageist narratives in institutional contexts through a process of provocation-conflict-appropriation; third, self-reflexivity of the seniors involved regarding aging, active aging and technology, the latter especially in relation to being a retired woman. The design implication was the co-design and development of *Fucinaperta*: an on-line platform for sharing knowledge and expertise.

3.4.7 The senior social gardens

For the *first senior social garden*, the *techniques* adopted were: participant observation, ethnographic field-notes, co-design workshops, scenarios and probes. Beside two initial informal meetings (with the garden chief introduced by my gatekeeper and a visit to the garden), the techniques were articulated during two workshops on understanding how the garden was perceived and used by the gardeners and understanding what their desires, strengths, and issues were. The gardeners identified their needs and desires among practical issues they shared in the garden.

From the first garden there were two *outcomes*: first, the impossibility of continuing the project, because the gardeners refused to continue without the approval of the garden chief; second, the gardeners' self-recognition of being unwilling to overcome the delegation role of the garden chief. Therefore, the *design implications* that emerged from participants' needs and desires were unable to be developed.

With regards the *second senior social garden*, additional *techniques* were adopted: participant observation, ethnographic field-notes, semi-structured explorative interviews (with garden chiefs), semi-structured interviews (with the 3 "experts"), co-design workshops, scenarios, co-deployment workshops, testing evaluation and evaluation meetings.

Two exploratory interviews were conducted to locate another garden suitable for research: with a garden chief from another garden and with the garden chief and the association president of what became the second garden of the study.

The meetings were realized as follows: a first co-design meeting on garden and compost management, with the association president and the garden chief; a meeting with the association president and the garden chief that requested that I talk with three experts of their choice; my participation in the garden's Spring Party; two co-design workshops with the end-user representatives on the presentation and approval of the project, budget and timing; and, a participatory deployment workshop of the bio-shredder.

The evaluation of the participatory process and of the bio-shredder was performed over a four week-period for testing the shredder and in a final meeting to evaluate the testing period, the participatory experience overall, and to plan future developments of the project.

There were three *outcomes* elicited from the second social garden: first, a self-reflection of the gardeners involved on their garden community management and how the DIY compost making is beneficial for environmental, economic and social reasons; second, the gardeners' recognition of the empowering quality of a participatory design approach; and, third, the deconstructing of intersectional stereotypes (gender and aging) of the gardeners' patriarchal perspectives with respect of me, a female researcher in their presence. Work is still to be done in respect of women gardeners.

The *design implications* of this project have been the participatory design and deployment of a power-crank compost shredder.

3.5 Learnings

A timeline (Figure 3.1) was structured as a road-map to display how learnings are situated in this research journey, within the time-span of the research, from November 2014 to

November 2018. The learnings follow a logical-interpretative order and therefore the timeline was traced aiming to restitute a linear visualization of the learning process. The learnings highlighted in the time-line are discussed in the Discussion (Chapter 8).

3.5.1 Acanto and Suitcase

There were two learnings from Acanto and Suitcase. The first learning was realizing that the label *"Active aging" as* a form of *ageism (1)* elaborated from the discrepancy between institutional, commercial, funding narratives, and elderly people's personal narratives on active aging. There are aging stereotypes about seniors and their involvement in these projects is very marginal, therefore it is not possible to deconstruct ageism since there is not enough interaction between stakeholders and seniors and there is not empowerment in seniors' will. Nevertheless, disentangling decision-making and deconstructing ageism is out of the scope of these projects. The second learning was that, re-imaging the "user" *starting from the participant's point of view (2)* becomes primary for design purposes. The steps drawn ahead are then: deconstructing aging stereotypes; deconstructing the user-customer perspective; and, unfolding and acknowledging participant's points of view. The methodological choice for the following case studies falls into design anthropology in participatory design.

3.5.2 The Movement of seniors and pensioners

The learnings from this first case study are multiple. The mismatch between seniors' narratives and normative narratives on aging confirmed the label *"Active aging" as* a form of *ageism (1)*. Then, *values and risks of designer's precariousness (3)* were acknowledged. Indeed, a common grassroots approach to a community for an ethnographer becomes a precarious approach for a designer approaching the same community. Still the precariousness of the designer has the quality to rebalance power-dynamics between the designer and the community. Participants need to be more proactive in the construction of a collective design project. They need to see valuable gains (outcomes), allies, and attachments (affective bonds such as trust), that fit with their socio-cultural context. Finally, the *participants' delegation to a leader (4)* represented a relevant obstacle in negotiating a participatory design process.

3.5.3 The senior social center

The learning from the Digital Lab 2014-2015 was the *importance of trust and mutual recognition (5)* with the participants when experimenting with participatory methods that require a proactive involvement of the participants.

The learnings from the Digital Lab 2015-2016 are multiple: In common with the previous edition, the *importance of trust and mutual recognition (5)* with the participants when embarking on a disruptive project that challenges the everyday hegemonies; the power of *self-disclosure* through *re-locating the activist researcher's position (6)*; *Shifting the focus* of the design inquiry *from the user* identity *to the common (7)* such as the human knowledge, allowed for the re-imaging of the "seniors". In this way, aging stereotypes

were deconstructed in their polyphony and intersectionality.

3.5.4 The senior social gardens

The learning from the first senior social garden was the same as for the Movement of seniors and pensioners: that *participants' delegation to a leader (4)* can be a relevant obstacle in participatory design processes.

The learnings from the second social garden were multiple. Shifting the focus of the design inquiry *from the user* identity *to a common (7)* such as human knowledge, allowed for the re-imaging of the "seniors". Aging stereotypes were deconstructed in their polyphony and intersectionality, as occurred in the Digital Lab 2015-2016. This case study highlighted the importance of carefully balancing power-dynamics between participants and designers, highlighting, again, that there are limits for negotiations and that *ethics is contextualized (8)* (researchers need to be prepared to leave the field if the core points of the agenda are not shared). Finally, this case study made clear the necessity of being ready for *unexpected implications for design (9)* that go against the funding of the project but are in favor of the participants' needs.

In the next chapters, the exploratory work (Chapter 4 and case studies (Chapters 5, 6 and 7) I describe and analyze the learnings in detail, while in the Discussion I elaborate them in five relational movements, as anticipated in the Introduction, that are: exploration, provocation, conflict, reflexivity and appropriation. Subsequently I detect three design tactics useful to make the common visible in precarious contexts, i.e. decolonizing hegemonic narratives, nurturing attachments and creating contextual ethics.

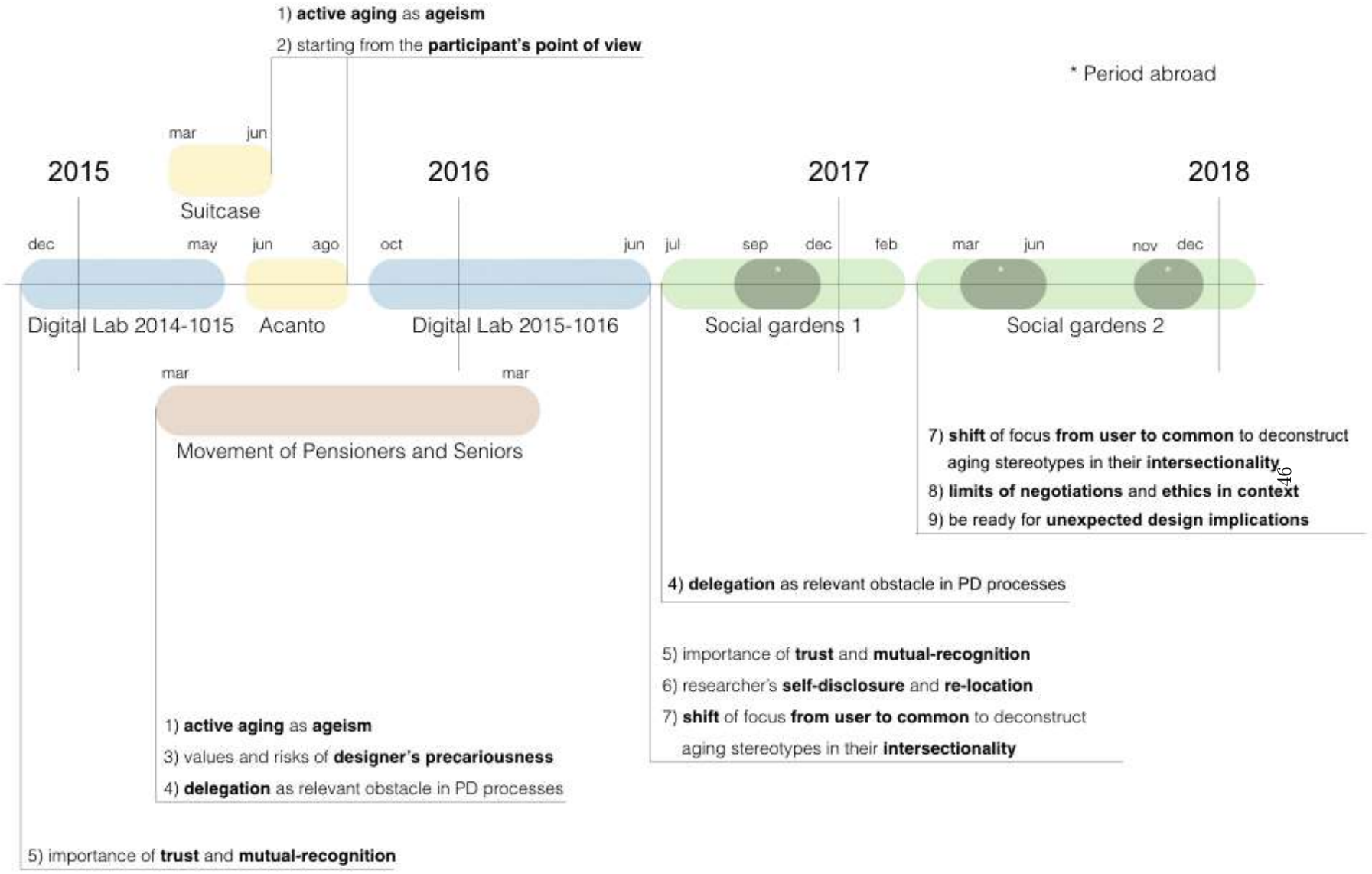

Figure 3.1: Time-line of the empirical work with the incremental learnings that follow a logical-interpretative order.

Chapter 4

Exploratory work

In this chapter, I illustrate some selected exploratory work I carried out in 2015, that represents a significant contribution to the design and the analysis of the three case studies illustrated in the subsequent chapters. The work presented here is related to two projects: Suitcase (SUstainable, Integrated and Territorial CAre Services) [24], which was an Italian pre-commercial procurement project, and Acanto (A CyberphysicAl social NeTwOrk using robot friends) [27], which is a Horizon2020 project. Both of them are situated in the realm of Active Aging in system design due to the funding lines, as well as for theoretical assumptions, i.e. ageism ([212]; [74]) and methodological design choices, i.e. choices which are functionalist and product driven [39]. I have been involved in these projects with a two-fold role: proactive in Acanto, as scouting interviewees, interviewer, data analyst and deliverable writer; auxiliary in SUITCASE, assisting the main academic investigator during two workshops as videographer, time-keeper, note-taker. Quoting from their respective websites:

> "The SUITCASE (SUstainable, Integrated and Territorial CAre SErvices) project aims at providing a comprehensive answer to the aging phenomena from the economic, social, ethical and technological point of view. This vision can be expanded by extending the welfare system, overcoming the current organization based almost entirely on public resources. The main objective of the project is to develop a sustainable socio-technical environment in which new services for citizens can effectively grow, along with business opportunities to private and public organizations" [24].

Whereas,

> "The ACANTO project aims to develop a portfolio of technical solutions that can serve this purpose. More specifically, our goal is to spur older adults into a sustainable and regular level of physical exercise under the guidance and the supervision of their carers. The key elements of ACANTO are a robotic friend (the FriWalk) that supports the user in the execution of daily activities that require physical exercise and an intelligent system that recommends activities that a senior user perceives as compelling and rewarding" [27].

As anticipated in the Introduction, the learnings of this research have grown incrementally. The necessity of "re-imaging the user", starting from the participants' points of view is a methodological lens that emerged from the state of the art on active aging, and that was confirmed by the exploratory work done in the Suitcase and Acanto projects. The empirical work was crucial to becoming aware of the dynamics that can be neglected in the accounts provided in academic papers from the Ubicomp field, and it was realized that these dynamics were important to document. That was the case of participants' gains, during a Suitcase workshop I facilitated with another researcher. There, participants acknowledged that their feedback could not influence the design of a fall-detection device because it was already decided by absent stakeholders and as a result their participation at the workshop became justifiably "subversive" [75]. It is also the case during wide infrastructured projects with an abundance of resources and multiple partners, where agendas become an impediment to acknowledging changes of design directions that emerged from the field research with participants.

In the next sections, I analyze the Acanto and Suitcase projects, describing my role and positioning. Highlighting what I learned from them, the focus is on the deconstruction of ageism, the unfolding of participants' points of view and the comparison of rhetorics and resources that shape and support system design projects.

The main outcome from this exploration is that the role of fieldwork is invaluable for deconstructing what appears to be taken for granted, in particular, the institutional narratives, the goodness of "active aging" and the wide infrastructures in complex projects. The deconstruction and analysis of these elements allow for the building of a novel gaze, re-imaging the participants, re-positioning as researcher-activist and reconfiguring participatory design projects in precarious contexts.

4.1 Acanto project

4.1.1 When field data exceeded normative rhetorics and how the project could not deal with it

Acanto is a Horizon 2020 project aiming at "implementing a cyber-physical social network using robot friends", specifically a "smart" walker (with sensors) with a table incorporated. During the summer of 2015, I was involved in the project in order to understand what can encourage older adults into sustained and varied physical and social activity.

In this project, I was in charge of collecting qualitative data in the field for the first work package that aimed at identifying, according to the project narrative, "user requirements" and consequently "implications for design". Still, the design of the walker its usefulness and stigmatization was not questioned, since it was part of the written project proposal that won the H2020 grant. I was responsible for finding and contacting seniors, interviewing them and analyzing the data and exposing the results in the deliverable, with the initial support of a post-doctoral colleague. I was able to carry out ten interviews in ten days across an urban area and a mountain area, thanks to the network of relationships with local seniors that I had been building in the previous months of fieldwork, since beginning my Ph.D. research. My task in the project was to select interviewees and conduct interviews according to a list of questions that the Italian and the UK principal

investigators (PIs) and the post-doc researchers agreed upon during previous meetings. Since the PIs background was in experimental psychology and HCI, they decided to apply the Integrated Behaviour Model (IBM). The questions of the semi-structured interviews were formed by the Italian and the British research teams using the Integrated Behavior Model (IBM). This model focuses on unearthing personal behaviors eliciting the interviewee's attitude, perceived norm and personal agency of that behavior [161]. The IBM interview script is reported in the Appendix A.2. Therefore my goal as interviewer was to unearth what activities seniors do, used to do, would like to do and how seniors relate themselves to these activities: the personal and social motivations, and the physical and social barriers involved. The questions of the semi-structured interviews were formed by the Italian and the British research teams using the Integrated Behavior Model (IBM). This model focuses on unearthing personal behaviors eliciting the interviewee's attitude, perceived norm and personal agency of that behavior [161]. The IBM interview script is reported in the Appendix A.2.

Comparing the Italian with the British interview analysis, the main trend of senior activities was related to activities that engage in a relational dimension with the others, especially a relationship of care, above all volunteering with some experience in political activism. In addition, social activities, such as trips and courses are prominent among seniors' activities. Instead, the barriers that emerged are mainly related to mobility transport (a combination of physical limitations and lack of transport) and communication (finding and sharing information).

The interview analysis highlighted a different image of aging from the normative one perpetuated in the EU policies and in the system design literature. For instance, I interviewed a woman that refused to use a walking stick, despite her severe backache, and deployed an aesthetic strategy, using instead an umbrella:

> "Yesterday I walked up to the shelter, in the wood, I had backache but I really wanted to go, so I put on a plaster... I still have it on! (laughing)... Look, I have problems also to my back (...) but one day I wanted to take a walk outside, so I took my umbrella even if it wasnt raining, eh, and I used it as my walking stick, and I went for a walk along the river. I came across a colleague that asked me: "Its not raining! What are you doing with the umbrella?", "Look, if I tell you... I have backache!"... With the stick everybody understands you are in pain, no? But with the umbrella... (with a complicit smiling)... "I just took it and I went out. Nothing can stop me... I dont have a walking stick, but I have often backache... I can use a stick when I go to the wood..."

As we wrote in the Acanto Deliverable D1.3 [28, p.17]:

> "The overall framework emerging from the two samples was in sharp contrast to the main stereotype reported in the literature to be driving technology development, which depicts older people as frail and passive creatures. On the contrary, the groups we interviewed demonstrated competence, resources, and resilience. They appeared to be capable of dealing creatively with the variety of challenges encountered through the process of aging. In this task, they could employ objects as resources, adapting them and reinventing their functionality

> to suit varied needs. The Italian woman who declared preferring an umbrella to a walking stick provides an illustrative example. The two objects can functionally perform the same task, but the umbrella avoids stigmatization and can be transformed into a fashion accessory. These results confirmed the idea that "it is a mistake to think of the older user as a wheelchair user or as severely disabled, hard of hearing or partially sighted. Older users are that vast number of people who, in advancing age, have some discernible impairment, but also have a strong drive to remain independent and to contribute to the community, but are hampered by inappropriate design. Better design can play a crucial role in enabling older people to remain physically and mentally active [116]"."

Moreover:

> "The analysis confirmed the pertinence of defining aging as a "wicked problem" [178], meaning a social phenomenon that is difficult to manage through traditional processes [64]; [150]; [179]. Wicked problems are socially complex and require both contextual knowledge and a multidisciplinary approach because there is not just one solution and it is critical to capture the full range of possibilities and interpretations. This is a crucial aspect to consider throughout the ACANTO project, which we aim to fulfill by following a process of Participatory Design (PD), [225]".

Although the researchers aimed to engage with seniors in a participatory design process, this could not happen because of the time constraints of the project and the contrasting research agendas and theoretical positions among the project partners.

4.1.2 Unfolding people's points of view: germs for an intersectional design perspective

Besides the questions I asked in the interviews, what emerged across seniors' stories was an unexpected power-dynamic dimension related to gender and economic position, which was not taken into consideration by the Acanto project, since it was out of the scope of the project. The semi-structured interviews aimed to explore what kind of activities seniors do, used to do or would like to do; what barriers they find in doing those activities; how they perceive themselves; and, how they feel they are perceived by "influential others", similar, although with different premises, to Karen Tonso's analysis of the identity construction of engineers in a highly ranked US college: 1) thinking of yourself as an engineer, 2) performing as engineer, 3) being identified as engineer [213].

In the stories told by the seniors, broader narratives related to the dynamics of post-industrial and patriarchal society were unearthed. Among male seniors, a common way of talking about themselves emerged. The men tended to identify themselves with the job they used to do and, in some cases, continue to do even after retirement, exalting their skills and hardworking attitude. In the case of Achille, a 72-77 year old male, he spent his youth travelling with his family between Belgium and Italy while crossing Europe in wartime, for beginning to work as a bricklayer from the age of 16:

> "Usually, I spend the days doing maintenance of the house, our house... because it's never ended, never. (...) I continue to work, here. (...) I... work with metal and rusty stuff... people bring me things... and then I try to fix them. It's not that there's a profit... (...) They [the people that know him] know I keep everything. And after I clean what they have brought me they don't even know what it is anymore! Maybe it was found in a field, see? (He shows me an old and well oiled clamp). And I make it work (he actions the clamp, that spins on itself with ease, without squeaking). It's all like this... I spend my time in this way, on old stuff... (...) I don't know what to do with it... but the feeling that it gives me to fix a tool like that! (smiling). (...) I'm always alone, here... ehm, I don't have friends. I am housebound. Don't take me away from my house! (chuckling). My wife wants to go somewhere... 'No, no. I'm not coming, go on your own!' ".

Similarly, in the first encounter with Pietro, a 75-80 year old male, he welcomes me in his house where he and his wife live. One of the first sentences he says to describe himself is:

> "I am retired now, but I still work (smiling). (...) Eh, now that I am retired one hundred per cent, I still work at the family business, but, money, I don't take it anymore (smiling). Heh heh! The pension income is minimal. Minimal..."

The narrative about their past work is predominant in their stories, mostly described as a duty in respect to their original family (when they were children) and the latter family of their spouses and children (where they were patriarchs). Most of the interviewees reported difficult family situations during and after World War II.

It is worth mentioning that in 2015 (the year of the interviews) the centenary of the First World War (1915-1917) occurred, that would last two years until 2017. The press and the Italian institutions made frequent commemorations of the Italian "victory" [4]. Exhibitions and military tourism of the forts and mountain garrisons were fashionable [160]. Italy celebrated a historical event narrating it as a victory, forgetting those lands and those people who, before 1917, were Austrians. Included in this were the places where my research takes place. Therefore, alongside the stories of Italian emigration, this national celebration was severely experienced by the elderly interviewees, who still remembered the stories told by their parents on the process of Italianization of their family names, undertaken by the fascist dictatorship.

Poverty and migration are common topics that emerge in the biographical stories of the interviewees. A gender-role distinction is a narrative that is unearthed by seniors as a matter of fact and a duty to satisfy social norms. Nevertheless, a rebel attitude is common in the narrative regardless the gender, more linked to people's youth. Work is also described as a form of self-realization and men identify themselves with their jobs even after they retire. They explain in detail what they do even if I did not ask. In particular, self-realization sometimes clashes with family life, when the attachment to work seems to be more consistent than the attachment to their wives and children. Reflections on self-realization through work do not strongly emerge in women, although some of them express these feelings. Anna refers to her managerial skills as the reason for her ability to

cover a relevant role in a voluntary association (the Movement of seniors and pensioners, see Chapter 5). Another woman refers to the way she educated her children as related to her work as a teacher. Nevertheless, none of them talks extensively about their jobs. Instead, women often describe themselves as "tomboys", referring to their attitude to be antagonists to an imposed social system. For instance, in breaking the rules during their childhood (going to play instead of working in the fields), confronting parental authority, finding strategies of rebellion within the dictation of family and societal pressure of getting married, of the choice of a specific school, education or job. Maria, a 75-80 year old female, recounted:

> "My name is Maria but indeed it would be Mario. I was a male, I... Yes, yes, yes, terrible I was. I used to run away from my mum when I could, instead of helping her work in the field, and I ran to ***, because there were always children playing. They didn't have homework to do, apparently".

Similarly Anna, a 70-75 year old female, stated in an interview:

> "So, I am a tomboy. I started then. I did little school because, anyway, I didn't need it. I am ignorant now, I was ignorant then, I will be ignorant in twenty years if I'll still be around, or until tomorrow, it doesn't matter. Little school. But lots of work. I started to work in the ***. I was 18 years old (...) I used the forklift... I was also an office employee. I loaded and unloaded pieces in a foundry. I can't tell you about the place, it was a cave! (...) It was so noisy that I became a bit deaf (...) And then I got married (...) but still, this is my character".

Some of the women report continuing with this antagonist attitude for their entire life, finally becoming free to choose with their retirement and with their children becoming adults. From their narratives emerges an image of aging considered by women as a time liberated from paid jobs (even though informal care work is still part of their lives), as their jobs remain in the background of their stories. Instead, for men, aging appears to be as a continuation of their jobs, a continuity before and after their retirement as far as their physical conditions permit it. Still, men also refer to being "wild" and "savage" concerning their preference to stay alone or to play outside during their childhood, neglecting parental authority.

This gendered aging is not well represented in design technologies for "active aging", since seniors seem to be considered as a homogeneous "user group", drawing from negative stereotypes of seeing seniors as asexual. These quotes are significant since the strong character of some women is still vivid in their narratives even though they had to adapt to social rules (not playing with unruly kids, getting married, etc.). Although the women interviewees cared to express their free spirit in their stories, their free spirit is expressed through male images ("male", "tomboy"), whereas for the interviewed men being a free spirit is related to being wild and there is a normal pursuit of retaining some working life, even after retirement age.

The learnings from the PC lab (see Chapter 6) add complexity to these narratives: if elderly men do not work they are often subjected to a crisis, while women consider retirement a time liberated from paid workload (but not from informal care work).

4.2 Suitcase project

4.2.1 Subversive participatory design: we are persons, not old people

Suitcase was a two year (2013-2015), Italian, pre-commercial procurement project aimed at developing innovative services for the welfare of citizens, with a focus on older people. The partners included business companies, volunteering associations, social cooperatives and the University of Trento. The technological realm was still the AAL one in particular: telecare, smart home system sensors for fall-detection and technologies for the "quantified self". The main goal of the project was to create a smart-home environment for monitoring house conditions (CO2, temperature, etc.) and personal health conditions (fall detection) [24]. To achieve this objective the project aimed to involve forty seniors per year. Volunteers were selected with the help of local associations and cooperatives. The "targeted user" was, ideally, a healthy over-65 year old that lives at home, theoretically an "active aging user". Research activities gradually involved all the participants while increasing their engagement. The technical outcome of the project was a platform accessible to the users through their smart TVs. It relied on a contact center designed to provide support in case of emergencies or risky situations (e.g., falls, gas and water leakages, smoke, and intrusions). Such interventions were mediated by several environmental sensors installed at home, a set of mobile apps, and wearable sensors.

I had been involved in assisting a post-doc researcher in two co-design workshops for evaluating fall-detection product prototypes, supporting the activities and collecting visual data (photos and videos). Mine was a role of note-taker, videographer and time keeper of the workshop activities. I did not participate in the design of the workshops, ideated and conducted by the post-doc researcher. I consider the two workshops as significant moments for the formation of my thesis contributions. We are immersed in stereotypes associating the "elder status" with difficulties and negative connotations, quite different to the opposite connotation that characterizes elders in some non-western cultures [198]. In this case, the two groups of elders involved in the workshops underlined that the technology proposed for their evaluation was promoting negative stereotypes on aging. In general, we (elders or not) are quite sensitive to social stigmatization such as those deriving from negative stereotypes that designers can inadvertently perpetuate. This kind of situation was the starting point of the reflections exposed below. The participants in the evaluation groups subverted the program of the activities moving from evaluating a device to starting the design of a better-suited one. This case can be considered as an example of the positive subversive power of participatory processes, even beyond the researcher's plans and stakeholders' commercial agendas.

The general purpose of the two workshops was to engage the seniors in a discussion about different fall detection technologies: the first workshop was focused on a smartphone that can be worn on a special belt (see Figure 4.1) or a pouch that fixed to a standard belt (see Figure 4.2), while the second referred to the smartphone working in connection with a smartwatch (see Figure 4.3). Both meetings relied on several steps depending on the "objects" given to participants. The groups, composed of six seniors each, started with a user journey map and then they were engaged in a co-design session concerning the interface of the smartphone.

Figure 4.1: A participant tests the belt during the first workshop.

Findings from the audio and video analysis of the co-design workshop were creativity and problem-solving attitudes based on a contextual case brought to pragmatic objections ("How can Marco [the persona] activate the alarm if he faints after falling? There should be a sensor that reveals that the person fell"). Besides, we noticed a strong rejection of the accessory designed to support the device that was proposed by the business partner (the belt for a smartphone). The belt was seen by the seniors as a stigma that depicts them in need, in respect of which they do not recognize themselves. This case confirms the general trend from the literature review in the related works: a functionalist approach in which the users have to adapt to the system requirements and an attitude to ageism in system designers in imagining solutions for active aging (the belt).

Specifically, the characteristics of the belt such as the color (i.e., electric blue), the size (i.e., covering the abdomen), and the material (i.e., a synthetic fabric) were severely criticized by the first group as signs of a poor and stigmatizing design. One man's behavior is remarkable: he crossed his legs and arms and rejected the use of the belt (see Figure 4.2 and the video clip [18]). All participants agreed that such an accessory was unsightly and in contrast with their style. Furthermore, they said that the fabric of that garment could cause unpleasant consequences (i.e. embarrassing perspiration, mainly during the summer). Only its elasticity was appreciated for making the belt easy fitting. A participant ironically commented that the appearance of the belt could be improved by embroidering it while performing disagreement anyway (see Figure 4.1 and the video clip [19] Similarly, the pouch (i.e., it was black and wearable with a normal belt) was uncomfortable especially in a sitting position as a man performed. Furthermore, this object revealed gender blindness. For instance, a participant woman stressed that an older woman used to wearing gowns would be unable to use such a design.

According to the participants of both groups, the smartphone was not handy because of its size (i.e., 137x70x8 mm) while a smartwatch exemplified a better choice and a working

Figure 4.2: Belt and pouch are tested by the participants during the first workshop.

device as well: it is noteworthy that the first group was not informed about the device (i.e., the smartwatch) given to the second group and vice versa. A man questioned the participants' design space by saying:

> "Did you decide the size of the smartphone yet? [In that case] there is nothing to discuss".

Another man suggested that a good idea would be to design a pedometer with a fall detector so that the size requirement could be satisfied and the portability too. Similarly, a woman suggested adjusting a technology like her iPod shuffle by transforming its big central button into an easy to find and press panic button that could be used in the case of a fall. Furthermore, she said that it would be pleasurable, even though more expensive. An older woman explained that a smartphone would be a problem for a person used to working outdoors (e.g., for gathering firewood) as many people do in rural areas near Trento. The matter of concern about the smartwatch was less from the aesthetic, social, and gender perspectives and more from a functional viewpoint (i.e., the poor performance of the speaker phone and a waiting time which was considered too long for communicating with the contact center in case of an emergency).

While the participants were testing and criticising the proposed devices, the post-doc researcher facilitated the conversation among the participants, answering to the questions they posed her, mainly about the future development of the project or the decisions taken by the project stakeholders. The researcher performed as an ally of the participants, pointing out that "we" (the university partner) had not been involved in the choice of the devices to test. For the researcher it was important to make it clear, since she was the contact the participants met the most, during home visits and workshops. Therefore the participants saw her as the recipient of their complaints and one of the possible responsible for emerging issues. Her research evidence of the inappropriateness of the devices did not

Figure 4.3: Testing the smartwatch during the second workshop.

influence the tech partner's decisions, taken before involving the seniors. I assisted to one of the meetings before the workshops, where the tech partner representative brought to the university the devices (the belt and the swatch) the seniors were supposed to test. The researcher asked to the tech partner representative what margins of intervention there were regarding the devices that could take into account the participants' evaluation, but the response was quite negative, since it was not possible to radically change or to re-design them, due to management reasons I could not figure out. Accounting for this answer, that in a sense made useless the research conducted by the university partner, the researcher wanted to keep her integrity as researcher, without being identified by the seniors as partner in crime of managerial design decisions. Despite my marginal involvement, I could not agree more, since ethically the senior participants' protection and empowerment had the priority. Even tough workshop facilitators have to be always supportive towards participants, to facilitate the articulations of feedback, it is possible that seniors read our workshop facilitation as complicity with them and this reinforced their skepticism about the project and the devices. This tension between our professional role and those of the tech partner influenced on my working positionality: a working role that is constantly in interaction with participants tends to be more comprehensive and welcoming to subversive reactions from them.

