This? Uncertainty as a Generative Practice in Design

I looked at the ceiling. 'There is little to be seen there,' I said, 'except a bluebottle that looks dead.'

The Sergeant looked up and pointed with his stick.

'That is not a bluebottle,' he said, 'that is Gogarty's outhouse.'

I looked squarely at him in a mixed way but he was paying me no attention but pointing to other tiny marks upon the ceiling.

'That,' he said, 'is Martin Bundle's house and that is Tiernahins and that one there is where the married sister lives. And here we have the lane from Tiernahins to the main telegraph trunk road.' He drew his stick along a wavering faint crack that ran down to join a deeper crack.

'A map!' I cried excitedly.

'And here we have the barrack,' he added. 'It is all as plain as a pikestick.'

When I looked carefully at the ceiling I saw that Mr Mathers' house and every road and house I knew were marked there, and nets of lanes and neighbourhoods that I did not know also. It was a map of the parish, complete, reliable and astonishing. The Sergeant looked at me and smiled again.

'You will agree,' he said, 'that it is a fascinating pancake and a conundrum of great incontinence, a phenomenon of the first rarity.'

Flann O'Brien, *The Third Policeman* (1967)[13]

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Abstract

This position paper briefly explores how uncertainty can work as a generative practice in design, through examples of card decks, metaphors, intentional apophenia, and following a dog's wanderings.

Author Keywords

uncertainty; divergence; apophenia; generative methods; design process; metaphors.

Introduction

The design historian Clive Dilnot [4] suggests that much design operates as both a proposition (should the world be like **this?**) and a statement (the world should be like **this!**), simultaneously, with the degree of certainty varying depending on context, ambition, confidence, and a whole range of structural factors.[1]

Many models of design processes explicitly incorporate divergent [7] phases, where the goal is to *increase* uncertainty, temporarily at least, or to maintain being comfortable with uncertainty for longer. The double-diamond is a well-known example, with two divergent phases, but there is a long history of calls for 'problem-worrying' [2], for example, to receive as much attention as problem-solving. From an interaction design educator's perspective, devising ways to help students become more comfortable with ambiguity and uncertainty for longer, rather than converging quickly on a 'solution', is an ongoing challenge, and one which also plays out in industry settings with phenomena such as design fixation. The benefits are usually framed in terms of enabling better problem-solving or innovation.

[1] If we look at HCI (or maybe any academic field) we might see that the work we do, and what we see from colleagues, is also somewhere between a 'This?' and a 'This!'—tentative, uncertain-but-presenting-as-certain, an offering for others to do something with, but with, usually, enough belief behind it to sustain actually spending the best evenings and weekends of our lives working on it. I don't know; your mileage may vary.

Figure 1. Students using the New Metaphors cards to generate ideas around different ways of thinking about climate futures.
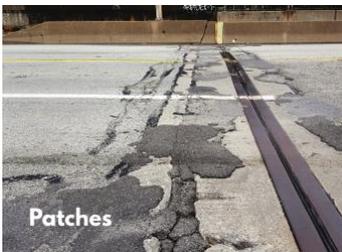

Figure 2. The card 'A LADDER.'

Figure 3. The card 'PATCHES.'

Nevertheless, aside from these somewhat instrumental uses of uncertainty, there is also value in intentionally creating or provoking uncertainty as a way of disrupting [1] or destabilizing practice, without necessarily having a particular end in mind beyond prompting a questioning of norms and assumptions—a more engaged approach to the world—and a spur to new forms of creative practice.

A personal dimension

I'm a design researcher, and I'm especially interested in developing what might even be termed 'divinatory practices' [8] as creative methods in art, design, and HCI, particularly to support those divergent phases of work. But I also have a personal interest. I became fascinated by the *I Ching* as a teenager, and spent many weeks creating a QBasic version which I would use every day myself to try to make decisions—and the approach of finding 'cues' in the world around me to suggest ways of doing things has stuck with me. Also as a teenager, I wrote, with friends, a Word 2.0 macro to create numerology 'personality certificates' from people's names, which we managed to sell via a UK daytime TV astrologer's company (ads in local newspapers) until his people realized how easily they could do it themselves. It taught me a lot about the Barnum effect [5] though, and it has been a pleasure in the present day to be able to introduce design students to cold reading [15] and similar practices as part of classes on persuasive design.

