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Research Through Design: Twenty-First Century Makers and Materialities

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- 1 RTD 2015 website, <http://research-throughdesign.org/2015> (accessed October 21, 2016).
- 2 Christopher Frayling, "Research in Art and Design," in RCA Research Papers 1, no. 1 (London: Royal College of Art, 1993), 1–5. Note that in this work Frayling references the research studio practice of Bruce Archer and colleagues at the Royal College of Art.
- 3 Bruce Archer, "The Nature of Research," *Co-Design* (January 1995): 6–13.
- 4 For the former, see Daniel Fällman, "The Interaction Design Research Triangle of Design Practice, Design Studies, and Design Exploration" *Design Issues* 24, no. 3 (Summer 2008): 4–18. For the latter, see Ilpo Koskinen, John Zimmerman, Thomas Binder, Johan Redstrom, and Stephan Wensveen, *Design Research Through Practice: From the Lab, Field, and Showroom* (Amsterdam, the Netherlands: Morgan Kaufmann, 2011).
- 5 A number of design researchers has discussed knowledge generation in research through design, including Nigel Cross, "Editorial," *Design Studies* 16, no. 1 (1995): 2–3; Alain Findeli, Denis Brouillet, Sophie Martin, Christophe Moineau, and Richard Tarrago, Research Through Design and Transdisciplinarity: A Tentative Contribution to the Methodology of Design Research (paper presented at Focused: Swiss Design Network Symposium, Berne, 2008); Ken Friedman, "Research Into, By, and For Design," *Journal of Visual Art Practice* 7, no. 2 (2008): 153–60; and Kristina Höök and Jonas Löwgren, "Strong Concepts: Intermediate-Level Knowledge in Interaction Design Research," *ACM Transactions on Computer-Human Interaction (TOCHI)* 19, no. 3 (2012): 1–18.

The Research Through Design (RTD) conference is a new, experimental dissemination platform to support design practitioner-researchers. Founded in 2013, RTD was established as a biennial conference series with RTD 2015, held in Cambridge, UK (March 25–27, 2015).¹ This special issue brings together a set of perspectives from those who attended the RTD 2015 conference, offering new experiential insight about what it means to practice, disseminate, and understand design-led inquiry within academic communities and beyond.

"Research through design" has been used for over 20 years within the design community as a distinct term to describe practice-based inquiry that generates transferrable knowledge. The term has gained traction in many diverse fields of design, from fashion, for example, to human-computer interaction (HCI). Arguably, research through design is not a formal methodological approach with a particular epistemological basis. Instead, it is a foundational concept for approaching inquiry through the *practice* of design; and as a concept it has been subjected to multiple articulations and interpretations both by individuals and by institutions. In 1993 Sir Christopher Frayling, in dialogue with Bruce Archer and others in the design research studio at the Royal College of Art, articulated a core conceptual tension fueling discussion on the subject: that "research practice" has historically been associated with the scientific method and with "words not deeds," which Frayling suggested might be antithetical to what design practitioners do.² Distinctions made between different design research approaches—for example, the "into, through, and for" practice model put forward by Frayling and the "about, for, and through" practice model put forward by Archer³—have since been contested and critiqued. Some commentators when making sense of research through design have drawn distinctions between the nature of design research practice in the different working cultures of academia and industry and in different working contexts.⁴ Others have investigated the different forms of knowledge that design and its artifacts can generate and transfer.⁵ As academic

communities of researcher-practitioners form, more questions about the nature of research through design are raised, including questions about design education, professional practice, its relationship to epistemology, and the challenges of its dissemination.⁶

The RTD conference was founded in response to this maturing academic discourse, seeking to make space to demonstrate and engage with the very practices and artifacts of design.⁷ RTD intends to accommodate all areas of design research and has international reach. As a dissemination platform, it is distinctive, comprising a curated exhibition of design research artifacts and roundtable discussions in “Rooms of Interest.” Work in the conference program is transported from the exhibition space into the Rooms of Interest for presentation and discussion. The RTD conference submission process involves the proposal of an exhibition piece, supported by a paper that describes a research-through-design process. With this format, RTD aims to offer an alternative to the traditional conference presentation of papers in darkened auditoriums and to support a more discursive, experience-centered setting that places the presentation of design artifacts at the heart of proceedings. The series is further distinguished by its dialogical and open ethos and its values of inclusivity and egalitarianism; these qualities underpin the creation of a supportive but still critical context for research engagement.

