Transformation of HCI co-research with older adults: researchers' positionality in the COVID-19 pandemic

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Abstract. In the time of COVID-19, many measurements to contain the pandemic contributed to social isolation and loneliness. Older adults in particular experience various forms of ageism in this regard, for example by being stereotyped as digitally illiterate. Hence, we need to learn more about the aging discourse in the context of participatory approaches, as it is currently lacking. This article presents the results from two participatory research projects that were significantly affected by the 1st COVID-19 lockdown. We specifically focus on the ways the relationships and modes of cooperation with our older research partners, i.e. the positionalities, have been impacted. We draw on the projects' results, reflecting on the possible implications for the involvement of older adults in design and HCI research and specifically, technologies that are supportive and empowering for the individuals against the background of the pandemic situation.

Keywords: co-design, co-research, older adults, positionality, COVID-19.

1 Introduction

COVID-19 and connected social and technological changes have led to a range of challenges, especially for co-design and co-research where older adults are involved as "the pandemic as a cultural experience produces radically different and rapidly changing orientations to it, disrupting and reordering what each of us takes as 'common sense" [12]. Digital tools are believed to have the potential to help in overcoming problems emerging from social and technological changes connected to COVID-19. Along with the requirement of physical distancing, we have become more dependent on what is (for some) a bewildering array of digital tools, which are themselves evolving rapidly. This rapid evolution has placed increasing demands on people living in our highly digitalized society as such tools do not support social interaction in a seamless way [33]. Learning and collaboration, in this context, have to a significant part become a question of mastering available tools. In turn, those who are less able to adapt to the changing landscape have found themselves excluded from digital activities [37]. The result is a complex landscape that is not easy to navigate, yet which has

become embedded in our personal and professional lives [26]. Life in Europe was forced to adapt to the health risks in March 2020. The health consequences of COVID-19 are not yet fully understood, which is also due to different virus variants [18, 51, 54]. The social consequences of the disease are also not yet fully clear and serve as the research topic of this paper.

This paper focuses on two research projects that took place during the 1st COVID-19 lockdown in Europe (March 2020 and further on). The first project "Project B", located in a big city and its surrounding area in Switzerland, focuses on the development of sustainable care structures in local caring communities and on the role of digital media in this respect. The second project, "Project A", is currently taking place in a small town in Germany, and targets the co-design of a mobile demo kit aimed at improving digital literacy and the everyday appropriation of digital media by older people. COVID-19 forced both projects to stop ongoing fieldwork and to look for new solutions to continue the research. We provide observations of appropriation practices for online communication tools from both projects, to support the work with older co-researchers within these projects. Up to now, it is common practice to hold workshops with older co-researchers on site. Conceptual considerations must be made, for example, on the joint activities as "third space" in a participatory design process [39] with an elaboration of methods that aim at supporting mutual learning between "professional" researchers and community members as co-researchers.

The broader aim of our paper is to understand how participatory research with older adults changes during rapidly changing times when it is not possible to meet in person. More specifically, our research question is: "*How do co-research and co-design change with older adults during the current COVID-19 pandemic?*"

In this paper, we start with a state of research to clarify how the discourse lines are addressed in the literature (sec. 2). In specific we focus on the aspect of aging in participatory design (sec. 2.1) and the positionality of the actors in the joint PD project (sec. 2.2). We will fill the identified research gaps with our data, referring to Project A and Project B (sec. 3). This will be followed by a discussion (sec. 4) and finally a conclusion (sec. 5).

2 State of the art

In this section, we address the question of what lines of discourse emerge regarding COVID-19 in different fields. The goal here is to illustrate the current state of the art in the relevant literature and which work can be considered representative [5, 11]. The provided literature review includes work that has addressed these prior to COVID-19 and during it. Central to our research is what this means for older persons and how they are made vulnerable by societal structures, social practices, and also by COVID-19. We use our empirical material to show what solutions we can offer to current problems. A range between resilience and vulnerability becomes evident. Older adults have certain coping strategies with which they can manage stress and know how to deal with the current pandemic situation [7, 28, 45]. Furthermore, we do not view vulnerability as something negative. It is part of being human to also become vulnerable in some moments and cannot only be interpreted as a general disadvantage [48].

To elaborate on these aspects, we will refer to the concept of positionality [4, 16]. Firstly, we will show in which position the older persons we studied found themselves, that they cannot merely be subsumed under the label *persons with vulnerabilities* and that they are capable to also shape their everyday lives in a variety of ways. Secondly, positionality as an ethnological concept allows reflecting the interactions between researchers and research participants in the field.

Social isolation and loneliness are a problem for older persons [37] but many other populations also suffer from physical distancing and social restrictions [13, 24]. Based on our data, we can show that many individuals have found satisfactory ways to cope with these issues. It was hence not our goal to paternalistically dictate to this group of people how they should organize their daily lives or how they should use technology. Instead, we tried providing them with opportunities to make their own decisions and to take responsibility for themselves. Next, we will first focus on the topic of aging in participatory design and then secondly on positionality.

