

Come Follow the Drifts of Design Research: Narrating Accounts of Design Knowledge Inspired by Non-Academic Literary Genres

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ABSTRACT

As forms of change in design research, drifting, reframing, and emergence has been the focus of recent discussion in the field. This discussion has raised how HCI and design researchers should present changes and drifts within scholarly accounts and has called for increased attention, creativity and innovation in the documentation of design research processes. We argue that design researchers should seek inspiration from and would find benefit in non-academic literary techniques. To demonstrate this, we present a case study of a design research thesis, which faithfully narrates its research journey by taking inspiration from Jack Kerouac's prose in *On the Road* and W.G. Sebald's discursive use of uncaptioned images. We believe that this non-traditional scholarly account could be a valuable starting point for a conversation around alternative documentation techniques for capturing drifts in design research. We illustrate how this approach to documenting drifting can both reveal how knowledge is generated through design exploration, as well as reach broader audiences by offering engaging and accessible ways to communicate academic explorations.

1 INTRODUCTION

As an increasingly recognized approach to Human Computer Interaction (HCI), design research is unique in its position to bridge the design practice with knowledge production. Recent scholarship have engaged the prevalence of "changes" in the design research process. They have discussed how these changes can be in method or implementation, in framing and goal, or even in the research topic, as researchers work and discover successes and failures. Terms such as drifting [4, 6], emergence [3], and reframing [8] are used to describe such changes. We consider "drifting" to be the umbrella term here. More specifically, drifting is defined by Krogh and Koskinen as "those actions that take design away from its original brief or question and lead to a result that was not anticipated in the beginning"[4].

However, researchers have noticed that these drifts in design research seldom make their way into academic publications [3, 8]. Gaver et al. suggest that the reason the researchers hesitate to report emergence in HCI papers is due to the implicit tension between design practice and the fields such as engineering where rationalization is considered a valuable trait in research reporting [3]. Within engineering and computer science, the most prevalent form of research is hypothesis-driven and this often leads to a linear, quest-driven narrative in research reporting. Design research, however, has its own unique qualities and values that should guide scholarly accounts.

Several authors have noted the potential harms created by under-documenting drifts. Zimmerman et al. argue that presenting a new

frame without revealing what led to it enhances the impression that "good design is done by exceptional people who simply have brilliant ideas" [8]. Gaver et al. warn that a purely goal-oriented narrative applied to design research loses the insights and knowledge that stems from early explorations and open-ended inquiry that often characterizes design research processes [3]. Similarly and in the context of autobiographical design, Neustaedter and Sengers encourage authors to present their true design process so that reviewers of scholarly contributions can "better judge the work" [5].

Beyond *what* to document about the design research process, there is a vast space to explore *how* to document the research process, and this is especially true of drifts. Gaver et al. recently suggested three strategies to narrate emergence in design research [3]. We consider emergence as a possible result of drifting, and their suggested strategies have promising implications for documenting this broader phenomenon. Here we directly quote from Gaver et al. [3] the strategies here:

- *Emergence Strategy No.7 - Present design research as a journey, not a quest.*
- *Emergence Strategy No.8 - Tell the full backstory.*
- *Emergence Strategy No.9 - Seek inspiration from different literary genres.*

Taking inspiration from these prompts and noting that no one, to our knowledge, has yet experimented with these strategies, our work explores the way in which narrative strategies from other non-academic literary traditions can enrich accounts of design research.

In our work, we explore applications of these strategies within a design research thesis prepared by the first author. The thesis was originally intended to be a design research project that produced a system or an artifact. After several drifts that led to a series of conceptual and technical reworkings of the project, we noted a tension between presenting the artifact and presenting the journey of research. This echoed the challenges and opportunities voiced in [3]. This led us to experiment with different narrative approaches where we compiled the documentation generated during the project's journey into the work presented here.

