

Designing for New Forms of Vulnerability

Exploring transformation and empowerment in times of COVID-19

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ABSTRACT

Our workshop will concentrate on vulnerability of specific social groups due to various reasons, including COVID-19, and the potential for technology design to result in empowerment. We want to address issues of what new forms of vulnerabilities emerge and how we can design digital environments in a way that acknowledges vulnerability but also has the potential to empower people in ways that are meaningful for them. When planning the workshop, we will also reflect on social situations that can result in vulnerabilities for participants. Therefore, we will ensure that interested participants will experience low barriers to participation include a variety of people with different backgrounds and ensure that interaction happens based on equality principles and in an atmosphere of solidarity. Participants can exchange ideas and thoughts without worrying about being exposed to biased assumptions. The workshop will allow for non-hierarchical and cooperative discussion and collaboration through interactive online exercises, resulting in a collaboratively developed zine. Finally, the social sustainability

of the workshop will be ensured through a website, mailing lists, joint publications and continuous contact.

CCS CONCEPTS

• **Human-centered computing** → Human computer interaction (HCI).

KEYWORDS

New vulnerabilities, COVID-19, Empowerment

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1 BACKGROUND

One of the key focuses of Human-computer interaction (HCI) research is the improvement of people's lives and the assistance in overcoming barriers by building appropriate technological solutions. These often aim at universal accessibility [2]. Designing with and for those who become vulnerable in the socio-technical landscape has hence been at the core of many HCI projects. More

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specifically, HCI research has explored how to design digital environments for and with communities that are vulnerable due to their ethnic background [7], health status [3], sexuality [6], or housing situation [5]. Recent studies show exploitation of vulnerabilities can lead to harm, e.g., due to differences in chronological age [3] race [10], and (dis)abilities [15]. Vulnerability has been explored at a previous CHI workshop focusing on designing technological solutions adequate to the needs of such target groups [13], but also evaluated more critically at a CHI workshop on ageing beyond accessibility [8]. However, as a consequence of COVID-19, a new range of vulnerabilities have surfaced. In the face of the COVID-19, people did not become vulnerable only physically due to health concerns, but also socially as an outcome of restrictions introduced in response to the pandemic [1]. Almost all aspects of society have been impacted, dramatically changing and often challenging the way we work (moving work into homes), the way we learn (home-schooling, new demands on teachers and other learning contexts [12], and the way we conduct everyday life (physical distancing, closure of cultural events, etc.). The impact of these changes rises incrementally as issues overlap: for example, working from home while taking care of children [11]. These intersections create new types of stressors and vulnerabilities. In our workshop, we want to address these emerging vulnerabilities whilst abstaining from reproducing reductive and binary narratives by labelling of people as vulnerable or not vulnerable [6]. To do so, we will draw on an emerging technique that includes vulnerability in design [4] using intersectionality as a lens [14] and seek to understand how vulnerability can be transformed into empowerment [9].

The goals of this workshop are:

1. To identify new types of vulnerabilities and their intersections that need to be considered when designing digital tools
2. To explore strategies for including vulnerabilities into the design of digital environments in order to transform vulnerability into empowerment

2 ORGANIZERS

David Struzek is a PhD student at the Information Systems department, especially IT for the Ageing Society at the University of Siegen. He explores how people in urban public spaces can be supported in their physical movement or motivated by technical interactive systems. Furthermore, his interests lie in the design of good usability and UX with the support of creative methods.

Katerina Cerna is a Post Doc at the Information Systems department, especially IT for the Ageing Society at the University of Siegen. She is interested in how participatory design can be used to facilitate learning to be well with her background in educational sciences and HCI.

Richard Paluch is a PhD student at the Information Systems department, especially IT for the Ageing Society at the University of Siegen. His research focuses on the robotization of care. Possibilities and limits of robotic systems for nursing are analyzed and standards for reasoning and assessment are developed for people in need of care.

Sven Bittenbinder is a PhD student at the Information Systems department, especially IT for the Ageing Society at the University of Siegen. He is working in the area of accessible software and how

to sensitize and support the general public to include vulnerable groups in everyday life and in the use of new technologies.