2.1 Aging in participatory design

Aging plays an important role in many scientific areas of Computer Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI). The literature review published by Vines [53] is a critical examination of this topic, which has been researched for over 30 years. It reveals that in these fields aging is understood as a problem and technologies are seen as the solution. The authors also work out that aging is defined by referring to social interaction or socialization, to the decline in abilities and performance, especially with regard to the use of technical artifacts and to care and health needs. Following assumptions formulated in social and critical gerontology, they highlight how the modern CSCW and HCI research discourses promote ageism.

Findings on current discourses in the field of CSCW and HCI research and within Science and Technology Studies (STS) point e.g. to a significant discrepancy between the national and international funding invested in research and development projects over the last decade and the very low level of payback that can be seen in market-ready products (see, among others, [21, 41]. Explanatory approaches within STS are directed at far-reaching handling of stereotyping and particularly deficit-oriented assumptions about older people and about aging processes that run through the entire R&D chain - from the initial call for funding at the policy level to project proposals and the research and development practices of research consortia [15, 41]. The work confirms early STS work that describes the "configuration of the user" by developers (e.g. [55]), a view that describes imbalances in processes from the provision of support to the adoption of deficit-oriented images of age among older people themselves.

Static procedural models within technology development, such as the Technology Acceptance Model (TAM) [52] or user research, which is predominantly defined by usability aspects [2], have been strongly criticized for ignoring socio-cultural contexts and thus forcing serious undesirable developments [17, 44, 53]. Ignoring the high diversity of the intended target group and the necessary orientation of IT concepts to the individual needs, interests, and preferences of older people leads in most cases to a "parachuting in" of digital technology [44], a "flying in" of technology concepts that, imposed from outside, cannot find a place within the subtle everyday worlds.

Participatory design approaches are proposed as a solution - although not a unanimously favored one - which conceive of technology research and design as a co-production process that is situated in the individual everyday worlds and practices of older people [25]. Critical voices, however, question the modes of participation actually practiced by older people with only low media affinity and competence to the extent that they see participation more as lip service than as a lived project reality [10]. Indeed, many questions remain open in the literature to date regarding the possibilities and limits of establishing cooperative relationships "at eye level" and in dealing with (self-)images of aging and older technology users. Related to this is the question of the significance of the originally connected democracy-oriented ideals of participatory design from the early socio-political and democracy-oriented participatory design studies of the 1980s [36].

There is no question that participatory IT research with older and non-tech-savvy people or persons with low digital literacy is highly presuppositional (e.g., [22, 47]). Our studies contribute new insights for understanding co-design and co-research with older adults which became visible during the COVID-19 crisis. On the one hand, our empirical results confirm the findings of STS research regarding the strong charge of IT research and design in the field of aging technologies with prevailing images of age and aging. However, studies also show that not only designers (researchers/developers, caregivers) configure potential users [15, 55]. They also demonstrate how older persons self-affirm, position, and locate themselves as research partners and potential technology users [23, 36]. In this way, older users also project themselves onto technology, adopt guiding principles of technology and images of old age that guide them in their appropriation process, in their interest and motivation, or even in their refusal to engage with digital media. The concept of "imagined affordances" [6] can be used to describe the phenomenon of multiple imaginary worlds and practices in an overarching way.

Thus, we can show how knowledge about certain forms of configuration and affirmation can be productively applied in a design project to transform the "user-designer" relationship in terms of practices of joint cooperative design of shared processes and goals, and in particular to conceptualize practices of participatory design with older, less technology-savvy individuals [36].

2.2 Positionality

A researcher's beliefs, opinions, values, norms, and social background shape how research is conducted. This affects what data are collected, how it is collected, how it gets analysed, interpreted, and presented. These aspects are also known as researcher positionality. In this paper, we view positionality as linked to the processuality of the research because the participants as well as the researcher collectively determine the research process. It is the respective identities taken and lived by the stakeholders that drive perceptions in a particular direction. It is meant to help reflect on a researcher's bias and whether he or she has outsider or insider status in relation to a particular field [34]. This is particularly relevant in relationship work [38].

Ethnologists questioned the representation of people in research. This was evident in *othering,* a process through which certain prejudices were associated with persons

from other cultures. Likewise, the positioning of the ethnographer, through whom ethnographic knowledge was produced [4, 55], was discussed and reflexively confronted. However, it was not only discussed on a scholarly level, but the stakeholders themselves drew attention to the problems as well. The researcher doing an ethnography brings her/his own "knowledge backpack" in a certain way, which affects her or his view of a particular field. In addition, social structures influence research. This leads to a reflection in which the specific context, situation, place, and time in which the research takes place are also examined in HCI [3].

The positioning of the researcher and the research participants can be understood as a practice. This is not a static condition but a dynamic process, which is continued and negotiated in social interaction. The task of the researcher is to constantly reflect on this in her or his own research as well and show what significance this has for participatory design. For example, it can be shown how relationships are shaped or power relations contribute to hierarchization [16]. For us, it is significant how the relationship between younger researchers and the older co-researchers takes place. This process is embedded in the perceptions of others and of the self that surrounds the topic of age and aging. There are also certain ideas about how and what technology should be used by older people, which impacts particularly technology development [40].

