



Research Products and Time: When, For How Long, And Then What?

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Abstract

This workshop focuses on the temporal dimensions of Research through Design (RtD) in Human-Computer Interaction. Building on the success of previous *objects of design* workshops at CHI, it explores how time impacts the creation, evolution, and deployment of design artifacts. Participants will discuss long-term and unconventional deployments, addressing methodological, ethical, and organizational challenges. Through hands-on, studio-style critique and collaborative sessions, the workshop aims to generate insights into how temporal aspects of design contribute to knowledge production. The event will also initiate long-term design deployments, with findings to be reported at a follow-up workshop in 2026, marking the 10th anniversary of this series.

CCS Concepts

• **Human-centered computing**; • **Human computer interaction (HCI)**;

Keywords

Research through design, practice-based design, objects, material, design things, issues, context;

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Research through Design (RtD) is an established form of research in Human-Computer Interaction that involves producing, documenting, analyzing, and reflecting on tangible *objects of design* as a way of generating knowledge [7, 9]. Previous RtD workshops at CHI and DIS have focused on the process of creating RtD artifacts [14], their material qualities [13], how to present them as research outputs [19], how and by whom they are used [2], and the

domains in which they operate and their impact on design research [15]. The commonality of these workshops is their continued focus on providing and shaping a venue at CHI for RtD practitioners to present and discuss tangible *objects of design* in a hands-on manner, similar to a design studio.

Building on these prior successes at CHI and DIS, this workshop aims to gather design researchers to interact, expand, and reflect on the material design outcomes of RtD through a *temporal lens*. Reporting on RtD processes and design objects often lacks temporal attunement, which obscures entangled knowledges [22], and obfuscates ethical issues and future effects [12], while long-term deployments of design objects [10] are impractical within the logics of academic funding and career cycles. Through our workshop, we invite design researchers to discuss and reflect on the temporal aspects of *research products* [21], and ask:

- How do temporal aspects of design artifacts contribute to new knowledge in design research?
- How does time shape the design, decay, evolution, and refinement of design artifacts?
- How do long-term deployments (e.g., field studies) or other unconventional deployments of design artifacts (e.g., self-use studies, probes, exhibitions, public engagement) contribute to new knowledge in design research?
- What organizational, methodological, and technological challenges are associated with such deployments?
- How do temporal qualities influence ethical considerations and future implications of RtD projects?

This proposed CHI 2025 workshop will also offer a venue for attendees to initiate long-term deployments (potentially with other workshop participants), keep them going for 12-months, and then to report on these findings at a subsequent planned *objects of design* workshop the following year in 2026, which will also mark the 10th anniversary of the workshop series since 2016.

1 Background

In Research through Design (RtD) [7, 9], *objects of design* [14], serve as exemplars, proofs of concept, material arguments, or speculative performances to generate knowledge. These design artifacts help to surface and articulate values and perspectives through making and use, thus helping understand and interpret human and non-human interactions. Next, we discuss prior work from design research on design artifacts, their temporal aspects, and long-term deployments.

1.1 Design Artifacts in Design Research

Showing, archiving, and discussing the artifacts of design research — and of human-computer interaction in general — remains a multi-faceted challenge. The properties and capabilities of design objects that are created as *research products* go beyond those of prototypes: They embody research questions; they are often highly polished in form, hardware, and software so that they can be experienced as they are and not as what they might become; they elicit varied and prolonged experiences; and they are designed for deployments in real-world conditions [14]. Other factors, such as the timeframe leading to their creation and revisitation, technical and infrastructural strategies for supporting long-term operability [4], the number

of copies produced [3], or the duration of their deployment with users, have an impact on these qualities.

