Giving Voice to Nature: Participatory Design with Non-Human
Stakeholders for Sustainable Development
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In this workshop, we aim to explore, discuss, and debate ways to engage and connect beyond the traditional human stakeholder in Participatory Design and to co-design with animals, plants, micro-organisms, natural entities, and their ecosystems. We intend to collaboratively investigate how we can possibly expand participation to these more-than-human natural stakeholders which we have ignored so far and whose involvement in the design process is as unexplored as it is now needed in sustainable development. Acknowledging the limits of current PD theories, methods, and experiences in co-designing with more-than-human natural stakeholders, we invite participants to contribute with ideas, methods, case studies, and stories of 'giving voice' to nature in PD, something we believe is key to rethink the field in light of the environmental crisis we are facing today.

CCS CONCEPTS •Human-centered computing~Human computer interaction (HCI)~Interaction paradigms~Collaborative interaction•Human-centered computing~Interaction design~Interaction design theory, concepts and paradigms

Additional Keywords and Phrases: giving voice to nature, designing with nature, more-than-human design, design with non-human, tracing connections

ACM Reference Format:

1 INTRODUCTION

> *"The world we live in – the social, scientific, intellectual, and material ways we go about our everyday – is now colliding with the world we live from – the air, water, plants, animals, bacteria and other micro-organisms upon which we depend"* - Todd rephrasing Latour 2017 [1, p. 161].

The main goal of this workshop is to collectively explore, discuss and debate on how to design with those non-human natural entities that we have so far taken for granted, and whose involvement in the design process is as unexplored as it is now needed in sustainable development. In line with the conference theme, we aim at building a network of Participatory Design scholars, practitioners and activists concerned with exploring ways to engage and connect beyond the traditional human stakeholders and design with animals, plants, micro-organisms, natural entities and their ecosystems.

2 IMPORTANCE AND RELEVANCE TO THE PDC THEME

Participatory Design (PD) is a human activity, historically concerned with the involvement of the workers, or more generally 'users', in service and product design. Started in the context of organisations for workplace democracy, PD gradually evolved into an empowering design process that is sensitive to the political aspects of everyday technology [2] and that is generally defined as a process of mutual learning in collective 'reflection-in-action' [3]. Key in this endeavour is the focus on developing tools, techniques and methods enabling users, designers and researchers to work together, reflect on current practices and envision future alternatives, which assumes humans as skillful and resourceful in the development of their future.

Despite growing calls to broaden the scope of PD today toward new design partnership with more-than-humans [4], [5], [6], [7], [8], [9], [10], and although there is a manifested urgency for environmental and sustainable interventions, design that seeks to widen the participation to non-humans, PD with nature and natural entities, remains mostly underexplored and falls short theoretically, methodologically and empirically. Discourses on sustainability in PD do not seem to contribute much in this direction. In a review of the topic, Poderi and Dittrich [11] identify works that use PD to support projects targeting environmental sustainability (PD for sustainability), but also works that reflect on the social – more than environmental – sustainability of PD processes (Sustainability of PD practices) and of PD results (also in Storni [12]). These and related terms are growing in the PD community [13] and calls for decolonizing the PD space to explore multi-species and more-than-human design exist [14], [15]. Yet participation, to use Reason (cited in Bastian et al. 2016) "… had nothing to do with the natural world." [5, p.19]. The field of Sustainable HCI [16] is of interest here because it evolved from a view of design being predominantly about persuading the individual human to be kind to the environment (e.g., using informatics and eco-feedback technologies [17] to a field exploring innovative and collaborative ways toward more holistic approaches encompassing social, cultural, environmental and technological factors [18]. Here questions are also being asked as to how we can involve non-humans for

environmental sustainability [15]. In this direction, some encourage ingraining environmental activism and social justice "in every interaction design project" [19, p. 63]. Others propose that we decentre not just the individual but the entire humanity in our sustainability discourse and design practice [20], which suggests adopting a humbler "we are in it together" attitude that recognises not only other humans but also non-human entities and the earth itself as victims of the ecological crisis and genuine stakeholders in our design for sustainability [21].