Regarding the aging discourse, there are several examples from research with older people of how the positionality of the researcher can have an impact on the research [34, 49, 50]. Especially when there is a large age difference between the researcher and the subjects being consulted. This can contribute to the researcher being denied the ability to understand the everyday challenges of older persons if the researcher is too young. This applies, for example, to aspects related to health. On the other hand, the younger person may also be given the status of a daughter or son to be told how to live their life or what decisions they should make in the future. Therefore, Liamputtong [30] suggests conducting focus groups when the age differences are too significant because then the researcher focuses on moderation and older persons can decide among themselves how they feel about a certain topic. Another way to diminish the insider/outsider distinction can be done by conducting participatory research in which stakeholders can participate on an equal level with the researcher. In HCI studies, such an approach would be appropriate [43, 58].

Lazar [29] points out how HCI studies with persons with dementia should represent the positionality of this group. In many studies, these individuals are perceived merely as recipients of assistance, assuming that technologies could compensate for their cognitive impairments. However, this does not consider the complex everyday world of persons with dementia, which is more multifaceted sensorily, emotionally, and cognitively than a mere focus on abilities could depict. They have to be seen in a holistic perspective as individual persons to try to capture the full complexity [32, 57].

2.3 Research gap

As a research gap, we identify that it has so far remained open how positionality in times of physical distancing influences co-research, especially as the need to use digital tools arises. In research with older persons and how they use technologies, there is already a distinction between insiders and outsiders, which arises, for example, when it

is assumed that young people as so-called digital natives can already use technologies [34]. The argument is that younger people have grown up with digital technologies and therefore know how to handle them. Such a perception continues the distinction between insiders and outsiders, which is further cemented in an online environment. Now under COVID-19, certain aspects can become even more visible again.

Indeed, other forms of positionality can only be realized under more difficult conditions: Younger researchers are in the position of representatives of digital technologies to be adopted, accepted, and appropriated by older participants. Something that could be accommodated in an offline environment, e.g. by making visible older persons who succeed in using digital technologies, is overshadowed in the online environment. One's own performance is the focus of attention because the actions of others cannot be directly perceived and compared. Thus, it seems like we as researchers tell older persons what they should learn.

However, we do not intend to say that only young people are fundamentally able to use technologies, nor that older people fundamentally do not understand how to use them. Instead, imagining can lead to a certain positioning, which is often the starting point for participatory design: The positioning into insiders and outsiders who do not understand the other's experience and thus perception of the world.

With our research approach, we would like to show a potential solution for heterogeneous positioning in situations when on-site collaboration is not possible. This is an aspect that has gained relevance especially due to the COVID-19 pandemic. Typically, research showing older individuals how to appropriate digital technologies would not take place online. Now, however, this has changed. Thus, two interdependent necessities can be identified regarding our case study in Germany. First, the need to participate in online environments. Second, the need to use digital technologies. These are issues that cannot be solved by technology alone. We, therefore, present social practices that demonstrate a way of dealing with these issues so that we can empower the participants and support them in their daily lives. Furthermore, our participatory research helps to close the gap between the insiders and outsiders and to realize successful cooperation. The study from Switzerland represents another case of empirical work dealing with the aspect of positionality reflecting on practice-based and ethnographic research.

3   COVID-19 Reflections, Adaptations in Research, Methods, Personally as Researchers

In the following section, we will illustrate the effects of the COVID-19 crisis on HCI co-research with older adults. Each section first provides information about the project, the setting, and methods, followed by a description of how participation in the projects developed and reflections on participatory research and positionality. We will first present Project A (3.1) and then Project B (3.2). Both projects use participatory methods, but they differ in their focus on the community. Project A works with individual senior volunteers in a city and with an association. Project B is community-based from the outset and is designed for community-based participatory research that connects very different stakeholders in a Swiss community, such as municipal actors,

association actors, and interested residents, with the aim of developing measures for the whole community.

3.1 Project A: Going online with older adults

Project A. Project A is an interdisciplinary and multinational project studying digital literacy of older adults. The particular subproject relevant for this paper focuses on fostering digital literacy of older adults in the context of participatory design. A broader aim this subproject addresses is autonomy of the older adults as a consequence of their digital tools use. To understand and support this issue, the goal of the project is to co-develop a mobile demo kit with the older participants. This mobile demo-kit involves learning resources for older adults and other relevant stakeholders to understand older adults' use of digital tools in the context of the aging society.

Setting & methods. Two groups of older adults were invited to participate in the project activities. The first was recruited from the local senior computer club, with whom our research group has collaborated before. Both regular club members but also three instructors decided to take part in our activities. The second group was recruited from a group of older adults previously engaged in another research project. We also started conducting participatory observation in the local computer club, to get a richer understanding of the local context in which the future learning activities would be embedded. Already here we have learned about one of the most important motivations for older adults to come frequently to the club: to be able to practice using digital tools in a safe space.

Altogether, we worked with 21 older adults who were between 65 and 80 years old. The group was very heterogeneous when it came to their digital literacy (ranging from complete beginners to experts), different motivations for joining our project (staying up to date with modern tools, teaching digital literacy to peers, collaboration with a university, or be in touch with younger people) or familiarity with the university-run participatory projects (ranging from complete beginners to experience with collaboration over several years).

The research team that organized the participatory workshops consisted of a junior and senior researcher (first and last author) and a group of students who were employed to support the workshops. Students were already familiar with some of the participants, which contributed to a good and cheerful atmosphere. Meanwhile, the students come from Germany and fully speak German, the first author speaks only on a conversational level and does not come from Germany. The research team was between 23 and 46 years old.