Lydia Stamato is a PhD student in Human-Centered Computing at the Department of Information Systems, University of Maryland, Baltimore County (US). She is interested in community-engaged research with a focus on youth and marginalized populations, participatory design of learning tools and experiences, and creative practice as a means of knowledge generation and communication.

Arind Reuter is a PhD student at Open Lab, Newcastle University (UK). Working interdisciplinary within the fields of HCI and gerontology, her work explores ways in which digital technologies and in particular community media can support civic participation in later life. As part of this participatory action research project, she was involved with setting up the Later Life Audio and Radio Co-operative, a UK network of older radio content creators.

Özge Subasi is an Assistant Professor at the College of Social Sciences and Humanities at Koc University, and the Director of the Futurewell: Co-creation and Wellbeing Group, the first participatory design research and wellbeing lab in Turkey. Özge's research is on co-creation with underserved populations, on topics such as assistive technologies, gerontechnology, social and situational aspects of access and the new forms of neighborhoods. Özge's most recent project is on crafting innovative remote tools for reciprocal wisdom, skills exchange, and well-being in later life.

Foad Hamidi is an assistant professor in Human-Centered Computing at the Department of Information Systems, University of Maryland, Baltimore County (US). His research focuses on community-based participatory design, DIY assistive technology design research, and community engagement. He is currently co-leading an NSF-funded research project on providing free mesh network internet access during and in the aftermath of the COVID-19 crises to low-income urban communities.

John Vines is Professor of Design Informatics at the University of Edinburgh. His research focuses on participatory approaches to design and the participatory qualities of digital technologies. He has conducted research on a wide range of subjects negotiating issues of vulnerability, such as working in health and social care settings, in ethically charged contexts, and collaborating with marginalised communities.

Claudia Müller has a professorship in Information Systems, especially IT for the Ageing Society at the University of Siegen (Germany) and is also a professor at Kalaidos University of Applied Sciences at Careum Hochschule Gesundheit (Switzerland). Her professorship focuses in teaching and research on information technology-based solutions to the challenges and problems of demographic change. Objectives are aimed at maintaining and increasing the social participation of older people, their mobility and independence, as well as the maintenance or improvement of domestic well-being and health in old age.

3 WEBSITE

We will design and develop a website dedicated to the subject of the workshop (<http://www.thenewvulnerable.com>). We will invite relevant communities to submit papers for participation by making a

call via mailing lists. We will include the ACM, CHI, and CSCW communities, as well as networks in topic specific areas such as Socio-Informatics and Business Informatics. We will also use the public event calendars of ACM and WikiCFP to register our workshop and the CFP. Additionally, the call will be announced via social media including Facebook, ResearchGate, and Twitter. The design and use of the website will adhere to accessibility criteria and comply with WCAG 2.1 standards. We will also coordinate with AccessSIGCHI to ensure social and situational accessibility during the workshop (one author is a part of the initiative: <http://accesssigchi.com/>). The website will introduce the authors and the workshop, but more importantly, provide a source of inspiration for the participants. All submissions will be archived on the website as will joint research or publication activities, to ensure sustainability. Given the current situation, we will aim to make the website as interactive and supportive as possible.

4 PRE-WORKSHOP PLANS

4.1 Advertising and Call for Participation

The call for papers for the workshop will proceed in several stages. First, general workshop information, such as the structure of the workshop and the call itself, will be presented on the website. The link with the call will then be placed on the well-known CHI website. In addition, the call and the link to the website will be distributed via various communication channels (mailing lists and social media) to increase attention to this workshop.

4.2 Submission Invitations

Participation in the workshop requires the submission and acceptance of a paper on the topic. Interested participants should use the ACM SIGCHI Extended Abstract Format to outline their research and/or interest in the workshop (maximum length 4 pages). All submissions will be judged by the organizing committee on originality and relevance. Selected contributions will be made available on the workshop website and serve as an introduction to the discussion during the workshop. Each participant will have the opportunity to present their work.

