

# Critical Computing, Sustainability, and Social Justice

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# What is “critical HCI”?

- Pays attention to the qualitative aspects of experience, rather than solving specific usability problems, or the efficient transfer of information <sup>1</sup>
  - Entailed by this centering of experience is a focus on embodiment, a critical orientation towards “what it means for a system to be ‘good’ in a particular context,” and a concern with locating users, interfaces, and researchers”
- It is sometimes referred to as the “third wave” HCI

“Critical HCI is...”

<sup>1</sup> Williams, A. M., & Irani, L. (2010). There's methodology in the madness. *CHI '10 Extended Abstracts on Human Factors in Computing Systems*. <https://doi.org/10.1145/1753846.1753857>

# Both a set of methods

Moves away from lab studies and user interviews and towards

- Focuses on self-reflection
- Ethnographic Studies
- Discourse analysis and critical reading
- Participatory design and action research
- Speculative design

# And a set of focuses

- Broadening the view of “user”
- Broadening view of “design” (i.e. Dourish, P (2006). Implications of Design)
- More political and social justice oriented topics such as:
  - Consequences of particular technologies for marginalized groups i.e. people of color, people in low and middle income countries, women, and queer people)
  - Broader ethical, societal, moral consequences including privacy, bias, safety, consent of groups of technologies in general
  - Environmental justice and sustainability

Embraces a dialectic view of technology that it has multiple, contradictory effects on society and that society has multiple contradictory effects on technology (Obrist, M and Fuchs, C. (2010) Broadening the View: Human-Computer Interaction & Critical Theory)

# Some definitions...

**Critical computing**, or the use of a critical lens to study computing, studies how design and technology reflect and configure social practices and how socio-political and economic conditions shape and contribute to the design of digital technologies

**Participatory design** originates from Scandinavian software development traditions, in which a social democracy and powerful worker unions encourages the participation of impacted workers in the technological development process. PD aims to include all stakeholders with different expertise, iterative prototyping of ideas, and co-determination of technologies and work practices. It focuses on preserving existing social systems and attempts to manage technology development and rollout in a humanistic fashion. It uses informal processes with an emphasis on in-situ methods and frequent user involvement

## Some definitions... (cont'd)

whereas in **Action research** the aim is to both understand and report a given problem *and* provoke change through action. Action researchers immerse themselves with their subjects and work with them as co-investigators. It is not defined by the use of qualitative or participatory methods, or restricted to any method at all. It “*engages all project stakeholders in constantly oscillating between knowledge generation and critical-informed reflection, in a helix directed at reaching a stage of improvement from which the process can start all over again - but this time towards an even higher level of understand and achievement*”

# Literature grounding critical HCI

- Science and technology studies literature from sociology
- Critical race theory
  - Ogbonnaya-Ogburu, I. F., Smith, A. D. R., To, A., & Toyama, K. (2020). Critical race theory for HCI. <https://doi.org/10.1145/3313831.3376392>
- Post-colonial studies
  - Irani, L., Vertesi, J., Dourish, P., Philip, K., & Grinter, R. E. (2010). Postcolonial computing. <https://doi.org/10.1145/1753326.1753522>
- Feminist theory
  - Bardzell, S. (2010). Feminist HCI: taking stock and outlining an agenda for design. <https://dl.acm.org/doi/10.1145/1753326.1753521>
- Queer theory
  - Spiel, K. et al. (2019). Queer(ing) HCI: Moving Forward in Theory and Practice <https://dl.acm.org/doi/10.1145/3290607.3311750>

# Critical computing, sustainability, and social justice...

## A CHI History

- first was called “critical and sustainable computing”
- a unification of two separate subcommittee proposals
- It was created with aims to support “**meaningful alternatives to the status quo**” and be a home for “technology and technology-oriented practices in creating a fairer, more sustainable, and flourishing society”
- Press release written in April 2020 in the **midst of the pandemic** and acknowledged the enormous human suffering that surrounded the moment (although the subcommittee formation was a 2-year process)
- product of decades of work in HCI, CSCW, and critique and **traces its roots to the 1975 Aarhus Decennial Conference** which focused on critical computing
- From 2010-2020, CHI papers dealing with sustainability, social justice, development, cultural computing, Indigeneity, feminist HCI, emancipation, race, intersectionality, and the relationship of HCI to politics, activism, ethics, and the legal and societal impacts of computing **more than doubled**



# Critical computing, sustainability, and social justice...

## A CHI History (cont'd)

“we, the authors, organized a Sustainable HCI (SHCI) Special Interest Group (SIG) at CHI 2018, aiming to bring together people who share an interest in these complex and interconnected issues [5]. To provide a more **comprehensive framing for the sustainable HCI community, we proposed championing environmental and social justice together**. The intertwined set of issues relating to society (e.g., inequality, justice, diversity, privilege) and the environment are often seen as separate in HCI. Through this SIG we began to take stock of the multitude of these issues, broadening our worldview and taking more responsibility as technologists whose work affects society and the environment.”

These authors found since digital technology is mediating socioeconomic, sociopolitical, and sociotechnical systems that entrench inequality and unsustainability, sustainable HCI can find new energy and become more diverse by engaging under a broader banner such as environmental and social justice.