Once the groups were recruited (with the majority of the participants who were familiar with the university collaboration and two completely new members), a series of workshops with the older people were planned by the researchers. During these workshops, we planned to introduce a range of devices (mobile phones, tablets, smartwatches, smart speakers, smart self-tracking devices) in person. In line with [23], we focused the first meetings on enabling the older participants to get more comfortable with digital technology. This was a necessary step for them to be able to better engage with the participatory design activities that were to come later. During the enabling

phase, we established ways to communicate outside of the workshops by an instant messenger (Telegram) and collaboratively explored Telegram use by exploring various functions such as sharing pictures, making videos, and taking screenshots. The workshops were structured but also very lively and often developed according to the older participants' needs and interests. Older participants would often talk over each other when experiencing problems with their smartphones or tablet PCs. Sometimes problems were perceived as so pressing that immediate explanation and help were demanded, other times older participants talked over each other because they struggled with hearing or not noticing that a session had already started. In addition, the PD workshop was both an environment for learning and for co-design, so goals were sometimes overlapping. By and large, however, situations could be managed as, through line-of-sight, researchers and students were able to repair situations fairly rapidly, without the need to actually interrupt the group activities. In the last in-person sessions, speech assistants and smartwatches were handed out to interested parties in one of the groups to be explored at home. Exchange and discussion formats as well as the collaborative development of usage instructions were planned for the following workshop sessions.

Altogether, we have organized two workshops with the group of participants from the previous project and three with participants and instructors from the local computer club. The first workshop took place in early February and the last one at the beginning of March 2020. We managed to get familiar with the participants as well as enable them to use relevant technology such as Telegram for our communication. However, the quite rapidly changing situation in relation to COVID-19 prompted us to consider changes in our approach in our collaboration with older adults.

Handling and negotiation of the participation during lockdown. Safety was an overriding concern. We, therefore, reached out to our older participants through Telegram (our main communication channel) and inquired about their own position regarding the situation. To our surprise, many of our participants in both groups wanted to continue, putting emphasis on the need to meet despite fear. However, then also institutional restrictions came into effect and we were forced to abandon face-to-face meetings. We knew from previous experience that older adults needed regular practice with new technology and that our research work was best fostered through long-term commitments, so we then inquired about interest in online workshops. This was met with mixed reactions - one of the participants expressed a strong distaste for that idea and after a brief exchange even left the group.

However, the majority of the older adults answered positively and we, therefore, proceeded with planning. Given our commitment to a participatory action-oriented approach, it was also our intent to see whether we might contribute to the participants' situation during the lock-down and learn whether we could support them with our experience with digital artifacts and especially online communication tools. As the first measure, we hence conducted a series of interviews, in which we wanted to learn about the participants' experience but also identify which possible needs they have which we could address (such as feelings of isolation due to lack of social contact). Overall, the participants did not seem to struggle with the situation in a dramatic way. Although they expressed sadness because they could not proceed with their regular activities,

such as visiting grandchildren or going to public spaces, they seemed at peace with the situation and instead focused on safe activities such as walking, gardening, or cooking.

Because the situation developed quickly, in combination with our limited resources, we chose to explore which off-the-shelf applications might be suitable as support for our project. During the start of our online workshops (middle of March) the global situation remained extremely unclear: we did not know much about the virus itself, but also how strict the restrictions would have to be or how long they would last. Hence, we decided to go on with supporting the older adults in how to use online communication tools over distance, despite that this is an underexplored method of teaching older adults.

First, we tested out different tools, namely Jitsi, Skype, and Zoom. The first meetings were more of a disastrous character. We chose to start with Jitsi, as it seemed to provide the least complicated way to access the online meetings; for example, no profile had to be created. When we used Jitsi for the first time, we had to stop the meeting after 10 minutes because of the constant echo and confusion among the participants. The design of the tool (made for one person talking at the time and switching of the view depending on who speaks) did not match the organic way the older participants were used to talking during our in-person workshops and the whole situation became extremely stressful. During the second online meeting when using Skype, we managed better but because of long pauses which the moderators had to spend on fixing individual problems, many participants became bored. Finally, we tested out Zoom. Together with our refined insights from the previous workshops, we were all able to make it work in the least stressful way. As Zoom was during that time the most reliable online tool that was accessible to us, we have decided to continue using it. For almost two months we met on a bi-weekly basis and practiced together the digital competence of the older participants, such as joining the session, sharing links, and writing in chat. At the end of this intensive period, we again discussed with the older adults if they want to continue working with us. The participants wished to continue and we agreed on less intense (monthly) meetings.

Through these initial explorations it became clear that if we wanted to continue collaborating with the older adults and later progress to co-design, we needed to foster their ability to use the online communication tools. Up to today, we have been hosting our monthly workshops, currently engaging in co-design activities. Eventually, two more participants stopped taking part in our online activities, communicating to us that it does not bring them anything new. On the other hand, two other participants who did not join us at the beginning were able to join us during the later sessions. Our way to foster our older participants' capabilities to use online communication tools could be summarized as the following.