This thesis project centered on inflatable air pouches as a manipulable interface for sound generation that is mediated through machine learning. We tell the full "backstory" by using the interwoven narrative techniques to reveal the personal motivations, literature reviews, and acts of making, as well as feedback and critique that led to different framings of the project. We engaged Strategy No.7 by documenting a faithful journey with four major "encounters", that is, four different framings that emerged during

Journal A

[1/23] Strangely, it still conveys a very strong vibe, despite the randomness and low volume, when the chord track was on, it was very hard for to deviate from 1) the note that it's playing, due to the tendency to harmonize? 2) the overall spooky, dark, weird mood, even when I want to sing some brighter melodies, like C E G major triads would be difficult. Maybe it's just me that get easily swayed into the background music?
Why would these chords be so magical?

Letter A

I had a lot of trouble with recording the touch pouches, which were not inflated and not on-body, me singing, and the machine sounds. In what I achieved to show Professor Jesse Stiles, I was singing and tapping on a piece of dubiously looking, partly shiny piece of plastic fabric laid over my arm in a very small frame on the upper right corner of the video, and the main screen showed floating curves and bar charts as diagnostics (Fig. 32),

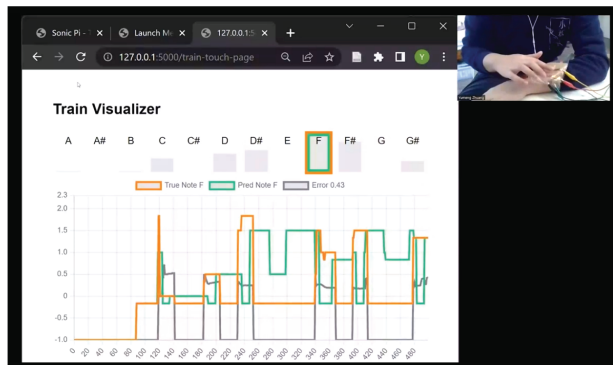


Figure 32: What I showed to Professor Jesse Stiles.

Letter B

and a distant humming of synths and chords could be heard with great care. It took me about 15 minutes to explain what this mysterious Zoom recording was about, with all the concepts of hidden labor in ML, intimate musical performance, and so on. Eventually, he arrived at the conclusion that I was trying to make a digital musical instrument with an unconventional input interface.

Main Text A

In reality, when I showed the recording of me interacting with the classifier pouch to J. Stiles, he concluded that I was trying to make a musical instrument with pouches and machine learning. It did not occur to him that there was any effort involved. Instead, he interpreted the system as an attempt to bring a novel form of interaction to music-making.

Letter C

This was of course very disappointing. Making a musical instrument did not touch on the speculative part, which according to me meant being something unusable. Nor did it touch

Figure 1: An example page from the thesis of the first author illustrating the interplay of the three writing styles to document a "disappointing" demonstration.

the iterative development of the pouches, the sensing system, and the machine learning approach.

We, in particular, focused on and deeply considered the role of Strategy No.9. In forming our design research account, we explored the value offered by multiple narrative styles operating at the same time; each affording a distinct perspective on the unfolding process. The three narrative styles are interleaved with one another to form

a holistic and integrated account of the design research journey. Specifically, the thesis is narrated in three styles (see Figure 1): the *letter style* inspired by Kerouac's 'On the Road', the *journal style* which uses direct excerpts drawn from the research journal from the first author, and finally, the *main text* style is content that the first author would report in an academic publication. The main text