The term "subversion" is adopted here in a positive and constructive sense [104] for describing the powerful dynamic that the participatory process enacted. Two groups of people were invited to interact with several objects and technological devices for the fall detection. Such an interaction was expected to shed light on the acceptability of these project outcomes. However, the participants performed a subversive behavior. I do not mean a mere "here and now" refusal to act according to the expectations. Their subversion did not intend to compromise the quality of research. In fact, they voluntarily

participated in the workshop because they were interested in technologies for fall detection and that was their main concern. The seniors elevated their perspective above the design framework, by rethinking expectations and interpretations about older people as users. Here, what is *subversive* is the proactive behavior that occurs in participatory designing: such a behavior re-configures the relationship between researchers and participants. From this processual perspective, subversion refers to *PD in the making*: a subversive behavior cannot be predicted because it pertains to a genuine, legitimate bottom-up participation in design. By deconstructing a number of stereotypes, the participants appropriate the design process. They subverted a dominant "age" order according to which seniors are compliant participants of design processes. By taking a proactive and ironic stance, they brought into question both the acceptability of the devices and the project overall. The conflict between the seniors' perspective (i.e., self-image, lifestyle, and inner sense of being) and the design pattern traced in the pre-commercial procurement project became increasingly evident. Instead of being compliant, the participants acted (i.e., handling and wearing the devices) and reacted by challenging the age-related stereotypes (i.e., seniors as technologically inexperienced, passive users, and frail people) and subverting a dominant stigmatizing design for older people (i.e., assistive, unfashionable, and unpleasant). Subversion was performed both discursively and physically. Some people extensively expressed their opinion; others preferred a meaningful silence; some people interacted with the devices, others visibly rejected any contact with them. Critical sensibility, irony, and creativity were the strategies that pervaded the participants' way of being and doing. For instance, they found the humor in wearing the belt, and they uncovered the limits of the project design space, but they displayed their proactivity in suggesting alternative solutions.

4.3 Learnings

In the Acanto project, two learnings were preponderant for me. Firstly, fieldwork suggests the need for an intersectional perspective in system design, historically elaborated by the third-wave of feminism, that includes the gender dimension but goes beyond it, since gender is only one element that influences power-dynamics among communities, including age, social position, wealth, etc., planting the germs of a feminist perspective in participatory design. Secondly, re-imaging the user, starting from people's voices, is the fundamental step to make a design (PD especially) meaningful and empowering and not functionalist (if not particularly harmful), and taking into account power-dynamics (including those gender-related, but not only) is part of the process of re-imaging the participants.

In the Suitcase workshops, the participants' re-actions were noteworthy in that they expose a gap between a dominant design for older people and the design expected by the people that are categorized so. But that is not so different from other age-related "categories" of population, the genealogy of which lays on the market-segments created by Post-Fordism. The subversive power of such behavior goes beyond the local project and the relationship with the researchers. The participants subverted a wider design framework shaped by functionalist-based and commercial agendas of the consortium of

stakeholders.

The seniors proved that today's so-called older population could also be fit, healthy, independent, and tech-savvy, like the rest of the population that does not fall under the category of "elderly". They showed a valuable knowledge grounded in their personal experience with several devices (e.g., the pedometer, the iPod shuffle) so that the stereotype of seniors as uninterested in technology was also questioned. The interaction with the devices shed light on the importance of combining functionality, usability, and aesthetic in the design for older people. In particular, these workshops were significant in my experience because they contributed to a self-deconstruction of the idea of designing with "seniors", substituting the idea of designing with "people". This shift allowed me to start thinking of focusing on matters of concern rather than focusing on "users". Transmitting this idea to participants that are usually categorized in user typologies is also helpful for them, in deconstructing the stereotypes they have on themselves, unlocking inedited design possibilities.

In conclusion, the experience gained from the Acanto and Suitcase projects represents an exploratory work as a link between the state of the art on active aging in System Design and Participatory Design and the first-hand experience of the "living things" that only can be gained through the encounter with the "otherness". The vivid agency shown by the participants exceeds the negative aging stereotypes that often inform institutional narratives and puts at stake the agency of the researcher that is called to take an ethical position standing by the side of the participants. The encounter with the "otherness" is significant for two reasons: first, it plants the germs for re-imaging the "users", deconstructing ageism and the user-customer perspective shaped in Post-Fordism identifying users as market segments; second, it signposts the beginning of the articulation of the entanglements between the power-dynamics that have been considered. Karen Barad provides an enlightening definition of "entanglements": "to be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence" [40, p.ix]. Moreover,: "Re-membering and re-cognizing do not take care of, or satisfy, or in any other way reduce one's responsibilities; rather, like all intra-actions, they extend the entanglements and responsibilities of which one is a part" [40, p.ix]. These are the entanglements put in motion by doing Design Anthropology within Participatory Design with an intersectional lens. In this sense, pursuing a participatory design project in precarious contexts is at constant risk of failure, but at the same time, it gives flexibility and proactivity in correcting the focus when, for instance, the implication is the move away from the original focus of designing an ICT solution and move towards a non-technological one.

Chapter 5

The Movement of Seniors and Pensioners. Delegation and opposing agendas

5.1 Aging in a scattered mountain community

This case study took place in a mountain community in North-East Italy where I was living from October 2014 to March 2016. It is a scattered municipality formed by 18 villages and lies 7km from the nearest city. For its geographical position, depopulation and the aging population, this municipality is considered by regulations as being disadvantaged. As a result of such a classification, it is privileged in applying for EU and regional funding. The municipality is characterized by several volunteering associations (19 associations were counted in 2015, serving the 1355 citizens). One of the most active associations, together with a youth service, is the Movement of Pensioners and Seniors. This movement presents a self-organization structure - a bottom-up approach to social and civic engagement and has a very low use of digital technology. It has an average of 30 active members per year, most of who are women, including the president and the vice-president. The community is defined by the institutional language as a *comune sparso* (literally, 'scattered municipality') and a *comune disagiato* (disadvantaged municipality). It is located in the complex of valleys called Vallarsa (see Figure 5.1) , a mountain area south-east of Rovereto, with an average elevation of 525 meters and a population of 1373 ([20], [21]).

Being a "disadvantaged" community inside EU regulations implies being financially sustained by EU funding for developing social and entrepreneurial projects in order to improve the area economically and socially and thus, moving out of the status of "disadvantaged". A disadvantaged area is a term used by the Official Journal of the European Union since 1988 [7], to define a rural and hostile environment. In that regulation and in the updated version from 1999 [215], disadvantaged areas are referred to as being in need of development. Parameters to evaluate the eligibility of an area as rural (and so disadvantaged) are set as well as the kinds of interventions that the EU Community can provide in order to support economic development. Consequently, from these institutional nar-

Figure 5.1: One of the valleys in the Vallarsa area.

ratives, it is possible to draw some guidelines about what development, entrepreneurship and innovation are meant by the EU regulations.

Regarding the notion of "disadvantaged", the CEE regulations describe areas characterized by low productivity, isolated geographical position, aging and depopulation. Mountain areas are explicitly included in this categorization (Article 18), and are those characterized by a strong limitation of land exploitation, due to two factors: hostile climate and altitude conditions and the presence of steep slopes. These factors imply high costs of production. Summarizing, the CEE regulation supports (Article 25): the introduction of new technologies for production, innovative investments, and the implementation and modernization of existing infrastructures. As we will see in the following paragraph, this leads to a tension between innovation (meant by the EU) and tradition (which leads to alternative innovation or 'innovation of innovation').

Surprisingly, the Euro Project, an EU body that works on community consultancy and public facilities, according to [215], declares that the whole province of Trento (including all the mountain communities) is considered a disadvantaged area [13].

The fieldwork I conducted in this mountain community mixed with my desire to settle in the area as new resident and become involved in community life. Therefore, I spent time with locals, participated in local activities (public celebrations, festivals and the local theater), and attended local businesses (the bar, the bank, the post office, the local doctor, the pharmacy). I also began participating in one of the many activities offered by the Movement of Pensioners and Seniors: the university of the third age. Initially observed with curiosity, I was accepted by the seniors in attending the classes, without being registered to the movement. Formally people below 65 years could not register as members and thus participate in the annual activities that also include trips and

gymnastics classes. I was invited to a number of seniors' houses to drink coffee and have informal chats. After some months, I had built a network solid enough to be able to schedule five interviews in a single week while adhering to a tight deadline for the Acanto project (see Chapter 4).

After two months of participant observation, I began to draw a general idea of this community: animated by tight kinship that crossed the public and private sphere three or four family surnames were recurrent in the political roles, in the public administration and in the few local businesses [26]. Politics and public decision-making were historically a family business. Many elements contributed to the idea that the institutional apparatus was something that just adapted to the pre-existing political dynamics of the community similar to many isolated and small communities. The local community magazine shows how the community diary is full of festivals, conferences, religious celebrations, workshops and publicity for group trips, all of which were organized on voluntary basis by the local associations.

From a design interest perspective, I had thought to have identified a problem I could work on in setting up a participatory design project with the seniors, a problem that often emerged in their conversations. This mountain community is considered by EU regulations a "disadvantaged municipality", since it presents an isolated position in respect of the closest city and industrial area, depopulation, aging population, and very low economic production and entrepreneurship. A common problem that the president and vice-president of the movement reported is the lack of public transport between the villages that make up the municipality and from the municipality itself to the nearest city. This is also reported to be the main cause of the decreasing participation of seniors in the movement activities and meetings. In the past, the movement had a van available for taking seniors around, but the last public administration cut its funding from the public budget and stated that the group must rent a van if they required transport.

The isolated villages are all connected by a single road that cross the valley and ends at the top of a mountain. This dead end road creates a peculiar context to the development of informal and familiar hitchhiking. Indeed only the valley citizens travel this road (with the exception of some occasional cyclist or mountaineer), so that hitchhiking is considered by the locals as a common and safe habit, practice by people of any age. I used to do hitchhiking myself, as a passenger as well as a driver, offering lifts to teenagers and seniors.

Therefore, my plan was to engage them in a participatory design process based on the local habit of hitchhiking. Nevertheless, when I made a proposal to the movement to set up a bottom-up PD project, they told me to ask the mayor and the municipality for permission. Numerous negotiations between the local Councilor for Heritage and Culture, my supervisor and myself followed. Soon after, the youth association was involved and I was pushed by the councilor to apply to an open call for projects made by local youths, in the interest of her political agenda, as I later understood. Nevertheless, the youths showed no interest in the idea, not recognizing public mobility as a problem for them. Nor did they show any enthusiasm for collaborating with seniors. Thus, the making of a PD project stopped. In the next sections, I articulate the design opportunities, how the project was infrastructured and the learnings from its failure.

5.2 Design for public mobility

From the preliminary field study conducted in the Movement of Seniors and Pensioners and in the mountain community in general, a recurrent public issue was the lack of public transport. This represents a substantial barrier for seniors to participate in the activities of the movement, as well as for those citizens that do not own a private transport (youths and adults), as reported by various citizens in a public meeting with the municipal council.

The main goals of the movement are related to creating a social environment for seniors themselves and then for the public, through cultural and physical activities. The main barrier to achieving this goal is the lack of public mobility. This lack of transportation is a common problem reported by all residents, regardless of age. Seniors claim that it is the main cause of seniors' isolation at home and the impossibility of undertaking activities together or to involve those seniors that stay always at home.

Nevertheless, informal strategies for moving to and from the nearest city and between the villages of the municipality are already performed, such as hitchhiking. This is possible because the road that passes through the villages is a single road that closes at the end the valley and therefore those that drive here are mostly people that live there or occasional excursionists. This creates a feeling of safety for people of any age when hitchhiking through the villages. On most occasions it is likely that the hitchhiker will be offered a lift by an acquaintance met at the local mini-market, bar or church.

Therefore, in terms of design implications, this case study offered the opportunity to investigate how to realize a design framework for collective transportation, such as car-sharing or car-pooling, in a public dimension that is characterized by a rural context and low use of ICT. Therefore, my plan was to organize a series of workshops between January and May 2016. These were to include workshops on user requirements mapping, co-design sessions and medium-fidelity prototyping sessions which would involve two distinct groups that would have interacted with each other: an initial group of seniors from the movement and another group formed by youths and adults, chosen with a diversity of relationships with the selected seniors (children, grandchildren, friends, acquaintances, strangers).

5.3 Infrastructuring a bottom-up PD project

Nevertheless, when I made proposals to the movement regarding the setting up of a bottom-up PD project and the organizing of a first workshop, they told me to ask the mayor and the municipality for permission:

> "You need to talk to the municipality, to the mayor and to the Councilor for Culture (*Assessora alla Cultura*, trad). Without the municipality we cannot do anything",

stated the president of the Movement. A first alarm sign was given by the vice-president, which I recognized as my gatekeeper: an independent, outspoken and determined, tech-savvy, "stranger" (for the local community, even if she comes from a nearby village) a divorced woman in her late 60's:

> "Oh! I'm so sorry for you dear, but here, don't hope to change anything!"

Their reactions made perfect sense in anthropological analysis (they wanted guarantees of protection by their "superiors") but surprised my design side, since the Participatory Design ideal claimed for democracy and a bottom-up approach.

Not wanting to give up, I contacted the Councilor for culture, a local woman in her 30's seemingly intent on a career in politics. It took a month to obtain a meeting with her. When I proposed the project idea on mobility sharing, she was enthusiastic. Nevertheless, she started articulating previous ideas of hers, such as an app for another issue of interest to her: a military fortress from World War I, restructured by the municipality and relaunched by the region as new heritage attraction. She was moved by her agenda and political aspirations and she did not show much interest in the senior movement. Two formal meetings followed, with the Councilor for culture, my supervisor and me in attendance - one at the local town hall and one at the department of my university. The Councilor seemed very open and once again stressed her project about the fortress. We explained that we worked with older citizens mainly, but do not exclude other citizens. I disclosed my agenda of designing for the public interest in a participatory way, not just for "targeted" users but rather for "targeted communities". She strongly suggested that, as I was a young citizen of the mountain community, I should have framed my project to fit into the regional initiative called Youth Plan (*Piano Giovani*, trad.) [22], which would have allowed me access to a funding stream reserved for projects around young people.

The Youth Plan is an annual call for resident youths in mountain communities, promoting involvement in civic life. As a result of this new direction, I arranged the ideas of the project more formally, meeting with the person in charge of receiving the applications from the Youth Plan, a young man who was the former youth association president of a nearby valley. He clarified that I could not propose a project alone but that I needed the support of an association or of a group of citizens between the age of 14 and 30. After this meeting, I realized that the Councilor's request was covering her hidden agenda. On the one hand, the applicants for the call had to be associations and so I could not apply as an individual citizen. On the other hand, the Youth Plan was for youth associations and I could not apply with the movement of seniors with who I had established relationships.

Every mountain community of the Trentino region has its own youth association and their members are often involved with local political parties once they become adults (as was the case of the Councilor for culture). Therefore, it turned out that the call for funding was not just for youths, but for the youth associations and so I had to arrange a meeting with the one based in the mountain community were I lived. At the time, I joined a car-pool with two girls, that were members of the youth association and students at the university where I also studied. They were friends with each other and one was introduced to me by one of the women from the seniors' movement. They recognized that car-pooling was very convenient due to the valley's lack of good connections with public transport. Since they were industrial engineering students, they seemed to understand the opportunity of designing a digital tool for solving an issue that they also had. Therefore, the girls organized a meeting to discuss the project with the president of the youth association. We met one night at the local bar. The two girls and two other boys (the president and the former president, who was also the partner of one of the girls) participated. I explained to them who I was, what I did and what my proposal involved. Their

feedback was quick and short, disappointing my expectations: the problem of the lack of public transport did not resonate with the president since he had a scooter as teenager and now a car as an adult. He said that this was a common situation for local youths. None of the other participants disagreed with him. They agreed that their grandparents should not drive anymore or take the few buses since it was too dangerous for them. This is a clear image of how seniors are seen and stigmatized by youths, apparently because youths feel patronized by them, in a vicious circle. They argued that the families of the seniors (their children and grandchildren) are able to provide transport for them, when necessary. Furthermore, they were not interested in doing a project with seniors because their previous experience was negative. They mentioned a previous computing course, also promoted by the Councilor for culture and by the man that administrates the Youth Plan, and a cooking course. The youths said they felt uneasy and patronized by the seniors.

> *I was listening to them carefully and increasingly panicking inside. The problem on which I had focused for a long time, suddenly disappeared! Should I insist and dig more into their aging stereotypes, trying to convince them that they have a problem? Unhappy with their aging stereotypes, I toyed with the idea of imposing my own ethnocentric perspective but opted not to as it would have been unethical. Instead, I step back from insisting and use my "power" (if I had any.)* I kindly thanked them and, feeling somewhat confused, offered my contact details should they decide to pursue a similar project in the future.

Following this meeting, I interviewed my gatekeeper and the vice-president of the seniors' movement to ascertain if there were other strategies to proceed with a project without the municipality's involvement, but her answer was negative. She stressed the fact that I was a stranger there and that local politics is a family affair. I then acknowledged that my position was precarious as an independent researcher and my power for negotiation was weak when compared, for instance, with the one of universities and municipalities in institutionalized projects that have an institutional safety net that can help in dealing with issues among the stakeholders.

The situation worsened: I could not apply to the call for funding anymore because I did not have young supporters, as the Councilor had strongly encouraged. I could not follow the ideal, bottom-up approach starting from the seniors because they felt that to be impracticable and wanted to have the support (social and economic) from the municipality before proceeding. Meanwhile, I had moved out of the valley and to the provincial capital, Trento, in order to be closer to my work place. I was commuting for at least 2 hours per day while living in the valley, and the university courses and the Digital Lab were starting to become demanding.

These practical issues in my daily life became major impediments to set up a fruitful collaboration. On the village side, reinterpreting the situation, I looked at Chiara Del Gaudio and colleagues' work on impediments and local powers [85]. The indirect influence of local actors that are not self-evident, the strategy as non-decision-making but indefinitely postponing, the "hidden agendas or exercising power through indirect secondary actions" [85, p.137] were prominent in this case study, among all the actors I interacted with, from the local dependency of EU and regional financial aids, to the personal agendas

of locals and their associations and parties. For instance, the bar owner of the only bar in the whole mountain Municipality was used to say that she would have closed down the bar when the regional funds would be finished. The bar closed in March 2018 and in the moment I am writing (August 2018) there is not any bar in the whole Municipality.

Overall, entering the field as a local from somewhere else (local by documents, not by roots), was worst than entering as a declared stranger-and-guest with an official letter, since it keeps the identity boundaries and the roles clear: despite the risk of being authoritarian, I might have been displayed as more influential and keeping the distance from the locals would have facilitated their deny in participating to a design intervention. Nevertheless, in Del Gaudio et al work, their position as strangers did not work either [85].

5.4 Learnings

One month after my departure, I returned to the valley to visit my gatekeeper, secretly aiming to find some clarity in my foggy reasonings. Enjoying the informal chat with her, I managed to ask her what she thought that happened to my project:

> "I told you! You cannot change anything here! You are *foresta* [a dialect word for 'stranger'], like me!".

I had confirmations of my assumptions of the local micropolitics as a type of family business. It made sense then: being a stranger facilitates the work of the ethnographer, but does not facilitate the work of the designer.

I also gained hands-on experience with the power-dynamics at stake in the organization of local projects in the Trentino region. Similarly to EU and nationally funded projects, which involve broad networks of stakeholders, the power-dynamics in this small mountain community in Trentino are significantly top-down oriented. The result is that even projects aiming at being participatory have a top-down push to allow a bottom-up approach. Citizens are prone to actively participate only under the approval of local power brokers.

> *My gatekeeper told me that the youth association invited the movement to a formal meeting. The Councilor, a forest ranger and the firefighters chief also joined. There were only three seniors present. The youths explained their program of events for the coming year (youth activities that did not involve seniors), and made a proposal to the seniors to set up a transportation service for them (I was starting to gradually smile) to travel to the heritage military fortress (my lips turned down immediately). My gatekeeper expressed her disappointment and we kept drinking our coffee.*

From this experience, I learned how difficult it is build relationships with the aim of making something together in the case of a design project, and how it is different from conducting ethnographic research alone, in which people are more open to talk and collaborate. Instead, attempting to create something was revealed to be more demanding

but also, maybe, a more delicate affair, since the design intervention might affect more than an ethnographic account: it may affect the dynamics of the local social structure.

Therefore, although ethnography is an intervention in itself (just being there is enough to change the setting), design interventions introduce other elements, e.g. the future thing to be designed (see Ehn on participation, [92]), and can find resistance in a community, even with participatory design approach. As in the case of the first senior social garden (see Section 7.2), this experience provides a first hint for anthropologists working with seniors and their network in Italy: sometimes the implications of ethnographic work are not to design (technology), as Baumer and Silberman argue [45], but relations and participation.

Looking retrospectively at this case, the first four movements can be identified in the context of the association and my participation, and in the design idea of mobility as commoning practice. I found a first phase of exploration through ethnographic fieldwork, following a grassroots approach and so attending seniors' meetings as a new citizen. This was also a provocation since my role, a new citizen but also a researcher, was not clearly categorized by the seniors and the other locals. The exploration of the design idea on mobility emerged from chats with the association as well as with other citizens of the mountain community. Instead, I trace the relational movement of provocation when I proposed to the senior association to co-design a service that could deal with the common desire of a better mobility. Seniors reacted expressing the statement of being powerless and dependent from the local political powers (the Municipality) and consequently deploying a delegation dynamics towards them.

The conflict relational movement is expressed by the contrasting agendas with the local Councilor for Culture (my role as youth and not as researcher) and with the youth association (negation of a better mobility as a common desire), crushing into hidden agenda of public fundings to the disadvantaged municipality.

These tensions and the impossibility for me to solve them, lead me to reflecting on the impossibility to move forward with the design project, but that I could only conduct ethnography without co-design interventions.

Chapter 6

Digital commoning: sharing knowledge in a senior social center

In this chapter, I present a nine-month project I led on the co-design of a digital platform for sharing knowledge and expertise, in the context of a senior social center, separate from the movement mentioned throughout the first case study (Chapter 5). The context at the center is inscribed in the normative narrative of active aging in technology design, in which seniors are usually portrayed as fragile and dependent people. Here, I describe how, throughout a series of participatory workshops with a group mainly composed of elderly women, an alternative agenda to active aging is unearthed by them. In their agenda, seniors see themselves, and want to be perceived, as already independent, self-determined and keen to learn about technology, not in need of policies aiming at "activating" them. I argue that design anthropologists can deconstruct aging stereotypes through provocation and reflexivity, to then allow for designing participation, can facilitate the creation of alternative agendas for the participants. During this project, I elaborated on design anthropology as a way to create alternative agendas of active aging. In doing so, I started exploring and challenging the notions and practice of participation and sharing in a context where liberal-consumer active aging is enacted, which means where it presents a customer-service approach (see also Chapter 7 on senior social gardens). My proposal here is to make the Common tangible and recognizable by the seniors and to nurture it (see Chapters 1, 2, 3). In this case study the Common is represented by the co-design of the sharing of expertise and knowledge through an online platform (www.fucinaperta.it), realized by a group that, throughout the process of design, was able to offer critique on that process.

This case study is presented and analyzed through four lenses: 1) re-imaging the "user" of active aging and deconstructing ageism; 2) discovering the life of attachments as affective bonds as ways to deal with the scarcity of resources; 3) fostering and supporting participants' gains and finally, 4) the emergence of a PD feminist framework.

The reconfiguration of participants, from a perspective of themselves as "user-customer" of a service (the PC lab) to allies and mutual learners, was possible through the deconstruction and critique of ageism, the reflexive co-exploration of participants' points of view and provocation about sharing and participation.

Concerning the affective life of attachments, in the senior social center where the group

of participants was almost entirely women, the relational attachments were those of affinity and empathy, since the weekly workshops became a space to talk about aging as women.

Fostering and supporting participants' gains concerned learning and interpreting technology in their own terms, with the creation of a local language of metaphors and making them recognizing that their expertise is a common that needs to be preserved, raising awareness about common-yet-to-be. However, the sharing of their knowledge and expertise as a Common on the Internet encountered some obstacles in terms of negative aging and gender stereotypes incorporated by the women about themselves (self-underestimation). It was not straightforward for the participants that their knowledge - that they took for granted and therefore struggled to recognize as such - was valuable, and even more, that is could be commoning as they designed its sharing and management. Concerning the acknowledgement of a feminist lens in Participatory Design, the gender dimension emerged from the empirical work as preponderant (18 of 20 participants were women) and that their attitude to experimenting and exploring unknown methods (participatory ones) and technologies reflects the six qualities of feminism in HCI described by Bardzell [42]: pluralism, participation, advocacy, ecology, embodiment and self-disclosure. These qualities were discovered and embodied by the researchers and the participants.

In order to pursue my agenda, id est advocating on sharing expertise as commoning practice, the process was articulated through five movements: exploration, provocation, conflict, reflexivity and appropriation. These were helpful in the creation of alternative agendas that challenge the current narrative around a particular issue, analyzing and reflecting on the challenges that emerged along the way. Finally, I show and discuss how fostering and evaluating long-term recursive engagement is problematic. Finally, I examine what was happening outside the weekly workshops, where a small but significant group of participants self-organized themselves in a IT "mutual help" group.

6.1 Context description

We developed our design project in a "liberal-consumer" context [78], in which seniors are "users", that consume the offers dispensed by the senior social center. At the center, technology is considered as a tool to learn scholastically. My research agenda as an activist researcher was to challenge this perspective and foster alternative agendas that are different from the dichotomy of technology as consumption and the person as user [102], as they are considered by the context of the social center.

This chapter builds on data collected in a series of 19 workshops that took place once a week between October 2015 and June 2016. These workshops were realized as part of an established partnership between our interaction design group Social Informatics and a senior community center in Trento, run by the social cooperative Kaleidoscopio (I will refer to the senior community center as 'Kaleidoscopio', without specifying which one of the senior community centers managed by Kaleidoscopio it was). In the Trentino region Kaleidoscopio is one of the largest and most well established social cooperatives and was founded in 1996, with 24 centers under its operation [3],(these data do not include the new centers for refugees and the protected houses for vulnerable persons.). Kaleidoscopio dispenses social services to a wide variety of "users" considered vulnerable by the institu-

Year	2012-13	2013-14	2014-15	2015-16	2016-17
Activities inside the Lab	Starting a community blog and content creation for it	Writing software and collective creation of memory cards (by participants and researchers)	Video-making through participatory video; printed DIY manuals (by researchers)	Co-design of a digital platform for sharing knowledge; printed DIY manuals (by researchers)	The laboratory did not take place due to lack of researchers
Activities outside the Lab	None	Co-design a tablet app for eliciting personal reminiscences	Participants self-organized a weekly group of mutual-help	Participants self-organized a weekly group of mutual-help	4 ex-participants agree to become ICT tutors and volunteered at the senior social center, under request of the social workers

Table 6.1: Time-line of the Digital Labs editions

tional narratives, across all age groups, and promotes individual empowerment and social inclusion. Our research group's access to the senior community center was established three years before. The agreement, set up between Professor Vincenzo D'Andrea and the social workers, consisted of organizing an annual computing course in exchange for access to run research activities.

The first laboratory of technologies was organized in 2012-13, and opened the research path that would have characterized the following editions: a participatory approach to building a laboratory of technology. The evolution of the laboratory through the last five years merits a brief explanation in order to understand the conditions in which the laboratory, under the form of a series of workshops, was set up in the 2015-16 edition. The core idea was to build the lab with the participants and the social workers, choosing different topics and different learning approaches each year. The idea was then to undertake matchmaking of participants' interests and researchers' agendas. The research question, which crosses the various editions of the lab, concerned the sharing of information and of which information the participants would like to share. The substantial difference in the last Digital Lab (2015-16), in respect to the previous editions, was not to focus on the users' typology (older adults) and their relationships and barriers with ICT, but to focus on valorizing their knowledge and expertise, treating it as a commons, and using ICT as a tool to share and nurture it.

As summarized in Table 6.1, the laboratory editions included working in groups to create the contents for a community blog that reports on activities at the senior social center (2012-13) [14]; the teaching, in frontal classes, of word processing or similar software (Word, PowerPoint); the collective creation of memory cards (2013-14); the teaching of video-making through participatory video [143]which included storytelling, shooting, video and photo editing and uploading on YouTube (for example, this video realized by a participant that opened a YouTube account: [33]); and, finally, the co-design of a digital platform and the collective content creation. This was done with the addition of printed DIY step-by-step manuals, produced by the researchers (2014-15). Meanwhile, outside the lab, the following projects were developed: a tablet app for collecting and recounting personal reminiscences [168]; and a self-organized group of mutual-help run by the participants, that weekly met with their laptops and smarth-phones at the senior social center (2015-ongoing).

In this chapter I examine and discuss the second Digital Lab edition (2016-17), although my involvement had begun in the first Digital Lab edition (2015-16) focusing on participatory video, that I structured and facilitated together with two other PhD students and one master's student [212].

Before moving to the case study, it is significant to highlight that my research trajectory has been determined by some empirical work I carried during the 2014-15 Digital Lab. The series of workshops started in December 2014 and ended in May 2015, for a total of 20 weekly workshops.

6.2 Interlude: Digital Lab 2014-15

6.2.1 Exploring participants' point of views about computing and the Internet

The participatory construction of the workshop through the year started from a request by the social workers that mediate between the researchers and the seniors who had expressed (to the social workers) a wish to learn to use media and communication tools (software and devices). The 2014-2015 Digital Lab edition was given the title (by the social workers and us): "Storie, immagini... Comunicazione" (translated as "Stories, images... Communication"). In the first meeting with the group of seniors, we asked them to brainstorm about what they would like to do with the computers. We clustered their ideas in two macro areas: video and text storytelling, and social media. Seniors stated their goals for the workshop: to produce videos with Windows Movie Maker and texts with Microsoft Word and upload them to the Internet. From these themes, we articulated a flexible program that involved participatory video and mutual learning. The training consisted in theory and practice phases. During the theory, I explained the different kinds of shots showing them in a slide presentation, while in a second phase I prepared a sheet for making their storyboard. I trained three participants about the basics of a camera and of a basic shooting scene. Then the three persons called another small group of participants and explained what they had just been taught supervised by me (Figure 6.1). This process continued until all the participants provided and received training to use the camera [143]. Furthermore I prepared a short manual to edit videos with Windows Movie Maker (the choice to use this software was made due to hardware available at the PC Lab of the university, the simplicity of the software and the fact that it was free to download). Seniors appreciated the image-based step-by-step style of the manual, because the figures showed exactly what they found on the screen (see sample in appendix A.1). This image-based style was the one I adopted also for other manuals in the second Digital Lab.

Social workers expressed to us their agenda to find effective ways to facilitate the formation of "expert" users among the seniors, which could activate processes of mutual aid and peer mentoring outside the laboratory. During the workshop, we noticed the formation of small groups of mutual learning and the emergence of expert users recognized by the community. Yet during the yearlong program, not one of the participants offered to become an ICT tutor and volunteer at the senior social center, with the exception of Carlo, a middle-aged man that was acknowledged as an expert user years prior to our project beginning, and who had also held his own photography courses at the center. As a result, the social workers asked him to join us on the tutoring side during the workshops with us. We welcomed this idea and started a collaboration with him. Nevertheless, via discussions we encountered some tensions about the style of teaching. While we wanted to promote a participatory environment, Carlo strongly supported a prescriptive and authoritarian way. Social workers would have to wait until mid 2015 (see Table 6.1) to see new ICT tutors volunteering at the center - in total, three women and Carlo.

In the laboratory, we wanted to avoid seniors identifying the researchers as teachers and themselves as students. This was not always easy, nor possible, due to many factors:

Figure 6.1: A moment from a participatory video workshop

time constraints related to the amount of technical knowledge to address, the number of participants, the sometimes chaotic atmosphere and the scholastic arrangement of furniture in the computer room (see Figure 6.6)

Beside these limitations, during the laboratory we noticed the formation of small groups of mutual learning and the emergence of expert users that were recognized by the community.