The RTD 2015 program had three tracks of Rooms-of-Interest sessions, punctuated by Provocations delivered by invited guests: Nelly Ben Hayoun; John Bowers, Bill Gaver, Jonas Löwgren, and Carl DiSalvo (in conversation); Amy Twigger Holroyd and David Gauntlett (in conversation); Sir Christopher Frayling; and Tim Ingold.⁸ These Provocations replaced the traditional keynote with the aim of inviting a more discursive form of engagement that is also supported in the Rooms-of-Interest sessions. A Provocation by Ben Hayoun featured her strategy of “total bombardment” for making design-as-inquiry to reach new audiences, and to disrupt and intervene. Twigger Holroyd and Gauntlett invited the delegates to discuss with each other the notion of “making a difference” through a design research practice that is socially engaged. A Provocation panel discussion, moderated by DiSalvo, allowed delegates to address direct questions to Bowers, Gaver, and Löwgren. In a Provocation filmed for RTD and presented as a series of clips for delegate discussion, Frayling revisited his 1993 essay and advocated for design-led research as a development of research through design.⁹ He championed designers’ cross-disciplinary collaborations, where design is “leading the charge” in generating research programs; and he articulated pertinent concerns for current design education, advocating that, as designers, we should “reclaim the vocabulary that fits us” when articulating our work (and move away from scientific modes of research).¹⁰

6 On design education, see Dorthe Thorning Mejlhede, “Design Research and Art-Based Design Education Programs,” *Design Issues* 31, no. 4 (Autumn 2015): 44–55. On professional practice, see Marijn Van de Weijer, Koenraad Van Cleempoel, and Hilde Heynen, “Positioning Research and Design in Academia and Practice: A Contribution to a Continuing Debate,” *Design Issues* 30, no. 2 (Spring 2014): 17–29. On the relationship of research through design to epistemology, see William Gaver, “What Should We Expect from Research Through Design?” in *Proceedings of the 2012 SIGCHI Conference on Human Factors in Computing Systems* (New York: ACM, 2012), 937–46, DOI: 10.1145/2207676.2208538. On the challenges of disseminating research through design, see Nadine Jarvis, David Cameron and Andy Boucher, “Attention to Detail: Annotations of a Design Process,” in *Proceedings of the 7th Nordic Conference on Human-Computer Interaction* (New York: ACM, 2012), 11–20, DOI: 10.1145/2399016.2399019.

7 Jayne Wallace, Joyce Yee, and Abigail Durrant, “Visual/Textual: Documenting the Realities of Research Through Design Practice,” *Studies in Material Thinking* 13 (2015), <https://www.materialthinking.org/papers/202> (accessed January 4, 2017).

8 For details of the Provocations at RTD 2015, see <http://researchthroughdesign.org/2015/programme.html> (accessed January 4, 2017).

9 Sir Christopher Frayling, RTD 2015 Provocation Part 1: Research Through Design Evolution, <https://vimeo.com/129775325> (accessed January 4, 2017).

10 Sir Christopher Frayling, RTD 2015 Provocation Part 4: RTD in Design Education, <https://vimeo.com/129778507> (accessed January 4, 2017).

Figure 1
Making Space session at RTD 2015.
Image © Abigail Durrant.