To fully understand and appreciate the material aspects of design objects, they must be physically experienced. Demo sessions at conferences are one way to facilitate tangible encounters. Alternative venues exist, such as informal exhibitions of “zines” — self-published, often handmade magazines with unique sizes, bindings, and designs that need to be experienced in person to be fully appreciated. Both opportunities exist only for the duration of the conference. Beyond conference experiences, *objects of design* can be revisited in pictorials that communicate their tangible aspects through visual content. However, there is currently no feasible long-term solution for archiving and preserving the *objects of design* themselves. These objects are often hybrids of digital and analog materiality, requiring both the archival of software code and hardware schematics with considerations for long-term compatibility and the documentation of their physical qualities. Introducing new artifact metadata at CHI 2024 is a step towards archiving, disseminating, and using artifacts associated with CHI publications [5]. Yet, questions around longevity and the potential for revisitation of physical *objects of design* remain an open question. After all, *objects of design* typically remain in the researcher’s lab, and are not archived in a physical library.

1.2 Design Artifacts and Time

Time is an often obscured property of design research on both a micro and a macro level. The design research community only recently started attending to aspects of time that govern HCI research. Reporting on RtD design processes and design objects often lacks temporal attunement, thus obscuring entangled knowledge, agencies, contexts, and hidden ramifications [22], as well as potential ethical issues and future effects [12]. Lastly, long-term deployments of *objects of design* are time-consuming and care-intensive [10, 16], making them impractical, risky, and often impossible to carry out within academic funding and career cycles.

Oogjes and Desjardins [22] have proposed seven terms: moments (events in which something perceivably occurs), encounters (separate actors come together), transitions (change of materials, prototypes are left behind), pauses (moments of waiting or staying still), rhythms (repetitive, predictable, cyclical pattern), other-time (temporal lifeworld of non-researchers, like machine-time), and temporal dissonance (when events clash), for design researchers to better articulate the temporal aspects of design research processes and design objects [22]. This vocabulary can sensitize design researchers to report with more nuance on their design work both in process and outcome over time, thus promoting the articulation of narratives that hinge on time and can thus unravel unseen relations, ramifications, and thus new learnings. Extending these narratives beyond process and product, Jardine et al. urge design researchers to consider the long-term effects of their work, projecting and reflecting on the ethical issues emerging down the line [12].

1.3 Design Artifacts in Long-Term Deployments

Long-term deployments generate insights into integrating novel technology into everyday life and illuminate relevant contexts of

use (or non-use). They help determine whether initial assumptions persist and provide insights into what happens once the novelty effect fades and other product qualities emerge.

For example, research on design artifacts that support long-distance relationships has been conducted for more than 20 years. Yet, very few of these design artifacts have been deployed for more than one or two weeks [11]. Only a few artifacts (e.g. [1, 2, 6, 10, 17, 20, 23]) have been deployed for more than a year, because of the challenges they entail.

Long-term deployments present organizational challenges in terms of time, costs, and effort. They often do not fit within the time constraints of PhD research, potentially conflicting with the three/four-year timeline for planning, executing, analyzing, and publishing. Personnel changes during long-term projects can cause overhead, friction, and shifts in goals. Long-term projects require high levels of integrity and trust. Participant recruitment is more complex due to the extended commitment. They also may include recurring operational costs and demand more supervision to mitigate technological problems. Long-term deployments of design objects with interactive features require basic operational conditions like electricity and internet connectivity. To function over prolonged periods of time, they need a high technology readiness level, ensuring reliability, robustness, and usability for lay users. They also must provide security, safety, and privacy to coexist with users without causing harm. Regular updates are necessary to maintain functionality and security. The requirements for research products are similar to those for conventional smart products—however, they are often created and produced in academic environments quite different from corporate settings.

Several long-term deployments mentioned above were conducted between researchers and their family members, and followed data collection and analysis in a first-person, autoethnographic manner [8, 10]. Such first person approaches in design research can help eliminate many of the challenges mentioned above by allowing for a deeper exploration and understanding of the intricacies of long-term use (while clearly being limited to the perspectives of researchers themselves). Deployments become much more resource-intensive when the number of research products increases beyond a handful of objects [3], or a wider spectrum of methods is asked for [18]. Accordingly, long-term deployments in HCI and design research remain relatively rare.

2 WORKSHOP GOALS AND ANTICIPATED OUTCOMES

As the design research community continues experimenting with alternative venues, the goal of our workshop is to craft and maintain a space at CHI for design researchers to gather around the tangible *objects of design* and to discuss them like in a design studio, this year with a special emphasis on temporal aspects.