6.2.2 The collage session

In agreement with the other researchers, I had the chance to run a collage session in one of the workshops. A collage session is a method I had used before, during my previous working experience as a social worker and video-maker. The aim of it was to explore the imaginary of the participants relating to computers and the Internet. To do this, I prepared an introductory text that I read aloud to them at the beginning of the session. The text was an evocative call to participants' memories, stimulating sensorial and affective reminisces about their first experience with a computer: what shape it had; its color, size and smell; what sound the keyboard and the mouse produced under their fingers; where they were; where the computer was positioned, and so on. In the previous week we collected as many magazines as we could, which were needed to provide the material on which to work (see Figure 6.2).

The interesting aspect of a collage session is that from an initial entropic set up, people manage to find their meanings through the images through which they browse.

> *The collage session has been welcomed in different ways from the participants. Surprise and curiosity were, above all, the most common reactions. Indeed, they did not expect a meeting that involved not touching the keyboards. As an*

Figure 6.2: A moment from the collage session

experimental workshop, we decided not to inform them in advance. Exclamations relating the collage to a psychological and therapeutic activity followed. Among those that wanted to keep their own collages, a woman claimed "I'm going to show it to my psychologist!".

One of the few male-participants referred to a slight feeling of unease with collage-making being an activity for children. This comment hurt me because it wasn't my intention to make them feel childish. Collage making, as far as I had used it with adults, has been welcomed as a creative activity of amusement and a distraction from the daily routine or a relaxation from work.

We were aware from the system design literature that one of the negative stereotypes about seniors is considering them childish (see Chapter 2). Ageism is a phenomenon that influences seniors not only from external judgment but also from self-judgment. It has been documented that this self-ageism is developed by people when they are in youth or adult age towards those that are older, and then it remained when they themselves became socially considered as "old":

A woman in particular came to me and openly complained, saying that if she would have known that today we wouldn't be using the computers, she would have stayed at home, taking care of her husband. This is because, in order to join the workshop, she pays a caregiver to stay at home with her spouse. I felt guilty and expressed my apologies, but at the same time I felt a bit upset because her reaction was meant to perceive the workshop as a service and we researchers as providers, she as a client. I had to remind myself that I carefully prepared for this session, and that in previous workshops it gave thoughtful outcomes. I

breathed deeply and calmly explained to her that this is an experimental workshop about technologies and that we are not just volunteers but also researchers. I didn't know if this repositioning of myself was helpful, but during the session she changed mood and engaged in the collage with enthusiasm, giving important feedback on her view of her competency in computing. We asked the participants to give a title to their collages. She titled hers: "Using a computer is a matter of style". Asking her why, she explained: "I'm the only one in the chorus group that is able to send e-mails. At the church group it's me that sends news and meeting announcements". At the end of the session she came to me and thanked me for the morning spent together, saying that we young facilitators were "good guys".

The resolution of the initial "conflict" with the woman initially complaining, but at the end satisfied, brings new learnings about the efficacy of reflexivity. The clash between the different interests of the participants and the researchers elicits reflection in both, through mutual learning and small shifts of perspectives.

This exploration allowed to draw an overall picture of seniors' high expectations of computing and the Internet, on the possibility of acquiring knowledge, but also their skepticism related to the risk that computers and the Internet distract and alienate people (youths in particular) from "concrete things". A woman had created a collage (see Figure 6.3) explaining that she was fascinated by the Internet as a window to the world, but she did not feel it as a fundamental resource for her life-style, since she lived most of her life without it and knowledge can be found out in other ways (talking to people, going to the library). Her concern was about the loss of a connection with nature. "We risk losing the feeling with the Earth" and the deterioration of relationships with others: "When I go out, on the bus or in bars, I see youths that look at their cellphones instead of talking to each other".

Echoing Light and Akama: "we must accept a high degree of arbitrariness in this kind of work. A chance word may bring in or redirect an uncertain participant, changing the group, the interaction and the outcome in unpremeditated ways" [137, p.69].

6.2.3 The Polaroid effect: attachments as affective bonds

During the last workshop of the laboratory, a deeper reason to engage with technology emerged: staying together to creating sociality. We realized that the development of sympathy and mutual trust between the seniors and ourselves was essential to continue until the end of the series of workshops. Developing affective bonds was a, until that point, unknown strategy for dealing with the precariousness of the lab: the volunteering connotation of the lab, the numerous moments of chaos and improvisation, the unfriendly set up of the computer room and the impossibility of improving it.

Today was the last meeting at the workshop. We saw the videos of those willing to show them. Seniors' attention was minor than the previous meeting of the fall-winter session before the Christmas break. Indeed, the video was no longer a novelty for them. (...) While we were waiting for a completed video to be uploaded and the computer to be connected to the projector, I anticipated surprise

Figure 6.3: A senior's collage made during the collage session

> *at the Polaroid cameras. Unexpectedly, I grasped their interest and Livia, who was the author of the video that was to be shown, said to skip it and pass on to the next activity. So instead, we used two Polaroid cameras and invited each of the participants to take only a single shot of whatever they would like to bring home from this lab.*
>
> *I expected they would have taken photos of the computers or other digital devices, or stills of the videos they had made through the year. Instead, everybody, without exception, wanted to take a photo with us facilitators or a group photo with everybody* (see Figure 6.4 and and Figure 6.5). *This collective choice seems to confirm what I previously annotated: many of their comments are not about their interest in participating to learn about new technologies, but to stay together: with us, with their fellow participants and their friends, spending time in a different environment. In this way, the last meeting ended with everybody happy and asking if we would continue next year, leaving the room with their photos in their pockets.*

The reactions of the seniors to the "Polaroid game" elicited reflections in the researchers about seniors' interest in digital technology. Their interest, indeed, seems closer to an informative journey. They arrive curious, about what digital technology can do, though their curiosity appears more like an interest to the "exotic" imaginary they have about digital technology and that in their opinion, we, the researches, embodied it, (see the collage session, Subsection 6.2.2).

Returning in subsequent years, the seniors hardly remembered how to use the software or the camera. This often caused frustration but they returned, year on year, nonetheless. Staying together and contributing to community building seems to be more

Figure 6.4: A participant showing the Polaroid photo she just took with two of the researchers.

Figure 6.5: A polaroid photo taken by a participant of the group and the researchers.

important than using digital technology. The technology is the medium. In this interplay of exchanging ideas and hermeneutic reflexivity, and similar to a previous occasion, we became aware of being the "exotic" to the seniors. We are watched with curiosity, distance and expectation, with a good dose of patience for our mistakes - patience they gained from decades of experience.

The response was positive and most of the participants attended the following Digital Lab edition in 2015-16. Sociality and networking were confirmed as prominent needs among seniors. In particular, vivid was the desire to communicate with their relatives and friends and to share experiences or stories; above all, to motivate themselves to use computers and smartphones. Another motivator was the willingness to prove to themselves and younger people (for instance their children and grandchildren) that they are still valuable and able to engage with digital technologies, expressing the agenda to disregard ageism that sees the elderly as tech-incompetent. Finally, also in this context, it emerged that seniors (women in particular) were already very active, engaging with peers in mutual aid, mutual learning and mentoring each other. In the videos produced, various participants spoke about their commitment to volunteering in external cultural, educational, religious and medical associations that involve not only seniors, showing a proactive attitude to social activism.

6.3 Digital Lab 2015-16: Deconstructing aging stereotypes

6.3.1 Re-imaging participants: from a user-customer perspective...

Compared with previous laboratory editions, which were flexible but characterized by frontal lessons, what I proposed was a workshop series. Our team of researchers was composed of a PhD student (a sociologist in Social Informatics) and a post-doctoral researcher (computer scientist in Social Informatics) and myself (an anthropologist doing a PhD in Participatory Design). The other researchers had different research interests and backgrounds, focusing on on-line learning and older adult learning. For this reason, and right from the start, it was crucial to negotiate our expectations and agendas during the weekly meetings used to organize the weekly workshops, as well as to be careful about the language and the metaphors we were using during the workshops (as explained later) in order to not perpetuate negative stereotypes around elderly incompetence or transmit the idea of imbalanced power-dynamics. I promoted the framework to develop the laboratory: my agenda was to challenge the idea of dispensing a course as if we would be a provider. Although we called it a "laboratory", seniors and, often, the social workers called it "the computing course", addressing the researchers as teachers and the weekly meetings as lessons. The provocation was articulated on multiple levels: the institutional narratives from the academic literature (see Chapter 2) and from the public policies (adopted by the social workers), the participants' expectations of attending a prescribed, teacher led class, but also the structure itself of a computing course, including content and settings. This was particularly challenging and needed to be elicited through most of the lab, because of architectural constraints. Indeed, as shown in Figure 6.6, the workshops took place in the computer lab at the university, the same place as previous Digital Lab editions. According to the architecture of the room, tables and computers are in fixed positions and

Figure 6.6: A typical workshop during the Digital Lab, in the computer classroom, University of Trento.

create individual stations facing the front where there is a, larger and raised, teacher's desk. This setting, which we were not responsible for nor were we able to modify, did not help in creating a non-hierarchical environment.

It was clear from the first workshops that seniors expected to attend frontal classes and scholastically learn how to use technically advanced apps and software. We introduced the workshop as an experimental place where we would all mutually learn, so everyone would share what she/he knew and we would have documented it through different ways in a multimedia project.

We did not talk in terms of Common and commoning, but in terms of valuing their knowledge and learning new knowledge with the goal to share what they already knew. We wanted to keep the conversation practical and also, at the time the idea of commoning was blurry in our team. Nevertheless, the more I was looking at their competencies and knowledge, the more I saw what they have in common as practices of commoning and mutual recognition.

Soon the participants felt lost, looking around and saying that they did not know anything, in particular, anything worth sharing with other participants. The idea of sharing something in order to learn something else (IT skills) did not appeal to everyone. Some of them openly complained around their expectation of receiving a proper frontal course. In fact, the group that initially contained 22 people, stabilized after one month to around 14.

We started by running two workshops, eliciting what the participants were interested in the most. With the aid of posters and post-it notes and without using computers, we elicited what seniors would like to share and what they would like to learn. After passing the initial uneasiness, people began to grasp the logic of our proposal and we ended up with four main articulated interests: wild local plants (how to recognize, locate, gather them and in what season to do so); the province public service smart card (where to find it, how to install and use it); pottery decoration (materials, drawing, painting, cooking); and, ethically conscious living (presentation of ethical purchasing groups, sustainable

tourism, ethical banks). The topics emerged through a guided process of brainstorming and speed-dating of topics to share, expression of interest in others' topics and, finally, counting preferences. Based around the top preferred topics, four groups were formed. We decided to select not more than four topics, because otherwise it would have been difficult for the three of us researchers to manage a multitude of small groups. People that did not have a topic or had not already joined a friend in a group were encouraged to choose one of the four. Once the groups were formed, people started to get to know each other better even if some of them were acquainted from previous Digital Labs.

In the following workshops, we provided them with a project plan sheet in which they organized their topics. As with the participatory video training during previous Digital Lab, we agreed that it was crucial to provide paper-based tools to facilitate their work, keeping it linear and not too much dispersive. The idea was to foster sharing through the creation of media projects. Therefore, we prepared a poster for each group. I made a proposal to the other researchers to create a hand written poster to provide a handmade feeling, hoping to decrease any possible anxiety in the groups in terms of "seeking perfection", instead encouraging the freedom to simply sketch. Nevertheless, one of the groups decided to copy the hand-writing draft to a WordProcessor file (see Appendix A.2). The poster was to include the sections: the topic they were sharing (e.g. public services smart card), how they wanted to share it (e.g. with a video-tutorial, an article), what was needed (information, a camera, physical card), digital tools (e.g.: computer, editing video software, the Internet, YouTube), the participants' responsibilities (names and roles), and further notes. This work plan was intended to raise awareness on digital and media technology and to elicit a critical "consumption" of ICT.

In order to deconstruct the structure of a "computing course" we needed to set up a sharing and friendly environment. The first two workshops focused on brainstorming what participants already knew: the expertise and knowledge of a lifetime. This would motivate them to learn ICT skills with a purpose, to communicate and estimate their knowledge, and clarify us on what to share with them in terms of ICT knowledge. At the same time, it would have created a space for reflection on the push for technology and inducted needs. Once the seniors understood what we were proposing, one of them said, illuminatingly: "It is like we know how to cook the soup, we need to learn how to use the spoon to eat it!", referring to organize, use and share their knowledge translated into a multimedia design project. The first stone for co-designing the Common was posed.

We started to challenge the *language* and began calling what we were doing a "workshop" and not a "course" anymore. The aim was to dress the role of "provocateurs", situating ourselves on the same level as the participants, stepping down from the desk of the teachers. As I acknowledged in the previous Digital Lab, building a common language was crucial for creating a trustful and collaborative environment, since many of the difficulties in using computers was based on a lack of visible logic in the usability of software and devices (the keyboard and, in particular, the mouse). Indeed, beside the usability barrier, the computer and Internet realm is characterized by English buzzwords that, for elderly Italian generations, often represent a linguistic barrier:

> *January 28, 2016 (workshop 11). Claudia asked the meaning of Twitter's bird symbol - a twit is a bird chirp and as the messages that someone can write on*

> *Twitter are short, since a bird sings with short sounds or "tweets". They had a collective and noisy reaction of surprise and amusement. The group is interested in understanding the meaning of the software starting from their names. In the previous workshops I explained what "browser" means in Italian (to browse =* sfogliare*), as to browse the pages of a magazine. Their faces brightened.*

Every word and expression needed to be chosen carefully and with awareness. For example, during the participatory workshop we acknowledged that to understand the *metaphor* of the cloud, is a challenging act of abstraction. It is, indeed, challenging to imagination that an on-line file storage service contains data that are virtually accessible everywhere but that the server is physically located in Sweden, as well as perceiving the difference between information located in the computer itself and information located on the Internet. Regarding usability, an example is that on the "desktop dimension" two left-clicks of the mouse are needed for selecting an item, whereas on the "Internet dimension" only one. All these details, taken for granted by daily ICT users, are part of a foreign culture for seniors that needs to be approached and familiarized. Similarly, daily ICT users need to approach and familiarize themselves with the otherness of a system of meanings and values that the participants gradually unfold to be a part of. It has been shown that so-called elderly people are as digitally capable as other "typologies" of "user groups" [188], [204], depending on how the technology is designed. Computer usability is not universally intuitive since computer interfaces are metaphoric: the graphic objects such as the desktop, folders and files system storage or the concept of the account, the log-in and the password, are culturally situated metaphors. Computer metaphors are not natural, nor neutral [107], since metaphors are agreements in terms of meaning, negotiated in specific cultural contexts. Metaphors dramatically change from one culture to another [93]. Also for this reason, an anthropological approach is needed in order to understand seniors' imaginaries and deconstruct negative stereotypes based on misleading usability choices in system design.

Furthermore, we negotiated a "learning middle-way" with the participants, preparing *printed and electronic tutorials* as physical attachments. Attachments consisted of step-by-step printed instruction manuals in which the software is presented and explained as tools, and therefore the seniors are situated in the position of users. I recognized the controversy of these attachments: in doing a workshop instead of a course, we questioned the traditional step-by-step, teacher to student method that does not work with on-line services, where the interfaces can change monthly (e.g.: Facebook). Nevertheless, at the same time I acknowledged the importance of these attachments in facilitating appropriation of the project and recursive engagement (this aspect is better discussed in the related section on attachments at the end of this chapter 6.3.5).

During the weekly workshops, we experimented with a dynamic mutual learning of ICT among the participants and among the designers and the participants. Still, the requests from seniors to have printed instructions was constant, even if it was impossible to provide exact instructions, since everyone had different laptops and operating systems. We were, however, able to create something adequate and the participants were pleased with the outcome of the printed DIY manuals.

> *January 21, 2016 (workshop 10). We distribute the printed manual we wrote*

on how to use the Chrome browser. We explain why we cannot teach in a step-by-step way: if we teach in that way, for instance how to use Chrome, then they wouldn't find exactly the same steps with Firefox or Internet Explorer, depending on what browser they have on their computers, feeling consequently lost. A participant said, "It's like cooking a cake, being able to cook doesn't mean following the recipe, but being able to read it and interpret it." Other participants agree with this view, but one commented that the problem with the computer is that it does too many things and that software changes continuously. Nevertheless, the group exorcises the fear and diffidence for the computer with a sense of humor. Eleonora and Francesca burst into laughter, repeatedly shouting "URL!! URL!!!" while they read through the printed tutorial, as it would a primitive cry, to the amusement of the others [in Italian, URL is similar to the verb 'urlare', that means 'to shout'].

The importance of building a common language based on metaphors that could allow participants to understand the logic behind the desktop dimension, the on-line dimension and different software (such as the image cropper or Google Docs) was a milestone in order to invent strategies for sharing and collaborating, through the appropriation of the IT tools used for realizing the group projects.

6.3.2 ... To allies and mutual learners. Provoking and exploring the notions of sharing and participation

During the workshops we accounted for the participants' acknowledgment of the discrepancy between theory and practice when 'sharing' and 'participation' emerged as positive ideals but problematic to achieve in practice. Emblematic was the use of Google Docs, where every group shared one Google Doc file and had to learn how to work on the same document simultaneously. The choice of using Google Drive and Google Docs was based on previous experience in the last year of having used Copy (https://www.copy.com/ [6]), a free cloud service whose use a social worker pushed because the feature of increasing free space was based on the number of shared contacts. The issue with Copy was an unfriendly interface in uploading and managing files that demotivated the elderly, so Google Docs was chosen in its place (also because Copy was shut down in 2016). Alternative strategies of collaboration and coexistence of the different authors' writings were created, which went beyond the use for which Google Docs was designed. The groups appropriated the main writing tool in different ways:

In the last workshops I noticed a positive reception of the new participants by those that participated in the laboratories in the past years. We introduced some tools for group work: Google Drive and Google Docs. They went crazy at seeing that people can write in real-time on the same document. We found the metaphor of a blackboard to describe how a Google Doc file works and seniors were concerned about how to preserve what one writes. I listen the discussion between two elderly women on how to avoid someone deleting what another wrote. They agree on a solution: adding in brackets the writer's name and what she/he

would like to modify. Other groups adopt the same solution, retaining it better than adding a note in margin as we had displayed to them previously.

Finding metaphors related to objects the elderly had experienced significantly contributed to breaking the fear of new technologies. For example, a group had decided to do a power point tutorial for the public services smart card. The power point had simply become a series of actual slides that they remembered watching projected onto a white wall in their homes years before. The empowerment over this software allowed them to produce a video tutorial as well [25]. Becoming a close-knit group was a gradual process. The initial fear and uneasiness of working with strangers was gradually replaced by the setting of a cohesive and friendly atmosphere. A few participants were acknowledged as experts and took lead of the groups. We noticed that within each group, one or two people emerged as leadership figures, which were those who were more expert regarding the use of the computer. This created variable dynamics, from mutual-help to delegation from whom knows less (or perceives knowing less) to the more knowledgeable.

October 29, 2015 (workshop 2). Today there are 19 participants. The embarrassment of working with strangers is felt, as well as the fear of not being able enough, of not knowing what to share, or knowing what to be good at. People tend not to want to be in the group of interest they know the most about but rather in a group with a topic they know nothing about. For example, Maria is unhappy about staying in the homemade recipes group and she moved to the health card group. But how will she help? The perplexity of some is reassured by the enthusiasm of others. The groups are formed and, starting to know each other, someone discovered they have lots in common with another. In one group it turns out that everyone had done the same job: working for the railway. We conclude the workshops in a somewhat perplexed but reassured and curious atmosphere. We do not make time for the final 10 minutes of feedback, but someone approaches us and shares their feedback anyway. At the end of the meeting, two women approach me and say, "Well, it seems good to me... a bit dispersive, but it's just to outline... Then I guess we'll work harder next time?". This reminds me of the design process from chaos to linearity of Botero and Hyyssalo with the senior co-housing [58]. I feel reassured by the literature.

November 5, 2015 (workshop 3). It was very nice to attend the formation of groups, the spirit was positive and the energies were proactive. I have facilitated the entry of two new participants into the economy group.

December 10, 2015 (workshop 8). After two months and eight workshops, the groups are close-knit, they seem accustomed to working together. A woman also attests the dynamics of the groups and the presence of "experts" for each group.

We fostered the variety of the participants' points of view specifically on two occasions. After three months of the series of workshops, during the Christmas break, we sent a Google Form to each of the participants, asking what, for them, 'sharing' means.

The initial complaints and ambiguity made clear to us that a miscommunication occurred between us and the social workers who presented the workshop in the previous

month and collected the subscriptions of participants. Because of our desire to overthrow the liberal-consumer view [78] , we inquired what *participation* and *sharing* meant for the remaining participants. During the Christmas break we asked to the seniors to fill out an on-line questionnaire on Google Forms in which we asked three questions: 1) What does the word "sharing" make you think of? 2) What did you like and what did you not like of the experience of sharing so far? 3) How would you facilitate/improve the experience of sharing? The answers were optionally anonymous, but all of the 12 participants that filled out the form added their names. We analyzed the answers through thematic analysis (see in Appendix A.6). Two main approaches emerged: the liberal-consumer one and a mix of utopian views. Digging into the idea of commoning, most of the participants showed the vision that sharing is very difficult to practice: "It is one of those words very easy to say and very hard to apply". Obstacles to sharing were identified in the "individualistic society" we live in, in the difficulty to "listen to the others" and to "let the others participate". Utopian views of sharing such as "company", "belonging to a group", "give and receive naturally", "common goal" remained, on an abstract level, difficult to realize. In opposition, the liberal-consumer view was well-defined, characterized by sharing as transaction, "division of goods", "exchange", individual learning. The liberal-consumer view was seen as the usual one and therefore accepted, because it is functional and efficient, despite its coercive approach, recalling the 'success' in liberal-individualistic projects [78].

The suggested strategies to improve the practice of sharing included self-organizational and prescriptive ones. Self- organizational strategies included arranging methods for collective writings (using the Google Docs seniors found different strategies to edit without deleting others' words), organizing smaller work groups, assuring continuity and continuing to make proposals. In contrast, the prescriptive strategies included an "elementary teacher" approach, in which we assume a directive approach, the tendency to accept the results that others achieve and follow them, providing printed tutorials at the end of the workshop. In fact, we acknowledged that during the workshops there was a general inclination among participants of taking more than giving.

One remark was about paying more attention on what to share, in order to clarify the roles and the expectations of each. The lack of the creation of a shared and strong commoning practice is one of the causes I acknowledge as the failure of long-term recursive engagement, except for few participants that self-organized the group of ICT mutual-aid. I discuss it in Section 6.3.6 at the end of this Chapter.

Furthermore, one week after the conclusion of the series of workshops our colleagues asked the same question during the focus groups (see Appendix A.10 for the script). We aimed at understanding if any changes had occurred and been acknowledged by the participants. Through Thematic Analysis of the transcriptions of the two focus groups, it emerged that sharing was a concept difficult to realize in practice. There was a feeling, shared by many, of not having understood the organization of the workshops and thus, of not being prepared to contribute. This was related to the perceived difficulty of the laboratory, often linked to the technical skills ("I'm not good enough") and it was perceived as an advanced course, even if what we were asking to share were not technical skills, yet expertise that seniors already have. Nevertheless, people decided to stay until the end of the laboratory and we inquired why in the final focus groups (Section 6.3.5 and 6.3.6).

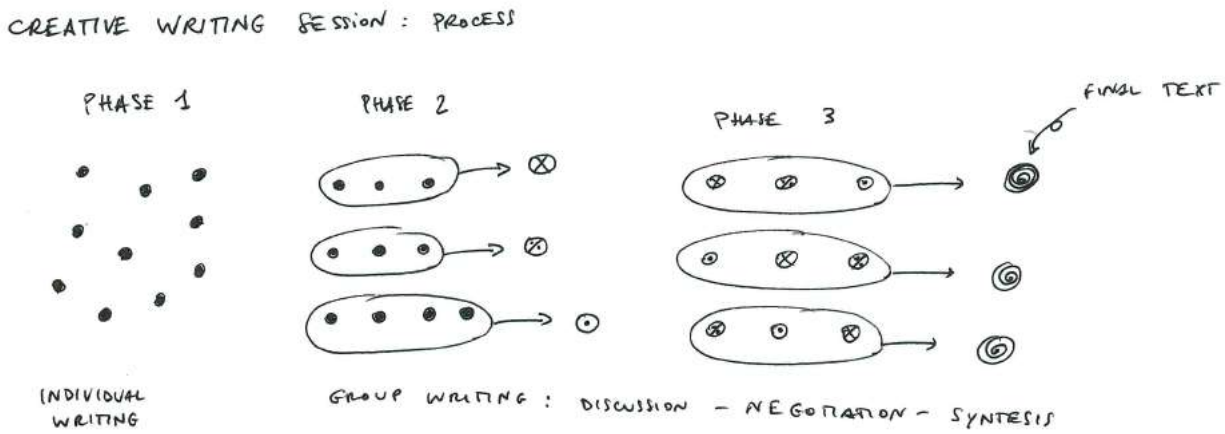

Figure 6.7: The creative writing process.

6.3.3 Reflexivity and self-representation in participants' voices: deconstructing images of aging

We organized a collective writing session with the aim to unearth seniors' self-narratives. The purpose was to generate a collective definition of the group of participants to be displayed on the section of the web-page titled "About Us". The collective writing session was composed of four steps that we facilitated as follows (the process is outlined in Figure 6.7) : 1) each participant wrote a description of the group, individually; 2) the participants (ten attended during this session) were divided into three groups: each group had to discuss and negotiate a group description that had to be representative of the individual descriptions present in the respective group; 3) once one description per group had been created, they were transcribed twice and distributed to the remaining groups, in order that each group had the three descriptions: each group discussed the three descriptions and negotiated to write a fourth description that was representative of the previous three.

Despite the seniors' initial skepticism about the exercise, the result left them (and honestly, us too) amazed and delighted. When they read the final three group descriptions, that were very similar with one another, they realized that their hard work (see Figure 6.8) had been compensated and their enthusiasm exploded in laughs, cheers and applause. Their trust on our methods significantly increased and they complimented us, admitting that they did not believe that this apparently chaotic method would have worked. They described themselves as folows:

> "We are a group of people registered at the *CSA Kaleidoscopio* that has joined a workshop on technologies performed in collaboration with the *University of Trento*. The goal is to share knowledge and experience through the contribution of all those who are willing to join". [Participants' italics, original: [5].

The word "senior" disappeared, as in the description of themselves and as in the description of the association they belong to (the senior community center). Interestingly,

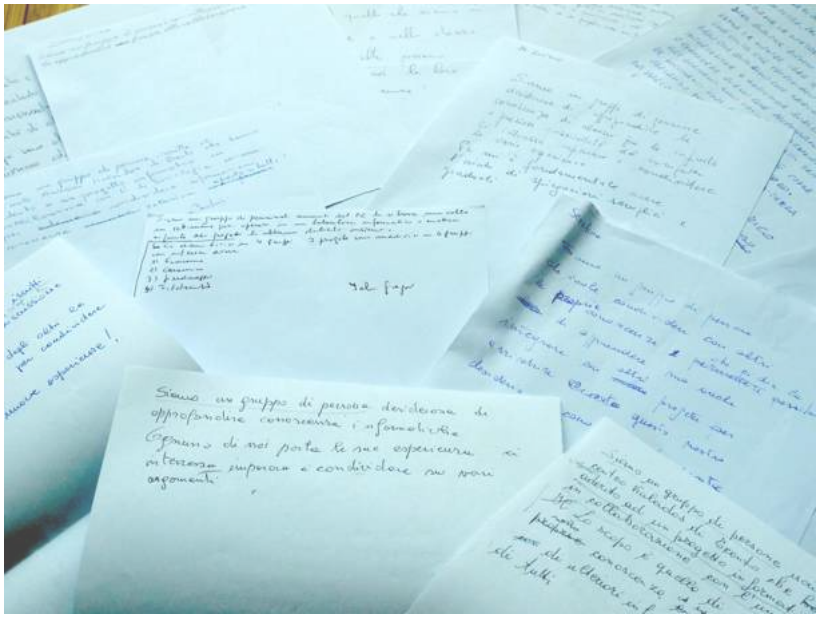

Figure 6.8: Group descriptions as the result of the creative writing session.

the community center disappeared from their narratives during the collective writing and popped up only lately when Ilenia said:

> "...But we have to tell that we are from the community center... Fabio [the social worker that represents our stakeholder] is eager for it to be included...",

which raised a collective nodding and murmur in the group. This creative writing activity contributed to developing, among the seniors, an unexpected sense of attachment to the on-line platform, that from a simple project for the group it had started to become something more: a possible artifact to start a dialogue with a public, with "outsiders". At the same time, the group developed a sense of identity, defining itself as the "original group" that started the project (who, in the platform, have a specific area). Furthermore, they developed specific issues related to privacy and security of user identities, offering to become the "ambassadors" of the project and asking for moderator permissions to review the contents on the platform (comments and future articles).

In a group discussion, the awareness of their self-perception of aging and the perception of society, clearly emerged:

> "I don't feel old, I'm more active than many youths I know, I do many things (...). I've started feeling some ailments, but that's physical. But, you know, when I turn 65 and I get a free bus pass, swimming pool discounts, and other discounts, the society is telling me that I'm old. And that's good, having all those discounts!" (Chiara)

> "I'm proud to be old, because this means I've been able to arrive until here. And you know what the alternative is...". (Valeria)

Also, in showing ageist stereotypes one with the other,

> "I tried to invite my sister to come to the senior community center. Do you know what she told me? 'Ah! You go to the wrinklies [dialect word]'. But she's always at home, doing housekeeping! She never goes out. (...) She's older than me, even if she's younger!" (Paola)

Self-reflexivity about aging was elicited especially when the potential public of the on-line platform was discussed. The participants expressed three main positions, developed in sequence:

> 1) "I want to reach other seniors, because there aren't websites for seniors, those I found are very poor, and many of them are isolated" (Chiara);
>
> 2) "I want to reach youths also, for this reason I don't want to display my seniority, otherwise youths wouldn't be attracted" (Valeria);
>
> 3) "Displaying my age is important to tell who we are, but it becomes secondary when people search the Internet on how to use the on-line health service or on what wild herbs can be found and picked [these are two of the sharing projects they realized]. They don't look for who wrote that page, but for the content of the page" (Ilenia).

During some of the workshops, we fell into conflicting relations with some of the stakeholders of the center. Particularly, two different visions of aging emerged during an open discussion: the social worker's perspective on *participation* and *sharing* was quite institutionalized, whereas the seniors' contained multiple critical visions. For example, in the collective writing of a common vision, the seniors removed the hosting institution and the label of "older people" from the self-description because they considered it stigmatizing. Indeed, identity was a recurring topic of discussion. For example, as the seniors became more and more engaged with their multimedia projects, they increasingly questioned how to present their work and themselves as a group to a broader public, such as to the local citizenship. Nevertheless, they did not want to overtake the stakeholders' authority in taking too much responsibility over the projects. This was especially evident in the making of agendas for future actions after the workshops and it was one of the causes of the failure of long-term recursive engagement. In the focus groups the image of aging given by society was also discussed, as explained in Section 6.3.7, at the end of this chapter.

6.3.4 Co-designing the digital platform

When the group projects were in an advanced stage and the issue of sharing them was a frequent topic of discussion, we decided that it was time to co-design the digital platform. The process of giving a name to the digital platform was not participatory. I proposed calling it *Fucinaperta* (*fucina*=smithy, *aperta*=open) and in agreement with the other two researchers we registered the on-line domain with the university's hosting service. This choice to restrict the participation was a result of the time constraints of having an on-line space in which to work (the bureaucratic timing of the university to register

Figure 6.9: GUI mock-up realized with WordPress.