4.3 Participants

We want to bring together a group of interdisciplinary participants from HCI and Design backgrounds who not only conduct research with stakeholder groups traditionally labelled “vulnerable” (e.g., older adults or people with mixed abilities), but also who have also identified new forms of vulnerabilities emerging as a result of the COVID-19 pandemic. To accommodate these interdisciplinary discussions and acknowledge the diversity of participants who come together in the workshop, we will give as much space as possible for discussion and cooperation. To this end, our goal is not to exceed 15 participants. Organizers will also actively participate in the workshop and present our relation to the topic.

4.4 Increase Inclusion and Ensure Active Participation

Since the workshop will be held online and all participants are not in the same time zone, we will start the workshop at 14:00 JST

(UTC+9). We will send a checklist and a short description of how to use the web tools we plan to use in order to maximize participation for those who may be using them for the first time. Participants with poor internet connection will have the option to use the telephone to connect to Zoom. We will screen share presentations and a collaborative Miro board. Due to limitations preventing simultaneous interpretation, the workshop will be conducted in English. Will work with participants to address specific accessibility concerns. The accessibility of tools used will be aligned to the state-of-the-art once accommodation requests are evaluated, and inaccessible tools will be replaced with the suggested versions.

4.5 Overview of the Workshop Structure

The workshop will also be offered online as the CHI conference is also fully online. Since an online meeting can be much more strenuous than an in-person one, the workshop will be no longer than four hours. Despite the online format, the workshop should be as interactive and creative as possible. For this purpose, various tools will be used. The website will be used as a platform and source of information about the workshop. The online video conferencing program Zoom will be used for synchronous exchange, and will be available to participants at all times. The online whiteboard Miro will be used to record content during group work. Open-source tools as well as pre-installed programs will be used to design zines. The cloud service Google Drive will be used to exchange documents.

5 WORKSHOP STRUCTURE

5.1 At the Workshop

We suggest a time frame of 14:00 to 18:00 JST (UTC+9) with plenty of breaks in order to ensure that there won't be more than 4 hours of activity. We would like to create discussions as well as carry out interactive and analytical group work. To support these interactions, the participants will be randomly assigned to groups of no more than 5 participants. A Zoom room will be available during the workshop. For the group discussion, participants will be divided into individual breakout rooms. In case of an emergency (e.g., when the internet connection is weak), participants can participate by phone. In addition, the organizers will present essential content via screen sharing.

5.2 Preparation for the Participants

In order not to tire the participants with long presentations about the different contributions and to focus on the interactive part, submissions of other participants should be read before the workshop. In order to be better prepared for group discussion, the participants should also answer two basic questions:

1. What connections do you recognize with your own work? and
2. What common challenges/experiences do you associate with the work?

To present their work, a maximum of two slides should be prepared by participants. In these slides, participants should present themselves and their relation to the topic, rather than the project itself. The presentation will be presented to the other participants

synchronously. Each presentation should be sent to the organizers in advance as PDF or PPT file.

5.3 Introduction and Agenda Presentation

To ensure that participants can test their camera and microphone so that we can start on time, the Zoom room will be available before the start of the workshop. In a short introductory session, participants will be welcomed and the agenda presented.

5.4 Paper Presentation

After introducing the agenda, organizers and participants will introduce themselves with short presentations. Each presentation should not last longer than 2 minutes. The organizers will share the presentation via Zoom. The participants should show themselves and their personal and scientific relation to the topic. In addition, this format should support networking among participants.

5.5 Selection of Topics and Questions

Based on the experiences of the participants introduced in the presentations, 3-4 questions will be developed together as a group. The organizers will enter the questions on the Miro board used for this purpose, and these questions will be discussed in the breakout rooms later. In order not to lose too much time to deliberation, the organizers will prepare 3 questions in advance, which will be suggested only if necessary.

