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# Beyond Personal Informatics: Designing for Experiences with Data

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**Abstract**

A data-driven life is increasingly possible, yet research and previous workshops have tended to focus on the utility of personal informatics – especially for behaviour change – rather than ‘lived informatics’ as experienced. This workshop proposes to engage participants in conversation, scenario building and conceptual design that deeply and critically examines the multiple roles personal informatics can play in people’s everyday lives and map out novel design opportunities and challenges.

**Author Keywords**

Personal Informatics; Experienced-Centred Design; Quantified Self; Internet of Things; Design Fiction

**ACM Classification Keywords**

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**Introduction**

There has been a great deal of interest within the CHI community in technologies that ‘*collect relevant information for the purpose of self-reflection and self-monitoring*’ [5]. They have been the subject of 5 previous CHI workshops [4,6,7,8,11] - about personal informatics (PI), ‘Quantified Self’ or self-tracking. The driving concern for these workshops, and many existing PI tools, (e.g. Fitbit, Jawbone, Nest, MyFitnessPal) has

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been to offer people rational 'self-knowledge', motivate behaviour change and monitor health as a means to improve wellbeing. However, as living a quantified and 'data-driven life' [14] becomes increasingly possible, as our lives become part of the Internet of Things, we should think more broadly about a multitude of possible interactions and experiences with data. In particular, we suggest that while a focus on behaviour change and health is well motivated, designing solely for a rational and analytical relationship with these tools is limited, and potentially occludes many other rich experiences of highly personal and local quantitative data.

Therefore we propose this workshop to encourage and foster new design perspectives, which broaden the field to consider, more critically and holistically, the situated experiences of personal and local quantitative data.

### **Workshop Approach**

This workshop is partly motivated by recent research that has adopted a more critical stance to the promise of PI and technological 'solutionism' [9,12]. Rooksby *et al.* [13], present a user study highlighting diverse 'styles of use' of PI. They contrast their work with Li *et al.*'s [5] more cognitive and 'technology-centric' stage-based model, and a tendency for self-tracking tools to assume overly rational and predictable human actors. Following Wright and McCarthy [15], they advocate designing for the experience of 'lived informatics' as they become 'enmeshed in everyday life'. Critically, this means working through the implications of PI, beyond their immediate utility – be it behaviour change, health or energy monitoring. For example, recent work questions the future uses of historical quantitative data as personal heritage [1,2]. Beyond HCI, sociologists have raised concerns for the potentially exploitative or

coercive use of PI [10]. Further, Khovanskaya *et al.* [3] have employed critical design methodologies as a practical lens to reveal some of the assumptions and limitations in self-tracking. Given the anticipated growth in 'smart' devices and wearable tech (e.g. Apple's 'Health Kit'), and the promise to optimise our personal and professional lives, it is timely to look more closely at the multiple affordances, roles and experiences of living with data as a journal, toy, security guard, doctor, judge, and even match maker.

As a starting point, we therefore offer the following provocations and questions, which we will address through discussion and debate during the workshop, and locate a more 'lived' informatics.

#### *1) Moving beyond the individual*

In many ways, personal informatics and the Quantified Self tend to be intensely individual pursuits. We suggest that research and design thus far has underplayed the social opportunities and challenges of such tools. As data proliferates our everyday lives, individual concerns become inevitably entangled with the lives of others - partners, children, colleagues, and employers. For example, consider 'Mother' ([www.sen.se](http://www.sen.se)) - the 'family of connected sensors' – that makes self-tracking a shared activity with evident complex social implications. How can data support story-telling or collectively marking and remembering the past? Besides gamification, how could we design more ludic or phatic informatics?

#### *2) Designing for dynamic trajectories of data*

We contend that the value of personal data can evolve, and gain or lose meaning beyond a first impression or initial use. As personal informatics tools become

embedded and networked, and personal circumstances change, what alternative trajectories of data could design support, beyond Li *et al.*'s [5] five-stage model? Elsdon *et al.* [2] question how quantitative PI data mediates remembering of the past, while Dong *et al.* [1] consider the fate of data from a Nest thermostat for something as enduring as a house. Can personal informatics data gradually become part of a meaningful biography? What value might a 'slow' approach to personal informatics yield? What happens to data and tools that are superseded, and is their room for second-hand informatics? Given the reported short-term use of personal informatics tools, how - if indeed they should - can they become a sustainable fixture in our lives?

### 3) *Representing data in new ways*

With the principle aim of rational self-analysis, we note that many QS tools tend towards representing data numerically, in charts or graphs, with an emphasis on comparison, progress or reaching set goals. We suggest this is just one means to make sense of malleable data. What new experiences can be offered by alternate modalities of data, or if it is rendered material and tangible? Selby's '*Earthquake Shelf*' (<http://markmakedo.co.uk/portfolio/earthquake-shelf/>) materialises live earthquake data in a fragile vase on a potentially shaking shelf. Rather than a specific objective insight, this design creates a curious and reflective condition between shelf and observer. How then do different representations emphasise or diminish interpretations and relationships with the data?