Both the researchers and the older participants need to understand which digital tools the older adults have and use to join the online workshops [8]. This is not a straightforward relationship, as only having access to a digital tool and its related applications does not mean the older participants know how to use it to join the online space. If the researchers do not know which devices, apps or which versions of them the older adults have, they also cannot support them. To overcome this challenge, it is necessary to collaboratively explore which tools and capabilities the older adults have access to, how to communicate that to the researchers and in turn, which support should the researchers provide the participants with. This process builds on mutual learning

and is only possible to build gradually over time. It was also necessary to involve a combination of different tools with different technological advancements - for example, a video-conferencing tool in combination with a messenger and regular phone calls.

Because of the lack of shared physical space, heavy emphasis had to be placed on verbal instructions. This kind of in-the-moment support was necessary to help the participants navigate the interfaces of the digital tools. This instructional scaffolding was required despite the fact that there are numerous resources online on how to use digital tools online, a range of them even targeting older adults. Despite that these resources often involve instructions on how to use the tools, they do not provide enough information on how to follow the instructions. An example can be sharing an instruction with the older adults "click on the link". However, this instruction does not provide them with enough information about what clicking on the link means. This kind of contextualization is hence necessary especially at the beginning of digital tools use. This problem further involves not only what is possible to do with the digital tool (such as press buttons or click on links) but also which behaviour is adequate, such as when to start talking during a video call with more than two people.

Finally, an important aspect of providing older adults with support is to be knowledgeable of the relevant social networks the older participants find themselves in. For some of the participants, it was possible to join only through their personal networks, for example when a son or a friend set up the starting of the call for them. On the other hand, social networks can also be a problem to tackle, such as when the researchers' instructions do not match the ones a family member is providing. As the instructors were also participating in our online activities, they often took charge in the efforts of trying to bring participants online or support us when navigating in the online space.

Reflections on participatory research and positionality. We started our project with the goal to empower older people to become autonomous by using digital tools. In the changing socio-technical conditions, this effort became a challenge as access to the learning space has become digitalized. Reaching this space in the first place required new competencies from the older participants (how to participate in an online project) and the researchers (how to support the older participants in using online tools). What in the end became possible was highly dependent on the different motivations of both the researcher team and the older participants. As socio-informatic researchers, we were motivated to do something to contribute to the perceived situation of older adults. Given our expertise, we extended the scope of our research efforts and refocused them on supporting online tools' use. On a more personal level, we were all concerned about the possible exclusion of the older adults from society. Providing the older adults with access and useful skills seemed to us as a possible way to overcome the threat of exclusion. However, the participants took part in our project for a variety of reasons: to learn new skills, to stay up-to-date with technical developments, but also to be involved in a social context and in touch with the younger generation. Observing how the older participants handled their taking part in the online workshops in different ways, tells us that what participation meant was different for every participant, depending on their own needs and motivations.

Becoming capable of participating in a context that requires new skills also opens opportunities for becoming vulnerable, i.e. not able to overcome the barriers in an

environment where we find ourselves (or trying to be in). The older participants were quite explicit in what they wanted (to stay in touch with the research team and keep on learning) and we tried creating a space in which this was possible. In the beginning, this was almost impossible: the digital tools we chose created a space that was not possible to reach for the older adults - at least not without extensive support. And it was not possible for us as researchers to provide them with appropriate support, as for us too this was a new situation. By trying to fix perceived problems connected to images of the older adults, such as the threat of social isolation, we invited them into the digital space; but as a consequence exposed them to an environment in which we could not properly support and navigate (at least at the beginning). In this paradoxical situation, both participants and the researchers became vulnerable to some extent.

3.2 Project B: Older co-researchers during the pandemic

Project B. Project B combines the concept of "Caring Communities" with the approach of "Living Labs". The latter creates a learning and exploration environment that develops the design and evaluation of digital solutions not only for people but with people [43]. Participatory development (co-design) and testing in and on everyday life (instead of only in the lab) were central elements. In this project, we expand the attention and action radius from digital to social innovations. The aim of the project is to explore the everyday life circumstances of older adults with care needs living at home and co-create community-based interventions which enhance the persons' quality of life beyond professional care services [35].

Setting & Methods. Representatives of three municipalities in German-speaking Switzerland are partners with two Swiss research institutes and a German one. With the announcement of the project approval, talks were first held with these people (managers of outpatient care services, community/health leaders, members of the commission for the elderly). Together, information events were planned for the respective communities in order to win over other local organisations and individuals for cooperation. In the course of the project, teams in very different constellations and at different levels of participation set out to shed light on the local structure of the "caring community" and to define possible research questions and methodological approaches as well as to establish cooperation alliances. In all communities, the joint work picked up speed in the winter of 2019/2020 and initially experienced an abrupt full break with the lockdown.

In one of the participating communes, Bachdorf (pseudonym), cooperation took place with the head of the health department and the local senior commission since the start of the project. The senior commission was a board of local older adults which took over volunteer work for the commune in respect to all issues that affect the everyday life of the older citizens in the commune. With the community representative and six representatives of the Seniors' Commission, there were initially several meetings in the town hall to consider together how to draw attention to the project idea and invite more people to co-research. Two larger events were planned together: on the one hand, a large information event for the whole village in September 2019 and the participation

in an Advent bazaar on a Saturday in November 2019 and, on the other hand, as an opportunity to get in contact with older adults as possible interview partners. After the jointly organised public information event, to which all households in the municipality were invited, some interested younger residents joined, so that until today there has been a solid core of seven people who have been engaging the project with the researchers. With this group, bi-weekly on-site meetings in the village hall started in October 2019.