Card decks and metaphors

Card decks are popular in design and HCI [16], including some which can be used in 'aleatoric' ways, to introduce chance or ambiguity (the resolution of which often allows a creative leap or insight). I'm fascinated by the different ways these kinds of cards are used by designers and creative people, from Brian Eno & Peter Schmidt's *Oblique Strategies* right through to Superflux's *Instant Archetypes* new tarot, and what they offer. A few years ago, studying how designers used my *Design with Intent* card deck [9] taught me that there is a role for even quite 'technical' collections of ideas to be used mainly as prompts and provocations, intentionally unsettling what people are doing or offering them new paths, and the current flourishing of 'casual creator' techniques [3] from Twitter bots (Figure 5) to card decks is very inspiring in this vein. With *Design with Intent*, what started out as a kind of lookup table or flow chart for deciding on particular design strategies ended up being used in practice in a much more free-form way. Obvious as it may sound, this affordance of card decks—their unorderedness, their ease of becoming disordered or mixed up or juxtaposed—seems central to their value in engaging with uncertainty (compared with a book, for example).

A project my students and I have been developing over the last few years, called *New Metaphors* [11] (Figure 1), is a card deck and set of association exercises, aimed at designers, for coming up with new kinds of metaphorical relationships between things in the world (a flock of birds, leftover food, patterns in brickwork) and important / abstract / hard-to-visualize concepts like the climate crisis or mental health. Metaphors, and different ways of generating and using them, are a current topic of much research work in HCI [6,12,14]. The New Metaphors cards are particularly useful for generating ideas for novel kinds of framing, or new approaches to (more qualitative) interface and visualization design, through introducing an element of

Figure 4. Bella investigating traces and paths invisible and imperceptible to me, but highly significant to her.

uncertainty at particular stages of a design process: an explicit 'this?' which can become a 'this!' with further thought and evolution.

Personally, though, I have found some value in using the cards in an almost divinatory way, picking a card and saying "OK, this is a metaphor for what's happening in your life right now—what do you do?" The results are mixed, I would say. The card 'A LADDER' (Figure 2) helped me go into a faculty meeting with the aim of seeing current stresses and challenges as just a rung on the way to something better, but also reminded me just how many other rungs there would be. The card 'PATCHES' (Figure 3), showing a badly-repaired road surface characteristic of Pittsburgh made me see the meeting in a different way, as a series of imperfectly executed repairs to keep things moving, but also made me wish for a much smoother resurfacing. The point is not that any of these is right or wrong—by definition, all metaphors are 'wrong'—but that there is a commitment to try to use the metaphors to 'make sense' of uncertainty in a new or unusual way. And if it doesn't work, you can always pick another.

Intentional apophenia

I have written for a previous CHI workshop [10] about the potential of intentionally seeing patterns and drawing links (or making metaphors) between ostensibly unrelated phenomena as a method for generative creativity. This could be a more explicitly divinatory approach which is essentially 'act as if patterns you see in the world are meaningful and telling you something', or primarily a way of providing a more poetic input to a design process. At present I don't know what form it will take (other than me obsessively photographing stains on walls and cracks in paving

slabs)—or finding maps in cracks in ceilings as in the extract from *The Third Policeman* in the sidebar on page 1—but I do have another, more practical example.

My dog, Bella, co-author of this paper and a tenured professor of barkitecture, provides, every day, a practical example of this for me. She follows—obsesses over, even—lines and trails of scent which are completely invisible to me, except through her actions (Figure 4). Patterns of particular flowerbed corners, or specific tree trunks or pieces of infrastructure come into existence when I'm with her, making my route between buildings uncertain (within certain boundaries). The patterns are meaningful to her, a kind of social network perhaps, but I am free to attribute whatever meanings I want to them—to make up stories for myself about other dogs and their lives, and to use her direction as a form of *dérive* generator for myself. She has taken me along streets I would not otherwise have visited, and directed me to pay attention to flowers and elements of street furniture I would otherwise have passed without noticing. In some sense, having a companion animal whose actions are opaque, to me, provides a daily input of uncertainty which enriches my life in ways whose value I perhaps cannot articulate.