Though certainly not exhaustive, through these provocations we suggest that the design of personal informatics has so far been largely focused on individuals, on the short term (motivation, persuasion,

and monitoring), and a generally reductive representation of one's data. We contend that the lived experience of a 'data-driven life' will inevitably extend beyond this, crossing boundaries. In this workshop, we seek to reveal opportunities and challenges for the design of personal informatics tools, which grapples with their potential myriad social roles, their evolving long-term and sustainable use and the many ways this mass of data may be represented.

### **Workshop Format and Goals**

Our principal concern for this one-day workshop is to engender a broadening of horizons for the research and design of personal informatics. We feel this workshop would benefit from a broad array of disciplines and practices - including those in the digital humanities and design as well as regular CHI attendees. Attendees are invited to submit position papers that extend current thinking of personal informatics, and speculate on novel experiences with data, which may or may not build on the provocations above. We welcome a wide-range of contributions, which could include, but are not limited to, the following:

- Critical reflections on new directions for experience-centred design of PI tools.
- Case studies of existing experiences with PI
- Design or deployment of bespoke PI systems
- Speculative scenarios or design fiction of PI

15-20 accepted submissions will be loosely grouped thematically, and used as the basis for panel discussions, led by the workshop participants as a means to collectively identify outstanding concerns and issues for the design of lived informatics.

These thematic issues will feed directly into a data-driven design activity. Beginning with traditional personas and scenarios concerning the often narrow preconceptions and utilitarian virtues of a 'Quantified Self' (that are often found in promotional materials for such products e.g. <https://sen.se/store/mother/>) we will work in small groups to provocatively improvise and rewrite these scenarios. This is partly inspired by design fiction methods considering 'alternate endings' [9]. We propose that the multiple narratives and conceptual designs that emerge from this activity will: a) highlight complex emotional and social entanglements of a data-driven life; b) offer a number of departure points to reimagine the design and use of PI and IoT devices. Together we hope to use these activities to develop a network of researchers engaged in designing with data, to foster ongoing collaboration amongst that network, and to support the development of co-authored publications, which will map future design spaces for designing with data and advocate for a more holistic understanding of the experience of living with data.

## References

1. Dong, T., Ackerman, M.S., and Newman, M.W. If these walls could talk: designing with memories of places. *Proc. DIS 2014*, ACM (2014), 63–72.
2. Elsdon, C. and Kirk, D.S. A Quantified Past: Remembering with Personal Informatics. *Proc. Companion DIS 2014*, ACM (2014), 45–48.
3. Khovanskaya, V., Baumer, E.P., Cosley, D., et al., Everybody knows what you're doing: a critical design approach to personal informatics. *Proc. CHI 2013*, ACM (2013), 3403–3412.
4. Li, I., Dey, A., Forlizzi, J., Höök, K., and Medynskiy, Y. Personal Informatics and HCI: Design, Theory, and Social Implications. *Ext. Abs. CHI 2011*, ACM (2011), 2417–2420.
5. Li, I., Dey, A., and Forlizzi, J. A stage-based model of personal informatics systems. *Proc. CHI 2010*, ACM (2010), 557–566.
6. Li, I., Forlizzi, J., and Dey, A. Know thyself: monitoring and reflecting on facets of one's life. *Ext. Abs. CHI 2011*, ACM (2010), 4489–4492.
7. Li, I., Froehlich, J., Larsen, J.E., Grevet, C., and Ramirez, E. Personal Informatics in the Wild: Hacking Habits for Health & Happiness. *Ext. Abs. CHI 2013*, ACM (2013), 3179–3182.
8. Li, I., Medynskiy, Y., Froehlich, J., and Larsen, J. Personal Informatics in Practice: Improving Quality of Life Through Data. *Ext. Abs. CHI 2012*, ACM (2012), 2799–2802.
9. Linehan, C., Kirman, B.J., Reeves, S., et al. Alternate Endings: Using Fiction to Explore Design Futures. *Ext. Abs. CHI 2014*, ACM (2014), 45–48.
10. Lupton, D. Self-Tracking Modes: Reflexive Self-Monitoring and Data Practices. *Available at SSRN 2483549*, (2014).
11. Meyer, J., Simske, S., Siek, K.A., Gurrin, C.G., and Hermens, H. Beyond Quantified Self: Data for Wellbeing. *Ext. Abs. CHI 2014*, ACM (2014), 95–98.
12. Morozov, E. *To save everything, click here: Technology, solutionism, and the urge to fix problems that don't exist*. Penguin UK, 2013.
13. Rooksby, J., Rost, M., Morrison, A., and Chalmers, M.C. Personal Tracking As Lived Informatics. *Proc. CHI 2014*, ACM (2014), 1163–1172.
14. Wolf, G. The data-driven life. *The New York Times* 28, (2010).
15. Wright, P. and McCarthy, J. *Technology as experience*. MIT Press, 2004.