Ingold, for his Provocation at the closing plenary, fixed lengths of string across the space of the auditorium. In this augmented setting and while manipulating the string, Ingold invited the delegates to attend to individual experience and the making of design research in terms of materials and movement. Manipulating the lengths of string in his hands, Ingold demonstrated how making things and working with materials is *constitutive* of knowing and understanding. He challenged an established notion: that there can be no making without prior design and that artifacts can only be judged as complete and “ready for use” in reference to a preconceived, intended design. His Provocation addressed, in a material and performative sense, a core tension in understanding design and making as a knowledge-generating activity. Ingold emphasized how design is fundamentally processual and relational in a practice of “gathering” and transforming materials. His provocation resonated strongly with the RTD conference attendees, as is reflected in this special issue.

Connecting with Ingold’s ideas, and supporting the RTD ethos, the 2015 program also allocated time for delegates to interact with work presented in the dedicated exhibition space. This Making Space session also enabled delegates to engage with more performative pieces beyond the roundtable configuration of the Rooms of Interest. This session was well received and formed a significant aspect of the dissemination of work (see Figure 1).

By developing this experimental format for RTD, the conference steering committee members, who also are the guest editors of this special issue, have aimed to carefully engage in the work of *conference design*¹¹—an endeavor that Peter Lloyd recognized as being important in his closing plenary talk at the Design Research Society (DRS) 2016 conference.¹² The DRS conference series also has designed its two most recent conferences to incorporate more discursive features, introducing both Conversations and Debates.¹³ In developing the RTD conference, we have also tried to strike a balance between establishing the distinct features of its format and being open to new developments in response to feedback from attendees of each edition. In this way, the conference design is ongoing; it is grounded in experiential insight from each conference event and is open to new forms of experimentation.

The contributions to this special issue have been invited from those who attended RTD 2015 and include two kinds of articles. We approached all of those who presented work at the conference, inviting them to submit accounts of research-through-design projects that extended papers originally included in the RTD 2015 proceedings. We also invited reflective commentaries from those who attended the conference as delegates, about both their conference experience and how it informed their understanding of research-through-design practice.

The collection offers the *Design Issues* readership a set of idiographic examples of how the practice of research through design is being communicated, disseminated, and made sense of. The selected articles reflect not only the RTD ethos and values, but also the theme of the 2015 edition: Twenty-First Century Makers and Materialities. With this theme, we sought to stimulate reflective discussion on the professional and potentially hybrid identities of design researcher-practitioners, including those designers new to research or early career design researchers. We also were interested in drawing attention to the multi-disciplinary collaborations that often characterize research-through-design projects, and how design expertise can play a central role in pursuing research inquiry within collaborative project teams, or with stakeholders and citizens.¹⁴ Another goal was to give voice to those in the midst of ongoing project work; building on the notion of the design school critique, or “crit,” we were keen to explore how RTD could offer a useful opportunity for critical reflection in the continuing development of practice. Importantly, some of the artifacts presented at RTD 2015 represented research outcomes, but not all; other presented artifacts revealed an aspect of working with materials, or were positioned as provisional pieces—works in progress. Being open to the critical interpretation of design artifacts as research objects was also promoted at the conference.

11 Abigail C. Durrant, John Vines, Jayne Wallace, and Joyce Yee, “Developing a Dialogical Platform for Disseminating Research Through Design,” *Constructivist Foundations* 11, no. 1 (2015): 8–21, <http://www.univie.ac.at/constructivism/journal/11/1/008.durrant> (accessed October 21, 2016).

12 Peter Lloyd, DRS 2016 Closing Plenary, July 1 2016, Brighton UK, <http://www.drs2016.org/programme/> (accessed January 30, 2017). See also Peter Lloyd, “From Design Methods to Future-Focused Thinking: 50 Years of Design Research,” *Design Studies* 48, no. C (2017): A1–A8, <https://doi.org/10.1016/j.destud.2016.12.004> (accessed May 25, 2017).

13 See <http://www.drs2016.org/conversations/> and <http://www.drs2016.org/debates/>, respectively (accessed October 21, 2016).

