

Critical by design: Fostering responsible innovation with critical design methods

ISTAS21 Special Session on Thursday October 28th, 2021, 1–2:30pm (EDT)

Session Presenters

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Program Description—Design theorist Matt Malpas suggests that critical design is “less about problem solving and more about problem finding.” Rather than offering solutions or efficiencies, critical designers develop projects that provide time and space to reflect on specific issues, most often problems related to technological progress. This creative practice can be integrated into the design workflow as a way of exploring and mitigating the potential social and environmental impacts of technological innovations. In this 90-minute workshop, participants will be introduced to critical design methods and apply them in small group projects to create speculative scenarios and objects-to-think-with that promote reflection on key topics in responsible innovation. The workshop will provide participants with skills that can be applied in their own research, design and innovation contexts.

Keywords—critical design, speculative design, discursive design, alternative present, problem finding, counterfactual

This participatory workshop occurred on the first day of the conference and made the case that critical design practice, first popularized by Anthony Dunne and Fiona Raby, can counter dominant narratives about technology by proposing alternative presents (as opposed to alternative futures). O’Gorman began with an excerpt from the science fiction TV series “Black Mirror.” He highlighted the crucial role of design when it comes to the props in the series that represent near-future technologies, arguing they are artifacts of critical design for a “present that doesn’t currently exist.” Lajoie then gave the example of his own “Queer Controller” project, where the ‘messiness’ of the interface is purposely unwieldy and meant to evoke questions like “who gets to play?” and “how is play determined?” From there, O’Gorman introduced the critical design theory of Matt Malpas and his mantra of “problem finding versus problem solving,” which serves as a means for critiquing the solvability, i.e., determinism that runs rampant in technoculture. O’Gorman also took time to address the various terms that constellate critical design discourse such as *speculative design*, *critical making*, *critical fabulations* and *discursive design*. In particular, he outlined critical making as design focused on the act of making rather than the aesthetic merit or efficiency of the final product—an important modality for engineers to recognize as valuable in their own work. Lajoie and O’Gorman then laid out several critical design methods: Fictional worlds; Utopias/dystopias; Reductio ad absurdum; Ideas as stories; Thought experiments; Counterfactuals.

Of note, O’Gorman cited Thomas Thwaites’ *Toaster Project* (2009) as reductio ad absurdum. Thwaites attempted to build a toaster without any mass-manufactured parts to underline the lack of self-sufficiency baked into capitalist economies. Another method that Lajoie and O’Gorman concentrated on was the counterfactual, which O’Gorman illustrated by asking “Instead of being a nature documentary filmmaker, what if David Attenborough was an inventor/technologist? Or, what if (Mark) Zuckerberg was a sculptor?”

The second half of the session put the counterfactual method into practice by splitting attendees up into groups of 4-5 in breakout rooms via Zoom, where each was assigned a different problem to “combat” through a counterfactual design. Problems included algorithmic bias, conflict minerals, e-waste, and AI job automation. Groups were given 20 minutes to discuss and devise a solution, entering a written description and visuals of their proposed critical design into a shared document. Afterward, all groups reconvened to share their prototypes. Examples included a proposal for a headband that would extract energy from brainwaves to reduce reliance on fossil fuels and goggles that would reveal bias as visual gaps between different types of users through augmented reality. An important question posed by one of the participants was “What are the next steps after (this process)?” to which O’Gorman responded: “To get these [methods] directly into the stream of tech design ecology.” One way to accomplish this may be to display critical design projects next to capstone engineering projects, using juxtaposition to reveal gaps in knowledge and ethical considerations.