The first close objective was to design, plan, conduct, and evaluate a qualitative interview study in a participatory approach with the question of what the domestic living situation of people with support needs was like. The epistemological orientation for the joint study is based on principles of participatory health research [56] and the methodological approach is based on Grounded Theory [20]. In our approach, the key assumption we built our analysis on is that the deeper conceptual understanding needs to be connected and directly derived from the empirical material. Hence, we have drawn on Grounded theory especially when analyzing the interviews through open coding as well as when building concepts together with participants through further coding.

Another long-term goal was the joint development of community- and socio-technically supported measures based on the results of the qualitative study. In this paper, we report on the first phase, namely on activities in the framework of the joint development of the research design, planning and training measures for the co-researchers in qualitative methods.
The group had set itself the goal of becoming better acquainted with the needs of people in Bachdorf, who live at home and need support in their daily lives. Over the course of several bi-weekly meetings, the research design and planning had been deployed, as well as training in qualitative methods for and with the co-researchers in order to be well prepared for interviews with other local older residents who would agree to become interview partners.

Besides the on-site meetings, agendas and protocols of the meetings written by the researchers were distributed by email. All co-researchers were familiar with using the internet and e-mail communication. All also used smartphones and were familiar with instant messaging tools, where we built upon creating a group in the IM tool "Telegram", in order to have multiple communication channels for interaction between the be-weekly events. Besides email, the Telegram group provided the option to quickly ask a question or send a note which was seen as helpful by the co-participants.

In further meetings, an interview guide was developed together and the procedure for a sampling strategy for contacting possible interview partners was discussed and planned. Just when everything was settled and everyone was ready, the lockdown came.

Handling and negotiating the co-research during the lock-down. At first, we were blocked because our contact person at the municipality was completely absorbed by the current situation in the community and signaled that she could not take care of the project in the current situation. Due to the quarantine and isolation requirements, we also had to cancel all meetings and activities for the time being. For us, the question naturally arose: What do we do now? But immediately also: And how are our co-researchers doing? Do they need support? If we are currently suspending joint research

activities, can we somehow help them in the current situation, especially the older co-researchers?

One thought was whether support in learning how to use video conferencing tools would be useful so that they can stay in touch with family and friends. The idea was met with interest and we made phone calls and - where desired and possible (especially with younger co-researchers) - video phone calls. In the conversations, however, it became clear that everyone was coping reasonably well with the current situation. Some of them took part in support measures themselves: an older co-researcher, for example, did telephone work for the shopping service of the neighbourhood help service, a younger co-researcher did shopping on call. We learned in the (video) telephone conversations that all co-researchers spent their daily lives during the lock-down phase doing work in and around the house, e.g. gardening. They also went for long walks in nature, made phone calls to friends, or tried out online participation in courses that had taken place on-site before.

In the telephone conversations and by email, we first agreed to wait and see how the situation would develop. We, scientists, were also initially reassured to hear that our co-researchers were doing well. Nevertheless, our co-researchers were impatiently waiting to start with their interviews. We, therefore, suggested that we hold video meetings to discuss how to proceed and to think about arrangements for when it would be possible to visit the interviewees again. During the lockdown, we organised several video meetings via zoom, which not all co-researchers were able or willing to attend. For some co-researchers, the video meetings were interesting and useful to make at least a small step forward with the planned research and to stay tuned. For some, however, we lost them for a short time.

Finally, the end of the first lockdown came. However, indications of very prudent behaviour continued to be published in Switzerland by the government as well as by the research institute. The recommendations were that one should be careful, especially when working with older research partners, and refrain from personal meetings if possible.

Reflections on participatory research and positioning. To begin with, the lockdown caused us to question our self-image as action researchers and partly socio-informaticians. The target of action research, as it is also understood by socio-informatics [19, 59] is about addressing relevant social problems of local research partners. Then our attention should shift. After all, we were working with older people, i.e. the vulnerable target group. Moreover, we wanted to do something in this unusual and difficult situation, to be helpful.

However, it turned out that our support was not needed at all. It is true that our inquiries by phone/video calls about well-being were answered benevolently and happily. However, to our astonishment, we heard mostly positive stories of coping with the 'extraordinary' everyday life. Tackling unfinished housework and gardening and long walks in nature were among the positive coping strategies; slow-down was a welcome effect of the crisis. At the same time, the co-researchers expressed regret that family meetings with children and grandchildren were not possible. Videotelephony was able to cushion the painfully felt social distance somewhat.

As the end of the lockdown approached, we started to negotiate by e-mail and in the video meetings with the co-researchers how their interviews could be conducted using appropriate safety measures and based on the consent of the interviewees. The two scientific researchers had a more cautious attitude than many of the seniors themselves and would have supported the decision to wait even longer; they felt responsible to protect the co-researchers sufficiently, but also did not want to patronize anyone.

