

# Understanding and Improving Human Data Relations

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## **7 Discussion II: Designing and Pursuing Better Human Data Relations**

### **7.1 Chapter Overview**

Through the Case Studies (Chapter 4 & 5) and the discussion in Chapter 6, a clear understanding of what people want from direct and indirect data relations (RQ1 & RQ2) has been established. In this chapter, we turn our attention from theory to practice, from what is needed to *what is possible*.

Specifically, this chapter will answer RQ3, which asks the practical question '*What challenges and opportunities are relevant when pursuing better Human Data Relations?*'.

Throughout Context Three (3.4.3), which consists of my

embedded work in four industrial and academic research projects during the course of my PhD, I have been able to explore how better Human Data Relations can be pursued in practice. This chapter aims to provide a roadmap, illustrated with real world insights and activities, and building upon the theoretical insights from the Case Studies to inform the design of future research, innovation and policy.

In section 7.2, the concept of Human Data Relations is expanded to identify two key purposes for Human Data Relations, which are used in section 7.3 as a framing to present identified obstacles and opportunities. Section 7.4 summarises the roadmap in a Theory of Change context, and section 7.5 concludes the thesis, summarising its contributions and answering the overall research question.

### **7.1.1 Practical Research Contexts Used**

The majority of examples and learnings shared in this chapter come from my participation as an expert researcher in two industrial research projects:

1. *BBC R&D's Cornmarket Project*, which explored through UX design and participatory research, how individuals might interact with data through a Personal Data Store interface (see 3.4.3.3)
2. *Sitra/Hestia.ai's #digipower Project*, a successor to Case Study Two, in which European politicians examined companies' data practices through data rights and technical audits (see 3.4.3.4)

In addition, my participation as an interface designer and front-end software developer in the following two academic research projects contributes secondarily to this chapter:

3. *Connected Health Cities (CHC)’s SILVER Project*, where I, along with a backend developer and a team of researchers, developed a health data viewing interface for Early Help support workers (see 3.4.3.1).
4. *Digital Economy Research Centre (DERC)’s Healthy Eating Web Augmentation Project*, which explored the use of web augmentation techniques to modify the user interface of takeaway service Just Eat in support of healthy eating (see 3.4.3.2).

### **7.1.2 Attribution of Insights**

Many of the details, theories and ideas presented in this chapter arose through close collaboration, discussion and ideation with other researchers, most noticeably:

- Paul-Olivier Dehaye and Jessica Pidoux at Hestia.ai;
- Jasmine Cox, Suzanne Clarke, Tim Broom and Alex Ballantyne at BBC R&D;
- Stuart Wheeler of Arjuna Technologies and Kyle Montague of Open Lab during the SILVER project; and
- Louis Goffe of Open Lab on the DERC project

Due to the ongoing and parallel nature of all of these projects to my PhD research, it is impossible to precisely delineate the origin of each idea or insight. In practice, ideas from my developing thesis and own thinking informed each project’s trajectory and thinking, and vice-versa. These ideas would not have emerged in this form without my participation, so they are not the sole intellectual property of others, but equally I would not have reached the same conclusions alone, so the ideas are not solely my own either. All diagrams and illustrations were produced by me, except where specified, and the overall synthesis and framing presented in this chapter is my own

original work. Where this chapter includes material from the four projects, that material is either already public, or permission has been obtained from the corresponding project teams.

## **7.2 Expanding the Concept of Human Data Relations**

### **7.2.1 Human Data Interaction or Human Information Interaction?**

[unpacking the important differences between managing data (which is optimised for use by computer systems) and understanding / being informed by information *within* and *about* data.. leads to role below]

### **7.2.2 The Two Distinct Purposes of Human Data Relations**

[Diagram]

#### **7.2.2.1 Life Information Utilisation**

[Life Information Utilisation](#)

#### **7.2.2.2 Personal Data Ecosystem Control**

[Personal Data Ecosystem Control](#)

### **7.2.3 The Role of Personal Data**

[Data as property, self, insight, medium, currency, expression, ...]

[Data has a role in informing people about themselves, Data has a role in informing people about the actions of others that affect them, Data has a role as a tool for changing self, Data

has a role for monitoring influences and actions of others]

## **7.3 Answering RQ3: What are the challenges and opportunities?**

[What challenges and opportunities are relevant when attempting to meet the six wants of human data relations? - How the six wants fit into these two purposes]

### **7.3.1 Challenges and Opportunities in Life Information Utilisation**

#### **7.3.1.1 Understandable Data**

##### **7.3.1.1.1 Obstacles to Data Understandability**

[Meaningfulness / relatability -> relate it to people/places/events]

[Context - Life - > need life interfaces]

[Information within Data -> Lack of Visualisations and Tools]

[Scatteredness -> holistic/unification, place to centralise]

[Complexity -> common formats/abstractions/summarisations]

##### **7.3.1.1.2 Improving Data Understandability**

[Personal data Stores as place to put stuff]

[Build systems to extract meaning - interpreting and combining signals]

