Annotating Design Ephemera: Communicating Research-through-Design in Progress

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INTRODUCTION

Research through design (RtD) [1,4] has gained interest in HCI as a research methodology, albeit one where notions of what forms of knowledge can be produced and how such work can be evaluated are live topics for debate [e.g. 5, 7, 12]. We see interaction design practice, as RtD, as capable of producing exemplars of *what* can be designed and *how* to inform broader programmes of research [2], and have used designing as a central means of developing shared enquiries into digital devices and systems to support remembering [3] and Christmas celebration [10].

Much discussion of RtD in HCI harks back to Frayling's essay [4] but we also refer to Archer's (Frayling's colleague) contemporaneous discussion [1] of research through (creative) practitioner action as being particularly suited to "*circumstances where the best or only way to shed light on a proposition, a principle, a material, a process or a function is to attempt to construct something, or to enact something, calculated to explore, embody or test it*". In this original description, RtD produces knowledge of the *specific* what and how of design but recent discussions demonstrate how design practice can produce more *general* transferable contributions as intermediate knowledge [6] – e.g. Zimmerman et al. [12] observe that RtD can produce "*new problem framings that suggest preferred states for the world*", and "*new product forms that broaden the space of design*".

Forms of intermediate knowledge such as Annotated Portfolios [5], Strong Concepts [7], and Design Exemplars [2] are valuable in communicating RtD and enabling others to critically evaluate and build upon it. However they all emphasise the presentation of mature design work – largely 'finished' designs with supporting accounts of their design and the ideas (theories?) explored and expressed in them. We have, at times, had difficulty communicating our research within CHI papers. Of course, this may be due to imprecise explication but we have often reflected that it may be because reviewers have been unable to appreciate in what sense the design work presented was *in progress*. This is not to question the competencies of reviewers (who may have been justified in criticising the work), rather we suggest there is a role for communicating *RtD in progress* and question how this may be done. Art and design schools, commercial design companies and, increasingly, interaction design research groups regularly use 'crits' (collective critique by colleagues on completed and in-progress creative work) to provide constructive feedback, additional design insights and develop creative practice. Why not then encourage such 'crits' between research groups via sharing RtD in progress?
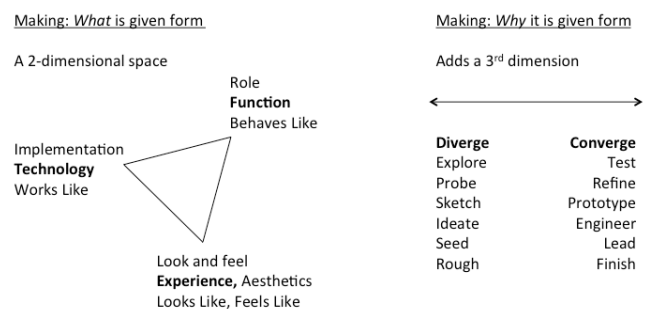

Figure 1: Dimensions of Sketches

COMMUNICATING RTD MAKING

Annotated Portfolios, Strong Concepts, and Design Exemplars (rightly) emphasise what is made during design work as essential in communicating intermediate knowledge that serves both to exemplify a *specific* instance of what can be designed but also to open up a broader design space and inspire others' designing. For RtD in progress, this would then include drawings, models, mock-ups, prototypes (in physical, digital and experiential forms) etc. – anything made for an enquiring purpose rather than simply to embody a pre-formed idea, i.e. 'sketching' (in the broadest sense of exploratory making) having instrumental use in problem-setting [11] and within interactive cognition [6]. Yet such 'design ephemera' alone do not give sufficient insight into the creative practice in which they figure, additional information is necessary to explain the ideas and understanding being explored. Discussions of prototyping often unpick relative focus on aesthetics, function and technological construction [e.g. 8], i.e. *what* aspects of design ideas are given form. But *why* making is undertaken also needs explanation (from divergent exploration/ideation to convergent resolution/refinement). This adds a third dimension to a two-dimensional space (Figure 1.).