14 Frayling raised this point in his pre-recorded Provocation for the closing session of RTD 2015.

In this special issue, we aim to capture these interests and considerations, demonstrating the nature of research through design by presenting both individual accounts of practice and commentaries on practice. Taken together, this collection represents a pragmatic effort to address the challenges of documenting and disseminating research through design, which provides the impetus for the conference. Through this effort, we take modest steps to articulate ideas about how research through design might be understood and shared. We capture voices from the academic community that represent the different career stages of researchers, and we seize the opportunity to give voice to papers that may not have had a place in more mainstream design research publications.

First, Amy Twigger Holroyd describes her doctoral research, which investigated openness in fashion. She lays out her generative research through design approach, scaffolded on a creative collaboration with amateur knitters. At RTD 2015, she presented folk fashion garments that had been made by experimenting with and specifically “reknitting” existing patterns; through this work, she challenged the workings of the fashion system, addressing its societal and environmental effects.¹⁵ In “From Stitch to Society: A Multi-Level and Participatory Approach to Design Research,” Twigger Holroyd extends the account of this project by detailing the development of conceptual tools for communicating her approach and her insights to others. Offering her perspective “from stitch to society,” she connects the individual maker’s experience of wearing homemade clothes to fashion culture dominated by mass-production. As a maker herself, fostering dialogue with other makers through a practice of “reknitting,” she generates insights on multiple scales, from “opening garments,” to “opening design,” and ultimately to “opening the fashion system.” Her findings highlight the significance of shared culture for folk fashion to flourish. She further reflects on her shifting identity in the course of her inquiry, toward being a meta-designer-maker who designs both garments and resources for social change.

Ingold’s closing Provocation at RTD 2015 features in the commentary pieces in this issue. In “What Lines, Rats, and Sheep Can Tell Us,” Alex Taylor reflects on the concepts that Ingold offered up in his Provocation as resources for “thinking and working through design.” Through the metaphor of the line, the practice of design becomes about perpetual movement, emergence, and transformation, with Ingold leading us to see the “always becoming” in our engagement with materials. Taylor extends Ingold’s ideas through the philosophy of Vinciane Despret, inviting readers to further reimagine relations between humans and non-humans in ways that design makes possible. As with the

15 Amy Twigger Holroyd, “Re-Knitting: Exploring Openness Through Design,” in *Proceedings of the 2nd Biennial Research Through Design Conference*, Cambridge, UK, March 25–27, 2015, DOI: 10.6084/m9.figshare.1327993.

opening of garments to enable a flourishing of folk fashion in Twigger Holroyd's practice, Taylor draws attention to the way in which, through our unfolding dialogical relations with materials—and by embracing openness and possibility—we become *more than human*, enabled to enable the capabilities in others.

We find connections between this way of “thinking and being” in “The Instrument as the Source of New in New Music,” by Kristina Andersen and Dan Gibson. In this piece, the authors present an autoethnographic account of their collaborative process of research through design, exploring the potential of a new instrument for opening up new possibilities in music. Their inquiry involves rebuilding a cello and becoming oriented to it as a site for the complex modification, hybridization, and processing of acoustic and electronic sound. Resonant with Ingold's Provocation, the authors describe building resources out of string to physically explore the material features of the instrument. They deconstruct the cello into material elements and combine these elements with technology from which experiential prototypes can be made and used for performance. This article extends work presented at RTD 2015; Gibson played the modified cello artifact at the Making Space session.¹⁶ Andersen and Gibson's piece in this issue focuses on the evolving, embodied dialogue between the musician (Gibson) and the instrument, which defined the creative process. The authors understand this dialogue to have opened up more possibilities than solutions in the design space.

The contribution by Jane Norris, “What Crumpling a Polyphonic Map Can Reveal,” captures her reflections on how she engaged people with her work at RTD 2015. In the conference program, Norris presented an exploration of research through design as making bowls that uniquely combine materials used in different historical eras.¹⁷ Working with the RTD format and the Making Space session, Norris came up with an innovative means to afford delegates a “tactile engagement” with her approach to research through design: a physical “paper crumpling” exercise for them to do. Delegates found the experience to be highly captivating—even revelatory; through a simple task, they transformed the qualities of the paper in their hands. In her commentary, Norris makes sense of the space and time that she created for delegates' direct and dialogical engagement with materials, as a means to communicate aspects of her practice.