Conclusion

This isn't a subject where something as certain as a 'conclusion' can reasonably be drawn. I merely offer the ideas in this paper as contributions to a discussion about how uncertainty could be used intentionally in design and HCI, to generate, provoke, and intrigue. The technological dimension would be interesting to explore—how are people using intentional uncertainty through technology (e.g. Twitter bots or similar) as part of their own practice, either art/design or for personal

Figure 5. Three Twitter bots which juxtapose concepts in a generative way: concepts bot by @kloseum; Magic Realism Bot by @chrisrodley and @yeldora_; and synaesthotron by @dullthud

decision-making, self-care, and so on? Are there opportunities here for a new kind of divination practice? Is there a new kind of artifact that could emerge—a smart home that is 'smart' by encoding the wisdom of the ages in patterns in the wallpaper or carpet tiles? An ambiguous interface for which 'this?' remains the question?

References

[1] Kristina Andersen, Laura Devendorf, James Pierce, Ron Wakkary, and Daniela K. Rosner. 2018. Disruptive Improvisations: Making Use of Non-Deterministic Art Practices in HCI. *CHI EA '18*. DOI:https://doi.org/10.1145/3170427.3170630

[2] Stanford Anderson. 1966. Problem-Solving and Problem-Worrying. Architectural Association, London, March 1966.

[3] Kate Compton and Michael Mateas. 2015. Casual Creators. In Proceedings of the International Conference on Computational Creativity. 228--235

[4] Clive Dilnot. 2015. History, Design, Futures: Contending with What We Have Made. In Fry, T., Dilnot, C. and Stewart, S. C. (eds), Design and the Question of History. Bloomsbury, London, pp131–272.

[5] Adrian Furnham and Sandra Schofield. 1987. Accepting Personality Test Feedback: A Review of the Barnum Effect. Current Psychological Research & Reviews, 6(2), 162-178.

[6] Katy Ilonka Gero and Lydia B. Chilton. 2019. Metaphoria: An Algorithmic Companion for Metaphor Creation. *CHI '19*. DOI:https://doi.org/10.1145/3290605.3300526

[7] Joy P. Guilford. 1968. Creativity, intelligence, and their educational implications. San Diego: EDITS

[8] Tim Hwang. 2019. Announcing the Program on Advanced Divination. https://medium.com/@timhwang/announcing-the-program-on-advanced-divination-b99e9b2c689a

[9] Dan Lockton, David Harrison, and Neville Stanton. 2010. The Design with Intent Method: a design tool for influencing user behaviour. Applied Ergonomics 41(3), 382-392

[10] Dan Lockton, Some Cracks In The Paving, and Water Trapped In The Window Of A British Rail Class 450 Train Carriage. 2018. Apophenia As Method—Or, Everything Is Either A Metaphor Or An Analogue Computer. Disruptive Improvisation: Making Use of Non-Deterministic Art Practices, workshop at CHI 2018. https://disruptiveimprovisation.files.wordpress.com/2018/04/lockton_cr_040118.pdf

[11] Dan Lockton, Devika Singh, Saloni Sabnis, Michelle Chou, Sarah Foley, and Alejandro Pantoja. 2019. New Metaphors: A Workshop Method for Generating Ideas and Reframing Problems in Design and Beyond. *C&C '19*. DOI:https://doi.org/10.1145/3325480.3326570

[12] Nick Logler, Daisy Yoo, and Batya Friedman. 2018. Metaphor Cards: A How-to-Guide for Making and Using a Generative Metaphorical Design Toolkit. *DIS '18*. DOI:https://doi.org/10.1145/3196709.3196811

[13] Flann O'Brien. 1967. The Third Policeman. MacGibbon & Kee.

[14] Savvas Petridis and Lydia B. Chilton. 2019. Human Errors in Interpreting Visual Metaphor. *C&C '19.* DOI:https://doi.org/10.1145/3325480.3325503

[15] Ian Rowland. 2005. The Full Facts Book of Cold Reading.

[16] Robin Roy and James Warren. 2019. Card-based design tools: a review and analysis of 155 card decks for designers and designing. Design Studies, 63, 125–154. DOI: 10.1016/j.destud.2019.04.002