We offer a notation diagram for explaining the *what* and *why* dimensions of design ephemera to enable others to understand it within an ongoing RtD enquiry. A point is plotted in a 2-D space according to the respective degrees to

which what was made expresses and explores function (F), technology (T), and experience of use (E); and the height of the line represents the degree of convergence to a 'finished' design. We accept that this diagram is limited. The plotted dimensions only reflect the designer's *intention* in making not how other design participants might understand what is made, and particular artefacts may have dual purpose in both divergent exploration of some aspects whilst convergent resolution of others. But we hope it offers insight into others' designerly thinking [9], e.g. we now provide annotated design ephemera from our own work.
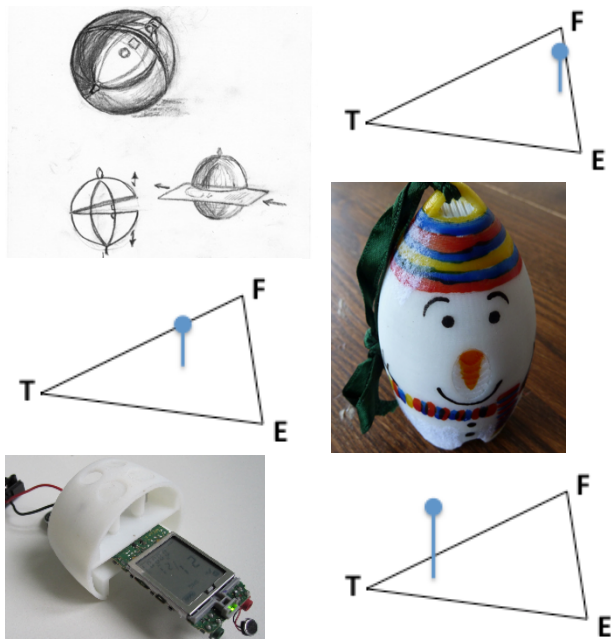

Figure 2: Sound Bauble – from speculation to hardware hack

SKETCHING DIGITAL CHRISTMAS

Since 2009 we have explored the opportunities that Christmas celebrations present for the design of interactive artefacts. We have used making as enquiry [6] to understand and speculate upon: social practices associated with Christmas; relevant qualities for digital artefacts in celebrations; and, how digital technology can support and extend such social practices, and create new practices that reflect relevant human values. Making was helpful both in sharing thinking between us as research collaborators, and developing this understanding through presenting and discussing artefacts with potential users.

Figure 2 shows three artefacts produced during this work. The first was a drawing made and shared by one of us with the others that suggested an enquiry into how interactive Christmas baubles might capture moments that can then be forgotten and rediscovered. The second was an operational mock-up of a 'sound bauble' demonstrated at a user workshop to prompt discussion of how *forgetting* and *rediscovery* might fit into family celebrations. The third was a robust working model of a sound bauble deployed with families over Christmas, which enabled us to further

our enquiry into forgetting/rediscovery whilst also exploring how existing hardware could be 'hacked' to provide the necessary functionality. These artefacts moved from a speculation about function and experience that inspired subsequent research, to a rough working prototype that deliberately left function and aesthetic form open for user discussion, to a more robust prototype for extended use by participants.

CONCLUDING QUESTIONS

Our proposal for communicating in-progress RtD raises several questions most of all *is it worth it?* The current practice of sharing (largely) completed design work is more amenable to critical evaluation and extension of the research because finished artefacts are more straightforward to understand than 'sketches' where the designer's intention may vary across several dimensions. If we are to share such design ephemera for the purposes of gaining critical insights from others and developing further research, then these dimensions need to be expressed. Our second question is then *how could our (or other) diagrams/annotations help?* Finally, if we are to use such annotated artefacts to communicate RtD, how can others trust that this making is more than idle scribbling and is evidence of design as enquiry? Here, showing a progression and/or development between artefacts may both demonstrate the 'designerliness' of the creative practice and the development of the enquiry.

Through participating in this workshop we would like to discuss the potential of annotated design ephemera for sharing the intermediate knowledge developing in RtD in progress as a means for fostering collaboration and enriching enquiry.

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