The situation highlighted the following facet of researcher positioning: In the literature on co-research with older people, the aspect of empowerment and the goal of an equal footing of all research partners is emphasised. Ultimately, however, a large part of the responsibility remains with the professional researchers, and it is also their responsibility to ensure that co-researchers are able to participate fully in the project (e.g. through empowerment measures). When it comes to taking/giving responsibility, power relations are usually reflected (e.g. who is in charge in the field, negotiating different perspectives of different local partners, local conflicts, etc.). We experienced something different: The high degree of self-determination and competence of our older co-researchers to get through the crisis situation, and in contrast, the perceived uncertainty and caution on our side, led us to hand over our decision-making competencies. The perceived responsibility for the older persons, which was very strong on our side at the beginning (also with/despite the postulate of eye level), changed because we experienced a high level of self-competence and responsibility in the current situation. This had a lasting effect on our relationship and on our perception of our relationships with the co-researchers and our own positioning. We designed and delivered the training in qualitative research methods; we aimed it at laypeople. In the lockdown, we were faced with highly competent people whose judgment we could rely on.

In Bachdorf, under the conditions of Covid-19, the position of the "competent persons" has shifted from the researchers to the co-researchers, as has the direction of empowerment. Because of the competent assessments of the co-researchers and decisions that were negotiated in the group and matured through multi-perspectivity, we were able to continue the research project - with a changed focus - even during the lockdown and immediately continue with the first relaxations.

The examples show that participation is not stative, but is constantly being achieved and also needs constant reflection. Continuing and explicating the relationship between scientific researchers and local co-researchers under the postulate of "eye-level" is a constant search movement and a permanent task, which also needs to be tackled in partnership.

4 Discussion

To sum up, the COVID-19-related breakdowns in both projects with older co-researchers have thus highlighted important conflicts and challenges in participatory research with older people. In particular, the connection of images of Ageing discourses in co-research and co-design can be illuminated more closely by exploring positionality in these case studies.

Different projects, different positionalities. Both projects have been conducting co-research with older people with the aim of designing socio-digital interventions to improve the quality of life of older people [35]. Project A is about joint research and co-design of measures that address the easy adoption of digital everyday tools through socio-technical measures to promote digital literacy. In Project B, the focus is on possible socio-technical support measures for people with special support needs.

However, both projects are also different in many ways. Each project has a different starting point with regard to the positioning of the scientists and the co-researchers. In Project A, the older participants received an invitation for participating in a project with the university researchers without having initially formulated their own goal, therefore the motivations for participation differed. In Project B, from the beginning the researchers functioned as facilitators, bringing different actors together to enable their collaboration. Another difference lies in the degree of focus on the digital aspect of the projects. In Project A, the use of digital tools is an immediate framework and a decided goal. Meanwhile, in Project B, digital tools are an abstract possibility of an intervention, which can be formulated once later, when the results of the qualitative study are available. They however serve as enablers for joint work during COVID-19. But as a research goal, Project A is much more abstract for the co-researchers than the goal in Project B, which is closely linked to municipal strategies for improving the quality of life of older citizens and thus more directly visible to the co-researchers.

With the concept of positionality, however, we can make important aspects visible that help to think specifically about challenges and possibilities of co-design with older people. In Project B, the aspect of taking responsibility, assumptions, and lived practice became particularly clear. In the case of Project A, even more specifically, translating this into reflections on good ways of supporting the older participants in making sense of digital tools. Namely mutual knowing of older adults' digital devices, appropriate verbal instructions, and relevant social networks.

Aging discourse and resilience. Many measures enforced to contain the virus have also contributed to ageism, e.g. discrimination based on age. This is not to suggest that these measures are ineffective or should be abolished. They are guided by the anticipated functional capacity of the immune system of individuals and categorize individuals into certain "risk groups" on the grounds of scientific assumptions based on probabilities [42, 46]. However, open discourse should be allowed about what negative stereotypes may be directly or indirectly perpetuated and how they should be addressed: 1) The heterogeneity of older people must be considered. Physical functioning and health do not correspond to the image of negative stereotypes; 2) It is unethical and unsustainable to tie medical care, such as intensive care, to old age; 3) Focusing on possible deficits cements negative stereotypes of old age and endangers the cohesion of society. Instead, solidarity must be emphasized. 4) A paternalistic attitude towards older people must be avoided; 5) Digital information and communication technologies should be used by older people to have a social exchange, gain new impressions, get involved and train cognitive skills; 6) Consequences of the COVID-19 crisis should be reflected by gerontology and virology and political decision support should be provided [14, 27].

Even in the research literature exists statements that correspond to negative stereotyping and thus age discrimination (for an overview see [53]). Technologies can

be a help regarding the consequences of loneliness and social isolation [37]. In the same context, it is mentioned that older people may not be able to use these technologies. However, this may also correspond to a form of age discrimination that needs further investigation. Our cases illustrate how older individuals have demonstrated during COVID-19 the great importance that resilience practices can have, e.g. coping mechanisms for having mental resistance regarding stressful situations or getting through difficult life situations without lasting impairment. By having greater experience in dealing with crises, it is also easier to cope with the current situation. This is especially true for the negative consequences of loneliness and social isolation [7, 28, 45].