Figure 6.10: GUI mock-up realized with GoogleSite.

the domain clashed with the dynamic timing of the workshops) and by the willingness to also make our voice heard in the process. Furthermore, the co-design process had to fit with the availability of a bachelor student in computer science that did an internship on implementing the website for us.

We started with a Graphical User Interface (GUI) evaluation of three website layouts we previously prepared on different website hosts: WordPress, Google Site and Weebley (Figures 6.9, 6.10 and 6.11). This was motivated in order to prevent the fear of the blank page that happened when the participants had to choose what expertise to share at the beginning of the laboratory. We aimed at providing examples this time "in our own terms" of what we meant for a digital platform. It was important for us to have an idea to present to the seniors on how to structure the information on the platform.

This phase was designed with the PhD fellow that was organizing the Digital Lab with me. The three website platforms were decided together, I only knew to use WordPress and I would have just applied different layouts with it to make the mock-ups. My colleague insisted to experiment also Google Site and Weebley offering to take care of them. Since we were both learning and doing research, I thought it was right giving space and not advocating only for my ideas. Also since he was proactive in carrying the workload of

Figure 6.11: GUI mock-up realized with Weebley.

creating the two website with Google Site and Weebley, I agreed with his proposal.

We wanted to evaluate the layout, the usability and the colors, but also the language to describe the group and the projects to see if seniors felt represented in those descriptions. We prepared 3 printed forms, one for each website, asking for three open questions: 1) one thing I like about this website (pleasure); 2) one thing I don't like about this website (sadness); 3) one thing I would change of this website (desire) (Figure 6.12).

We asked participants to work quietly, to not influence the others with their own suggestions. One participant complained that it looked like writing essays at school. We concluded the evaluation workshop with a collective debate, where participants confronted their feedback. To our surprise, the "old style" book index-alike layout made with Google Sites was considered by the seniors as "innovative", a word that was repeated by many participants. Indeed the left-side menu bar was welcomed as straightforward and easy to orientate and "handy", avoiding the feeling of being lost. In addition, the site map was appreciated because it showed the structure of the pages in an immediate way. A bright and white layout was preferred to a dark and elegant black one, defined as "very sad" and "depressing". One particular that bothered some participants was that the pages had wide, blank spaces at the end, which looked like a waste of space to them. Also appreciated was the embedded blog (that was created in the Digital Lab 2012-13) in one of the layouts that allowed writing on the blog while remaining on the same page and not needing to go to the blog address directly. Finally, one participant made a final remark regarding the use of double translation Italian/English, not only for the page "Home" but also for the others, "so that they could learn some English word while they navigate the website". These findings motivated our choice to adopt a clean, minimalist and "old-style" layout for the digital platform, with a left-side menu, bright colors and the full use of the page space.

With these insights we moved on to preparing the co-design workshop of the platform *Fucinaperta*. We prepared two activities for a two-hour workshop: a user journey with two kinds of people based on two scenarios with two kinds of "platform users", one able to navigate the Internet and one not. The scenarios were the following: the first sees an independent user: "Anna wants to share a knowledge of her on Fucinaperta, she has a

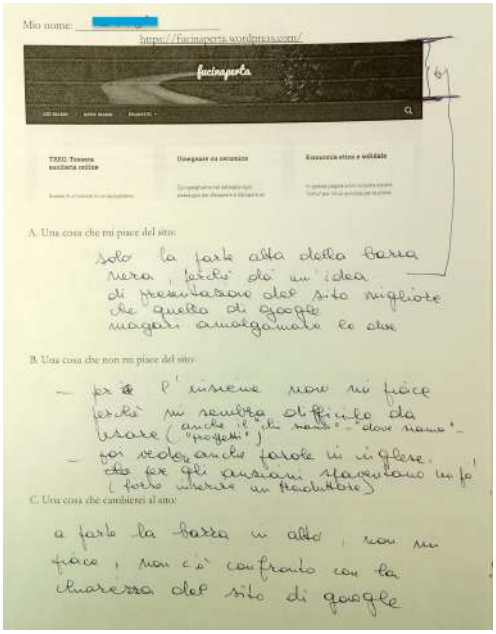

Figure 6.12: Sample of the evaluation sheet

computer and she know how to use it" (Figure 6.14); the second sees a scenario aiming at fostering collaboration between seniors: "Marco wants to share a knowledge of him on Fucinaperta but he does not have and does not know how to use the computer. He goes to the Kaleidoscopio social center and..." (see in Appendix A.6. The two scenarios were decided at the Lab in the previous week during a collective discussion. With the seniors we imagined how the public would have known about Fucinaperta. They wanted to make it using at the center at first, while we were thinking broader to the whole town or national territory. The final collective decision was to keep the public small and thinking about the audience of the social center we imagined two potential users. From the discussion and from the difficulties of using a text editor as WordProcessor, the common goal was to make a platform that users should not have to learn to use - as it is for Word - but that could be intuitive and essential enough to make users feel at ease. I introduced then to the participants the concept of modularity, having previously proposed and discussed it with my PhD colleague and my supervisor. The participants, divided into two groups, had to articulate the two journeys for sharing content, from the registration of the platform to the content publication (Figure 6.13. The process required preparing a multimedia web-page and indeed the second activity concerned the creation of mock-ups for designing the web-page frame (Figure 6.14 and Figure 6.15, and in Appendix, A.6and A.7).

> *March 17, 2016 (Co-design scenario and mock-up workshop). I look at the clock on my smartphone... We've been here for more than two hours! I resist the temptation dictated by my diligence to interrupt them informing that it's after 11:00 and past the scheduled end of the session/workshop... They are keen on vividly discussing the mockups and the network of relationships that a person who does not use the computer could trigger to interact with our platform. I'm*

Figure 6.13: A moment from the co-design workshop of the web-page frame for Fucinaperta.

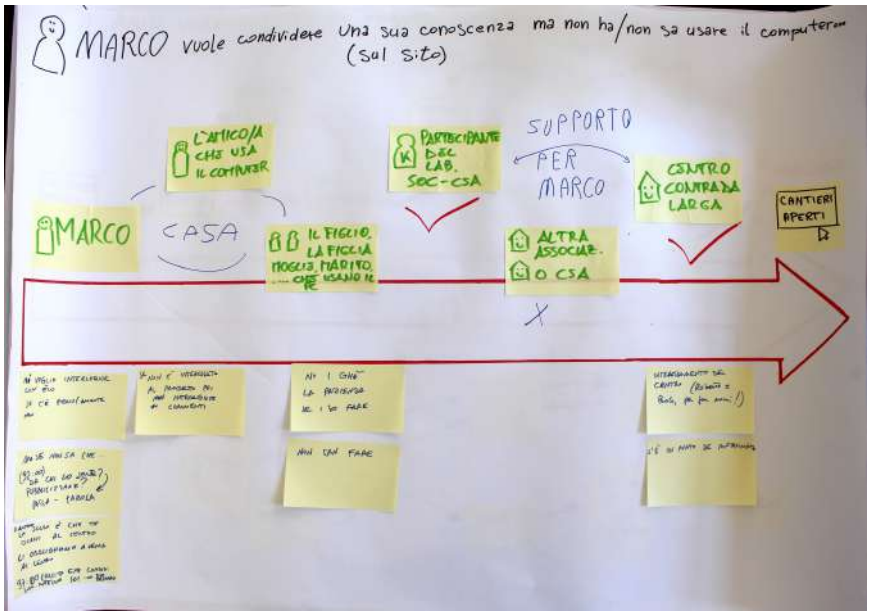

Figure 6.14: One of the scenarios to design how to access and use Fucinaperta.

Figure 6.15: One of the mock-ups of the web-page frame for Fucinaperta.

amazed by their sharp and timely comments, their "interactive imagination" ability: as seniors pointed out "If this button does this, then... If you move the text box here...".

Previously, during some of the workshops, several issues about privacy and authorship emerged. In particular, the feeling of interacting with a secure system that prevented spam and the potential for fraudulent activity was felt as a sensitive matter. The use of nicknames to ensure anonymity to non-registered visitors was an important characteristic. However, they also highlighted that it was important to display users' real identity to the registered users, as well as the possibility of being able to assume the role of moderator. The choice of registering to the platform was proposed and argued by all participants. Privacy and especially transparency of the privacy setting is an asset for them. Privacy was a side topic that emerged alongside the workshops in different occasions: when we discussed Twitter and Facebook there was much confusion, finally clarified by the testimony of Francesca, a participant: "On Twitter, everybody can see your messages but with Facebook no, right? Because some were tricked, posting stuff on Twitter and thinking that they were private!"

Their progressive appropriation explicitly emerged through design of the digital platform and to the nurturing the common through their sharing projects. They offered to become moderators to manage the approval of new content and to become facilitators at the senior social center if someone that cannot use the platform comes to enquire about adding content to the platform.

We reported these guidelines to the bachelor student, providing our feedback and discussing with him what to implement and how. He was concerned that our guidelines did not correspond to any of the existing plug-ins for WordPress (the platform we decided

Figure 6.16: A moment of the platform evaluation workshop.

Figure 6.17: The final web-frame layout for creating content on the platform

to use) and that he would have to program from scratch. As the seniors had expected to see their mock-ups implemented, I was concerned that our accurate work would have fallen apart due to the technical limits of programming. In the end we were able to accurately realize the original proposals - we were very lucky to have encountered an intelligent and capable student, because we did not have other alternatives.

> *Following weeks of work, we organize an evaluation of the digital platform at the senior social center. I also invite the bachelor student, since I believe it is important that the person that implements the platform has first-hand experience with the users. He is amazed by the seniors' proactivity, admitting that he imagined them very differently. He admits that this workshop is the first time he "meets" a user, since the traditional Computer Science bachelor degree does not include any related User Experience course.*

During a workshop focused on the evaluation of the platform, the seniors spontaneously provided usability feedback, such as repositioning buttons or exchanging drop-down for pull-down menus. This is an interesting observation since it suggested that throughout the workshops they developed a high technological understanding that ended up in the final version of the platform (Figure 6.16 and Figure 6.17).

6.3.5 Attachments: physical and affective bonds

It has been documented that attachments are important in the formation of publics since they facilitate the maintenance of the engagement of people.
[151].

Recursive engagement was fostered through an ecological system of attachment: while the physical ones were created on purpose, the bonds that were affective occurred unexpectedly. I consider physical attachments the creation and use of a mailing-list and the printed instruction manuals on ICT topics, which were made by the researchers.

The *mailing-list* had a double effect: seniors practiced using e-mail and through this, we maintained relationships with them, updating them with practical information. In addition, a minority of elderly used the mailing-list to share greetings, wishes for Christmas holidays and some Internet links they considered interesting.

We discovered that it was very important for the seniors to have some *paper material* to keep and store. The instruction manuals were printed in color and were highly valued by the seniors. They were made following a step-by-step learning approach, providing practical instructions, more or less visual, more or less verbose, depending on the researchers' personal taste and style.

Instead, I consider as affective attachments the weekly meeting on *mutuo aiuto* (self-help) organized by one of the participants, a woman with a past of political activism, and the relationship of sympathy we established with the participants. The *self-help group* started in December and ended in June. We supported it since we recognized that two hours per week were a short time to learn sufficient IT skills. This self-help group was started during the previous laboratory in 2014-15 and she continued to promote it in the following laboratory. The idea was already familiar to the past participants and she kept the same day and time as the previous year. We dedicated a two-hour slot for each group.

When the slots, which were free and managed by the elderly woman, remained un-booked, we were not required to attend. The result was that four or five different people came every time, with two frequent attendees.

Regarding the relationship built with the participants, we were often described as "very patient", compared with their (now adult) children. Seniors reported behaving differently with us than with their children, for instance being more insistent with them or being more "diligent" with us. Reflecting on this, I also recognized myself being patient in a different way with them compared with my parents, since the circumstances are different: this is my work and there is not that familiar intimacy, although there are often moments of *sympathy* and *empathy*. This allowed for the building of a recursive engagement week after week, as was also reported by participants in the focus groups:

> "Meeting on Thursday and continuing in attendance and frequency was interesting, then... our teachers were always ready, even to intervene on small things, even with those who were not good enough, and with patience... with the computer that often did not [have patience]... and so in short... for me it was important to meet... I was able to come every Thursday... without ever missing a session..."
>
> "Yes, I think that the presence of tutors was one of the fundamental things".
>
> "They have been very good".
>
> "For me, it has been an experience I have never done before, therefore it was important, this availability of the youths [the researchers] towards us, the patience, I didn't expect it, so for me it was very important".

6.3.6 Participants' gains: collective failure and individual successes

Although we had conflicting moments along the way with the social workers, they expressed their satisfaction and told us that they would use the digital platform for future activities at the center and for teaching other elderly people to use the Internet. Instead, in June 2016, with the refugee emergency, an increased number of migrants were hosted in a reception facility run by the social cooperative Kaleidoscopio. The two social workers we worked with and who were responsible for the senior social center, received an offer to be relocated to the reception facility, which they accepted, but the handover documents and procedures to their colleagues were lost and *Fucinaperta* has not been used since. At the same time, no new PhD students arrived in our research group to work with the seniors at the center, that could have revitalised the project.

Like many other, even classic, PD projects, when the project ends and the researchers leave, the project quickly dies. I have been told that it is "normal", but I find it very discouraging. This case shows the final prevailing of power structures. The social workers changed jobs and left the seniors, encouraging the most tech-knowledgeable of them to become "ICT tutors" for the seniors that attend the community center. The lack of the new social worker's supervision and presence caused dissatisfaction and disappointment among them.

The lack of the acknowledgement of a significant common for the participants is one of the causes we acknowledge as the failure of long-term recursive engagement. Nevertheless,

the group of participants did not want to overtake the stakeholders' authority in taking too much responsibility over the projects. This was especially evident in the making of agendas for future actions after the laboratory and it was one of the causes of the failure of long-term recursive engagement, according to the seniors I have spoken with. A further reason that caused the end of Fucinaperta project is that since it was "normal" that projects finish, neither social workers, neither seniors, neither us thought to prioritize and prepare a consistent plan to guarantee longevity. For instance, we could have revitalize the PC station that is at the social center, but that nobody switch it on.

In the focus groups, the motivations to attend the laboratory were investigated. The laboratory was seen with curiosity and as a challenge. The participants that attended the laboratory revealed themselves as very open-minded and stubborn in terms of understanding and positioning between the technical aspects and the "topics to share" as commoning practices. Yet, they struggled to overcome the technocratic vision of the user as a consumer of a service, and look more towards a vision of nourishing the common by using technology as a tool.

> "I liked staying together, knowing new persons, sharing something, more or less, I would have liked to share more... certain things more, certain things less... anyway it has been an experience, and from an experience we get always something positive, don't we? ... what I didn't like was the organization at the beginning, because things could have been said... more precisely maybe, so that everyone knew what direction to take... and probably we need to understand how little the knowledge of the technical side influences the operation and how much, instead, collaboration and sharing are more important than the technical things. I still haven't understood that, but probably I will, in the end!" (laughing)
>
> "It's there that I didn't understand if people wanted to arrive at understanding the technical stuff, how to learn... then it wasn't important [what to share], it could have been the cooking, the herbs, the pottery, the painting... understand?"

The divide between the knowledge of the technical aspects and the matter of sharing and collaborating, but less the value of what is shared, returned at the end of the laboratory as a central node when asking about what participants learned:

> "I learned how to use the thing.... How is it called...?"
>
> "Google Drive?"
>
> "Yes, Google Drive".
>
> "I learned to work together, to repress my personality a little bit... and... to adapt to the personality of the group... of the whole".

A significant proactive appropriation was the project of Emma on an IT dictionary she started by collecting words with definitions for her self-learning, and asked the group if they were interested in seeing it. The response was very positive and so she added her dictionary project to *Fucinaperta*. [9] She was initially very insecure and afraid of using

the computer, when she started the laboratory, yet she grew in confidence and became friend with Francesca (the initiator of the self-help group). After the end of the laboratory, we have kept in touch, having coffee or lunch sometimes. I was delighted when she told me she had become an ICT tutor at the social center, still keeping this attainment a secret from her children:

"I don't tell my children, that I do the tutoring. They would never believe me!"

This is significant also to the affective attachments I created with the seniors, the anti-stigmatizing way of treating a person that influences the image that a person builds of herself.

6.3.7 Intersectional dimensions in participatory projects: gender, economy and power.

At the end of the workshops, we performed an evaluation of the participatory process, organizing two focus groups [62]. We asked for the availability of the participants and organized two groups of five people each (just one of the two men who participated committed to attending the evaluation). Four researchers from our research group that have never met the participants conducted the focus groups in pairs of two. In order to guarantee participants' anonymity and freedom to express themselves, we (the researchers who had worked on the project to that point) did not conduct the evaluation focus groups and the informal consent declared that we would have received only the anonymized transcriptions and not the audio recordings. We did, however, prepare the questions on the topics to evaluate (see Appendix A.10 for the full script). The focus groups explored different aspects of the project and of the context and since the researchers undertaking the focus groups did not participate in the workshops, they asked participants to explain how workshops were structured in order to explore the seniors' points of view. Firstly the questions explored the individual dimension: expectations and needs before the workshop, learning and motivation to continue participating throughout the series of workshops. Secondly the collective dimension of aging was explored: what the word 'sharing' recalls and if the workshop had been collaborative and between whom. The questions also explored the inter-subjective dimension inquiring if attending a series of workshops mainly attended by women influenced something, what is the image of aging in the society and if it is realistic. Finally, the last questions concerned the organizational aspects of the senior community center, how the "offers" of the center are decided and what the center expectations are in respect of them.

During one of the focus groups, the liberal-consumer position was reinforced by the economic wellness that seniors admit to living in. In respect of their children and other younger people (like the other researchers and me) in general, they described themselves as privileged, "compared with them we are *Sióri*", a dialect word that means a wealthy person, in this case used to refer to the improvement of wellbeing and lifestyle compared with the seniors' parents. In post-World War II Italy there was an unprecedented economic boom, where the previous generation (often peasantry or working class) lived in poor economic conditions for the following generation, that of today's seniors, to enter into an enlarged middle class (working or bourgeois) of relative economic prosperity. Many seniors

admitted to financially helping their children's families but recognized how psychologically unsustainable it is, for both parties. This is also connected with the images of aging that society provides:

> "Forbidden to grow old!"
>
> "Because if you are old, you are a burden."
>
> "Older and younger generations are swimming in very bad waters But the youngsters the most. We lived our life, we did our part. We saved some money. They cannot".
>
> Interviewer: "How do you feel, what are the examples you see of the senior that society shows today?"
>
> "That we cannot grow old".
>
> "That we have to sustain everybody".
>
> "Forbidden to grow old!"
>
> "The child because he needs it, the child because she needs it, the grandchildren because, the society because, really, one thing is talking about so-ci-e-ty, another thing is talking about how we feel."
>
> Interviewer: "The question was referring to the images of the senior stereotype that society proposes".
>
> "The diaper advertising!" (laughing)
>
> "Yes, unfortunately if we talk about society, we talk about TV, and so if they make the diaper advertising they put a 40-years-old guy because they cannot put a old person... with his real things... For the denture advertising they show you a 30-year-old lady in grey hair, what kind of society is this? It's forbidden to grow old in this society".
>
> "It's always this consumerism, we can't do anything about it".
>
> "It's the society that must go on, and it can't be stopped. The elderly person must follow, must consume, the elderly person slows down, slows down".
>
> "It's the society, it's the lifestyle system".
>
> "An example is that little girl that felt down from a building and she was babysitting by the grandmother that was 83. Com'on! You can't give a girl so lively to a person so old".
>
> "Because the family didn't have money for the babysitter".
>
> "Ok, but also having a child is a choice, and young people should think about it before giving their kid to a 83-year-old person for babysitting".
>
> "But we are all selfish. Sel-fish".
>
> ...
>
> "I think they [their children] see us as an opportunity, a resource, because they count on this, 'mum, do this', 'mum keep that', 'mum, go there'... (laughing)... We are resources!" (laughing)

The participants' feedback about images of aging that society provides were intimately connected to the inter-generational matter between seniors and their children, in terms of care work and financial support. From the stereotypical images of aging, seniors moved to discuss about the economic divide between generations:

> "These are very tough historical times, for us and for young people".
>
> "More for young people".
>
> "Because the youth has to fight".
>
> "And run, run".
>
> ...
>
> "The situation of young people is dramatic, dramatic, com'on. My daughter lost her job, my son in law earns 1300 euro [per month], they have two children and a loan, what can they do? Do you understand?"
>
> "Giving them some more [money], so that they can have a chance, giving a little bit more salary to young people than to seniors, because the majority of seniors, they saved some money, not everybody".
>
> "If a youth needs to get married, to get a house, stuff like this, he doesn't have the money! And he goes to dad and mum. Why? Because they accumulated some [money]. And so, in a certain way, the senior, I'm not saying all seniors, but they are a bit *siori* [dialect for 'wealthy persons'], compared to young people".
>
> "But this completely unbalances social relationships".
>
> "Totally".
>
> "Sure, but it's also difficult giving it [money] to the youths because they have a dignity. For example, my son in law doesn't know how much stuff arrives under the table, because, with his character, he wouldn't never accept it".
>
> "Dignity".
>
> "Exactly".
>
> "But in front of a family with two little kids, in short, bend your head, and take the money".
>
> ...
>
> "In any case, the discourse is that the senior helps the children and the youths".
>
> "And he has to make do".

I felt this intergenerational matter preponderant in the third case study, when I had complicated times in building a mutual-recognition with the male senior gardeners (see Chapter 7).

In one of the focus groups one proposal to engage with people for future workshops was to add a small symbolic fee in order to make people feel committed to attend, "the word 'free' in Italy is harmful", stated an elderly woman. In both of the focus groups, a proposal was made to be more directive and decide one topic to work on as a united group, opposing the suggestions from the questionnaire made at the beginning of the workshops,

in which seniors suggested making even smaller groups. The position of the single topic was contested by other participants since it is very difficult to find agreement amongst twenty people. One proposed solution was a strict inclusive/exclusive criterion, but that left people unsatisfied in both the focus groups.

Participation and *gender* emerged as being related in both of the focus groups. The gender rate in the group of seniors that participated in the workshops (15 out of 17 were women) was investigated in the focus groups. Female participants told the interviewers that they were eager to learn now that they are retired, and had no problems in admitting their ignorance on certain topics or skills (such as digital technologies), since they have been constantly told they don't know enough and treated as such. This is reflected in the way older women approach the courses offered by the senior community center, reporting that women are better at getting involved in new experiences. This statement is confirmed by the fact that the courses offered are almost entirely attended by older women.

At the second focus group, only one male participant joined (while the other one did not show up). Edoardo was very active during the Digital Lab and even though he joined the Lab without computer knowledge, by the end of the Lab he became an autonomous PC user. With a background in car mechanic, he told his experience about learning to use the computer in this terms:

> Interviewer: "What were you expecting to find?" [at the Digital Lab].
>
> Edoardo: "Learning as much as I can to hack with the computer. Because the computer is like a bomb, just saying, knowing how to hack it... it's like saying for example: the car, one takes the driver license, and more or less here people get the computing license. One thing is driving in town, slowly, another thing is driving on the motorways, super fast, then you go down, ahead, you drive on the countryside roads, you park the car into the garage... After all the computer is like that".
>
> Interviewer: "The fact that at the Lab the group was formed mainly by women has influenced the way the Lab has been developed?"
>
> "No, I don't think so".
>
> "No, no".
>
> "It would have been better if there were also man, to confront more, in all the courses for our age 90% are women and maybe 2% are men".
>
> "Probably women are more brave, more inclined to be involved".
>
> "More curious, more curios, then yes, men, in my opinion, learn when they are young that are more challenged, for necessity, but not when they get old".
>
> "We served and revered them for our whole lives, of course that they are scared to be involved in new things".
>
> "It's because they don't have friendships that require all these things".
>
> "Yes, if someone goes only to the bar, what he can share, he has his friend, he call him at the phone "come down, let's meet at the bar". it depends a lot on the real life someone has".

> Interviewer: "So you all found yourself in courses where the majority were women".
>
> "Of course".
>
> "Always, always".
>
> Interviewer: "And what about you?" (asking to Edoardo)
>
> Edoardo: "I'm full of activities and I don't have time, it's like, I start the week that it's already over. I've lots of works, because I have a piece of land to harvest, and a friend that asks for a help to cut the hedge, and the other one asks to help to fix the broken shutter, and so my time is so full... I joined the Lab because what I was interested was learning as much as I could there, because after it's finished, I'm on my own... After all, since this winter I've never skipped a workshop, why? Because I'm interested, interested to learn drop after drop, and slowly, I'll learn also how to edit videos, because I have tones of them, videos and photos".

Despite Edoardo's experience, female participants recognize him as an exception, being their opinion on the dis-engaged older males well grounded:
"Men recline more easily".

> Interviewer: "And has this attitude influenced in the participation at the Lab from the men side?"
>
> "There were no men, I cannot compare. Him (pointing at Edoardo) but he wasn't in my group. In my group there were only women".
>
> "The other man didn't do anything".
>
> "Even [name of his sister, she was a participant too] was telling that".
>
> "He was just playing, he was coming and playing with the computer, only with games. He was saying that he was coming to take company to her sister".

I do not have enough empirical data to sustain the female participants' thesis about elderly men, still I can confirm that the bar of the senior association I visited many times in different day times, during the third case study (Section 7.2) was attended almost entirely by elderly men (between 5 and 20 persons each time I have been there).

This thesis appears also in the first focus group (the participants were all women), where a female participant tells how for her husband learning new things, and so admitting to be ignorant in some topics, is very challenging:

> "My husband worked as manager and he never wanted to learn to use the computer. He said that he worked better with only his hands than those that worked on the computer! It's ten years since he retired and he would like to use the computer like that (snapping her fingers), without learning! (laughing) He has always refused to learn".

Pointing out women's numeric majority, one participant at the focus group said:

> "It is very hard to accept that after retirement everyone comes back to being equal, that they [men] are put on the same level of us [women], especially for those that worked in power positions".

Suddenly achieving a gender and power equality with the other retirees because of the end of their working life, was a statement reflexively developed by the other participants that agreed and told similar stories from their personal experiences. Nevertheless, elderly women recognized that they had improved their lives since the end of the patriarchal family:

> "When my father came back home, it's not that we had to stand at attention, but almost! Nowadays it's already enough if children greet the father when he comes back home".
>
> "Compared with the past, an elderly woman has acquired at least a little bit more with respect to her individuality, the same with her interests, compared with the past... In the past for sure the elderly woman was at the service of others, whereas now she can find some space, for sure, even if there is a family behind and other interests".
>
> "Because in the past, everyone else had the priority over the woman... The husband, the children... Before yours there were others' interests".

These discussions about images of aging through generations and contemporary intergenerational issues have been illuminating to unearth identity production. As Tonso explained for the identity production of engineering students on campus [213], identity production cross through three movements that happen between one and the context he/she lives in, and form own inter-subjectivity:

- Thinking of yourself as a (senior): the refuse to recognize yourself in the image given by society, of beauty and active elderly; the feeling of being younger than many youths;
- Performing as (senior): the feeling of pressure and demand to be always active contrasting with the desire to be left in peace (also regarding the duty of doing informal care work);
- Being identified as a (senior): being fine with having discounts once you turn 65.

6.4 Learnings

The presented design project shows how the participation of people directly affected by a widespread narrative can challenge the narrative itself. In this case study, the main relational movements to approach participation, the design idea and the object of design are fully articulated as exploration, provocation, conflicts, reflexivity and appropriation.

Looking at the case study from the relational movements, exploration took place in my participation when I was establishing a contact between the research group and the association, especially in the design idea and in the design object: about the former,

we made observations and discussions with the participants to subvert the traditional learning approach of PC usage; about the latter, we made observations and discussions with the participants about metaphors to understand PC icons and the Internet and desktop dimensions.

I intended provocation as a way of questioning established narratives. The project challenged the narrative of seniors as fragile and dependent. In addition, it also questioned the assumptions of the participating seniors on the character of the series of workshops. In this way, provocation can be seen as both a design objective and as a design strategy.

The attention to conflict elucidates similarly on both a wider frame and the design process. Indeed, we experienced the conflicts with the social workers at the community center, as well as the sense of "belonging" to the community center described by the seniors. These conflicts pointed to the centrality of the institutional and social context in which a design project takes place. Moreover, the conflicts on authorship and the multiple points of view on relations with the community center played a role in the unfolding of the design process, including the possibility of engaging a wider audience and taking responsibility for the project's outcomes.

Reflexivity was a movement that happened, as in the design idea of sharing knowledge as commoning, as in the object of design as the digital platform, as in the context of the association. One of these reflexive moments was represented when discussing about the practice of sharing and the debate about the two views that seniors provided, liberal-consumer view (sharing as product exchange) and solidarity one (sharing as growing and managing). We challenged seniors to think about personal and society ageist view and how this is related with their interactions with the senior social center. The creative writing process to describe themselves as a group, was an important moment of deconstruction of the society ageist perception they have. This lead to the reflection on the object of design, in particular when seniors and us discussed about the perspective public of Fucinaperta, discussion that then lead to the creation of two scenarios we used to design the user journey map. Nonetheless, the design process provided hints for an intersectional feminist perspective, in deconstructing the "elderly user" label and in shifting so the design focus from the participants as users to the relationships among them as commoning practices.

Finally, appropriation took place at multiple levels. Participants appropriated and reinvigorated the narrative on seniors as active people, both in their self-description for the website and in the reinterpretation of the whole process. Regarding the design idea, seniors appropriated the idea of sharing knowledge and expertise online through the way they decided to share their projects and to what kind of public. While regarding the object of design, seniors co-designed the plug-in to upload their multimedia projects and decided the privacy settings for the public to sign up to Fucinaperta.

Chapter 7

Environmental common with senior social gardens

7.1 Context description: senior social gardens

The fieldwork described in this chapter started with the search for a design space in which the approach could be genuinely bottom-up, in the spirit of PD, and not mediated by social workers, medical staff or seniors' families. My agenda was grounded in the personal interest for collective gardens as political practices for building lifestyles alternative to capitalist logics, that can nourish the common in the form of environmental and community consciousness.

During the case study on the Digital Lab (Chapter 6) I met Francine, a former protester of the 1968 uprisings, vivid feminist and critical thinker. By chance, she became my gatekeeper to the first "senior social garden", as they are institutionally named. Being introduced by her to the community looked promising since she was an active and well-known member of the senior club that managed the social gardens, as well as in the social gardens themselves. In the Trentino region, social gardens are public lands made available by local municipalities to associations that apply. Initially reserved only for associations of elderly and retired people, social gardens are set up by the municipality, which divides the plot into allotments, builds water connections, provides a toolshed and so on. The municipality regulation is adopted by the associations and includes access to an allotment according to a ranking system based on the allotments' requests. Access is reserved for the members of the association. There is a symbolic payment of an annual rent (between 20 and 50 euro). The management of the garden is undertaken on a voluntary basis by a "Garden Chief", who is one of the gardeners, and it is headed by the president of the association. Finally, garden work is not planned collectively; everybody works on their own, individual allotment.

As a young female researcher, I recognized that it was more straightforward for me to seek out and get to know older women as part of a bottom-up approach, rather than approaching older men, since cultural habits that transmit age, distance and power disparities are ever present, which I had to eventually deal with in this case study.

Figure 7.1: The first senior social garden (view from the entrance).