# Sustainability Unpersuaded: How Persuasion Narrows Our Vision of Sustainability (2012)

**Authors:** Hronn Brynjarsdottir, Maria Hakansson, James Pierce, Eric Baumer, Carl DiSalvo and Phoebe Sengers

**Method:** Literature review of “persuasive sustainability” using the sociological concept of “modernism”

**Modernism:** “people can and should change the world for the better by analyzing present conditions and improving them through scientific and technical knowledge.”

## Three Tenets of Modernism:

1. Trust in techno-scientific reasoning
2. Means → Ends thinking
3. Trust in formal, rational methods

**Argument:** Sustainability research in HCI (aimed at Persuasion) is a modernist project – and as such has focused too narrowly on data-driven technological solutions aimed to persuade rational agents to change behavior

# Sustainability Unpersuaded: How Persuasion Narrows Our Vision of Sustainability

## Prescriptions:

- Broaden understanding of persuasion
- Include users in design process
- Move beyond the individual
- Shift from Persuasion to reflection → move from prescriptive systems to eliciting broader reflections
- Shift from individual behaviors to thinking about larger, social cultural practices

Why is sustainability in this subcommittee along with “Critical Computing” and “Social Justice”?


In what ways is this paper “critical computing” in addition to being “about sustainability”?

Why are they using “modernism”?

How is modernism different from “techno-solutionism”?

What other applications of modernism do we see in HCI?

# Critical Race Theory in HCI

As the name implies, critical race theory has intellectual roots in critical theory, which examines the role of power, history, culture, and ideology on social phenomena, often with an eye to critiquing or correcting abuses of power [72]. 

The origin of critical race theory lies at the intersection between varying realities of identity and law. There are 5 tenets which are the belly of CRT: **Counter-Storytelling, the Permanence of Racism, Whiteness as Property, Interest Convergence, and the Critique of Liberalism.**

# Critical Race Theory in HCI

- What does this paper insight or challenge about our conceptions about HCI?
- What do you think about the data analysis/methods?
- What are the limitations and generative things about this paper?
- What does fighting against racism mean in HCI?

# CHI4Good or Good4CHI: *What is good?*

- It is problematic to name one group as the savior bringing tech-based social and economic benefit and the recipient group as needing this “good”
- “Good” usually means that design research and practice is inherently benefactors or beneficial toward a group that is usually excluded from having access to mainstream technology



**What does “good” mean to you  
in CHI4Good or tech4good?  
What do you think of the  
paper’s analysis of “good”?**

# CHI4Good or Good4CHI: *the structure*

## Composed of two constituencies

1. **Accessibility**, which is driven by interactive design challenges with non-standard technology interfaces
2. **HCI4D** research, which is concerned about population themselves and socio-technical concerns around technology use

## Three ways in which HCI4D, and other CHI4Good, conduct research:

1. Application research
2. Crossover research
3. Community research

# CHI4Good or Good4CHI: *the structure* (cont'd)

1. **Crossover research** - research on interface that avoids social-good framing and seeks to implement artifacts in different contexts and novel ways
  - a. Exploratory since the product doesn't have to have a market potential but is still interesting to the research community
  - b. Novelty of interface is central
  - c. Fits right into CHI
2. **Application research** - seeks to increase efficiency of existing organized activities. Beneficiaries are underserved populations. Research is driven by metrics of efficiency like time, data, and cost rather than the "good."
  - a. Business use case
  - b. Important due to its focus on implementation and user experience
3. **Community research** - is in-depth descriptions of socio-technical setting that inquires about the context in which a design artifact exists
  - a. Currently, techno-community research with underserved user population cannot be properly be evaluated because CHI is generally not domain experts on the population or issue
  - b. Crossover and application research does not have to be framed as social good to be included in CHI because they are essentially about design

# CHI4Good or Good4CHI: *CHI's structural issues*

CHI's structure limits the ability to do real-world social research. If engineers are lured to do social research, they will selectively report and represent, grandstand design, or fetishize the population in order to tease out a novelty factor

- Rise in global good CHI work that weirdly centers certain places in the Global South in which it is relatively easy to do quick design research (due to structural reasons)
  - Field-wide selection in easiest available participants → bias across scholarly work
- There exists issues of ethics and power relations
- **CHI rewards research that develops an implication for design rather than understand some facet specific to the community being studied**
- Its format does not allow for deep examination of social phenomenon

# CHI4Good or Good4CHI: *4 in HCI4D and CHI4Good...*

...implies that value flows from designer to community but...

- Technology offers no more than an amplification of existing possibilities
- Does “D” mean those in need of enlightened civilization?
- Tech sector is just developing a calling card for its own brand
- Tech culture universalizes Silicon Valley epistemology of modernity
- Uses “representation” to show all the “good” technology can do

# CHI4Good or Good4CHI: *CHI needs to restructure*

HCI benefits more from global research than the other way around because it gives HCI researchers field experiences and provides them with professional opportunities.

In order to remove this power imbalance, CHI needs:

- A more inclusive understanding of “good”
- To change the format and reward system of the community
  - If design is the goal than its “glory” is innovation and entrepreneurship. But the rewards are different when working on issues of social good.

Otherwise CHI4Good really should be Good4HCI

Social good is not making a technological intervention and having social good be a by-product or a way to affirm ourselves for doing “good” work