These considerations and views of older people as a highly vulnerable group in the COVID-19 situation are contrasted with further observations that make visible a special degree of resilience of older persons. This range between highly vulnerable and highly adaptable and resilient mirrors a general range for the 65+ group. During the first lockdown, however, it became extremely visible and this form of ambivalence also has implications for our participatory work with older people. Both aspects of vulnerability and resilience were discussed above in co-design contexts and elaborated for two perspectives: on the one hand, the question of the significance and promotion of digital literacy in participatory design in remote situations for people with a tendency to increased vulnerability due to COVID-19; on the other hand, we used the concept of positionality to better understand processes in participatory design, to make the forms of resilience visible and from here to elaborate on current challenges in co-design and co-research.

User and designer relationship. The transformed positionality also leads to a different user-designer relationship conception. As we have seen in both cases, participation is something to be constantly negotiated and dynamically changing, in the context of the aging discourses. Currently, participants even in participatory approaches are often conceptualized only as recipients instead of being viewed from a holistic perspective as a whole person [29, 32, 36]. Project B shows the challenges involved in bringing research between researchers and co-researchers on an equal level. This is particularly difficult in times of pandemic, as different negotiation processes exist regarding the risk of contracting COVID-19. This has been seen primarily in the question of whether or not a face-to-face meeting is possible. Initially, it was decided not to do so. However, the older co-researchers then suggested that hygiene measures be followed and that a physical meeting be held under strict precautions. The research team did not want this, but the decision of the older participants was accepted and respected. Thus, there were different structures of expectations that mediated this negotiation process: How should equal research be possible? What is the role of different people's responsibilities in the research process? Project A shows the challenge involved in enabling participants to become competent in digital competence while at the same time not fully being competent in supporting them in doing so. As the situation caused by COVID-19 was new to all people involved in the research project, mutual support and learning were necessary.

5 Conclusion: HCI Co-Research with Older Adults in Pandemic Conditions

In particular, our contribution elaborated on three aspects:

1. We provide observations of appropriation practices of online communication tools, which we applied to support the distributed work in the research project settings with the older co-researchers. Up to now, it is common practice to hold workshops with older co-researchers on site. There are conceptual considerations, for example, on the joint activities as "third space" in a participatory design process [39] with an elaboration of methods that aim at supporting mutual learning between "professional" researchers and community members as co-researchers.

2. The joint practices of professional and community co-researchers have made us reflect on the nature of collaborative work and interaction in the very field of HCI. If we understand participation as a joint achievement between all actors, so the participatory project consists of acts of continuous and iterative negotiations and positionalities. And these projects are framed in micro-practices and contexts but are also influenced by policies and discourses (e.g., socio-cultural contexts). Modes of positioning have been strongly affected by COVID-19, and the modes of participation (according to the ladder of participation by [1]) have been subject to changes. The COVID-19 situation established a new lens on the interactions between researchers and the co-researchers in regard to achieving equivocal relationships and to taking and delegating responsibility.

3. Our empirical insights and methodological reflections are strongly linked to the current social models, namely to the question of how older people should behave in the pandemic situation and what risk potential they face. Here, multi-perspective discourse lines can be observed: if older people were initially in the foreground as a risk group, with prescribed measures such as physical distancing, the focus was initially on their high vulnerability. On the other hand, many older people have come through the crisis/lockdown well, sometimes better than younger people, building on their previous experiences with different crises. This new discourse points out the high degree of resilience that older people also possess and can apply by various coping mechanisms.

In the future, it is open how we can continue to design and conduct participatory research in HCI in new challenging situations. With our empirical, methodological, and analytical-conceptual considerations, we would like to contribute to the understanding of participation as "joint achievement" even under crisis conditions and to consider how the facets of resilience and vulnerabilization can advance our thinking about supporting socio-technical infrastructures for participatory research and work alliances in the field of "IT for aging societies".

Apart from the obvious inconveniences, which are more than evident from the COVID-19 crisis, we can also learn a lot of things from the pandemic. We need only think about what our daily lives would have been like if the pandemic had started ten, twenty, or thirty years ago [31]. How would we have managed our daily lives if we did not have the technology that we currently use on a daily basis? We see that despite justified criticism and disadvantages, technology also shows its positive side that enables us to get in contact with other people, to attend events, or to educate ourselves.

All in all, it is currently true for our research that we as HCI researchers have to expand the scope within community-based participatory co-research and, against the current background, reflect and implement them permanently and flexibly. We experience this also at our organizational level/university: consulting of students, PhDs, peer coaching on research methods/ remote user research is changing due to the pandemic. Furthermore, work, communication, coordination, and cooperation are now part of the home office. We have our own problems, cannot and sometimes do not want to be in the role of action researchers all the time. It can also be overwhelming.

Moreover, not everything can be switched one-to-one to remote. Particularly with digitally non-affine users, we must look very carefully at how much individual support can be provided and how participation in the group activity can be sustained. It is often a fine line and requires an extremely high flexibility of the researchers, but also high frustration tolerance of the participants (even more than was necessary before COVID-19).

For us the question still remains unanswered: how can the cooperation be sustained and fostered in the long term? Nevertheless, we also see potentials and opportunities: how can our work address real needs even better? Strengthening digital sovereignty is an extremely important goal. In the future, consideration may also be given to referring to video recordings or diaries written by the actors in the field [9]. There are also challenges in this respect, but we are at first steps towards continuing our research in this way (e.g., we are conducting a study with robotic pets in a nursing home with caregivers collecting the data since we cannot enter the house due to COVID-19).

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