7.2 The first senior social garden: a bottom-up approach to Participatory Design

In June 2016 Francine introduced me to her senior social garden (see Figures 7.1 and 7.12). It is around 8 PM and we walk along the strip of 11 garden allotments that constitute the space. Every member has an assigned allotment to take care of, ensuring that their plants do not invade others' allotments. We met a few other gardeners that were harvesting. Francine whispered to me: "I've never met them! [pointing to a couple] This is because I never come at this time of the day! Now I know when I have to come to meet so many people". (. . .) They report that it often happens that people do not meet each other throughout a whole year. I am greeted by the other gardeners and introduced as a university student doing research on social gardens that could help them to organize something. There is an immediate enthusiasm among the gardeners; all of them agree that there is no sociality in the so-called social garden and that people never meet. A woman from central Italy proposes an afternoon meet-up. I ask her why they have never self-organized a meeting, she says: "It's not easy, you know? We are in Trentino!"

In Italy there are popular stereotypes regarding the character of a person in respect of her/his birth region: northern regions are considered to be inhabited by 'cold' and 'closed' people, while the more southern locations are considered home to 'warmer' and more 'welcoming' people. Similar stereotypes are present for inhabitants of mountain areas or areas by the sea. Being in a mountain and northern region of Italy, stereotypes are maximized.

Figure 7.2: The first senior social garden (view of the back, from the park next to it).

Francine proposes to organizing an aperitif meet-up at the garden, by way of leaving an invitation on the common toolshed. This is the only place where notes are communicated and always from the garden chief. Francine does not want to sign the invitation with her name, as she does not want to undermine the role of the chief. I do not want to either. She suggests that I leave the note anonymously, with only my cellphone number, which I do, trusting my gatekeeper. It has been explained to me that there is a "chief of the gardens" who is responsible for sorting out the issues of the garden and that in serious circumstances he can report to the senior club's board of members. I ask Francine to arrange a meeting with George, the "Garden Chief", since I do not want to undermine his role or create misunderstanding. A few days later, before the aperitif meet-up at the garden, we meet with him. He is a big and humble man that becomes enthusiastic when he talks about plants and gardening. He agrees with the idea of organizing a workshop.

In the week before the aperitif, I received two phone calls from the gardeners. Both of them asked to know who was organizing the meeting and if the garden chief was informed and in agreement. After I assured them, they were pleased to come as they did. The aperitif meet-up is welcomed and nine participants attended, including the garden chief

Figure 7.3: The anonymous invitation I wrote with Francine, sticked on the tool shelter at the garden.

and his wife. My gatekeeper and I bring snacks and drinks and so do other gardeners, spontaneously. The atmosphere is convivial, thanks also to the tablecloth provided by Francine, which provides for a familiar and merry environment. The gardeners chat about the garden, but also the current political issues in the municipality and on a national level, expressing their sorrow to me for being young and in a country that does not support youth generations that often migrate abroad, as has happened with some of the children or nieces and nephews of the gardeners. I feel patronized by these discourses, being disempowered in the relationship I am trying to build with them, still I recognize that what they say is what me and my peers live in our everyday, so I do not have much to argue against.

I explain my research with local communities and reveal the idea sponsored by Francine of undertaking a project together should they feel the need to tackle or improve some aspect of the garden. They are curious and agree with the proposal to do something, but above all people are happy to have met, since this was the first aperitif meet-up they had attended at the garden and for some it was the first time to meet their allotment neighbors. They even propose to organize a BBQ before November, when then the garden chief will close the water and the gardens start a period of quiescence until February of the next year. Some of them wanted to take me to "visit" their garden to show it off. An abundance of fresh vegetables are given to me as gifts (7.4. After three hours, and, having arrived at sunset, the aperitif meet-up ends. They look forward to being contacted by me for a formal meeting, expressing a shared will of design for change. At the end of the day, before leaving the garden Francine tells me: "Well done! I'm surprised! I didn't expect so many people today, I was wrong! It's a shame we didn't take a group photo!".

While I was organizing the first workshop with Francine's help, on one occasion she openly expressed her anger in facing the difficulty of involving people in organizing simple collective actions for solving common issues at the garden or just social moments to be

Figure 7.4: Fresh vegetables gifted by a gardener during the aperitif.

spent together. She expressed her frustration regarding the bureaucratized organization of the senior club, which she considered more harmful than helpful, since it discourages people from contributing and some of the members end up spending their free time in dealing with formal requests across the club hierarchies. We were at the senior club headquarters, a bar run by elderly volunteers, crowded mostly with elderly men that were drinking white wine and playing cards:

> *Yesterday I was the spark that fired up the hearts of the gardeners. It took so little! I went with Francine to the senior club, to bring flyers for the workshop to the two board members who sit above the garden chief in the club's hierarchy [i.e. the president of the seniors club and the head of the two social gardens run by the club]. What an infrastructure! The intricacy of the senior club organization in respect of the board of members' roles (and then what they actually do and do not do) made me smile and annoyed Francine for the same reason: its bureaucratic complexity. With regards to the "rubber wall" (cit. Francine) against which the gardeners collide, I have instilled the idea that they could self-organize. Francine agrees on the primary importance of meeting and talking between gardeners: "...organizing at the grassroots", she says banging her hands on the table, "because if we wait for them...", she whispers while pointing the finger to the two board members, who are drinking white wine with other elderly men. "I must say it...they don't do a damn thing!", while the two elderly board members try to overhear our subversive conversation and I listen to her, remaining quiet with a feeling of embarrassment.*

The first workshop is well attended (8 gardeners out of 11) and very animated (Figure 7.5) so I have to moderate the discussions intensively especially when Francine and George monopolize the discussion or the participants start to digress. Participants sit around a table in the library at the senior club. I provide some drinks and snacks and a few of them bring homemade-cakes and drinks. We explore the time at the garden, while I take notes about a time-line when the gardeners usually go to the garden (Figure 7.6). They

Figure 7.5: Group discussion during the first workshop with the first garden.

talk about the way they spend their time, weekly schedules and seasonal changes in their routine so that at the end of this activity mapping everyone is aware of the others' habits and discover why they do not meet and when they can meet someone else more easily. Following that, by way of a brainstorming session and the use of posters and post-its, we explore what the social garden means for the participants, what they like, and do not like of it and what they would like it to become (Figure 7.7). On the "like" side it emerged that gardening is perceived mainly as an outdoor hobby, characterized by the pleasure of knowing that they have grown some of their food themselves (despite it being more expensive and demanding than buying from the supermarket), by taking care and observing living things growing, experimenting, self-learning and exchanging tips with the other gardeners, when they accidentally meet. On the "do not like" and "desires" sides, a common desire to improve the relations among the gardeners emerged, to communicate and socialize more, since the issues they identified are dependent on collective cooperation. These concerned the managing of surplus vegetable production, dealing with pests such as snails and slugs, improving the thin soil of the garden and making compost in the compost bin each shares with another allotment.

All these concerns are related to improving their communication and coordination. The last workshop activity was the ideation of an instruction manual of the "technology of the future": a technology that would solve the issues they raised (Figure 7.8). Some ideas participants proposed included setting up a WhatsApp group and a physical notice board in the garden, organizing afternoon breaks, producing information booklets on compost making and on pest control methods. Alongside possible solutions, practical constraints emerged: not all the seniors had a smartphone or know how to use it, nor did many seniors feel comfortable with their handwriting. As facilitator, I stressed these aspects, since a

Figure 7.6: A time-line poster to share and visualize when people go to the garden.

Figure 7.7: A poster to share what gardeners like, do not like and desire about the garden.

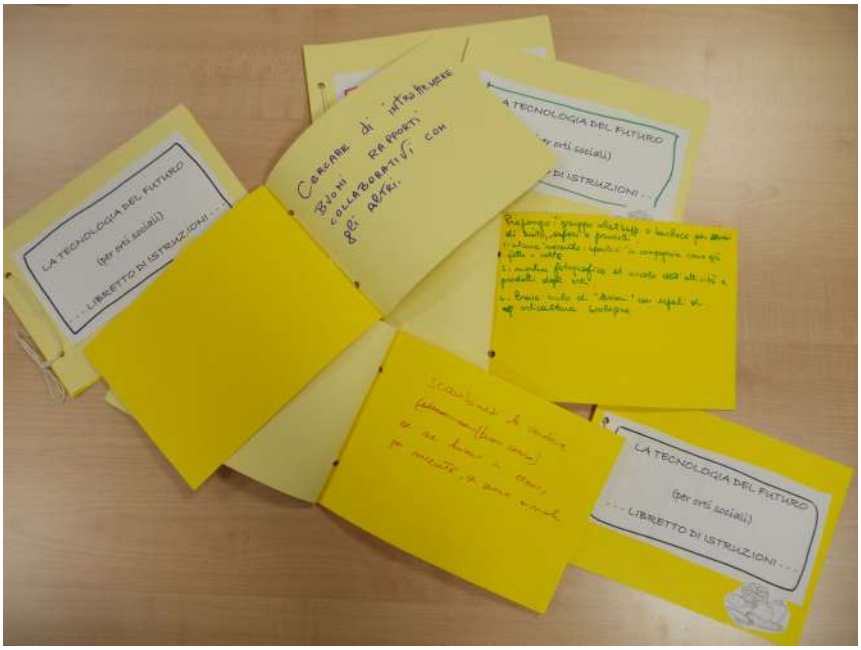

Figure 7.8: Instruction manuals of the "technology of the future".

few participants were already prone to adopt these solutions, excluding in this way other participants from taking part. The gardeners left the workshop in a positive mood and looked forward for the next steps.

Unfortunately, the situation worsened in the second workshop. The garden chief did not participate and during the workshop Francine (who was a friend of his) confided in me that he refused to come because the last workshop made him feel uneasy and anxious, "like he was back at school". When I was organizing the workshop, calling each participant to invite her/him, the garden chief told me that he would have probably come. At the time, I did not recognize the signs of this imminent catastrophe. Participants were surprised by his absence, but from there on, they started to minimize the issues and desires they had, saying that, in any case, without George they could not take decisions. For instance, the same person that made a proposal to organize afternoon breaks in the previous workshop said that that garden is inhospitable, it is a place where people just quickly come and go, and afternoon breaks are unfeasible.

During the discussion, I took the opportunity to inquire about the role of George, the garden chief. He was described as the referent in charge of speaking with the board of members and the person in charge of fixing small problems in the garden or between gardeners. The mechanics of delegation emerged as preponderant, at the same time as the justification for not taking grassroots action and the reason for respecting and following the lead of the delegated garden chief. Only Francine expressed disagreement about the idea that everything must be approved by George, for the burden upon him and for the grassroots self-organization she advocated. Yet the opinion of the group was against her. Since the discussion was not going further, a participant invited me to proceed with the workshop activities. Four design probes were provided to foster a discussion on

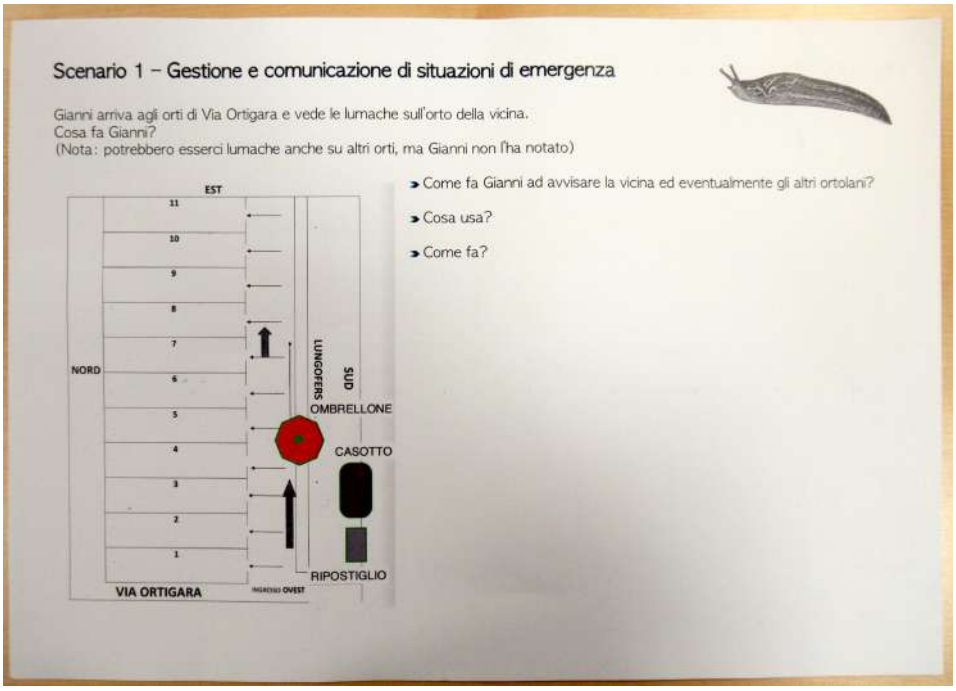

Figure 7.9: A scenario on the management of slugs.

gains and losses about ICT solutions they proposed in the previous workshop (WhatsApp and SMS) and similar ones I introduced based on their requirements and constraints (portable printers with pre-set messages, a vocal notice board)(Figure 7.11 and Figure 7.10). Yet with the negative mood spread in the group, alternatives to WhatsApp were seen as too hi-tech for the garden chief (in the participants' view), while this potential choice left people with constraints unsatisfied, excluded and blamed by the others for not having a smartphone or not be willing to learn how to use WhatsApp. Neither of the two case scenarios (Figure 7.9 and Figure 7.10, in Appendix, A.8, A.9, A.11, A.10) about surplus vegetable production and slugs control, stimulated fruitful discussions. The participants left the workshop unsatisfied and discouraged, thanking me for "having tried" and complimenting me on the well-made workshop materials, showing how design methods are not only contextual and embodied in the designer's practice ([137]) but also intimately subjective in their reception. They considered the hierarchical structure of the senior club as insurmountable, while in the same way they considered the delegation system a comfortable solution.

In the following days, I tried to contact George in order to meet him, but he pretended to be very busy and said that he did not like the first workshop, since he felt like he was a schoolboy again. I was very sorry and prone to meet him to discuss my approach and methods, underlining his role in the design project. I mentioned that without him the other gardeners were reluctant to continue. He said that he was no longer interested in the project and refused to meet me again. He said it on the phone several times, mumbling uncomfortably. After this conversation, I never again attempted to contact the gardeners, assuming that George would have notified them of the end of the project, even though

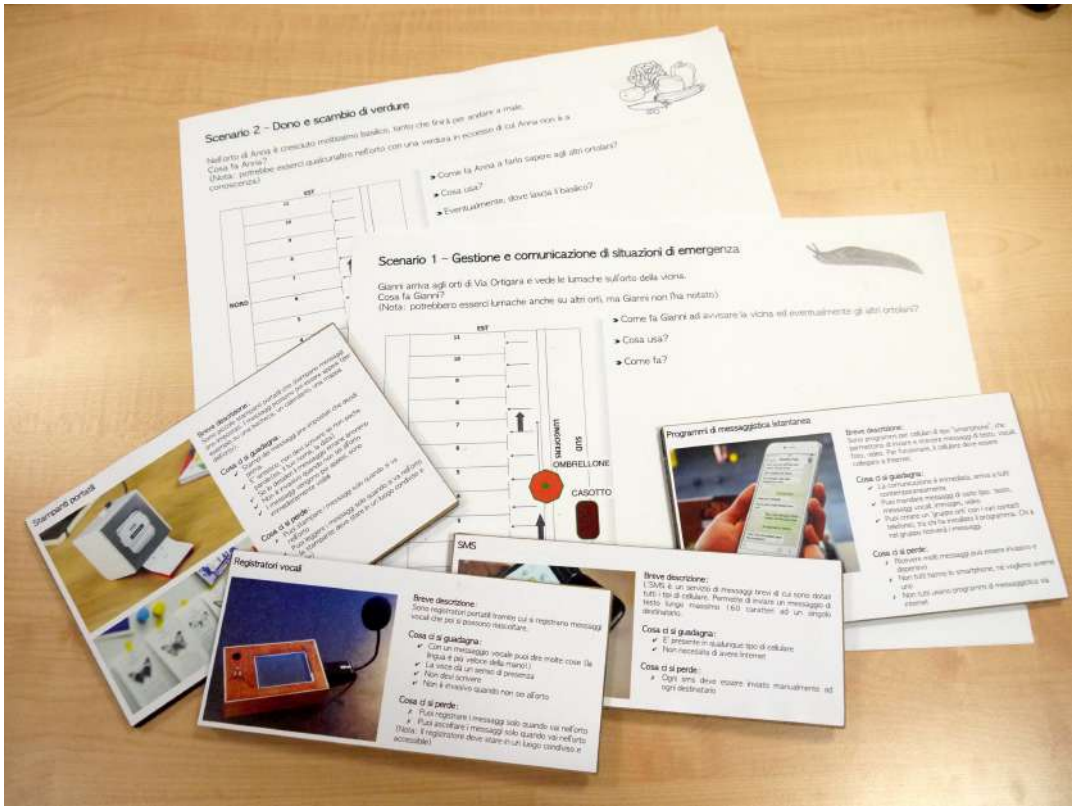

Figure 7.10: The workshop materials used at the second workshop.

Figure 7.11: A design probe on gains and losses of SMS.

weeks later, I met Francine for a coffee and I realized that he did not notify any of the gardeners that the design project had come to an end. I decided not to insist with my agenda in this field, considering that a "minimum acceptable level" of participation was not achievable in this context, and, as Shapiro comments, "we would have, at the limit, to be prepared to walk away from a project where such matters are not negotiable" [193, p.35], as also reported by Del Gaudio et al [85].

7.3 The second senior social garden: a top-down approach to Participatory Design

With the lessons learned at the first senior social garden in mind, I decided to approach another. This time I chose a top-down approach in order to look for a common agreement with the garden and club authorities from the outset. Indeed, without a formal agreement between institutional actors, a design space becomes more precarious and dependent on the quality of the relationships built between the actors involved. Dindler and Iversens [86] call it "relational competences" and is a core skill in PD. The importance of building affective bonds as attachments for the participants is more evident in a context with scarcity of resources beside the personal competencies of the designers. It became evident to me how important was building affective bonds as attachments for the participants when conflicts arose among actors (i.e.: me, the garden chief and the president of the association).

Therefore, I found as legitimate tactic setting up alliances with those at the top of the hierarchy, to minimize chances of sabotage.

In fact, sabotage is a real risk in PD projects when managers feel threatened, as reported by Simonsen and Kensing [194] where a production manager attempted to shut down a project because she felt her authority threatened by the design process.

In this second garden, I also decided to investigate a particular issue that I learned is common in senior social gardens that it primarily emerged in the workshops with the first garden: making compost together. I moved the attention from the relational and organizational matters of a senior social garden to a pragmatic and tangible matter. This move was intended to face a day-to-day concern (compost and composting as commoning practices) and thus indirectly sensitize the gardeners about themselves, similarly to the provocative move done with the Digital Lab. In this case, the agency of the designers was showing that a shared concern is more than that. Raising awareness among the gardeners about the role of compost and their role in composting, made compost and composting be considered a "common-yet-to-be", a commoning in the making. Quoting The Rodale Book of Composting [152],

> "Composting is, in broadest terms, the biological reduction of organic wastes to humus. (...) This process, (...) is part of the ever-recurring natural process that supports all terrestrial life. (...) Let's just say that compost and composting are, like water and air, essentials of life" ([152, 1]).

Connecting the utilitarian view of compost with the commoning one:

> "Composting is one way to work within the life cycle in the furthering of our welfare. Compost is more than a fertilizer, more than a soil conditioner. It is a symbol of continuing life" [152, 10]).

To face budgeting cuts on waste recycling, the local Municipality requires the seniors clubs to make compost instead of producing waste. The issue is that the Municipality does not provide training in composting, and sometimes has given inadequate compost bins, too large to be managed by elderly people (3m x 2m) (Figure 7.13). Indeed, even if the senior social gardens in the local municipality are subdivided into allotments that are worked individually, making compost is an activity that needs to be done collectively. In the case of the first social garden, one small compost bin was shared between every two allotments but only Francine and her allotment neighbor were able to make compost. Therefore, I searched for another senior social garden by trying to contact the garden chiefs, thus changing approach from the previous case where I gained access through a gate-keeper (Francine). Having already engaged with one senior social garden there were four others available in the urban area and of the first two of these four, the chief was not contactable by telephone (no answer) nor by going there in person at different times during the day (the club was always closed even if the garden was accessible). I directly contacted the final two senior social gardens, one well-established (since 1997) and one in the early stages of opening. I made exploratory interviews to their garden chiefs focusing on cooperative and management dynamics (eligibility and right to access an allotment, rules on plants and fertilizers, mutual aid and communication) focusing attention on the management of compost. In the interviews compost making was revealed as an unsolved issue: both of the garden chiefs were interested in being involved in a design project and admitted that making compost is easy in principle, but it becomes an issue to coordinate and make it collectively in large groups. The garden chief of the well-established garden admitted that every year they have to spend about 300 euro calling a tractor to dispose of the unmade compost, which has become organic waste and has filled their compost boxes. The newly established garden would begin operation a few months later and the chief asked me to wait, since they would need an initial period in which they self-organize and "go with the flow' in the early stages of operation. Instead, the other was a well-established and bigger social garden. Due to time constraints in my research contract I decided not to wait and to engage with the well-established garden (see Figure 7.12).

The social garden due to participate in the design project consisted of 127 allotments with an average size of 30 square meters. The initial contact was made through a formal phone call to Mark, the garden chief, who offered his availability to let me visit the garden and to be interviewed. At the meeting, Tomas, the president of the seniors club, also attended. They showed me the garden plots and the compost area, which consisted of two large boxes of approximately 10 cubic meters each, in which there were many large branches and green waste is deposited, left to rot. They explained that a couple of years before, a university professor in civil and environmental engineering, who is also a senior gardener there, had done a feasibility study with his students in order to solve the compost problem. The solution found was not feasible because it would be too expensive (50k euro to buy an industrial composting system). This was indeed what would be needed from his requirements analysis.

Figure 7.12: View of the second garden from the relax area - the compost boxes are far on the right.

Figure 7.13: The compost box models provided by the Municipality, allocated also in the second garden.

> *We initially met at the garden, where the garden chief and the president gave me a tour. Five minutes after we met at the garden, the president tells me "I'll call you 'tu'"["ti do del tu" in Italian] inviting himself to refer to me informally. I laugh politely while thinking "what the heck?". Instead, the garden chief refers to me using the formal form, and I must say that I like it as it gives me the feeling of finally having a recognized role.*

To clarify, "ti do del tu" (literally, 'I give you a you") is a colloquial expression used by someone to notify another that they will use the informal form (2nd person singular) instead of the formal one (3rd person singular). In Italian the informal form is used to express closeness (e.g. between friends, partners and relatives) or, as in this case, when a person wants to mark their own superior position with someone (e.g. different age or different working level).

> *To my surprise Tomas participated in the interview without being invited. I kindly invited him to leave the room but both of them agreed to stay, and due to the power relations, I didn't insist, thinking that having an institutional point of view from both Tomas and Mark would have been useful. Mark proves to be open-minded to Participatory Design. Both complain that the gardeners do not know how to make compost, and the president Tomas is especially critical, bordering on offensive. They denounce the lack of a "foolproof system", because there is no "disciplinary power" to enforce the respect for rules, "because we cannot fire them!", said the president, referring to the gardeners. Tomas is certain that we must ask the municipality for at least 50k euro in funding in order to make a composting system. He is very skeptical that I can propose something workable, since the professor already tried and did not succeed. He patronizes me in somewhat misogynistic way, often interrupting me. Mark, instead, is more available to discuss the project and according to him, a fundamental part of the compost process is the bio-shredder, since they don't have the strength to break up all the green and wooden waste into smaller pieces. He asks me to propose a project plan for the next meeting. At the end of the meeting, Tomas also invited himself to accompany me home with the excuse of helping me find my way, without offering a "please" or "thank you".*

I asked about the history of their garden, their motivations and their use of ICT for communication and organizational aspects. Similar experiences to the previous garden were reported, except for the use of ICT solutions. The garden chief used a mailing list and a notice board in the garden, but only for one-way communication: none of the gardeners had access to the notice board, and very few gardeners used to respond to the mailing list. The garden chief told me to propose a plan and, based on his feedback, they would decide whether to proceed or not and whether to open participation to some of the other gardeners identified in the group as the most assiduous and trustworthy volunteers. He refused to organize a plenary meeting with the other gardeners to brainstorm together, because:

> "you know, the elderly, it's quick for them to say... 'it's bullshit!', and so you lose them".

Yet I refused to provide them with a product that they only had to evaluate, because this was not my agenda. Therefore, we discussed the process of making compost, brainstorming the possibility of re-designing the boxes, partitioning them or adding humidity/temperature sensors and creating shared rules of use with the other gardeners. Their belief was rooted in the idea that without big money and big projects it is impossible to address the problem. The president was especially discouraged about the feasibility of shared rules among the gardeners.

We met again two days later to discuss the project proposal I had to prepare. The path proposed was twofold: co-design a shared set of rules to make compost and/or co-design a bio-shredder. They were mostly interested in the bio-shredder since, in their opinion, the gratification of seeing the result (a plant that grows, a compost that is shredded) was a strong attraction for the gardeners. In this phase of the project, the ethical question resonated familiarly: "Does a design method, tool or process, deal with a justified loss or change of design focus, for example when participants identify problems that require non-information technology solutions while the process was initiated to design information technology?" [180, p.82].

I acknowledged that this was a case in which the implications for design are not to design ICT [45], so I proceeded according to the participants' will.

I acknowledge that this is not the most participatory way to start a PD project, and at this point, I could have considered that this context did not have the conditions for a participatory project. Nevertheless, I accepted their constraints, since in their perspective why should they give blind trust to a single stranger that does not represent any institutional - and therefore trustworthy - project? Still, making space for the participants' agenda is one of the core values of PD. From this point of view, it could be considered a design-driven approach having organized a plenary meeting with the gardeners, while a more participatory approach (aka empowering the participants in their own means) the way we followed: enacting more as 'product' designer, answering the garden chief and the president's demand of proposing them a solution. The reason for their reaction was twofold and connected with the next turning points: the skepticism of the president about the gardeners and the skepticism of the garden chief about the researcher's capabilities.

The garden chief mentioned his work in a quality-control sector and that he was aware of participatory approaches to involve the workers in improving some tasks. This memory from the past was an important element in leaving the door open to the project. Yet, my position was not the best, since a professor in civil engineering that was also a gardener in that garden had tried to tackle the compost problem. His solution was to involve the municipality asking for at least 50k euro and yet his project failed. With the assumptions about the alleged laziness of the gardeners and the budget and institutional constraints, starting a participatory project was significantly challenging.

Given these conditions, my proposal was to make a small step in terms of feasibility. I suggested focusing on the first phase of making compost, which is preparing the material, i.e. shredding it. I identified a list of requirements for design (see Table 7.1), based on the context that Mark and Tomas described and that I was able to see in my first visit to the garden. In the following meeting, together with a master student I was supervised, we pitched the design concept of a pedal-powered shredder (Figure 7.14), with the intent of

People and Context Requirements	Design Implications
Limiting the amount of electricity (garden not on electric grid)	Building a mechanic-based tool
Overcoming the lack of budget	Building a low budget tool
Keep the task simple and straightforward	Add the waste to the basket and pedal to shred it
Incentive people to shred own waste	Building a fun tool through which people can do physical activity
Absence of expertise among gardeners in compost making	Propose as first step a task shared by everyone
Absence of cooperation among the gardeners to make compost	Co-design a system that can work only in cooperation (by 2 persons)

Table 7.1: Implications for design based on gardeners' and environment requirements

addressing the people and context requirements that emerged from Mark's and Tomas's perspectives. The intent was to make a first step without expecting to solve the whole compost problem.

> *Tomas remains skeptical and antagonistic in the discussion, while Mark asks us cautiously "... but are you sure that it works?". He expresses the fear that presenting an unworkable project to elderly people will lead to losing the gardeners' confidence towards him. Therefore, he becomes doubtful about introducing us to them. He tells us that instead of involving the gardeners in the design process, we "make the product' on our own and subsequently they can try it, endorsing that functionalist approach in system design, in which people are not involved as co-designers, but they are relegated to the role of 'users', and therefore consumers, as Mark implicitly describes the prospective users of our 'product'.*

Mark tells us that before returning to them, they want me to talk to three experts selected by themselves: the civic and environmental engineering professor, the manager of Public Gardens Office at the municipality, and a biologist that works on compost in a renowned local agricultural institution. Since this was not negotiable, I contacted these three experts.

The professor argued that without an electric or gasoline engine a machine cannot shred anything, claiming in an e-mail that:

> "We must place before the technical primacy on the social",

with the rest of the e-mail presuming that I was undertaking this project as a volunteer.

The manager of the Public Gardens Office openly showed indifference to the compost problem, claiming that:

> "This is not my problem, they need to organize something by themselves".

He was the one that installed the over sized compost boxes in most of the senior social gardens in town, without considering any training for making compost and without considering the usability issues that the boxes implied.

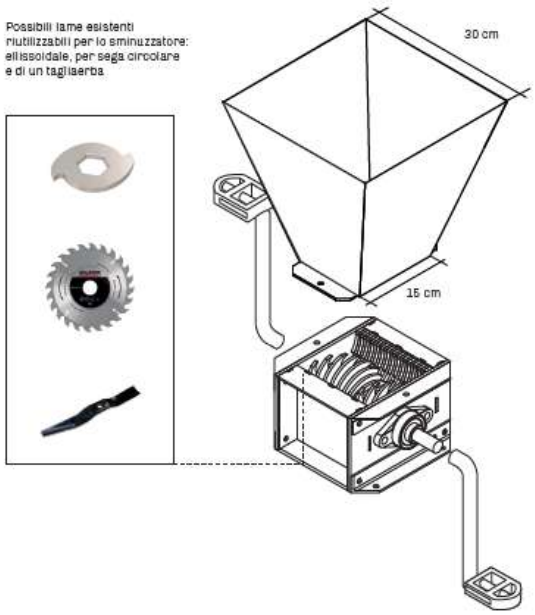

Figure 7.14: First pedal-powered shredder design concept. (Credits to Silvia Tulli)

I moved to the last meeting with the biologist, at the agrarian foundation. She and her colleague appeared very interested and curious about the pedal-powered shredder design concept, finding it a suitable solution, and asking me to keep them updated. They showed me the institution's compost system and told me that seniors should visit them to learn how to make compost:

> "The most important thing is seeing with your eyes, because then even the most skeptical are persuaded... we know them... and we are here for a reason!",

echoing the garden chief's words on the importance of the gratification in seeing empirical results.

With these findings we were finally introduced to the group of volunteers and with them, we organized three workshops (see Figure 7.15). I was careful to involve the garden chief in planning the workshop activities and gradually I earned his trust, building a fiduciary bond of mutual recognition, which endorsed me with the other gardeners.

In the first workshop, I eliminated all the 'creative' and colorful design materials (post-its, posters, markers) and used only grid paper and pencils to invite the gardeners to sketch their ideas. I further used my Mac for providing technical drawings and videos on how shredder blades work manually, showing samples made with 3D printers and of other pedal-powered machines. It was crucial for them to see that the mechanical bio-shredder was feasible and the best way of doing this was to show them videos of similar projects ([16] , [210]) . I believe that using such workshop materials that adhere to the imaginary of a stereotypical professional helped to deconstruct the stigmatizing stereotype of the

Figure 7.15: The first workshop with the second garden. (Photo credits to Silvia Tulli)

young and inexperienced researcher.

The first workshop concluded unexpectedly: when we finished the activities, the garden chief asked me and the master student to leave them alone so that they could privately deliberate on the feasibility of the project. Their response was interesting: they accepted participation in the project but with conditions. They decided to make a crank-powered shredder, discarding the idea of the pedal-powered one, since they judged it as unfeasible and uncomfortable. They asked me to make the university provide a metal mechanical shredder and they would build the structure around it, customizing it according to their needs.

