

Taming a Run-Away Object: How to Maintain and Extend Human Control in Human-Computer Interaction?

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Departure

- communities of practice and how they own, share, appropriate and co-develop technology
- how to create interactive digital environments that are flexible enough to support appropriation by end-users
- AIM:
to discuss “ownership” and “control” in relation to AI/automated computer technologies

Context

- renewed focus on AI threatens to jeopardize human control over information technology
- Need to rethink and innovate HCI to better address these new challenges
- Common Interactive Objects (CIO):
to bring together an understanding of use
and a framework for building new interfaces

Conceptual Mindset

- Human-Computer partnerships mediated by CIO
 - Motivate collaboration
 - Enable work across diverse boundaries
 - Constitute infrastructure for activities
- As Boundary Objects, CIOs can be:
 - multiple, heterogeneous, potentially conflictual
- Inner: openness, malleability and seamlessness
- Across: closeness, resistance and seamfulness

Some issues

- Automation pushes standardized objects/practices, often limiting user control (blackbox examples: ERPs, SNs, ML recommenders, fraud detectors)
- Contrast with malleable, community built/adapted tools (e.g., spreadsheets, wikis)
- AI risks removing user's flexibility to adapt/shape their actions to concrete contexts – normalized culture
- Algorithmic objects historically reinforce/crystallize disciplinary/org practices, discouraging alternative modes or interpretations – routinization of the human

Some key questions

- Delegating to automata means TRUSTING there is shared perception or a common understanding
- To what extent these objects enable such an understanding and how do they make apparent their interactivity or coordination capabilities?
- To what extent can object-based coordination be inspected or made traceable?
- How are other people's actions subsumed through a shared object?

Some Design Challenges

- Automated behavior does not need to constrain; interactive objects may transparently enable appropriation
 - background recalculation, styling a picture VS opaque recommenders, social profiled welfare
- To cross contextual boundaries, interactive objects need to foster user's experience of control and insight in system's actions
- AIs as CIOs need to address the...
 - ...control that lies with the user or community, in use;
 - ...control that lies with communities of users appropriating and technology in use;
 - ...control that lies with the creators of technology.

Workshop Challenges

- #1 *"How can we create interactive digital environments that are flexible enough to support appropriation by end users?"*
- CIO: "Making interaction accessible through different methods and modalities contributes to the 'common'-ness of our digital technologies, and therefore the flexibility for appropriation:"
- #2 *"How can we combine human intelligence with artificial intelligence to optimally benefit human activities rather than simply replace them?"*
- CIO: "for combining human intelligence with AI, with the aim of optimizing human benefit, we must tread carefully on the issues of reference data being used, who gets to determine the criteria for optimality, as well as why, when, and where this gets decided. "
- #3 *"How can we help users shift easily across different types of human-computer partnerships, from full user control to full automation?"*
- CIO: "At the current stage, we do not envision any easy answers, as people's practices and the objects involved are so varied and influenced by context that formulating general solutions could prove to be near impossible. Some communities of practice may not even need or desire to shift from full user control to partial, let alone full, automation."