Conceptually, this space is often rooted in philosophies such as Object-Oriented Ontology [22], [23], [24] and Actor Network Theory [25]. Despite their differences, these approaches acknowledge our entanglements with nature in a pluriversal world [26] and the socio-technical complexities around the inevitable posthuman era of the Capitolocene (Moore 2016). Talking about the two colliding worlds in our opening line, Latour continues: "As soon as we wish to represent what it could mean for entities to be entangled with one another, we are at a loss" and stresses the need to "map what connect the 'me' to the necessary endless list of 'others' with whom life and our society is made possible" ~~Latour and Weibel, 2020)~~[, p. 9].

To respond, Akama et al [8, p. 9] suggest that "all of us start living more explicitly with more-than-humans and embody these practices by: 1) being with plants, other animals, trees, mountains and rocks to attune our pace with different rhythms and flows; 2) keeping multiple worlds alive within ourselves so that these philosophies and cosmopolitics can inform dialogue without being flattened out; 3) designing with and learning among people with deeply relational worldviews" so that we can trace for ourselves the histories lost and futures possible.

In this workshop, we therefore acknowledge that we are all inextricably and persistently entangled, that our traditional ways of observing, describing, explaining and intervening are inadequate to deal with socio-ecological crises, and that we need to explore new ways to observe, listen, trace, connect, represent, interest, recruit, ask questions, and test ideas toward co-existence [1] or multispecies cohabitation [27]. In this direction, pioneering research works have included explorations of Animal Computer Interaction [28], [29], designing with insects [30], cohabiting and designing with plants [31] and interacting with the biosphere including non-human, non-living [32] and even invisible things such as sounds [33], [34]. We hope to expand this space with a focus on non-human natural stakeholders hoping to learn how to connect and relate with the non-human species as legitimate and respectable stakeholders who are given voices and accorded rights [35].

3 HOW PARTICIPANTS WILL CONTRIBUTE

We aim to get participants to contribute to the following topical questions with a position paper or case study (1000 - 1500 words) to be submitted to a call for contribution which we will circulate in advance of the workshop. Optionally, participants can also contribute pictorials, design fictions, provocations, or reflections.

3.1 Workshop Questions

1. How do we bring in non-human natural and biological entities in our Participatory Design? For instance, how can we take natural and biological entities as users, informants, testers, or design partners?
2. How can we interest and recruit, give voice and listen to non-human natural entities in PD processes? What does 'mutual learning', 'empowering', 'reflecting', 'democracy', all key features of traditional PD, mean when designing with nature?

3. How can we describe and make visible the invisible interdependencies and entanglements with natural entities we have ignored so far? How can we re-learn our moral duties as terrestrial cohabitants as well as members of globally interconnected societies in a common world? How can we shift and multiply viewpoints to include nature in our efforts at sustainable development? How do we create new sensitiveness to see life differently and explore alternative condition of living with others?

As our workshop tackles theoretical, methodological and empirical shortcomings in giving voice to nature in PD, the contributions will be expected to address at least one of our questions with either a theoretical (framework, theory or concept), methodological (tool, technique or method) or empirical contributions (case study, stories, traditions). Accepted papers will be shared with the workshop participants in advance of the workshop and will constitute the material to support workshop activities.

4 PROPOSED FORMAT, METHODS OR TECHNIQUES USED TO STRUCTURE THE WORKSHOP

We propose this workshop to be a half-a-day hybrid event taking place both in person and online. Environmental sustainability is an obvious reason why this workshop is conceived as hybrid along with concerns about maximising access and inclusion. We also foresee complementing the synchronous activities on the day of the workshop (see Workshop Structure) with asynchronous ones (in preparation for/following up the workshop). We hope this format supports networking and potential for future collaborations.

Asynchronous Activities: In the weeks before the workshop, we will create a shared folder on the Cloud where accepted contributions are going to be stored and shared with the workshop participants so they can prepare for the workshop discussions. We will also create a Miro/Mural or Google Jam board and invite the accepted participants to post brief bios, images and highlights of their submission. This material will remain accessible to participants even after the workshop.

Synchronous Activities: Participants will assemble at the PDC venue where video conferencing for remote participation is set up. We foresee using platforms (MS team, Zoom) which enable creation of breakout rooms for discussions and interaction during the workshop. If planning to record the session, we will create an online participation sheet and informed consent to be signed by participants. To support group work and workshop activities (see workshop structure), we may also make use of Miro, Mural or Google Jam boards allowing participants to communicate, interact, and share text and visuals.