5.6 Group work

After selection of the collectively developed questions, the participants will be divided into groups. The groups will then pass through stations discussing the questions that were developed based on their own experiences and the questions answered in advance for each short paper (see section 5.2). The results will be collated on a Miro board prepared for this purpose. Each participant can actively work on the board and insert their own content. Each group will start with a question, inserts their ideas, and after 10-20 minutes move on to the next question. Ideas contributed at each station should always be based on the ideas that were contributed by the group before. Depending on the number of questions and participants, there will be several rounds. The organizers will manage the time.

5.7 Group Reflections and Result Discussion

The final outcome will be to bring together the ideas of all the groups on the respective issues, resulting in a large yet structured collage/map that shows emerging forms and stakeholder groups in relation to vulnerability and the experiences and potential for empowerment in crisis situations. Representatives of each group will reflect upon and discuss their contributions to the collaboration.

5.8 Zine Round

The results of the workshop will be developed in a common digital zine. Traditionally, a zine is a low-cost, self-published booklet developed outside the constraints and expectations placed on typical publications, often in small groups around a topic. One of the special features of zines is the enrichment of reading experience with pictures and short texts. Zines are one of the most equitable design outputs that can be created collectively and easily disseminated.

We believe that this flexibility can enable new ways of thinking and communicating about new vulnerabilities. Each participant will design one zine page to document their personal takeaways from the workshop, with the help of a graphics program. The template of the zine will be set by the organizers, and the finished zine will be available as a digital document on the workshop website.

5.9 Schedule of the Workshop

Time	Activity	Tasks of the organization team
13.45	Open workshop/Zoom-room	Allow entry into the zoom session Test audio and video input devices
14.00	Introduction to the workshop	Welcome presentation Agenda
14.05	Introduction presentations	Networking Who is who? Reference to the topic? Note down the most important buzzwords
14.30	<i>Coffee break</i>	Time to get up and move
14.40	Selection of topics	Development of questions for group work
15.10	Group work	Presentation and questions Note down the most important buzzwords Project, context, research approach, stakeholder group and experience
16.10	<i>Coffee break</i>	Time to get up and move
16.20	Group reflection and result	Presentation of the results by each group Agreement of the results Clarification of missing/open questions Future Outlook
16.45	Zine round	Creation of a digital zine. Each participant will create their own zine page. Graphic material and sketches will be provided by the organizers. Each page can have a thematic title to be created in the reflection part. Depending on the number of participants, the pages could also be created in small groups.
17.45	Close	Presentation of the mailing list Discussion about possible collaborations and publication stories Clarify questions Acknowledgement Last words of each participant

6 POST-WORKSHOP PLAN

Experiences from the workshop will be documented by the zine on the website. We also invite the participants to work on joint publications in which their work will be further elaborated. In order

to stay in contact after the workshop and to invite potential new interested parties, we would like to create a mailing list. This list will be used to spread new collaboration possibilities and synergies. A special issue contribution for Interactions or Human-Computer Interaction would be conceivable here. Interested participants will be informed about the current status via the mailing list. In addition to the internal publication process, participants as well as other researchers from the community can be invited for other paper contributions.

7 CALL FOR PARTICIPATION

In times of unprecedented socio-technological changes, such as those introduced by COVID-19, new forms of vulnerabilities emerge. By drawing on the narrative of transforming vulnerability into empowerment, we want to explore the novel vulnerability landscape to better inform HCI research. Hence, we want to invite HCI researchers and designers, as well as persons from other disciplines, to our workshop where we will focus on two goals: 1) Identifying new types of vulnerabilities that need to be considered when designing digital tools; and 2) Exploring strategies to include them or transform them into empowerment. Researchers interested in exploration of new emerging vulnerabilities are invited to submit a position paper about their research, findings, and/or interest in relation to the workshop in the ACM SIGCHI Extended Abstract Format and (maximum 4 pages) to newvulnerabilities2021@gmail.com by February 20, 2021. The papers will be selected based on the contribution to the workshop goals and potential to stimulate discussions. Upon acceptance, at least one of the authors must register for both the workshop and for at least one day of the main conference. To read the full call and access further information, please have a look at <http://www.thenewvulnerable.com>.

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