- **Explore Temporal Dimensions:** Encourage participants to critically examine how time influences the creation, use, and evolution of design artifacts.
- **Reflect on Temporal Attunement:** Promote discussions on the importance of temporal attunement in reporting design processes and outcomes, highlighting hidden ramifications and ethical considerations.

- **Foster Collaboration:** Create opportunities for design researchers to collaborate on projects emphasizing temporal aspects, leading to richer, more nuanced research outcomes.
- **Advance Methodological Practices:** Address the organizational, technological, and methodological challenges of long-term deployments, sharing strategies and best practices to overcome these obstacles.
- **Facilitate Long-Term Deployments:** Initiate and support long-term deployments of design artifacts, enabling participants to explore their impacts over extended periods.
- **Reflect on Unconventional Deployments:** Consider the longitudinal dimensions of design research activities that include self-use studies, probes, exhibitions, and public engagement. Reflections on the temporal engagement with artifacts within the design studio/lab might also be considered.

Following this, the workshop will also serve as a venue for design researchers to discuss and deploy long-term studies with each other. We encourage interested participants to bring design objects to the workshop that can be deployed for a six to twelve-month long-term deployment, for which the workshop will be an initiation point, establishing touchpoints for these deployments.

We also intend to host a follow-up workshop in 2026, marking the 10th anniversary of the workshop series, and a joint publication, for example, an annotated portfolio of temporal aspects of research through design artifacts.

3 ORGANIZERS

Arne Berger is a Professor of Human-Computer Interaction at Hochschule Anhalt. He is fascinated by the complex, idiosyncratic and unintended interactions between humans and digital technology. His work recognizes that those who will be affected by a future technology should have an active say in its creation. Arne's research focuses on the early phases of design and development processes, and he is particularly interested in how errors, failures, blips, and oversights shape how we think about future technology.

Stephan Hildebrandt is a designer, entrepreneur, and consultant dedicated to developing innovative applications in smart technology and sustainability. As a research associate at Anhalt University of Applied Sciences, he specializes in human-machine interaction, with a particular focus on implicit and multimodal communication. His work is distinguished by a visionary approach, an insatiable curiosity, and a relentless drive to solve problems by asking the right questions, actively listening, and skillfully mediating knowledge.

Albrecht Kurze is a post-doctoral researcher, lecturer and principal investigator at the chair Media Informatics at Chemnitz University of Technology. With a background in computer science, his research interests are on the intersection of Ubiquitous HCI and human-centered Internet of Things: How do smart products and environments allow for new interactions and innovation, and how do we cope with the implications that they create, e.g., for privacy?

William Odom is an Associate Professor in the School of Interactive Arts and Technology at Simon Fraser University. He is the founder and director of the Homeware Lab which explores a range of projects that inquire into topics including longer-term

human-data relations, slow interaction design, and methods for developing the practice of Research-through-Design.

Tom Jenkins is Associate Professor of Interaction Design in the Digital Design department at the IT University of Copenhagen, where he leads the masters' specialization in interaction design. He combines community-based research through design with cultural and critical theory to produce speculative electronic artifacts that engage critically with smart products and systems, examining how design can produce novel relationships between and among people and devices.

James Pierce is an Associate Professor of Design at the University of Washington. His research investigates how interfaces mediate action, perception, and social practices. His current research uses design approaches to address trust, control, and inclusivity with interactive products. Alongside his research into specific domains such as privacy and the Internet of Things, James's research advances techniques for practicing design as a mode of academic inquiry, participatory engagement, cultural criticism, and speculative exploration.

David Chatting is a post-doctoral researcher at Newcastle University. He is an experienced interaction designer who confronts systems through a process he describes as designerly hacking to find alternative design spaces and to make compelling new experiences.

Doenja Oogjes is a design researcher focusing on the relations between design and the more-than-human worlds. She is an Assistant Professor at the department of Industrial Design at Eindhoven University of Technology. Informed by feminist posthumanism, she develops design strategies, crafts research products and conducts long-term field studies. She aims to strengthen the imaginative and speculative potential of design by developing vocabularies and tools.