Submission of contributions to the workshop is optional. Calls for participation which will be distributed in advance on the PDworld mailing list along with a number of related mailing lists (CHI, NORDICHI, EUSSET) and social media (LinkedIn). A workshop website will be developed to support such call for participation. We aim to have from a minimum of 10 to a maximum of 30 participants including students, researchers and activists from all design fields who are concerned about the environment and sustainability. Our call will outline the workshop title and objectives, its importance and relevance for PD, the research questions that we intend to address in the workshop and how participants can submit their contributions.

All participants' contributions should be submitted by 14th June 2024. Their acceptance will be notified by 21st June 2024. Materials will be made available online for the participants to access by the end of June. We propose to run the workshop on 15th August 2024.

All accepted papers will be distributed in advance of the workshop for preparatory work.

5 WORKSHOP STRUCTURE

Prior to the workshop, participants will be asked to peruse the submitted contributions and add comments, feedback and questions on a provided sharing platform (e.g., Miro, Mural, Google Jam). The workshop will run for 3 hours 30 minutes, and the schedule is as follows:

Introduction (20/30 minutes): Workshop organizers (both in person and on-line) welcome the participants, introduce themselves and the workshop themes. Participants will also be asked to briefly introduce themselves, their backgrounds and research interests.

Formation of groups and group work (60 minutes): We will form groups around contributions which complement or resonate with each other possibly aiming at matching a theoretical contribution to a methodological and empirical one. Work prior to the workshop might help with the identification of such matches. Subgroups will be asked to speculate and discuss how the proposed theoretical or methodological contribution would apply in a real-world case study. If possible, we will welcome the opportunity that groups focus on local case studies and that group work is performed in the field.

Break (20 minutes)

Group presentations (60 minutes): Groups will report the highlight of their discussion to the entire audience with a focus on what was learned, developed ideas and outstanding issues.

Plenary session (40/50 minutes): Workshop organizers will wrap up with highlights and lessons learned from the group work and discussions. Further research and dissemination opportunities will be discussed.

6 ORGANISERS

Chidi Usanga (he/him) is a PhD candidate in the Department of Computer Science & Information Systems (CSIS), University of Limerick, Ireland. With a background in multimedia/web technologies and energy industry stakeholders engagement for environmental sustainability and sustainable development, his research is on the role of new and emerging technologies, e.g., IoT, VR/AR, and participatory design, in giving voice to non-human natural entities towards more sustainable environmental practices.

Cristiano Storni (he/him) is Associate professor in Interaction Design at the Computer Science & Information Systems department, University of Limerick, Ireland. He has a background in Human Computer Interaction and Science and Technology Studies. His work lies at the intersection of social science, computer science, and design with research interests including design theory and practice, participatory design, health, sustainability, and inclusion.

Ann Light (she/her) is Professor of Design at the University of Sussex and Malmö University. She has focused on the politics, ethics and agency of design, and especially co-design in communities. Regarding the social and ecological as inextricably linked, over the last few years she has turned to consider climate collapse and the stress that current systems put on the planet, believing creative remaking of relations is needed.

Maurizio Teli (he/him) is Associate Professor at the Department of Sustainability and Planning at Aalborg University, Denmark. He leads the Techno-Anthropology and Participation group and chairs the Center for Sustainable and Digital Transformation at the Technical Faculty of IT and Design. His research focuses on participatory design for sustainable computing, embracing socio-ecological approaches to IT design and promoting socio-ecological justice in computing.

Liesbeth Huybrechts (she/her) is Associate Professor and works in the areas of participatory design, design anthropology and spatial transformation processes in the research group Arck, University of Hasselt, Belgium. She has developed a research interest in the design for/with participatory exchanges and processes of capacity building between human and the material/natural environment and the "politics" of designing these relations.

7 PLANNED OUTCOMES / OUTPUTS

We will endeavour to nurture the network of participants towards future joint research proposals and dissemination activities such as a special issue or joint papers.

Output of the group work could range from design scenarios to provocations, from prototypes and mock-ups to theoretical as well as methodological contributions. Participants' position papers, the feedback and discussions that these will hopefully trigger (both asynchronously prior to the workshop and synchronously during the workshop) and the materials generated as part of such discussion (notes, sketches) represent the key outputs of the workshop. Based on the originality and quality of such contributions, there is hope that we can aim at a special issue (e.g., in CoDesign: International Journal of Co-Creation in Design and the Arts)). Similarly, we will explore the possibility of joint papers or joint research proposals and how to further sustain the network.

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