They did not want to commit economically since some skepticism about the shredder remained. They considered that fair since this was a project in partnership with the university, the institution would pay for the shredder and they would have contributed with their expertise in carpentry and metalworking for crafting the support, which would be customized for their garden. We made a deal and I offered to help in welding the metal structure to the hilarity of most of the gardeners, who could not believe a woman would be able to weld.

In the second workshop (see Figure 7.16) the lead of the project was taken by the two carpenters (father and son), who appropriated an incautious suggestion given by the master student, that felt so enthusiast about the project to jumping into the workshop as participant, leaving her role of workshop facilitator. The carpenters sketched a detailed structure on the grid paper, customized to be fixed between the wooden struts of their compost boxes (Figure 7.17. The carpenters were instantly empowered and the other participants felt they were no longer of use and started to leave the workshop saying "if everything has been decided, I can go home", impeding me from running the workshop activities I prepared in order to engage everyone in brainstorming and sketching design ideas.

Figure 7.16: The second workshop with the second garden.

In the third workshop, I tried to challenge the design concept of the structure, inquiring about the safety rules and possible changes in the interaction with the shredder (Figure 7.18). We discussed three main areas: declaration of responsibility, safety and accessibility, and the structure and mechanism of the shredder.

These issues were intertwined one with the other. A signed declaration of responsibility was required for my supervisor and me in order to handover a potentially dangerous device to them, which would be available to use even in the case of there being no researcher present to supervise. Safety and accessibility issues concerned who could access the shredder and how to use it. The social garden is accessible throughout the day and members of the public can enter freely, although access to the toolshed is restricted. However, the shredder, with a fixed structure on the ground, would have been accessible night and day to anyone who passed by. Similarly, gardeners who had not undertaken training to use the machine could be seriously injured. The structure and mechanism of the shredder were discussed since the structure of the shredder was made by the gardeners themselves and then installed onto the body of the shredder, a half assembled machine purchased from a German maker. I facilitated the group discussion but, reminded of my previous experience with the first garden, I did not ask the seniors to interact with the post-its and poster, to their visible relief. In this workshop I assigned the master student the task to quietly annotate the keywords of the discussion on post-its and filled out the poster with them (Figure 7.19).

Yet the idea, a metal and wood structure, was approved by the participants and passed as "the carpenters' design" and therefore we proceeded to deploy it. Since the structure was designed in a way that was not portable to other gardens, I proposed the condition that they would have to commit to financing the materials required to build the structure. After a consultation they agreed and days later we helped the carpenters/metalworkers in their workshop at welding and cutting the structure for the bio-shredder (see Figure

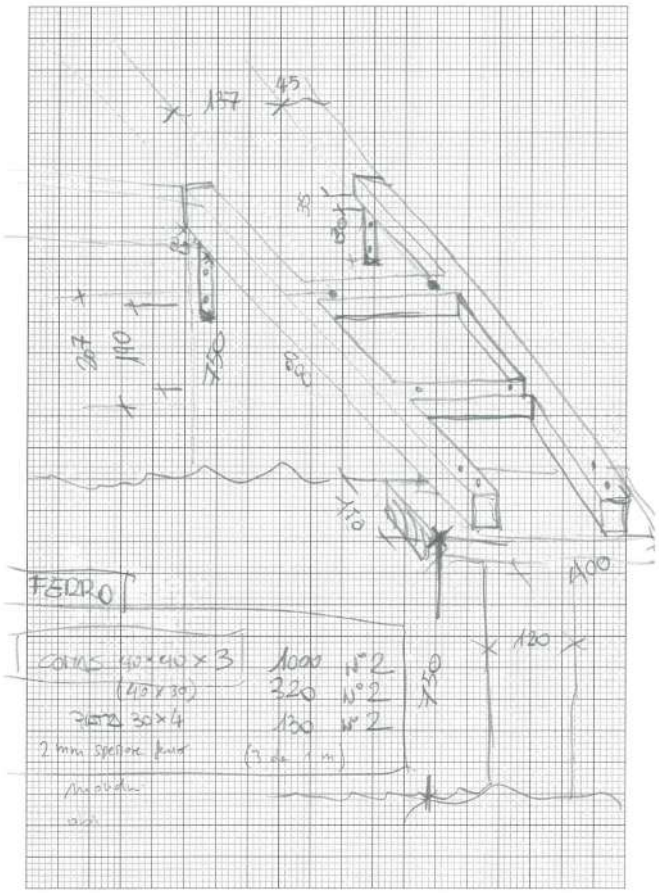

Figure 7.17: The shredder support drawn by the carpenter's son after the master student's input.

Figure 7.18: Discussing safety issues during the third workshop. (Photo credits to Silvia Tulli)

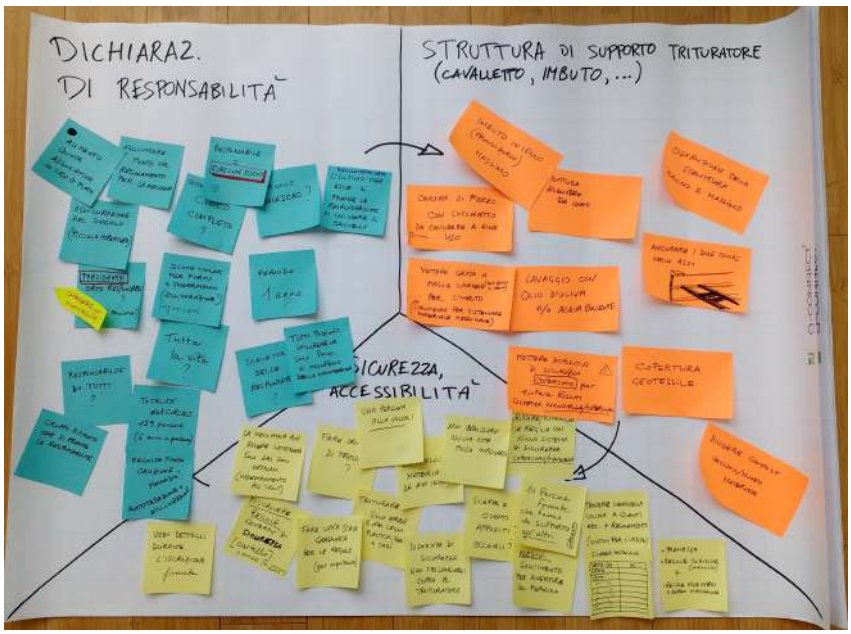

Figure 7.19: The poster made from the group discussion, during the third workshop.

7.20).

We began testing the shredder over a five-week period. This took place in the garden and was restricted to the volunteers selected by the garden chief and to the other gardeners only if supervised by the volunteers. In order to use the shredder (Figure 7.21), the volunteers were trained according to the safety rules of the machine and had to sign up to a "Declaration of Responsibility", discussed by the group in the third workshop and specially written by a retired literature professor, who took the lead in the writing session, encouraged by Mark.

I acknowledged that limiting participation and delegating the politics of the invitations to the garden chief led to an empowerment of his and the chosen volunteers' positions, to the exclusion of the other gardeners. I asked for the inclusion of females, for "statistical reasons", as I told the garden chief to be more convincing, than advocating for gender equality that would have made him giggling, while in reality I was just pursuing my agenda to be as much as inclusive. Unfortunately he declared to not to know any female woman well, and my request did not persuade him to make an open call to those gardeners he did not know.

Yet, the choice of limiting participation in the testing phase, reasonable for safety reasons, also showed the importance of testing a cooperative practice by involving motivated people that could then promote the practice to the most skeptical, raising their curiosity through the gardeners that were excluded in this phase.

The gratification of seeing that the garden waste was shredded and that the composting process had begun (Figure 7.22) boosted the commitment of the volunteers as well as that of the garden chief in making the shredder a practice embedded in the cycle of the garden, and inviting all the gardeners to use it. Near the end of the testing period, we collected feedback from the volunteering testing group in two informal meetings that

Figure 7.20: Participatory deployment of the shredder structure, at the carpenters' workshop.

Figure 7.21: The crank-powered shredder.

Figure 7.22: Composting process.

became celebrations of the project and which included toasts with wine. The feedback was generally positive, confirming the intention to present the shredder as a "new offer" in the garden that draws on pragmatism. The flyer was written by the volunteers and especially by the retired professor of Literature and edited with the computer by the garden chief. The flyer advertised the saving of money currently used to dispose the green waste (and also in saving money in buying it), "green" ideals in self-making a good composting, outdoor physical exercise to become stronger and the spending of time in each other's company (see Appendix A.12). Yet a negative feedback was that women (the garden chief reported) were not enthusiastic of the shredder because it required too much energy. I answered that this was caused by the fact that no women were involved in the design process and as a result, the design was wrong if women would not use it. The chief answered that, in any case, women in general will not use the shredder too much:

> "some women will use it, some men won't use it, (...) But if 30% of the gardeners use it, it will be a good result (...)' The shredder is not good for everyone",

referring to those that do not have time, those that always go to the garden in a hurry, those that have physical problems or those that are not strong enough to use it.

7.4 Learnings

The ethical dilemmas that emerged from fieldwork are especially found at the crossway between the subjectivity of the researcher and the subjectivity of the participants. Following Haraway [108] on questioning "the voice from nowhere" as the voice of the researcher in academic papers presumed to be objective, it is important to acknowledge and understand what it implies: in the field, the voice of the researcher is absolutely gendered. It

is important, as Muller [162] suggests, to ask the "who" of the researcher when designing interactive systems. Acknowledging the heterogeneity of the researchers highlighted, especially by feminist scholars, that it is also important to acknowledge the heterogeneity of aging, highlighted by those scholars that propose a critical analysis of the normative and hegemonic system design for "active aging" [220], [73].

The articulation of the ethical dilemma emerges from the acknowledgment of the two subjectivities of the researcher and of the participants:

How can one respond to gender issues (stereotypes?) when designing with elderly men (a user group labeled "vulnerable", according to traditional system design literature) brings the researcher (a woman) to be subjected to gender stereotypes and paternalistic attitudes by the elderly men themselves?

Re-imaging the user concerns the deconstruction and critique of aging stereotypes and deconstructing them from a user-customer perspective towards becoming allies and mutual learners. In the first garden, I tried to avoid talking about gardens for seniors but the chief did not accept the creative workshop material (post-its, colors, posters) and perceived it as childish. In the second garden, I avoided disclosing that I was working with the elderly and I always talked about, simply, social gardens and not senior social gardens. The chief and the president of the associated senior club put the accent on the elderly component themselves, describing it as an impediment to the success of the project. I did not use creative materials in the workshop but serious grid paper and pencils, printed material (photographs, under the chief's advice) and video via my laptop.

In the second garden, I opposed the garden chief's idea of working as product/service designer but engaged them with a participatory process, even arriving at an ultimatum to adopt this method and pursue my agenda or risk my departure from the garden and the project. This strong position was risky but, in the end, rewarding because I earned the chief's respect and his interest and he was able to share in this method.

During the case, and moving from one garden to another, I acknowledged that shifting the focus from a communication problem to a compost problem means shifting from the person to the environment. The person (and all his/her attributes that determine the typology of user) is out of focus and the problem is not age-related or status-related. As a result, what emerged as central is the environment and the relation that the people have with it: gardeners trying to find a way to make compost, collectively. Going through this, the communication issue emerges without the need to tackle it directly. The result was that the being "elderly" was a peripheral element during group discussions and the adopting of design choices.

Looking at the case study from the relational movements, they developed differently in the two garden. In the first garden, exploration took place when I adopted a bottom-up approach through a gardener (Francine), that was also a participant of the Digital Lab. Understanding how gardeners experience the social garden was the exploration that lead to the design idea, of improving communication and garden management as commoning. Provocation consisted in proposing to the gardeners a reflective journey, to make something together for their garden, challenging their approach to delegation. In the design idea this meant sharing responsibilities among gardeners on the matters of concern they pointed out (i.e.: surplus vegetables, compost, insects). The project roughly

stopped in the conflict movement, when gardeners refused to break the existing delegation system and I was not able to recover the compromised relationship with the garden chief.

In the second garden, exploration took place when I decided to change engaging approach and adopted a top-down approach, building trustful relationships with the garden chief and the president. Confirming that compost-making is a widespread issue in senior social gardens was the exploration of the design idea that motivated me to propose a design process focusing on it. Here I recognized that designing digital objects would have been out of place. The exploration of the object of design consisted in analyzing the compost process and deciding to select and focus on the first step: shredding. Therefore, I conducted a background research on the different mechanisms that shredders have. Provocation consisted in refusing to adhere to gardeners expectation to prepare the "product they would have to test, opposing to this client-provider approach the encouragement of the participation of gardeners with different competencies, not only to design the shredder but also to build it. The conflict happened on two levels, both related with mutual-recognition of competencies. At the beginning of the project, the garden chief and the president challenged me because we had different competencies, and to work with them I had to speak with three experts of their choice. In the object design, me and the gardeners had long discussions about the validity of a non-electric mechanism. Earning trust from the gardeners through providing the feedback from the three external experts and from the test we ran in making compost, was the reflexivity movement that changed and improved the relationship among us. Finally appropriation took place in the design idea when the validity of my proposal was adopted by the chiefs and the gardeners, and in the design object when the gardeners worked on gardeners responsibilities and future developments.

Chapter 8

Discussion

8.1 From relational movements to design tactics

The case studies illustrated in this thesis represent experiences used as examples, as probes and as explorations. The role of small cases serves to illuminate some points in PD, especially the early stages of PD projects, which are missing explanation, in particular how PD projects are set up, how funding shapes the participants' gains and project goals [38, pp.81-82], how *mutual learning* (a core aspect of PD) overlaps with *mutual aid* when negotiations are enacted between researchers and participants to achieve each one, and common agendas (that are not always the same). In particular, the aim of this research is to contribute to ideas on setting up, developing and realizing Participatory Design projects with local communities in design contexts that are precarious and in which hegemonic narratives exert strong influence. The agenda of finding a way to design for the common and as a commoning practice in precarious contexts and hegemonic narratives unearthed five movements: 1) exploration; 2) provocation; 3) conflict; 4) reflexivity and 5) appropriation. These movements are symptoms of two main mismatches or controversies: the first one, between the normative and the everyday narratives of active aging and the second one, between the different agencies involved in the case studies.

Experiencing a precarious context fostered the development of a feminist perspective. Precarious was the status of my condition in respect of the normative narratives of AAL and active aging that influenced my own stereotypes and those of the participants I worked with. The silent power of these narratives strongly obstacled design proposals in the direction of commoning practices, disruptive and misunderstood to seniors. Precariousness was also nourished by the precariety that I lived in everyday life with the seniors, that constantly reminded me in a paternalistic and pietistic way the working precarious condition of young generations in Italy [10]. In this situation my role as a researcher was seen with tenderness, my work misunderstood ("You already graduated?"); the coercive power that could derive from the institution that I represent or from my research role was nullified, when it was not even considered, was instead seen as an opportunity to "rub" or exploit (for instance by the garden chief of the second garden). On the other hand, if one felt vaguely threatened, without any explanation a wall was raised (as the garden chief of the first garden).

In the making of my personal standpoint while doing Participatory Design with seniors,

they could be triggered to develop or at least have a hint of a critical view, whether not a dissociation "from the authoritative forms of knowledge that constitute a dominant world-view" [227, p.348], as in knowledge production as in its consumption, for instance, the paradigm of the service-customer at the digital lab or of the product-consumer in the gardens.

The making of my standpoint and vision to the other ones could not be detached by the practice of Design Anthropology, in the continuous loop of observing, participating and acting.

Going from familiar to unfamiliar allows to unfold new horizons of interpretations, experience of aging and meanings. The added value to an anthropological gaze is that the research is conducted by the anthropologist with the collaboration of the "indigenous tribe" involved: it is a co-research. This implies multiple consequences: reflexivity as a process involves informants too, shaping a co-research style which is analogue to the style of Participatory Design, in which the participants are considered expert in their field, and the encounter with the designer is characterized by the mutual learning of each other competencies. As a provocation, should we aim for publications co-authored by designers and participants?

Donna Haraway argues that the science question in feminism about knowledge production (who and how knowledge is produced? What is scientific objectivity?) stands in situated knowledges. Situated knowledges are always partial perspectives because are produced by "embodied objectivities", always situated and positioned, "these are claims on people's lives; the view from a body, always complex, contradictory, structuring and structured body, versus the view from above, from nowhere, from simplicity" [109, p.92]. Embodied objectivity implies the constitution of an ecological vision of tensions and resonances, that cannot be relativist. Situated knowledges are incompatible with scientific Relativism and the consequent equality of knowledges, because Relativism denies the responsibility of positioning and critical inquiry. It is in the embodied objectivity that I articulate a map of tensions, articulating the actors and the objects of design interacted with in five recurrent historical movements. I was able to identify them only *a posteriori* in the case studies, looking back at my data and learnings.

I will retrace the design case studies though the movements , but before I briefly explain them. The main five recurrent movements were:

1) Exploration: an initial phase of every case study, where I was trying to know the people and their environments, mainly quiet observation and participant observation

2) Provocation: the following phase in which I add to the anthropological approach, a design one.

3) Conflict: the phase caused by provocation, which creates shock, misunderstanding and tensions between me and the participants

4) Reflexivity: this is the digestive phase of the movements, in which new insights, negotiations and affective bonds develop. Although reflexivity is a movement that happens all along the case studies, before and after, here I consider it as the historical moment in which a shift of paradigm happens.

5) Appropriation: it is the final moment in which the "design things" are recognized by the participants as part of their knowledge.

The movements identified are relational ones, in respect to the context and the persons I interacted with during the case studies ("context of the association / my participation" in Table 8.1), and in relations with the design ideas and, when it succeded, the design objects. Looking at how the movements articulate in the cases, the incrementality of learnings is so unfolded:

- In the mountain community there is not the design of the object but there is the design of participation with the different persons involved, the stance on active aging is slightly touched through chats with the seniors as it was still sketchy in my research perspective;

- In the senior social center the design idea becomes design object and the critical stance on active aging is achieved collectively by me and the participants through provocation. Here the research focus shifted from active aging to commoning;

- In the gardens, different approaches to engage with the communities (bottom-up in the first garden, top-down in the second), are provocative in relation to the participants, and the different competencies between the garden chiefs and me generate conflicts. Here the research focus is towards the commoning since the beginning.

Overall, provocation and conflict are the moments that distinguish the design will, compared with ethnographic practice that is more related to the exploration movement. Still there is no hierarchy among the moments, the only order is the chronological one.

An intersectional (feminist) approach helped me to get away from my initial domain (system design for active aging) and to approach the participants in an intersectional polyphonic way, and their relationships with the world and technology (ageism, already active, etc). In particular, a feminist approach helped me to shift the focus from the type of user (a participant that is not just a senior) to the type of design object (commoning practices), and to envision the mismatches that occurred during the unearthing of the above mentioned movements.

My learnings started with acknowledging these mismatches, and I incrementally gathered through the exploratory cases and the case studies (see Figure 3.1, in Chapter 3). These learnings make up the germs for an intersectional Design Anthropology. Aiming at systematizing them, I grouped them in three main tactics (Figure 8.2): decolonizing, nurturing attachments and creating contextual ethics. I refer to them as tactics and not strategies, as tactics are impromptu actions, actions of those who do not have their own space and act in another's space. The expression, originally from Michelle De Certau, articulated in his work "The Practice of Everyday Life" (1980) [82], was then resumed in HCI by several authors, including Dourish [171], Bodker et al [54], Lyle et al [144], Yanki Lee [134] and others, to indicate the extemporaneousness of the design action in projects that happen spaces defined by institutional strategies, such as the cities, with their urban planning (Michelle De Certau) or the associations, with their agreements regulated by the municipalities, and consequently all that follows (social structures, power-dynamics, etc.). I speak of tactics instead of strategies because these are instead planned actions, of those who have their own space and act in their own space, for example if I were a researcher who does design within their own university with students as participants, or if I were a designer who makes plans inside my company, with employees and colleagues as participants.

	Exploration	Provocation	Conflict	Reflexivity	Appropriation
			The Movement of Seniors and Pensioners		
Context of the association / my participation	Grassroot approach: attending their meetings as new citizen	My role – new citizen but also researcher – was not clearly categorized	Conflicting agendas with the local councilor for culture (my role as youth and not as researcher) and with the youth association (negation of the mobility need), crushing into hidden agenda of public fundings to the disadvantaged municipality	Not possible for me to move forward a design project, but only possible doing an ethnography	
Design idea: mobility as commoning practice	Emerged from chats with the association as well as with other citizens of the mountain community	Seniors' statement of powerless and dependence from the local political powers (the municipality) and consequently delegation to them			
			The Digital Lab		
Context of the association / my participation	Established contact between the research group and the association	Proposing to focus on commoning as the design practice to deploy at the lab	On ageist view	On ageist view	
Design idea: sharing knowledge as commoning	Observation and discussion with the seniors to subvert the traditional learning approach of PC usage	Challenging seniors' view about their own competencies: starting from what you know since it is valuable to document and share	Conflicting agendas between us and the seniors about the goal of the Digital lab: negotiation through the paper-based tutorials	On commoning: What "sharing" means is twofold: liberal-consumer view (product exchange) and solidarity one (sharing as growing and managing). On ageist views: Creative writing process to describe themselves as a group	Seniors' appropriation through the way they decided to share their projects and the kind of public
Design object: Fucinaperta digital platform	Observation and discussion with seniors about metaphors to understand pc icons and internet/desktop dimensions	Triggering seniors' imagination on the user journey map through the platform and the usability of it (scenarios and mock-ups).	Negotiations between seniors' desires and system limitations.	Seniors and us decide the public of Fucinaperta through scenarios	Seniors design the plug-in to upload their multimedia projects and decide the privacy settings for the public to sign up to Fucinaperta

	Exploration	Provocation	Conflict	Reflexivity	Appropriation
			First senior social gardener		
Context of the association / my participation	Bottom-up approach through a gardener that was a participant of the Digital Lab	Proposing a reflective journey and to make something together for their garden			
Design idea: improving communication and garden management as commoning	Exploring how gardeners experience the social garden	Sharing responsibilities among gardeners (surplus vegetables, compost, insects)	Gardeners refuse to break the existing delegation system		
			Second senior social gardener		
Context of the association / my participation	Top-down approach, building trustful relationships with the garden chief and the president		The garden chief and the president challenged me because we had different competencies		
Design idea: compost making and its management as commoning				Earning trust from the gardeners through providing proofs from the 3 external experts and from the test we ran in making compost	The design idea and the validity of my proposal had been adopted by the chiefs and the gardeners.
Design object: powered-crank bio-shredder	Analyzing the compost process and selecting the first step: shredding. Background research on the different mechanisms that shredders have	Fostering the participation of gardeners with different competencies	Arguing with the gardeners through existing samples that the mechanism is valid		The gardeners worked on gardeners responsibilities and future developments

Figure 8.1: The five relational movements occurred in the case studies

We encountered two kinds of mismatches, based on unmet expectations by designers and participants. The first mismatch is the one between the narrative on active aging from the literature, policies and social norms, an institutional and hegemonic narrative, and the narrative that emerges from the participants during fieldwork, a personal and intersectional narrative, collectively built by the participants involved. This mismatch of narratives involved a decolonizing move to overcome it.

The second mismatch is between the agendas of the designer, the participants and the community-based organization. It implies negotiations along the entire PD process, from its methods and techniques, such as tackling delegation, challenging the student-teacher and the consumer-product designer models, to the workshop materials. The second mismatch pushed until it challenged the technological outcome, through unexpected implications for design. This mismatch of agendas involved an attachments move to overcome it.

Finding a way to deal with these unattended five movements, means acknowledging that they are permanent tensions that need to be continuously challenged and questioned, and not problems with final solutions. It is by starting from these mismatches that a way to improve relationships and practices became possible. I argue that an intersectional Design Anthropology lens in Participatory Design is decolonizing, relational and ethically contextual. In the following sections I explain how.

8.2 Decolonizing

The discourse about decolonizing design takes place in different fields of design, such as Industrial Design [8], Participatory Design [101]and Design Anthropology [214].It is not to be confused with postcolonial, which in HCI [121] and PD [147] has had more resonance. Decolonizing is a concept elaborated on by South American scholars and activists that advocates for practices of deconstruction of colonialism that permeates not just in the former colonies, but extends on a global scale, in production systems, education, as a form of dominance of the few on the exploitation of the many, lately developed by feminist analysis [174]. Instead, postcolonial is the reflexive discourse elaborated mainly by those scholars that share their ethnicity and race with the ones of the historical colonizers, from the "West" to the "East" and "South", usually in the historical period after the discovery of America ([186], [187]).

As Tunstall argues for a Design Anthropology able to decolonize design innovation: "Design Anthropology enacts the critique of positionality and power articulated by Third World scholars, indigenous scholars, and second and third wave feminists by reframing the problem areas of social impact as within the value systems of imperialism" [214, p.244-245].

In this work, I took into consideration active aging as a hegemonic and normative narrative in design to be explored and deconstructed. The critique of ubiquitous computing as a hegemonic and colonialist approach to design has been the starting point of this journey [91]. It has been discussed that active aging promotes a stereotypical and simplistic view of "elders": a category that oversimplifies the complexity of the diversity between people to whom this label is attached. This thesis aims to problematize the use

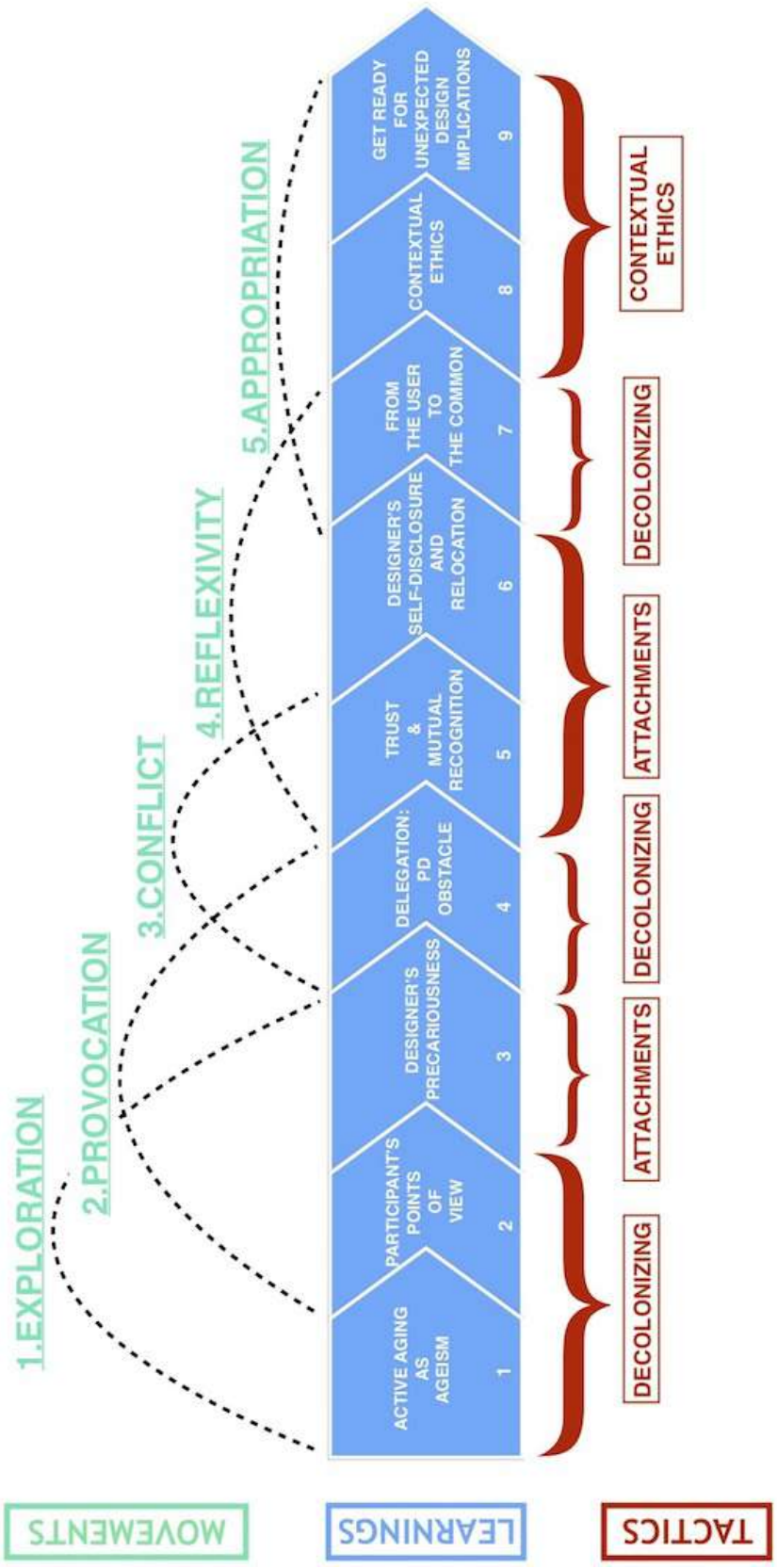

Figure 8.2: From movements to learnings to tactics for an intersectional Design Anthropology.

of the active aging label and promote a different perspective. Refusing this stereotypical view, this work aims to approach aging by deconstructing its normative aspects and advocating for a design that is not for "solutions" against aging but a design of the practices of commoning. Therefore, I argued that deconstructing ageist stereotypes is a strategy to open up different kinds of discourse on design and on values, which challenge the focus on the physical and demographic characteristics of a person. Considering elderly people as human beings like anyone else (without assumptions about their cognitive or physical abilities) permits to include them in the discourse about the common, recognizing their potentials as well as their responsibilities. I believe that it is becoming increasingly urgent to develop practices of care and of sustainable use about the common, to diminish injustice and environmental and social catastrophes.

The reconfiguration of the participants, deconstructing them from a user-customer perspective (elderly people as market segments of ICT solutions) to an allies and mutual learners and aids one, has been the first learning of this journey. When the reconfiguration of the elderly as active participants was prevented by the conditions of the context (i.e.: unbalanced power-relations in decision makers, different agendas), the project failed, as occurred in the mountain community and in the first garden. This is the first practice of decolonizing hegemonic and normative narratives.

How we think and define the people we work with, categorising them into stereotypical groups, are they "users" or "participants", is not a mere functional act but a political one, because underneath ideological stances [200]. There is a substantial difference between market segmentation [223] and the attempt to reconfigure the user [41]. The segmentation of customer streams is empirically justified according to their needs. This leads to the creation of "homogeneous groups of customers", whose stability can guarantee "successful marketing strategies" [223, p.4]. Since, "the question of whether groups of customers can be identified as segments in real markets is an empirical one" [223, p.4], customers as users are surgically categorized according to "observable general bases" which are cultural, geographic, demographic and socio-economic variables. In this scale, a solid classification of social classes can be drawn, yet the numerous variables above-mentioned are reduced to the degree of production in the capitalist system. At the lowest level, we find "persons at the lowest level of subsistence (old age pensioners, widows, casual workers, those dependent on social security schemes)" [223, p.8]. Nevertheless, we find a sensible mismatch with this empirical perspective, if we start from the bottom side of this process of categorization and homogenization of human beings, hence from the interaction between the products in the hands of the users. In the case of active aging, the first mismatch I found in doing fieldwork was regarding the normative assumption that pensioners have more free time, still they present other structural factors, such as the moral duty of caring their families, economically sustaining their children and babysitting their grandchildren, as a typical domestic situation in Italy, where the welfare family substitutes the welfare state. Care work is normatively invisible, not recognized by the institutions and this contributes to the image of the pensioner with plenty of free time.