Sara Nabil is an Assistant Professor of Human-Computer Interaction at Queen's University (Canada) and the founder and director of the iStudio which focuses on designing interactive interior and everyday things, e-textiles, smart spaces, and wearables for self-reflection and self-expression. Her work aims to engage and empower marginalized groups through co-design, including people with physical disabilities, people in self-isolation, and people with dual identities. She's particularly interested in DIY and digital fabrication of sensors through digital weaving, 3D knitting, and hybrid crafts.

Andy Boucher is an Associate Professor and co-leads the Interaction Research Studio at Northumbria University. As a designer and maker, he takes a practice-based approach to creating interactive research devices. His work explores alternative ways for technology to be produced, distributed, and used, from highly finished prototypes for long-term studies to self-build designs for home use.

Bill Gaver is Professor of Design and co-leads the Interaction Research Studio at Northumbria University. With the studio, he has developed a portfolio of work over 25 years that includes research products, methodologies and conceptual insights for and about practice-based design research, with an emphasis on ambiguity, ludic design, and emergence.

4 WEBSITE

The website www.thingsofdesign.info has archived outcomes from RtD design research workshops at CHI and DIS since 2016. It will be used before and after the workshop as a place to promote the workshop and to share the Call for Participation (CFP). As with previous iterations, authors will continue to maintain the website after the workshop. Participants are invited to submit position papers and are expected to bring, where possible, their object of design to the workshop.

5 PRE-WORKSHOP PLANS

The CHI community will be invited to submit short written descriptions of their work. However, documentation of RtD processes and physical outcomes will be emphasized above written research results. The selection criteria in the CFP will be: 1) Proposed work must involve design processes and products, 2) must be created and used within a research framework or with research goals, and the authors must 3) speak to the uses, goals, and outcomes of the work in relation to temporality. We welcome diverse documentation and exhibition format including but most certainly not limited to image, text, website, application, video, audio, performance, code, and instructions.

We will ask authors to submit 1-4 page position papers in the ACM CHI extended abstracts template, and will welcome flexibility, as with pictorial submissions.

The website www.thingsofdesign.info will be used to advertise the workshop, communicate to accepted participants, and help disseminate the work pre- and post-workshop. Workshop papers will be submitted through the website and then reviewed by organizers.

The collective social media accounts of the organizers and their personal academic networks—which are notably diverse and international—will be used to advertise the workshop, and social media will be used to expand the audience before, during, and after the workshop - both inside and outside the CHI community.

We further encourage participants to submit design objects that can be deployed for a six to twelve-months long-term deployment, using the workshop as an initiation point. Before and after the workshop, we will support these deployments logistically and ensure that we report on them for the following *objects of design* workshop.

6 IN-PERSON ONLY WORKSHOP

This workshop aims at collectively and materially experiencing, understanding, and curating a shared portfolio of *objects of design* and relating temporal aspects and considerations. Further methods at the workshop are equally hands-on and highly interactive, and additionally, we strive for high-quality photographs of all tangible research outcomes presented at the workshop. To accommodate these goals, we decided on a design studio approach that benefits from researchers gathering in person.

Although the workshop will be hosted in person only, we will have avenues for participants who may not be able to attend to experience the outcomes of the workshop. All participants will be provided access to a collective visual board, where the collective portfolio is curated. During the workshop, insights drawn from the activities will be documented there for collective and synchronous

discussion. Afterwards, workshop materials and summaries of each activity will be shared through the *objects of design* website. A Slack channel and Miro Board will be created and maintained for participants engaging in long-term deployments.

7 WORKSHOP STRUCTURE

This one-day workshop will be held on-site at the conference. It will be designed to facilitate discussions and tangible, hands-on interaction with the *objects of design*. Building on the organization of previous successful *objects of design* workshops at CHI and DIS [2, 13–15], the format of the day consists of activities that include studio-style critique, the creation of affinity diagrams, a collective portfolio, and small/large discussion groups to initiate long-term deployments. In what follows, we provide details of the workshop structure and activities.