[Use standards & semantics to convert data to life information]

[presenting and visualising life information]

### **7.3.1.2 Useable Data<sup>1</sup>**

#### **7.3.1.2.1 Obstacles to Data Useability**

[Trapped Data -> Force unlocking of data through technical means or regulatory influence]

[Integration challenges -> Need to be able to bring data together and connect and combine]

[Lack of malleability -> need to be able to slice/group/view from different perspectives]

[inability to investigate -> enable questions, comparisons, investigations etc]

#### **7.3.1.2.2 Improving Data Useability**

[supporting useful actions on data - filtering, referencing, cross referencing, conjecturing/whatiffing - data action verbs]

[data as material, interface features as tools to use that material]

[supporting appropriation, annotation, organisation, curation, use & re-use]

[temporal, entity-based/relational and geographical exploration]

[support goal setting, tracking and reflection]

[an information operating system]

[asking tools rather than answers or insights]

#### **7.3.1.3 Other Factors in Life Information Utilisation**

[Motivation -> Showing the potential]

[Effort -> doing as much as possible automatically, conjecture and assertion over blank pages. training rather than meticulous instruction.]

[how the other wants fit in, visibility as it pertains to Life info, transparency/oversight/involvement etc]

[agency over trapped data (by tech or by companies (lead into next))]

## **7.3.2 Challenges and Opportunities in Personal Data Ecosystem Control**

### **7.3.2.1 Data Visibility and Process Transparency**

#### **7.3.2.1.1 Obstacles to Data Visibility and Process Transparency**

[hidden data and closed processes -> closed by default thinking -> encourage or legislate for openness.. e.g. data portability/access rights, rights to explanation etc, but more needed]

[silos and motives towards closed proprietary systems -> highlight the pains]

[lack of information *about* our data -> awareness and accountability even where access is difficult -> ]

[lack of standards, motivations against interoperability -> motivate standards and uncover opportunities for interoperability]

#### **7.3.2.1.2 Improving Data Visibility and Process Transparency**

[ecosystem visualisation and overviews]

[exploiting the seams - the battle for the seams]



[standards creation and the benefits of enabling a 'data understanding' industry]

[regulation - forcing openness transparency and interop. DSA ? ]

[collectives - as a means to exert individual power]

### **7.3.2.2 Ecosystem Negotiability**

#### **7.3.2.2.1 Obstacles to Ecosystem Negotiability**

[structural power, resource control, centralisation etc -> uneven landscape -> awareness as first step and systemic change needed to change. ]

[the four levers of infrastructural power. accumulation of info/surveillance as power. changing available information/actions as power]

[data self affects you but cannot see (proxy for involvement, unseen inferences etc)- > find a way to produce better digital selves]

[Controlling the landscape of what is knowable, and what is do-able -> recognise the importance of free information landscapes, and make them happen through tech or through regulation]

#### **7.3.2.2.2 Improving Ecosystem Negotiability**

[better digital selves -> people as source of data. profiles and curated as better representation of self, ref past calls in C4&5 for stewardship, user-contributed data etc]

[collectives, supported by policy [uber, ref GDPR guidelines?]]

[the battle for landscape control - RSS, API, 3P interfaces, etc,  
Defending The Seams And Protecting Interface Freedom]

[-> exploiting the seams in order to produce new information  
presentations... ref JE paper (+colin?) -> web aug, firefox  
containers. Taking Back Power In The Browser, resist moves  
to apps]

[-> better policies to protect the information landscape? DSA?]

### **7.3.2.3 Other Factors in Personal Data Ecosystem Control**

[complex data ecoystems]

[Inconsistent and difficult data rights offerings]

[Lack of up to date insights / delay]

[data literacy and rights awareness - you should teach this in  
schools]

[Feeds and flows that loop in the data subject (default not opt  
in)]

## **7.4 A Theory Of Change Perspective on Better Human Data Relations**

[the four change quadrants for each of the two purposes.  
diagrams to work out].

## **7.5 Thesis Conclusion**

[reiterate the answer to the question - the key 4 roles, 3  
capabilities and N approaches needed for better human data  
relations]

[clarify the contribution of the thesis, with backreferences - 2 case studies, RQ answers, and the HDR roadmap]

[highlight future value/societal implications of the work]

## Bibliography

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Nielsen, J. (2012) 'Usability 101: Introduction to Usability'. Available at: <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>.

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1. The words '*usability*' and '*usable*' (spelt without an 'e') most commonly refer to a judgement of the degree to which a website or user interface is easy to use (Nielsen, [2012](#)). Throughout this thesis, I deliberately use the alternative word spellings of '*useability*' and '*useable*'

(Collins English Dictionary, [no date a](#), [no date b](#)) respectively, to clearly distinguish from this ease-of-use concept and to denote that I am referring a different meaning: the more literal definition, i.e. *“the quality or state of being convenient and practicable for use”* (Merriam-Webster Dictionary, [no date a](#), [no date b](#)). Any usages without an ‘e’ can be taken to refer to the interface ease-of-use concept. [↩](#)