Jeffrey and Shaowen Bardzell [41] show a case study on digitally mediated sexuality, in which feelings and experiences from the interactions between users and sex toys where analyzed and the devices criticized. The sex toys' design referred to an "ideal" user that

does not correspond to reality, consequently causing unmet expectations in the users, frustration and even feelings of unease, because of the inability to enjoy the product, disclosing the hegemonic norms foregrounded in sex toy design (a normative weight or size of the user, a normative size of the sex device, etc.). The authors deconstructed how the user is configured through the products, starting from the history of sex toy design, advocating for a reconceptualization of the user as a "subjectivity of information". They refer to it as "any combination of (structural) subject positions and (felt and performed) subjectivities relevant to the context of information technology use" [41, p.134]. This means that "users" are not fixed entities - simply recipients of products - but that their subjective positions regarding technology can change overtime. Advocating for a "fragmented self that lacks unity and coherence", Bardzell and Bardzell [41, p.143] disclose the intersectionality of the self in relation to our environments. The precariousness of a subjectivity of information becomes the possibility of critically self-determining personal agencies with regards to technology. Suchman's argument that "boundaries between humans and machines are not naturally given but constructed, in particular historical ways and with particular social and material consequences" [202] is a suggestive view of Bardzell and Bardzell's subjectivity of information, as well as of what Butler calls precariousness and contingency of being, as the materialization of the body through the reiteration of norms [66].

Deciding to talk differently about "the user", and talk instead about "participants" puts the designer in a precarious position, because the challenge against authoritative narratives is launched, with little means such as gains, attachments and designing for common and as commoning. Also acknowledging that "the Other" is a participant, implies a re-balanced encounter that inevitably brings a mismatch of agencies, only because people are different and unique. Precariousness is not a theme explicitly tackled in PD, but in some articles, it is possible to find traces. For instance how we involve participants in design is maybe the first precarious element that we encounter and that we need to reflect upon [219]. In Del Gaudio et al [85] and in Luke et al [142], precariousness is located in a project that is initiated by designers, which is a very common situation in academic research. Indeed few are the cases in which participants knock on researchers' doors, asking to engage in a participatory design project. This is more likely the case where design labs have the opportunity to be constantly present on the public scene, for instance having a exhibition and open-lab warehouse in town, such as the one of the research unit Inter-Actions of LUCA School of Arts [23]. There are cases in which successful projects were initiated by the participants, as with the senior co-housing described by Botero and Hyypsalo [58]. Still, how the project was set up (for instance how the participants knew about the existence of the designers and the possibility of activating a PD process) remains unexplained. As described by Balka, how PD projects are set up, how resources and relationships shape participants' gains and project goals is rarely considered of academic interest, and therefore it is not displayed [38, pp.81-82]. Nevertheless there are some exceptions, such as Teli et al [208] and [156], that state that the projects were initiated because of personal relationships among acquaintances [208], or because the young participants involved were children of the university staff. In both of these cases, a network of attachments and trustful relationships were already present. How to

talk differently about the user is a matter of personal involvement and therefore a matter of attachments. At the same time, recognizing the precariousness of "the Other" and of the self (i.e. recognizing the intersectionality of design conflicts) implies the construction of a contextual ethics. I demonstrate how in the next sections.

8.3 Nurturing attachments

The importance of participants' attachments and building trustful relationships with allies as a tactic to deal with the precariousness of the designer position are learnings that emerged in the first case study in the mountain community, counted for less in the senior social center (since it was institutional-driven) and were more significant in the senior social garden case. In a precarious design project, the designers are "powerless" in the sense that they start from a grassroots position, although they can approach a community adopting either a bottom-up or a top-down approach in order to set up the project. The designer's starting point is analogous to the anthropologist attempting to start a fieldwork, and indeed the anthropological perspective and method turns out to be helpful (see Chapter 3).

The question about participants' attachments [151] and participants' gains ([56], [57]) becomes preponderant here, hence the analysis of the case studies focused on the importance of the attachments for the sustainability of a PD project and the relation between attachments and participants' gains. Attachments is a concept from STS [151] that has been adopted by participatory community design as a constitutive element to the formation of publics around matters of concern [81], [88]. In this narrative, the attachments are ancillary to publics and those that are not, tend to somewhat fall apart from the focus of their research.

Here I argue that attachments, which are constituted by affects and relational bonds, are crucial not just, according to the literature, in the formation of publics (that's already an advanced step) but primarily in the developing and realization of a design project (and eventually its survival and evolution after the designers leave the project) when the project is precarious. Therefore, when there is precariousness, creating and nurturing affective bonds and affects consequently becomes more crucial and evident.

Therefore, as a requirement to cope with precariousness, the second movement of an intersectional design anthropology concerns the life of attachments as affective bonds, how the kind of attachments can be based on commitments or on dependencies, and how they change over time. In particular, in the senior social center where the group of participants was almost entirely women, the relational attachments were those of affinity and empathy, since the weekly workshops became a space to talk about aging as woman, while gains concerned learning and interpreting technology in their own terms, with the creation of a local language of metaphors (in oral and written form, see the "dispense") and the value of their expertise as a common. Although the sharing on the Internet of this encountered some obstacles in terms of negative aging and gender stereotypes incorporated by the women about themselves (self-underestimation)(Chapter 6).

Instead, in the third case study with the social gardens (Chapter 7), the attachments were articulated differently, according to the different power-dynamics between me and the

participants, and according to gender differences. Earning the respect and the credibility of the garden chiefs, which were elderly men in both of the gardens, was a challenge for me, and one that I failed in regards to the first social garden I engaged with, since I challenged the power-dynamics of the context too much. In the second garden, the respect and credibility earned worked as attachments for the garden chief and consequently the gardeners, acknowledging my competencies about the issue of making compost and the feasibility of the project ("ti abbiamo fatto girare un po' eh!", trad. "we made you go around quite a bit, hey!"), adding also the affection as a possible adopted daughter or granddaughter ("potresti essere mia nipote", trad. "you could be my granddaughter"), the goodness of the project ("abbiamo visto la bont del progetto", trad., "we have seen the goodness of the project") and the idea of becoming a virtuous example for the other social gardens mixed with a sense of competition ("we will be the first to have the compost shredder! We might become an example for the other gardens"), and their willingness to help me to finish my thesis ("and after all you have to finish your thesis, haven't you?").

As it has been introduced, commoning as part of the researcher's agenda has different meanings and values for the participants, which needs acknowledging. The relationship between common and gains is an aspect this research aimed to explore. This thesis attempted to evaluate the gains and the result of a PD project [62] looking especially at the gains of participants [56], trying to elaborate on an analytical dimension visible in short-term - a pragmatic one visible as material outcomes and a transcendental (moral?) outcome related to becoming aware of existing common.

These issues are constantly discussed in PD literature, from the early beginnings [72], developing reflexive approaches to gains [126], the sustainability of a long-term project [142] and the difficulty of participation [100]; [92]. From the case studies presented in this thesis, I argue that nurturing attachments is an essential movement to nourishing the common, starting with fostering a collective recognition of a commons, making it from a commons yet-to-be to an actual-commons, as suggested by Bollier's provocative question: "Can we learn to see the commons?" [55].

Pelle Ehn often tells the anecdote that after several months of doing his master's thesis project, a participant asked him "do you really want to know why we let you do the project?", and the reason was that the workers just liked him because he was a nice person. As a result, they let him continue with his project, even though they did not understand anything about his design workshops. He mentions this as a side anecdote, but I think that re-locating the designer ([211], [31]) within the constellation of participants' attachments could enlighten some aspects of the politics of design, like what is the relation between attachments and gains, how design can be a practice for commoning and how commoning can be a gain as well as an attachment. Accounting for the researcher's relocations as reflexive moves, part of design tactics for commoning, is a teaching I learned through an anthropological perspective that borrows from feminism the practice of self-disclosure. Self-disclosure is a useful companion for nurturing attachments since it helps to build connections with "the Other". It is defined as "is a process of communication by which one person reveals information about himself or herself to another. The information can be descriptive or evaluative, and can include thoughts, feelings, aspirations, goals, failures, successes, fears, and dreams, as well as one's likes, dislikes, and favorites" [118].

8.4 Creating Contextual ethics

As mentioned in the introduction, with precarious contexts of design, I refer to the precariousness of projects based on informal and personal agreements, attachments and gains, that intervene between designers and participants.

What is precarious here is the encounter between the designers and the participants in a context such as the design arena. Precariousness, in Butler's analysis, describes the human beings' condition of uncertainty and contingency, the fragility of human corporeal existence [65]. Design projects can be seen as symbols of the encounter with the "precariousness of the Other" [65], between the participants and the designers. As well as the adoption of an intersectional lens of inquiry, this encounter calls for a reflection on an ethics that is contextual, especially when designing for the common and as a commoning practice.

In this thesis, I use the term "contextual ethics" for an ethical system situated in a specific context rather than taken as a universally valid system. Here I summarize the fundamentals of ethics in PD and the reason for a contextual ethics. There are several principles PD stands for, but the main ones are the following: people have the right to self-determine how to perform their activities (working and not) and therefore the right to determine the technology they are going to use; people who perform a particular activity have the expertise about how it is undertaken; mutual learning about each other's expertise and representations between the actors involved (participants and designers) leads to mutual understanding; and, involving people in representing their activities and in designing technology has the effect of increasing democracy [180]. Nevertheless, the kind of democracy and the kind of democratic ideals are rarely discussed in PD literature, nor openly stated, with some exceptions such as in the early PD projects with Scandinavian trade unions. We can guess that looking at the cultural and national context in which a PD project is undertaken, can give a hint of the implied political ideals. 1980 Feminist Theory questioned the objectivity and absolutism of knowledge, arguing that scientific knowledge, as well as ethical stances, always emerge from a geographical, historical, partial context [108].

Therefore, asking who and how we engage with participants in a PD project is crucial to remaining aware of possible harmful practices to vulnerable participants. The contextual ethics coming from a situated knowledge [108] can imply frictions with the risk of designers imposing their own values on the participants, even when they take an advocacy position [42]. Nevertheless, we need to ask who is vulnerable and from whose viewpoint. Eevi Beck [46] argues that Participatory Design should be focusing on contexts where dominant narratives can be challenged. I argue that situating the designers in a precarious position might protect vulnerable' participants from harm and might reveal that participants are not as vulnerable as they are depicted by normative narratives. In deconstructing the stereotypes that label a certain user group as vulnerable, hegemonic patterns are already challenged and other power-dynamics, more personal and situated, emerged. This deconstruction opens up to disentangle' power and decision making [61], representing participants as intersectional subjectivities, and does not exclude the designers themselves, whose vulnerabilities emerge in relation to the participants.

Considering contextual ethics allowed this research to unearth located as well as norma-

tive tensions with a renewed emphasis on dominance patterns in PD [46, p.88]. Embarking on informal PD projects with community-based groups of citizens is increasingly common in PD ([117], [149], [208]). These kinds of projects are more precarious, subject to failure and subject to variations, than PD projects that lay upon an institutional safety net. The key issue is the recognition of the common as a state of necessity. The garden case study strongly highlighted this ethical concern, but this was also present in the other two case studies, in the senior movement of the mountain municipality (and my attempt to solve transport issues) and in the senior community center (where IT knowledge was shared and a digital platform was created). Since the last case study is the result of the incremental learnings from the previous ones, I move to discuss this.

As seniors consider gardening a hobby, rather than a necessity, it is likely that the senior clubs do not tackle community issues, preferring to endure them, especially if most of the participants did not experience cooperative or self-organizing practices during their working life. What is at stake is the recognition of the common as a state of necessity that needs to be addressed beyond the labor mindset, where when participants are not forced by a higher power or encouraged by material benefits to address their concerns, it seems preferable not to address them at all. Nevertheless, through a slow process of mutual recognition of our competences and of gaining personal trust in each other, I could provoke and partially deconstruct the "liberal-individual" view of the participants [78].

Evidence from semi-structured interviews conducted for the Acanto project in the mountain community (Chapter 5), demonstrates how the narrative about retired men's past work is predominant in their stories, mostly described as a duty in respect to their original family before, and their spouses and children during and after. Work is also described as a form of self-realization and men identified themselves with their jobs even after they retire. They explain in detail and extensively the job they used to do, even if we did not ask, often in search of congratulations, which we indulged. These labels are so strong that even when discussing activities within the research group we often refer to the participants as "the butcher", "the doctor", "the carpenter", "the teacher", instead of using their names. In particular, self-realization sometimes clashes with family life, when the attachment to work is more consistent than the attachment to their wives and children. Reflections on self-realization through work emerge also in women, but less often (see the interviews in the mountain community, Chapter 5). Overall, if aging is considered by women as a time liberated from working, as their jobs remain in the background of their stories, for men, aging appears to be a continuation of their jobs, as far as their physical conditions permit.

We can use the above-mentioned data as the background to understanding the attitudes of the two garden chiefs (George and Mark) and of the president (Tomas). In the first social garden, George suddenly decided to stop my design project, since he was feeling uncomfortable with a grassroots PD approach. Meanwhile, the other gardeners did not want to threaten his power-position. As gardening was a hobby, and not a state of necessity, I argue that it was not a sufficient reason for gardeners to become empowered as a community, since this would have implied taking individual responsibility by discarding the current mechanics of delegation towards the garden chief. Similarly, in the second social garden, the garden chief was doubtful, while the president of the association

was completely negative, about a participatory approach that would include the other gardeners in the design process.

The ethical dilemma that emerged from fieldwork is grounded at the crossroads of the subjectivity of the researcher and the subjectivity of the participants. Following Haraway [108] on questioning "the voice from nowhere" as the supposedly objective voice of the researcher in academic papers, it is important to acknowledge and understand what it implies: in the field, the voice of the researcher is intersectional and contextual. In the encounter with the participants, it is not only the design project at stake but also the intersectionality of the actors involved: their subjectivities as the entanglements of their gender, age, background (class, education), ethnic and national origins. We argue that in this case, the intersectional aspect of gender was preponderant in the interaction between myself and the gardeners. It is important, as Muller [162] suggests, to ask the 'who' of the researcher when designing interactive systems, acknowledging the heterogeneity of the researchers. Similarly, it is important acknowledge the heterogeneity of aging, highlighted by those scholars that propose a critical analysis of the normative and hegemonic system design for active aging [73], [78].

The ethical dilemma that emerged from conflicting agendas is this: how can the researchers choose between their own agenda and the participants' one, when the former advocates for designing as a commoning practice and the latter advocate for designing as a delegating and functionalist practice? The acknowledgment of the subjectivities of the researcher and of the participants opens a further complexity to the dilemma: how to respond to gender issues when designing with elderly men (labeled a 'vulnerable' user group) brings the lead researcher (a woman) to be subjected to gender stereotypes and paternalistic attitudes by the elderly men themselves. According to our ethics, the design project aimed at being participatory. Nevertheless, this proposal was not initially taken on board in the second project and sabotaged in the first, since this agenda came from a voice considered weak: young, female, student. In a participatory process, the designer needs to remain separate and limit his/her decision-making power. Yet, in limiting her power, the lead researcher adhered to a stereotype of vulnerability (young, female, student, ...). So, how to avoid being stereotyped without losing the role of facilitator, hence limiting our power without recalling a vulnerable stereotype? Should we have to exercise our power more? In order to answer to the first dilemma, the second one was unearthed.

It has been argued in critical gerontology [198] and system design that aging is a heterogeneous process and how the more we age, the more we become diverse. This implies a critique to the normative and quantitative definition of 'older person' (mainly defined by their age). Leaving the quantitative aspects in the background and focusing on the qualitative and heterogeneous articulations of human beings, permits designing at the intersection of the researchers' and the participants' subjectivities. In this way, by deconstructing quantitatively based stereotypes that shape a 'user group', it is possible to open up to different kinds of discourse. This was the case with the Digital Lab, but even more so with the senior social gardens, in which contextual ethics for designing as commoning were articulated (as with the critical approach to digital technologies) as collaborative compost making. In the case of interacting with elderly men I advocated for a bypass strategy that enacted a contextual ethics that embodies the cultural attitudes

of their generation: they felt uneasy being directly involved in the design when they considered themselves simple 'end users' (in both the social gardens) and they showed open skepticism on the design researchers' capabilities and of the feasibility of the projects (in the second social garden). Differently, in the case of the Digital Lab, one senior complained that she would have liked to be involved also in the coding of the platform, complaining that in her opinion, she and the other participants did not contribute much in the technical implementation of the platform.

The ethical tension about the gender and power issues between designers and participants leads to a final consideration about the sustainability of a genuine PD approach when there is the risk that some members of an organization hinder and sabotage collective participation. The attempt to design from grassroots has uncovered issues that the stakeholders refused to tackle collectively (community communication and collective compost-making). The challenge for the researchers is how to tackle matters raised from a collective need, when the most powerful stakeholders prefer to avoid them. A further issue concerns managing the stakeholders' opposition if their attitude is also supported by a mechanism of delegation by the other participants. The fieldwork in the two senior social gardens show older men being reluctant to embrace novel approaches and be involved in a mutual learning process for the sake of a common good. In particular, in the second garden, they prefer to evaluate a product, perpetuating a functionalist design attitude that poses the system as central in respect of people's involvement. Nevertheless, people's participation effectively highlighted collective needs and commoning practices, such as community communication and collective (compost-) making, which can be considered as a commoning practice not only for specific groups but for everyone. Therefore, this is a situation where the implications are not to design technology but rather to design participation [219]. Participatory Design is a contextual practice, and includes the "things about power" and decision-making that surround it [61], and the methods used in PD [137]. As a consequence, ethical discourses are also situated in PD [180]. I argue for the necessity of focusing attention on two coordinates to navigate in defining ethics issues in practice in PD projects: balancing between the political agendas that lay in PD projects; and the necessary adaptation to the context and to the participants' agendas, which are often not stated clearly from the beginning but unfold while the project is ongoing.

I summarize here the learnings that became guidelines to me, useful to reflect on this ethical dilemma, which could be kept in mind when encountering similar situations in our work:

- Deconstructing stereotypes: by deconstructing ageist stereotypes and placing the seniors on an equal level, we could change the design focus from their registry attributes, to intersectional attributes, that can better represent a person, restituiting the complexity of her/his identity. This can be done through ethnography with attention to intersectionality: deconstructing stereotypes and common identity classifications (aka 'user groups') imposed from institutional narratives (legislative, cultural, traditional...) [212].
- A move towards broader topics such as environmental responsibility, community building, the common. This also had the effect of treating the participants without discrimination, as they are considered as persons capable of equal ethical awareness.

Combining this move with ethnography, the suggestion is to go beyond identity towards the common and what ties human beings together. The challenge is "can we learn to see the common(s)?" [55].

- Working on the common: there are values that go beyond the traditions of the groups, that are included in an ecosystemic contextual ethics, beyond the contextual ethics of a group. Senior gardeners are privileged to have access to allotments that others do not have, managing their community to the best of their ability is their social responsibility.
- Building common agendas yet stating how individual agendas can be different, as among the researchers as among the participant. Stating not only the researchers' agenda as a group but each of their individual agendas, as wished by different researchers [137], [201], [220]. Therefore finding allies among the participants, uncovering their open and hidden agendas [83]. Similarly, be ready to leave the context if a minimum level of sharing the agenda is not achievable [193].
- Participatory deployment: promoting participatory implementation, if the conditions allow it, beyond the participatory design. First hand experience on the making physical of the design project is a deep act of awareness and empowerment.

Having articulated and discussed the movements, the learnings and the tactics occurred in my research, I move to the conclusion in the next chapter.

Chapter 9

Conclusion

Aging is a personal matter. Studying aging is a personal activity. I admit that I was a bit scared of approaching elderly in an academic way, at the beginning of my PhD (I have blurring memories of my grandparents since they passed away when I was a child). In addition, in the Anthropology literature elders are usually considered guardians of traditional knowledge, expert politicians, matchmakers, peace-keepers for their community (Sokolovsky 2009). The first image of seniors I got from Computer Science worried me: a frail, mental-impaired, vulnerable person. The Computer Science interpretation of ageing did not match at all with the Anthropology one, thus I started doubting. Nevertheless, what kind of tribes was I going to study? On one side "the elderly" on the other side "the computer scientists". Thus, I did not know what to expect. I was intimately missing that experience (interacting with someone that has a much broader experience about life than my parents have) but fearing it at the same time. According to the stereotypical image of elderly, what if they were boring or bored, or what if I would have been not patient enough? I was secretly blaming myself for this reaction: what hidden prejudices was I incorporating? As for many PhD students, my research topic was defined in a PhD call. Mine was indeed part of a national project. Since my background is in Social Anthropology and Philosophy and my perspective department was focusing on hard sciences with very little space for interdisciplinarity, if I wanted to move to Participatory Design and HCI, I had to commit and adapt to what the research market offers. Therefore, my perspective supervisor suggested me to apply to the project available that year, on active aging. It was called: "Aging in place: a respectful approach". Whatever it meant, the project was related to AAL technologies, a novel concept for my background, an umbrella term that refers to controlling and monitoring people at their own homes. It did not pass too much time from when I started having strong ethical issues. The project abstract argued a critical position to AAL technologies, explaining that computer scientists and engineers are missing the elderly users' needs, producing technologies that are not being used. For this reason a "respectful approach" was needed. Aging is becoming a major problem for EU politics and global society. Therefore, "activating" elderly people is prescribed as an action line to take urgently, maintaining them active in order to postpone the transfer to nursing homes and consequently provoking rapid psycho-physical decline. Therefore, a social scientist might provide, according to the call, methods and sensibility to address this global problem. At the time I did not have a clue that the targeted

so-called "older adults" were already active.

Aging is a personal, inner phenomenon. For this reason, in doing research on and with aging it is convening taking a reflexive and self-reflexive stance to the phenomenon. Anthropology can offer useful teachings on how methodically pursuing the research with a reflexive approach, usually embedded in its core method, ethnography considered a method as well as a writing style. An anthropological gaze allows to make what is familiar to the researcher, unfamiliar, and what is unfamiliar, familiar, reconfiguring the "otherness" through an incremental process of qualitative and quantitative data. So, when I came to "study" aging something that is considered understood by everyone as familiar because it is an experience common to everyone I had to take a step back, approaching aging as a social phenomenon, which determines certain aging stereotypes (ageism).

Focault argued that social practices exceed their institutionalization [95] and the fact that people desire to age in their own way, exceeding the prescriptive way of active aging, is a good example of this.

The entanglement of the fragments that compose the above-mentioned design projects (social practices, institutions, power-dynamics, common, gains, attachments) is configured in a situated and temporal way, in constant change. This is shown as in the changing of attachments and gains over time, as in the definition of the participants as "elderly", or "IT tutors", or "gardeners". To describe these phenomena, I developed a Feminist approach to Design Anthropology in Participatory Design as I believe it is timely to make in dialogue and intertwine Participatory Design and Feminism. According to Shaowen Bardzell [42], HCI has intrinsic feminist aspects that are not publicly declared in academic research nor are researchers often aware that these characteristics come from a feminist tradition. Bardzell calls them "six qualities of Feminist HCI" which are: pluralism, participation, advocacy, ecology, embodiment, self-disclosure [42]. I found these qualities to be my companions through the case studies and a useful interpretative lens. I am aware of two schools of thought that shape the relationship between Participatory Design and Human Computer Interaction (i.e. PD part of HCI and PD as an independent field) having tensions, which are, in my opinion, more political and career-oriented than conceptual tensions. Taking a side is out of the scope of this thesis, but I take the Feminist approach from HCI because no one has yet talked explicitly about a Feminist approach in PD. Having shown in the Discussion (Chapter 8) what movements, learnings and tactics a Feminist approach can lead to Design Anthropology, the highlighting of the already existing Feminist qualities in Participatory Design is my last contribution.

As extensively argued in this thesis, active aging is a product of capitalism as well as the commodification of the common. My research contribution aimed at provoking and challenging active aging normative narratives of negative stereotypes in order to open up to a different discourse about the common. I recognized that every context has a different ethics and my attempt has been to contextualize the ethics. We faced an ethical dilemma in the tensions between our agenda and the seniors' agenda. Through a process of conflict and building trustful relations, the gardeners recognized the common in their garden: the compost, and, more importantly, the collaborative making of the compost itself.

The conception of 'success' by the participants of a project is also subjective. For instance, in the case of the gardeners and the creation of the bio-shredder, it is an impor-

tant result that involved a dozen people in its testing, and which began from an initial point of skepticism, yet for us it can seem a modest number. Participatory Design cannot be imposed because it is a process sensitive to changes. For this reason, it is necessary to find the 'right' allies among the actors, especially in doing PD as commoning, where it is necessary to find allies that can believe and engage in an open-ended project, in which nothing is already decided. Open-ending can lead to a failing project as well as to a situation where the implications are not to design technology but rather to design participation. The challenge is that the participants (as well as the researchers) have to legitimize a priori a process of change and its results, which cannot be described in advance: the unknown and the unexpected. As Ursula Le Guin wrote [133].

> "How to change the goals of human domination... involves acceptance of impermanence and imperfection, a patience with uncertainty and the makeshift".

In conclusion, in order to develop a meta-perspective on aging and design for aging that can lead to a shift of design focus from aging to commoning, it emerges from the discrepancies between fieldwork and institutional narratives that a reposition of the actors involved in the research is needed, starting from the researcher's reposition. Indeed, the researcher has to navigate in a precarious scenario, between the academic constraints (e.g.: timing of a PhD research, academic hierarchies), the institution expectations (e.g.: what a EU project requires), stakeholders' expectations (e.g. the Senior Community Center agenda), and finally the participants' expectations and motivations. In order to realize these repositioning, I searched among the tools I had learned in my anthropological training, developing for instance the method of auto-ethnography or self-disclosure for feminist methods. Transferring the anthropological approach to Participatory Design permits to involve the participants in reflexive practices, establishing a process of mutual discovering and learning with themselves, among the participants and with the researchers. Therefore, the participatory design anthropology process overcomes the centrality of the outcome of the process itself: it is indeed critical. Critics is subversive itself, in respect of any form of power (stakeholders, institutions, funding bodies). For this reason a design anthropology that is critical and participatory is hardly institutionalise-able into the ethnocentric normative narratives on aging, because the critics is often moved also against the (political and economic) interests of these narratives. It is a precarious balance, since we (academics) depend on these narratives, from an economic and a career perspective, being critic to these narratives might look self-destructive in terms of career and income. Nevertheless, to institutionalize a critical approach means risking to loose the critical part, as capitalism commodifies passions, creativity and liberty.

This work is a humble attempt to explore how issues and problems can be used positively in order to improve relationships and practices. In conditions of precariousness for the designers, the participants and the design context, designing for nourishing the common and as a commoning practice, allows for the creation of politically-engaged projects, decolonizing hegemonic narratives and empowering so-called "users" as human beings.

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Appendix A

Appendix

A.1 Call for PhD position 2014 University of Trento

Ageing in place: a respectful approach:

Academic and industrial research on the elderly has grown rapidly. Different projects have been funded both at national and global level. Many of them analyse the "ageing in place", the ability for people to stay in their homes as they get older. It is seen as a solution to the rapid growth of the elder population and is also the wish of many senior citizens who prefer to stay longer and more autonomous in their home. A rapidly growing body of research is investigating the role of assistive technologies for supporting ageing in place. Various of such studies have demonstrated the appropriateness of using ethnography as a research method. However a careful study on the contribute of ethnography for researching ageing looking both at social and technological aspects lacks. This project has the goal of assessing the role of such methodology with a socio/technical perspective, aimed at defining an approach on the one hand respectful of the elders and on the other hand providing significant inputs for developing and implementing assistive technologies.

A.2 Integrated Behavior Model (IBM) interview script

IBM model applied to the generation of the questions for the semi-structured interview

First Phase:

[Generative question]

1. Can you tell me about your everyday life?

a. Who do you live with?

b. What is your normal mode of transport? (probe: if they say by car ask if they still drive)

c. Do you live in a rural area? Urban area?

d. What sort of groups do you belong to/attend (e.g. church, bowling club, walking group)?

e. What activities do you like to take part in? How frequently do you do each one? [If necessary, ask whether there is at least one activity related to physical activity]

f. Who do you do these activities with?

g. How do the seasons affect your activities (i.e. summer and winter)?

h. Are there any activities you would like to be able to do but dont currently?

For each activity ask the following questions (or most frequent)

[Criteria to focus on activities that interviewee has mentioned before: "Activity that he/she likes and is used to do" "Activity that he/she likes but is not used to do" "New or restarted activity that she/he does"]

[IBM - Experiential Attitude]

2. How does this activity make you feel?

a. What do you like about the activity?

b. What (if anything) do you dislike about the activity?

[IBM - Instrumental Attitude]

3. What do you expect to gain from taking part in this activity? (Probe: for instance does it keep you fit)

[Motivator]

4. What does make this activity so attractive for you?

[IBM Injunctive Normative Influence]

5. How important is it what other people think? Whose opinion matters most?

6. What do significant others (e.g friends, family, doctor) think about you doing this activity (probe: positive and negative)?

[IBM Descriptive Normative Influence]

7. What sort of other people take part in this activity? (Probe: Do your friends?)

[IBM Perceived Control]

8. How much control do you have about taking part in this activity? What sort of things or people make it easy for you to take part in this activity when you want to? What sort of things or people prevent you doing this activity when you want to?

[IBM Self Efficacy]

9. Do you feel able to keep doing this activity? How well can you perform this activity?

[Barrier]

10. Are there any specific constraint which prevent you from doing this activity?

A.3 Acanto IBM interview schedule

Code name	Date/Time	Duration	Gender
FB50	June 30/15:30	34'42"	F
MGF46	July 1/10:00	39'29"	F
GS13	July 7/09:00	38'00"	F
MT39	July 2/18:00	31'46"	M
UP44	July 10/14:30	42'48"	M

Table A.1: Interviews conducted in a urban context.

Code name	Date/Time	Duration	Gender
MD48	June 30/11:00	65'32"	F
FU37	June 30/09:30	42'09"	F
RV44	July 2/09:00	51'29"	F
AL40	July 7/18:30	87'17"	M
BP39	July 8/15:00	47'30"	M

Table A.2: Interviews conducted in a rural context.