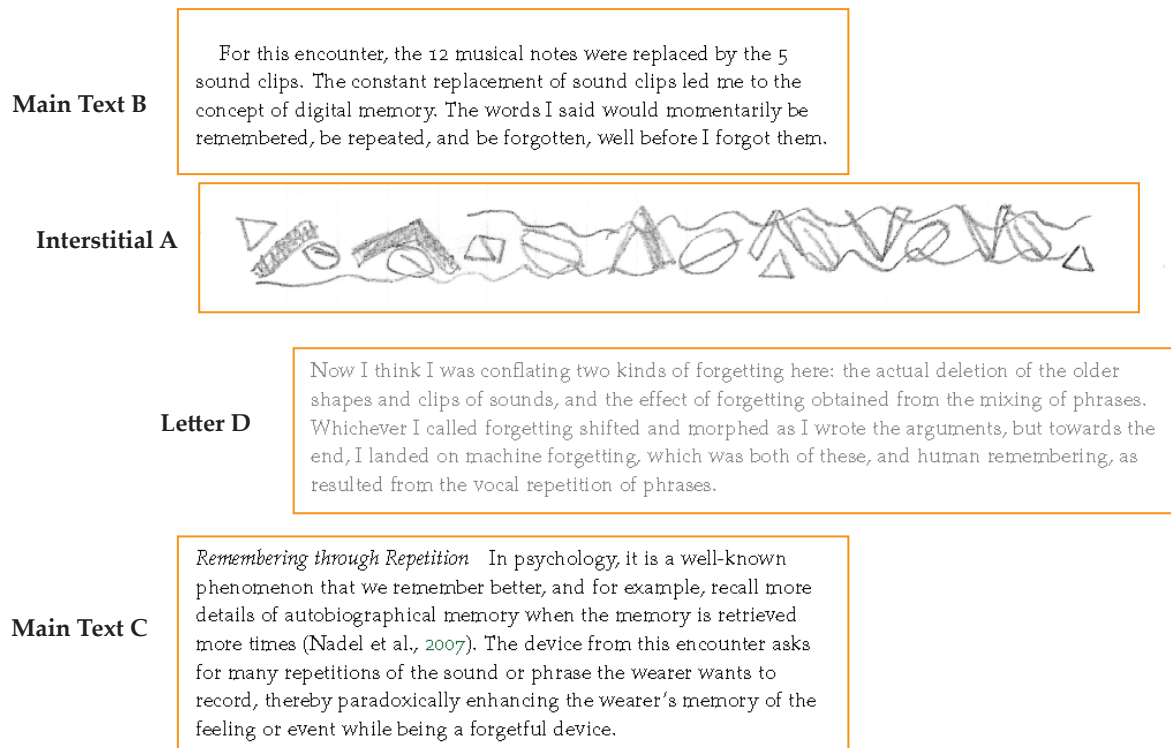


Figure 2: An interstitial image to provoke free associations as embedded in this example, as well as a main text paragraph providing background literature.

draws from drafts of the thesis document, and manuscripts prepared during distinct enactments of the project. These three styles interweave throughout the account of the journey and are visually identifiable by their differences in style – typeface, indentation, etc. – and authorial tone. In addition to the textual descriptions, images and illustrations are introduced. For this, we embed sketches, images, and mind maps that were produced during the research journey, as well as provocative illustrations that were prepared. Inspired by W.G. Sebald's books, these uncaptioned illustrations are used at times to support and at other times to create dissonances, to interrupt the flow of text, and to slow the reader at specific junctures.

We believe that our particular way of presenting an emergent design research journey – through its changes, reframings, encounters, and subsequent drifts – also leaves room for different and broader audiences to navigate design research, participate in getting to know, and potentially to evaluate the work. For example, the letter style is more light-hearted and conversational. This makes it an easier read than the scholarly main text. While, the journal style is messy, it intimately captures and reflects the moments of decisions by the author, as well as helping to characterize the felt experience of research. Although the main text situates the work in the academic discourse, the inclusion of mind maps and sketches visually depict snapshots of the research framing and provide access and understanding to readers. Finally, the provocative interstitials

invite readers to freely associate textual information with the hand illustrated forms and shapes (see Figure 2). We provide a few examples in the next section.

2 EXCERPT ANALYSIS

In this section, we provide two excerpts from the larger account. These excerpts offer examples as to how the three styles, illustrations and interstitials work together to tell the story of our design research journey.

2.1 Example 1: Documenting an Experiment from Three Angles

On the Road engages the readers in the form of “spontaneous prose”, the use of spoken words, and free associations [7]. This example illustrates how we drew inspiration from Kerouac's literary techniques.