In “Planting and Tending to Digital-Nature Hybrids in a Walled Kitchen Garden,” Liz Edwards and colleagues extend their RTD 2015 paper by discussing a collaborative project to support visitor engagement with a public garden through the design of three interventional artifacts.¹⁸ Although their initial inquiry was guided by theory, the approach to research through design that

16 Kristina Andersen and Dan Gibson, “The Instrument as the Source of New in New Music,” in *Proceedings of the 2nd Biennial Research Through Design Conference*, Cambridge, UK, March 25–27, 2015, DOI: 10.6084/m9.figshare.1327992.

17 Jane Norris, “Making Polychronic Objects,” in *Proceedings of the 2nd Biennial Research Through Design Conference*, Cambridge, UK, March 25–27, 2015, DOI: 10.6084/m9.figshare.1327941.

18 Liz Edwards, Paul Coulton, and Mike Chiasson, “Walking off the Garden Path: A Design Journey,” in *Proceedings of the 2nd Biennial Research Through Design Conference*, Cambridge, UK, March 25–27, 2015, DOI: 10.6084/m9.figshare.1327941.

they adopted created the space for a “way of knowing” to emerge from the interactions that took place between their artifacts, people, and the garden. They also discussed the iterative nature of their design process, understanding it as ongoing and unfinished. They draw on the metaphor of the growing garden to reflect on their developing understanding about materials, values, place-making, and the unfinalizability of the designs.

Rebecca Taylor offers a personal account of the connections she has made between attending the RTD 2015 conference and her wider experience of developing her practice of research through design as an early career researcher. She draws upon two perspectives from her doctoral project to explore her concerns with her practice of research through design: first, the ethics of design interventions and the responsibility of the design researcher, and second, the choice of the theoretical lens that informs her practice and the language that she uses to describe it. Her commentary offers a window onto the often-messy process of her work as it interweaves with everyday life, and she demonstrates a process of personal reflection on this subject.

RTD 2015 introduced an alternative way to document the dissemination format established in 2013. Pairs of amateur “scribes,” who had professional skills in the creative arts, were invited to sit in on the Rooms-of-Interest sessions and Provocations to capture the discussions and interactions that took place. Scribe documentation combined drawing, sketching, note-taking, and even musical compositions (performed post hoc). Scribe materials were presented back to delegates later in the RTD 2015 program, at two plenary sessions. We previously examined and reported on this “scribing process,”¹⁹ and we include in this special issue an article authored by the RTD 2015 Documentation Chairs and the scribes themselves, offering personal reflections on their experience of scribing. “Scribing as Seen from the Inside: The Ethos of the Studio,” is a multi-voiced commentary, intending to reflect the polyphonic, experimental, and often intuitive nature of the “scribing” endeavor. Collective sensemaking is synthesized on what it means to extend research using design dissemination practices within and beyond the collocated interactions at RTD.

Our final contribution is from Ian Lambert and Chris Speed, General Chairs of the RTD 2017 conference. In their commentary, “Making as Growth: Narratives in Materials and Process,” the authors reflect on the widening recognition of practice-based research in the academy and on the challenges presented therein for articulating forms of knowledge that creative practice generates. With further reference to Ingold, plus the work of RTD 2015 presenters and other contemporary designers, Lambert and Speed highlight making as a “process of growth,”

19 Durrant, Vines, Wallace, and Yee, *Developing a Dialogical Platform*.

raising the significance of narratives that might illuminate making and the maker's engagement with materials. That the theme of "making as growth" is carried forward to the 2017 edition in the RTD series seems fitting. RTD 2017 was held at the National Museum of Scotland, where contemporary and historical objects from the museum collection were juxtaposed with the exhibited artifacts of the RTD 2017 program. Lambert and Speed aim to provide a setting at RTD 2017 that enables artifacts and their makers to "redraw the geographies of design," for new narratives, new inquiries, and growth-through-making to take place.

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