A.4 Image-based page sample of an instructional manual I created for the Digital Lab 2014-15

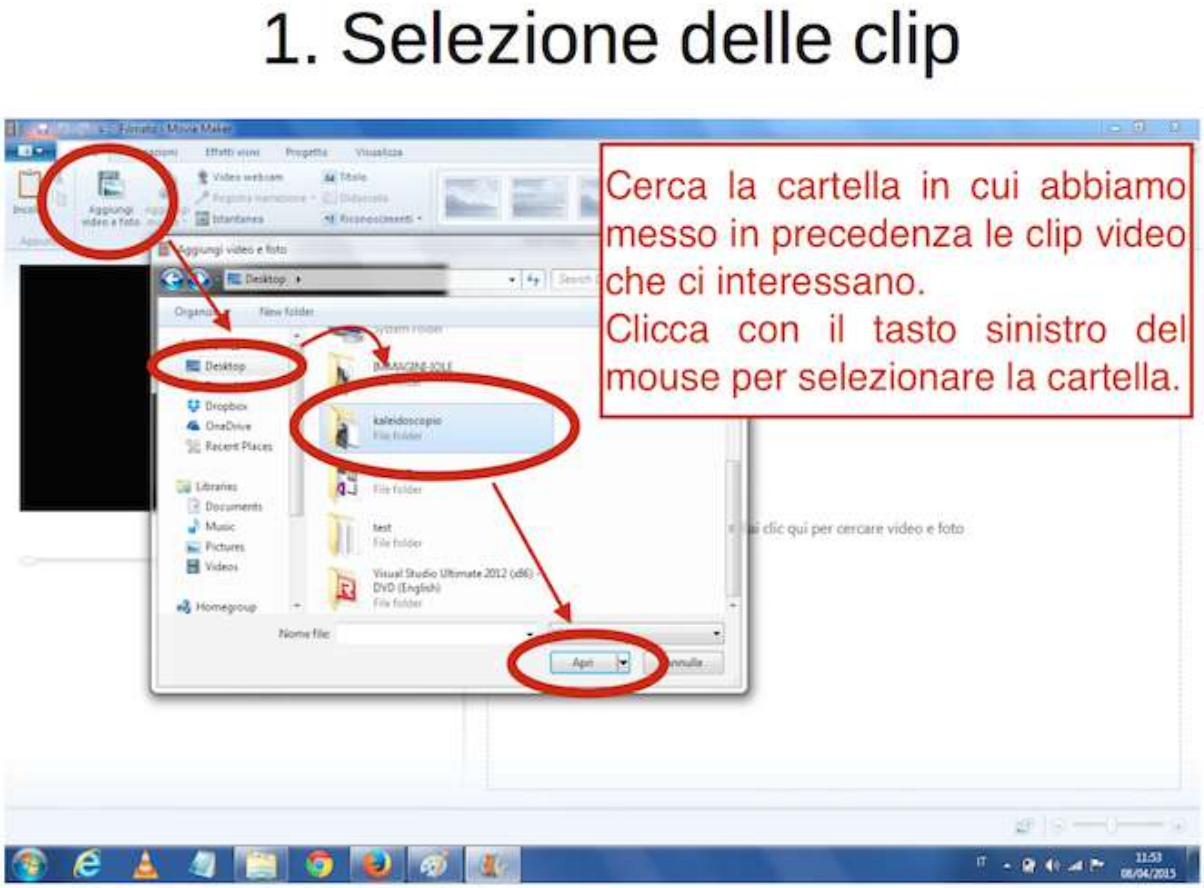

Figure A.1: A page from the "How to edit a video with Windows Movie Maker" manual.

A.5 Sample of a project plan made by a group of participants

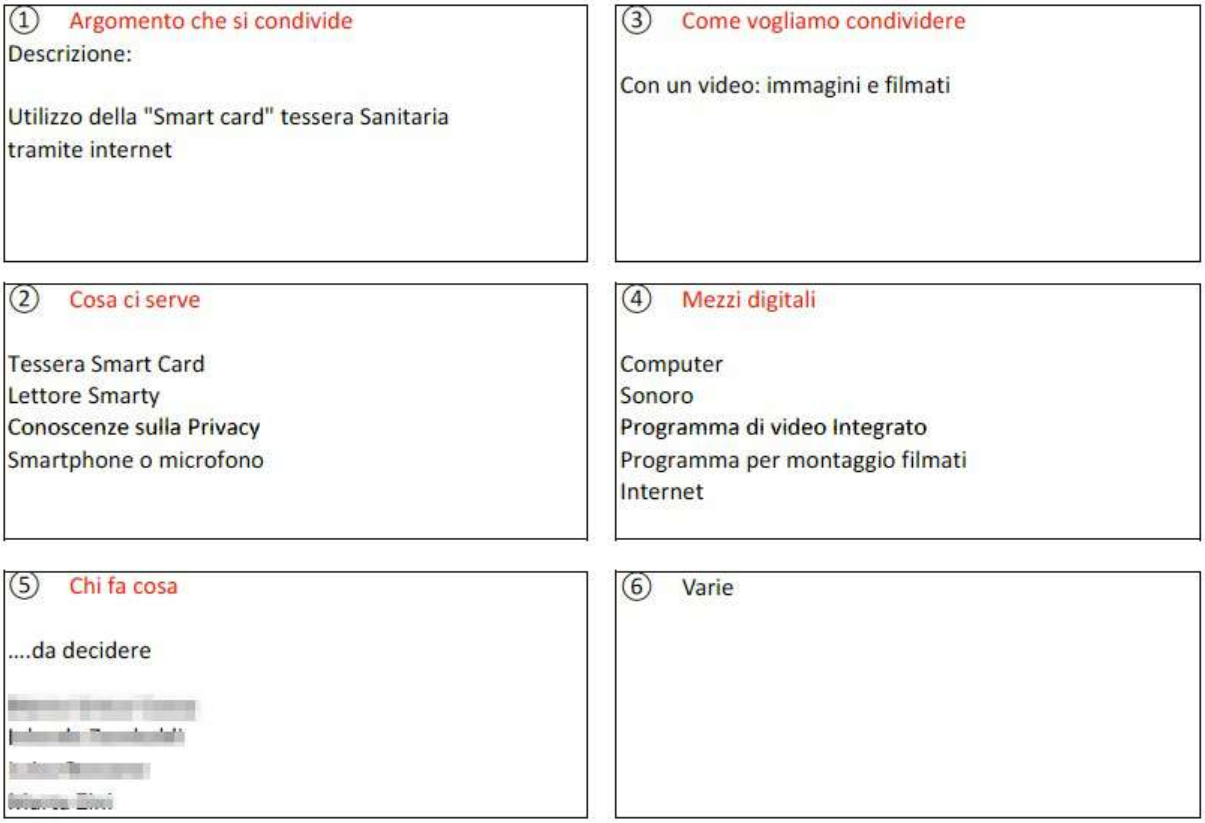

Figure A.2: A project plan prepared by a group of participants on the PC.

A.6 Online questionnaire at the Digital Lab 2015-16

Informazioni cronologiche	Come ti fa pensare la parola "condivisione"?	Cosa ti è piaciuto e cosa non ti è piaciuto dell'esperienza di condivisione?	Come agevoleresti/miglioreresti l'esperienza di condivisione?
12/18/2015 19:02:33	Spezzare il proprio pane per mangiarlo in compagnia: è un dare e ricevere con naturalezza e semplicità.	Mi piace la volontà di donare la vostra esperienza per insegnarci sempre cose nuove ed utili, forse non da tutti recepita per l'avidità individuale di sapere tutto e subito, inconsapevoli che siamo un gruppo da gestire - magari un po troppo rumoroso - perciò dobbiamo cercare di condividere con pazienza le nostre esperienze ed esigenze. [1]	La " condivisione" non è molto sentita nella forma di laboratorio a gruppi - c'è poca coesione lavorativa fra i partecipanti, e molti preferiscono lavorare individualmente, o meglio, condividere/imparando solo con VOi quanto ci insegnate: es. come l'ultima lezione di costruire un video su Youtube. [2]
12/19/2015 15:56:19	é una di quelle parole facili da dire e molto difficili da applicare.In questa società individualistica capisco che è molto più difficile da mettere in pratica" che "ai miei tempi " sessantottini Posso con dividere solo quello che ho: tempo,conoscenze,idee,emozioni,cose ecc. Con chi? una o più persone. Perchè? Per un obiettivo comune.	CONDIVIDO che l'idea era ottima.Vi ricordate che avevo proposto per l'estate scorsa di ritrovarci una volta a settimana al Centro per CONDIVIDERE quello che avevamo imparato? Lo avevo chiamato corso di mutuo aiuto ma era in sostanza la stessa cosa. Fallito miseramente Ma ci spero sempre forse piano piano si capirà che è bello ricevere ma anche dare e condividere.	Prima di tutto spendendo un po di tempo in una lezione a capire bene cosa intende ognuno di noi per CONDIVISIONE (buono anche questo test)e come muoverci a livello organizzativo all'interno dei vari gruppi.Alcuni non avevano capito che era un lavoro di gruppo e anche sapere quel che vuol dire la parola è di poca utilità se non si ha voglia o ci si impegna poco o niente . Poi se possibile visto che il gruppo è molto dispersivo e chiacchierone chiedo un po' più di rispetto per chi ci sta aiutando ad imparare e per chi vuole capire.Il momento delle spiegazioni sia di ascolto.Una volta si usavano metodi come bacchettate sulle mani .Brutali ma super efficaci Senza arrivare a questo lascio a voi la soluzione.Scherzo ma non troppo.Ciao e grazie a tutti voi per la disponibilità e sopratutto la pazienza [3]
12/21/2015 17:33:48	Come premessa mi sento di lodare i ragazzi che ci hanno sostenuto x la loro pazienza e tolleranza. Condivisione può sembrare una parola molto semplice e di facile applicazione, ma non è sempre così. Condividere vuol dire innanzitutto mettersi all'ascolto dell'"altro" e cercare di capire quali e quante siano le aspettative di ognuno.	Indubbiamente la disponibilità degli insegnanti, la cordialità dei partecipanti che andava comunque cercata e sollecitata,(è comunque questa una prerogativa che appartiene al carattere del singolo.) Un pò di confusione nei ruoli; sicuramente la condivisione è più semplice, se il progetto viene presentato da un gruppo già affermato, piuttosto che da un singola persona.	Presterei più attenzione sul " cosa" condividere affinchè i ruoli nella condivisione siano a priori chiari sia per chi presenta un progetto che per chi decide di condividerlo, di maniera che gli sforzi per raggiungere un obbiettivo abbiano lo stesso valore per tutti. A tale scopo, penso che un confronto preliminare fra i partecipanti sia molto utile.
12/21/2015 17:35:56 [4]	Come premessa mi sento di lodare i ragazzi che ci hanno sostenuto x la loro pazienza e tolleranza. Condivisione può sembrare una parola molto semplice e di facile applicazione, ma non è sempre così. Condividere vuol dire innanzitutto mettersi all'ascolto dell'"altro" e cercare di capire quali e quante siano le aspettative di ognuno.	Indubbiamente la disponibilità degli insegnanti, la cordialità dei partecipanti che andava comunque cercata e sollecitata,(è comunque questa una prerogativa che appartiene al carattere del singolo.) Un pò di confusione nei ruoli; sicuramente la condivisione è più semplice, se il progetto viene presentato da un gruppo già affermato, piuttosto che da un singola persona.	Presterei più attenzione sul " cosa" condividere affinchè i ruoli nella condivisione siano a priori chiari sia per chi presenta un progetto che per chi decide di condividerlo, di maniera che gli sforzi per raggiungere un obbiettivo abbiano lo stesso valore per tutti. A tale scopo, penso che un confronto preliminare fra i partecipanti sia molto utile.
12/21/2015 19:04:32	Con - dividere; in generale, far partecipare anche gli altri a una cosa fatta da me e viceversa	Nell'esperienza di condivisione che abbiamo fatto in questo trimestre mi è piaciuto appartenere a un gruppo, "sentirmi del gruppo" e col mio gruppo scambiare opinioni, immagini e anche saluti. Se poi devo esser sincera non mi è piaciuto avere la possibilità di cancellare il progetto fatto dalle mie colleghe di lavoro , per errore o per differenti idee. L'originale dovrebbe essere salvato, altrimenti non è condivisione ma modifica arbitraria.	Già il nostro gruppo ha deciso di fare le modifiche fra le parentesi e salvare il testo più o meno originale. Per altre modifiche e miglioramenti nell'approccio confido negli esperti..... [5]

Figure A.3: First page of the survey results.

Informazioni cronologiche	Come ti fa pensare la parola "condivisione"?	Cosa ti è piaciuto e cosa non ti è piaciuto dell'esperienza di condivisione?	Come agevoleresti/miglioreresti l'esperienza di condivisione?
12/22/2015 21:22:47	Per me la parola condivisione mi fà venire in mente la parola condividere assieme un qualcosa ,quello che abbiamo fatto assieme a voi e noi in quattro gruppi abbiamo cercato di fare qualcosa .Bene o male ci siamo riusciti in qualche maniera . Io sinceramente sono riuscito più male che bene non per cattiveria ma poco tempo a disposizione per collaborare con i miei compagni di avventura .	Penso che l'idea è buona solo che mi è sembrato che per condividere bene questa esperienza ci vuole un po più di pratica con il computer ,questo mi sembra almeno per quello che ho notato .	Ma penso che per migliorare questa esperienza farei come inizio ,almeno le prime lezioni come abbiamo fatto alcune volte alle ultime lezioni ,partire da zero di qualche argomento e ripeterlo alcune volte .A me per esempio ho bisogno di ripetere alcune volte una data operazione per capire il funzionamento ,forse a qualcuno altro non serve ma per me è cosi .Forse sarebbe stato interessante che voi visto che eravate qualche volta in quattro, e visto che noi eravamo in quattro gruppi ,seguirci uno per gruppo . Vi faccio un esempio, parlo nel mio caso ,quando voi davate delle spiegazioni sullo schermo, se io mi inciampavo con qualche parola ,che sono tutte in inglese ,e vi assicuro di inglese non ne capisco niente ,restavo inpaltanato e mentre gli altri andavano avanti io cercavo dai miei compagni vicini come andare avvanti . In conclusione ,altrimenti faccio un libro, io ho imparato qualcosa non lo nego ,però voi dovreste fare come facevano le maestre nelle scuole elementare che ripetono continuamente una parola o un argomento ,magari fino alla nausea finchè deve entrare in testa .Benchè noi confronto a voi abbiamo raggiunto un certa eta ,pur rispettandola come avete fatto ,dovreste fare come faceva la maestra alle elementare .Io penso che non ci sia nessuno che protesta tanto da come ho notato non tutti sanno smanetare il computer .Concludo ,la mia idea sarebbe esercizi le prime lezioni e poi mettere in pratica quello che si a imparato .Con questo non vi voglio portare via il vostro lavoro ,per quanto mi riguarda voglio imparare a capire il vocabolario del computer e saperlo gestire piu bene possibile.Pochi argomenti ma impararli bene .FINE [6]
12/24/2015 8:42:05	Condividere è spesso molto difficile. E' normale che ognuno sia convinto delle proprie idee o dei risultati di ricerche personali, a volte raggiunti faticosamente. E' necessario quindi, per lavorare in gruppo, che ognuno sappia ascoltare, valutare ed accettare le idee valide degli altri e sappia mettersi in gioco .	Appartengo al gruppo " ceramica ". Gli incontri di guesti giovedì mi sono davvero "volati" ... Mi sembra che abbiamo stabilito un ottimo rapporto e grazie alla vostra straordinaria pazienza e competenza ho imparato molte cose.	Spesso si accettano i risultati raggiunti da chi è più esperto. Forse sarebbe necessario ampliare da parte di ognuno le ricerche personali, sottoponendole al giudizio del gruppo.
12/24/2015 20:35:36 [7]	Condividere è spesso molto difficile. E' necessario saper ascoltare, dare fiducia ed accettare le idee degli altri, dopo averle valutate.Significa anche mettere a disposizione le proprie conoscenze e competenze.	Appartengo al gruppo " ceramica " Questi giovedì mi sono davvero " volati " e, grazie alla vostra straordinaria pazienza e competenza, ho imparato molte cose.	Si tende ad accettare il risultati raggiunti dagli altri . Sarebbe valido sottoporre maggiormente le ricerche personali al giudizio del gruppo.
12/30/2015 18:38:25	Collaborazione. Il difficile è trovare l'argomento per condividere tutti insieme.	Sembra non aver fatto niente ma non è così. Ci siamo trovati, abbiamo parlato discusso qualche base è stata tratta.	Continuando a proporre.
1/4/2016 18:22:08	per me significa mettere a disposizione ,il mio sapere (qualsiasi cosa)verso tutti [8]	mi è piaciuto l'entusiasmo che ogni singolo gruppo ha dimostrato,io mi sono trovata bene e giudico l'esperimento positivo	non so darti nessuna indicazione
1/6/2016 18:54:51	Premessa: la sintesi è la mia virtù. L'incapacità di scrivere è il mio limite. Con questa premessa, sarò breve. La parola condivisione è una bella parola: mi fa pensare ad una tavola imbandita da condividere con amici, ad un'idea, un progetto da portare avanti con persone interessate. In realtà ho risposto più a "cosa" ti fa pensare che non a "come". A "come" non so rispondere.	Mi è piaciuta la discussione che è nata fra noi, l'apporto di idee di ciascuno, il sentirmi creativa, venire a conoscenza di cose, per gli altri magari banali, ma per me sconosciute e viceversa. Il nostro gruppo "Economia" era troppo numeroso. Si aggregavano continuamente persone nuove. Ognuno apportava un'idea, che veniva presa in considerazione, con la conseguenza di obiettivi sempre più vasti e dispersivi e, di fatto, inconcludenti. I gruppi più piccoli, con pochi e chiari obiettivi hanno funzionato di più.	Gruppi piccoli, obiettivi chiari e delimitati, continuità di presenza, nel limite del possibile personale. [9]
1/6/2016 20:35:47	la parola condivisione per mé ...un gruppo di persone che mettono a disposizione di altri il loro sapere o la loro conoscenza	mi é piaciuto tutto l'insieme ,entusiasmo di cooperare ,disponibilità,divertimento	booooooooooooo é tutto ok

Figure A.4: Second page of the survey results.

Informazioni cronologiche	Come ti fa pensare la parola "condivisione"?	Cosa ti è piaciuto e cosa non ti è piaciuto dell'esperienza di condivisione?	Come agevoleresti/miglioreresti l'esperienza di condivisione?
1/7/2016 10:41:12	Per me significa spartire insieme con altri e questo comporta dare fiducia. Distinguerei due tipi di condivisione: - A senso unico per cui una persona condivide ciò che ha con altri che non hanno. Può ricevere in cambio riconoscenza e gratitudine.(Dare) - Comunitaria dove una comunità, un gruppo o due persone (sposi, conviventi mamma e figlio ecc.) spartiscono, dividono insieme beni, denari, risorse, vissuti, competenze, idee, ecc. (Dare e Avere). La condivisione va di pari passo con la responsabilità escludendo la competitività (va valutata opportunamente) e rappresenterebbe il modo migliore per arrivare alla pace e all'uguaglianza.(Utopia?)	Mi sono adeguata al progetto dei gruppi di condivisione iscrivendomi al gruppo "economia"perchè mi sembrava corrispondesse di più ai miei interessi ma dir la verità non mi riguarda ciò che propone (del resto nemmeno ciò che fanno gli altri gruppi), perchè: - la proposta dei GAS credo di non realizzarla mai. - il Turismo : eventualmente accetto le proposte dei vari circoli o mi affido alle Agenzie Viaggi. - Gli investimenti, questo mi incuriosisce ma posso farne a mano. Mi piacciono invece gli argomenti nuovi di informatica per l'uso del PC che proponete (vedi cattura e youtube).Io sarei interessata ad altri elementi come WORD (ho avuto difficoltà -per ignoranza nell'uso del programma - a scrivere queste poche righe) FACEBOOK , POSTA ELETTR. (so come usarla ma mi manca conoscere altri particolari per es. gli allegati, mettere immagini, i contatti, salvare ecc.), INTERNET (le sue strategie per facilitare la ricerca), SCARICARE, ecc ecc. Può darsi che il vostro programma di insegnamento preveda queste conoscenze che svilupperete nel proseguo del corso.	Nell'ambito di una corretta esperienza di condivisione suggerirei questo approccio per agevolare l'apprendimento dei partecipanti (per quanto riguarda la lezione cattedratica): Esplicazione rapida di tutti i passaggi relativi alla lezione senza che i partecipanti usino il PC. - Ripresa di ogni singolo passaggio con uso del PC assicurandosi che ognuno abbia eseguito il comando. Questa fare che può essere più o meno lunga deve essere verificata in maniera attenta per il buon esito di una condivisione efficace per prevede un feedback positivo. So benissimo che avete messo in atto questa metodica ma non è stata sufficientemente collaudata; molti prendono appunti e questo fa perdere qualche passaggio. Importante assicurare le vostre dispense delle lezione (v.cattura) [10]

Figure A.5: Third and last page of the survey results.

A.7 The second user journey map based on a person (Marco) that wants to use Fucinaperta but does not know to use a computer autonomously.

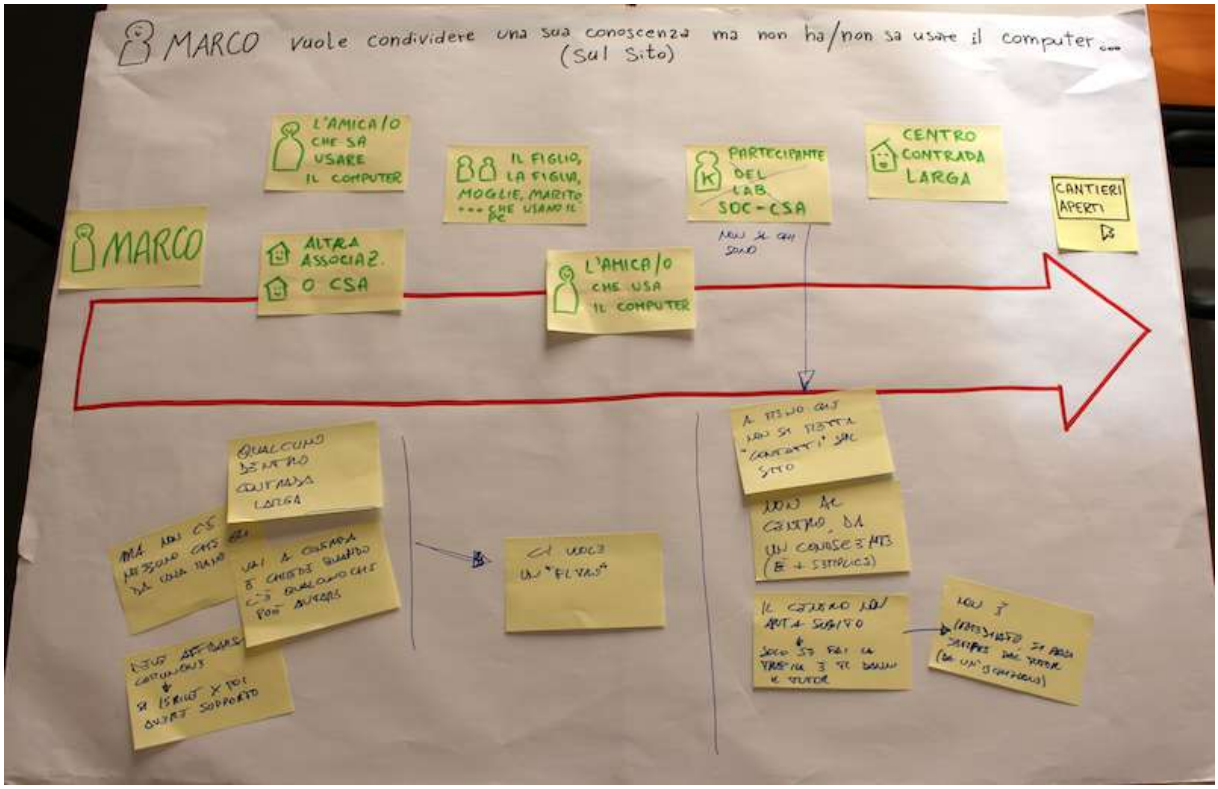

Figure A.6: The second user journey map.

A.8 The second mock-up of the plug-in for Fucinaperta

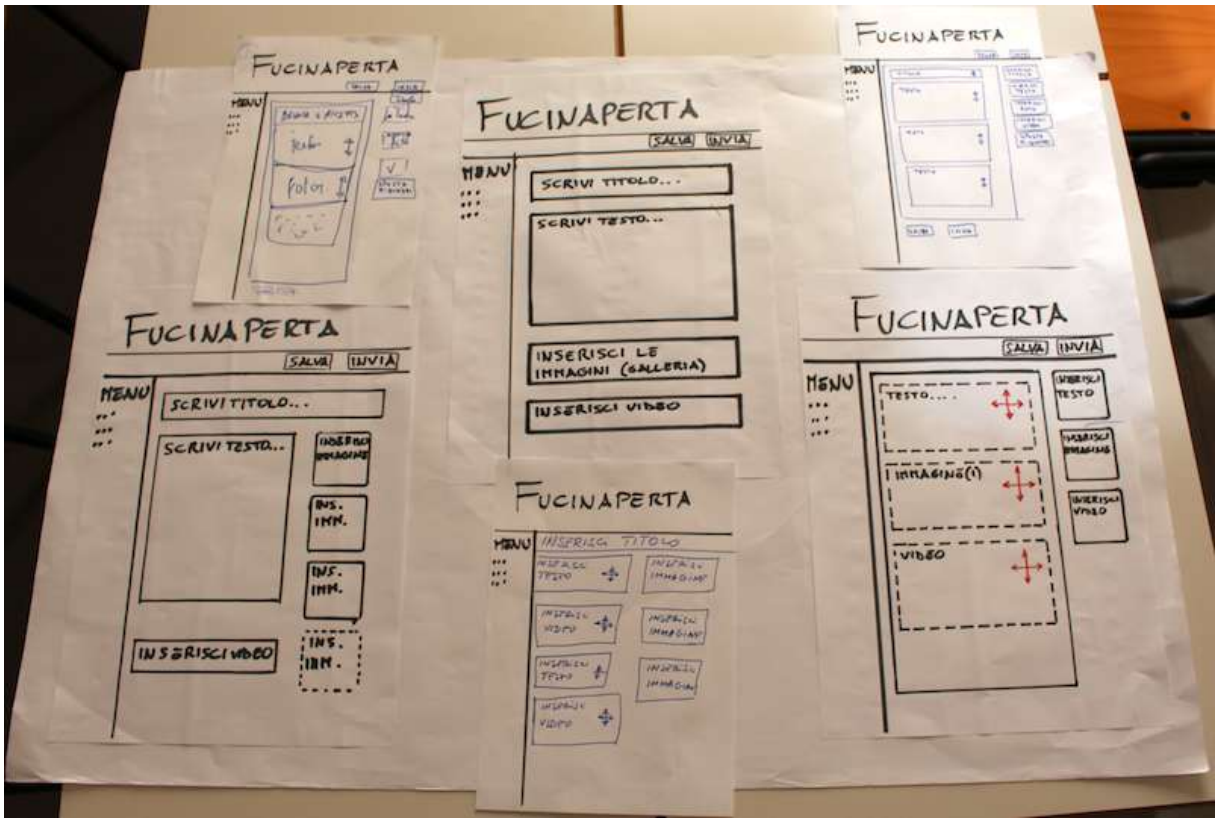

Figure A.7: The second mock-up.

A.9 Material for the second workshop with the first garden

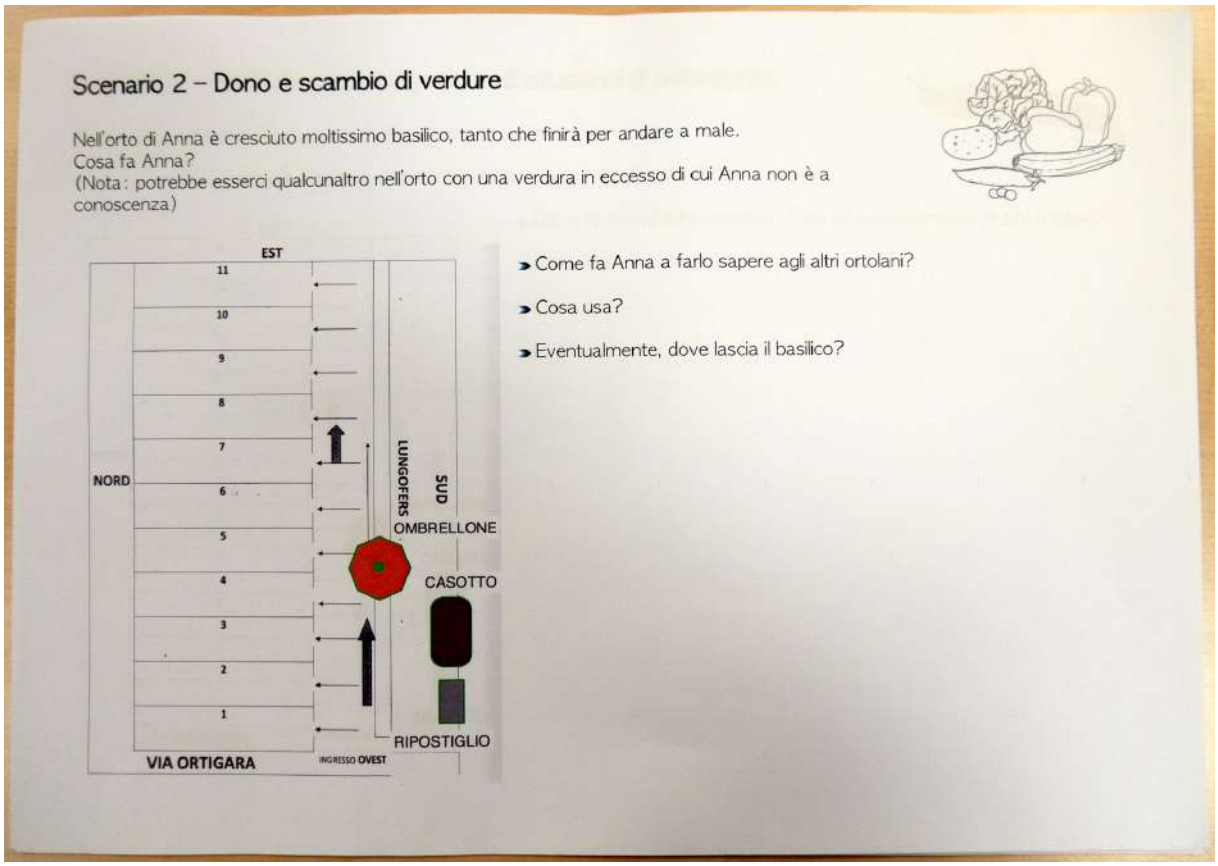

Figure A.8: The second scenario about gift and exchange of vegetables in surplus.

Figure A.9: Probe on vocal recorders.

Figure A.10: Probe on smartphone instant messaging.

Figure A.11: Probe on portable printers.

A.10 Digital Lab focus group script

1. Can you explain to me how the laboratory was structured?

[Individual dimension]

Expectations / needs (before the laboratory):

2. The senior social center holds various courses on technologies, what led you to choose this?

3. What did you expect to find / how did you imagine this workshop? ("This year's laboratory" in case of people who attended previous lab editions)

Learning / motivation to continue (during the workshop):

4. What motivated you / pushed you to keep coming to the lab during the year?

5. What would you have changed / improved?

6. What did you learn from this year's workshop?

7. What was there to help you learn these things?

[Collective dimension]

Sharing:

8. What makes you think the word "sharing"? Was the lab collaborative? (which subjects collaborated with each other)

[Inter-subjective dimension]

Gender:

9. In your opinion, the fact of being a majority of women has influenced the development of the laboratory? (example: "female" practices or dynamics)

Being elderly:

10. What does the old word make you think?

11. In your experience, is the image that society has of the "elder", is it realistic?

Organizational aspects:

12. How is the theme of the workshops chosen from year to year?

13. Do you notice any differences in how this laboratory is organized compared to other activities at the senior social center? (Do you perceive it as something separate from other activities at the senior social center? Are we subversive? We are adherent to the center?)

14. In your opinion what does the senior social center expect from this laboratory? And from you?

A.11 The leaflet wrote by the gardeners.

NOVITA' NELL'ORTO:

TRITACOMPOST

Un gruppo di ortolani volenterosi in collaborazione con esperti dell'università ha progettato e testato un sistema semplice per triturare i residui dell'orto.

Lo abbiamo provato e funziona!!!

Quindi lo proponiamo a tutti voi.

Perché ci ha convinto?

1. **Non dobbiamo più pagare lo smaltimento;**
2. **Abbiamo un fertilizzante sano e biologico;**
3. **Triturando ci possiamo fare i muscoli allegramente e in salute;**
4. **Tra curiosi e volenterosi saremo sempre in compagnia.**

CI RIVEDIAMO IN PRIMAVERA !!!

Figure A.12: The flyer wrote and edited by the gardeners under the guidance of the retired professor of Literature and of the garden chief.