Figure 1 is organized into five sections, each labelled with the style used. Journal A described the first author's experience using the an initial version of the system: “the overall spooky, dark, weird mood” that she perceived while testing the chord generation system. This draws from the author's own research journals, recording the first-hand experiences. Letter A and Letter B shifts the style and tone of the account. These sections describe the experiment she demonstrated to a reviewer. The letter adds her comments about the situation: “had a lot of trouble”, “dubiously looking, partly shiny

piece of plastic fabric", and "this mysterious Zoom recording". These comments have a light-hearted and reflective tone. Main Text A uses a more formal form to describe the discrepancy in understanding, and avoids personal reflections and comments. Quickly returning to spontaneous prose, Letter C captures how the author felt about this demonstration: "It was of course very disappointing". These three angles work to enrich the story of this particular moment in the design research, providing a set of perspectives (journalled in the moment, reflective prose, and more formal scholarly descriptions) that are integrated and that allow the reader to approach the content in a holistic way.

2.2 Example 2: Combining Uncaptioned Image with the Flow

W.G. Sebald engages the reader by blurring the line between the real and the imagined. Sebald does this by introducing images and illustrations that present ambiguous meanings and are either tangentially or unrelated to the adjacent text. This invites the readers make efforts to interpret possible meanings and relationships [2].

In this example, Main Text B describes the moment of arriving to a core concept of digital memory — one of the four main enactments within this journey. Letter D provides a post-hoc reflection upon a potential flaw in the argument. The interstitial image does not represent any of these concepts explicitly, but could be interpreted as implying associations. For example, the wavy lines could be seen as the existence of a piece of memory over time, and the varied shapes placed along the line could be seen as aspects of or content from the messy memory. The interstitial image is intended to provide the reader a break in reading and offers them a moment to pause to contemplate freely on the topic. Main Text C that immediately follows this sequence and draws the reader back to the academic tone, providing an academic review of literature about the psychology of memory.

3 DISCUSSION AND FUTURE WORK

The goal of this position paper is to suggest that HCI and design researchers can and should inspirations outside the accepted conventions of HCI scholarship. These other unconventional forms of prose help to document drifting in ways that are accessible to both the academic community and the general public.

As we have demonstrated above, the three styles of writing achieve a set of complex and complimentary descriptive functions throughout the account. This resulting reflective account can help both to report the process and offers a vehicle for sensemaking about design research for the primary researchers. However, and within this position paper, we focus our discussion on the opportunities for reader involvement and how this narrative account facilitates knowledge dissemination and generation for its readers.

If the reader is a potential future researcher, these literary techniques can be ways to establish the connection to the work and design knowledge. Knowledge is often embedded in a lineage of studies, and follows an initial framework or theory that further evolves with contributions from each successive researcher and project [4]. Then, enriched accounts of emergent design research could, in turn, inform and support future investigations.

Additionally, we also believe that the researcher-reader connection could help to build understanding of the work, and perhaps more generally design research, with the general public. Providing alternative textual forms and narrative strategies has the potential to increase access to and appreciation of the work. It may encourage readers to engage in, and provide new opportunities to promote discourse around the project, thereby bringing in fresh perspectives and new audiences.

A more interesting potential of documenting drifts is that it illuminates the points at which the project drifted away from its original intentions. The drifts may contain many unexplored opportunities, they represent, both for the research community and for broader audiences, a place to ask "what if's" and to explore potential fresh avenues for future inquiry.

This way of narrating the research journey is still experimental and has not yet not been evaluated with an external audience. We hope that this workshop will be an opportunity to do this and to shed insight into how both academic and general audiences perceive our work. As Casanave notes academic writings inherently reflect the personality of the writers, which are far more diverse than the all-to-often often formulaic structure of current academic papers [1]. We strongly encourage fellow researchers to explore "bending the rules" in their own writing for the communities they are members of. Opportunities to do this, and next steps for us, will be to explore how multimedia and tangible materials can be incorporated into the documentation of the journey. Design research is always richer than text, so we expect techniques from cinema, theater, and even immersive experiences could offer inspiration for engaging emergent documentation.

ACKNOWLEDGMENTS

We would like to thank Sinan Goral, and members of the School of Architecture's CoDeLab for their feedback throughout this project. This work was supported by CMU's GuSH Research Grant.

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