7.1 Time and Activities

09:00–9:30 Welcome and introductions by organizers; overview of workshop

09:30–11:00 90-minute studio-style critiques and discussion of participants' RtD artifacts

(1st 1/2 of participants)

11:00–11:30 Group discussion

11:30–13:00 Lunch (off-site)

13:30–14:30 90-minute studio style critiques and discussion of participants' RtD artifacts

(2nd 1/2 of participants)

14:30–15:00 Discuss and document temporal aspects of RtD artifacts

15:00–15:30 Coffee break

15:30–16:30 Breakout sessions

1) *initiating long-term deployments* & 2) *further themes identified by participants*

16:30–17:30 Discussion moderated by organizers directed toward unpacking key methodological questions,

next steps, planning of publication and follow-up workshop

7.2 Accessibility and Expected Size of Attendance

We aim for a design studio-style workshop with a maximum number of 25 participants. Participants will be asked about their accessibility requirements, and we will ensure these are in place for the workshop.

8 POST-WORKSHOP PLANS

During the workshop the organizers will carefully document the activities and exhibits. Immediately following the workshop, the organizers will update the workshop website so it can serve as an archive and repository for position papers and further outcomes. This resource can then continue to serve as an archive both for researchers and educators when teaching RtD methods and objects in the classroom. The organizers will also explore the possibilities of a special issue of a journal, such as TOCHI, based on the workshop goals and themes, with the aim to report on the outcomes and long-term deployments.

9 CALL FOR PARTICIPATION

Research through Design (RtD) is an established form of research in Human-Computer Interaction that involves producing, documenting, analyzing, and reflecting on tangible *objects of design* as a way of generating knowledge. Since 2016, the *objects of design* workshop series provides a venue at CHI for RtD practitioners to present and discuss tangible *objects of design* in a hands-on manner, similar to a design studio, with the intention of expanding forms and practices of RtD and its relationship to broader HCI methods. This years' workshop aims to gather design researchers to interact, expand, and reflect on the material design outcomes of RtD through a *temporal lens*. Our goal is to explore and reflect on the temporal dimensions of Research through Design (RtD), including how time impacts the creation, use, and evolution of design artifacts. Reporting on RtD processes and design objects often lacks temporal attunement, obscuring entangled knowledges, and obfuscating ethical issues and future effects, while long-term deployments of design objects are impractical within the logics of academic funding and career cycles. We seek diverse contributions from design researchers with experience or interest in the temporal aspects of RtD. Relevant topics include long-term deployments, self-use studies, probes, exhibitions, and public engagement. Before this background, we invite design researchers to discuss and reflect on the temporal aspects of research products, and ask:

- How do temporal aspects of design artifacts contribute to new knowledge in design research?
- How does time impact the design, decay, evolution, and refinement of design artifacts?
- How do long-term deployments or other unconventional deployments of design artifacts (e.g., self-use studies, probes, exhibitions, public engagement) contribute to new knowledge in design research?
- What organizational, methodological, and technological challenges are associated with such deployments?
- How do temporal aspects influence ethical considerations and future implications of RtD projects?

This workshop will also enable attendees to initiate long-term deployments, to involve fellow participants in other unusual deployments, and to report on these findings in time for a proposed 2026 *objects of design* workshop, which will celebrate the 10th anniversary of the *objects of design* workshop series.

Submission Requirements:

This in-person workshop fosters tangible, hands-on experience with the objects of design under consideration. Participants are invited to submit a position paper in SIG-CHI Extended Abstract format (1–4 pages), including visual content, describing their *object of design* with a focus on temporal aspects. We encourage participants to use the workshop to deploy long-term engagements with their objects of design with fellow participants.

Participant Selection Criteria:

Participants will be selected based on the fit of their position paper to the call for participation. At least one author from each accepted submission must attend the workshop. All participants are required

to register for both the workshop and at least one day of the CHI 2025 conference.

Publication:

Accepted position papers will be published on the workshop website [www.thingsofdesign.info](http://thingsofdesign.info). The organizers will also explore the possibilities of a special issue of a journal, such as TOCHI, based on the workshop goals and themes, with the aim to report on the workshop and long-term deployments with the 10th anniversary of the *objects of design* workshop series in 2026.

10 How to Submit:

For more details and to submit your abstract, please visit our workshop website: <http://thingsofdesign.info>

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