



The Self as Data: Visualizing Identity Through Data Portraits

Catarina Sampaio

hello@catarinasampaio.com

Universidade de Lisboa, Faculdade de Belas-Artes, Centro de Investigação e de Estudos em Belas-Artes (CIEBA), Portugal

Keywords: Data Portraits, Personal Data, Identity, Visualization, Self-Knowledge, Human Agency.

This study focuses on the creative exploration of personal data as raw material for the creation of portraits, considering how our contemporary existence is constantly mediated by an expanding array of digital technologies, capable of recording various aspects of human life as digital data. It draws on a previous study on data portraits, following a theoretical, analytical and practice-based approach that seeks to create visual representations of identity that reflect choices, attitudes, tastes, or the behavioral profile of an individual, while exploring their digital footprint. This project seeks to frame these representations of identity as tools for self-expression and self-knowledge, while promoting discussion on our lack of control over the data we generate, aiming to foster our agency over our data. This approach also highlights how portraiture can be reconceptualized to become more attuned with our contemporary mode of living immersed in data.

1. Purpose of the Research and its Importance to the Field

The purpose of this research is the study, analysis and application of data visualization techniques in the field of portraiture. According to an exploratory and critical design approach, it aims to create data portraits that reflect the behavioral profile of an individual, exploring the implications of data collection by means of technological devices. This approach seeks to highlight the use of personal data as a mechanism for self-observation and self-expression, and also as a means of raising awareness about the current uses of our private information.

This approach is motivated by the present context of widespread technological mediation and consequent dissemination of personal data, which in most cases are governed by various corporations that use them for their own commercial purposes. Considering that this setting of “surveillance capitalism” (Zuboff 2019) fails to acknowledge our sensitivity and humanity, we aim to repurpose these trails of personal data to our own interest, as a means of self-expression. The research thus proposes a reflection on our current “data-driven [way of] life” (Wolf 2010) and the prevailing trend towards the quantification of everything around us, including the most subjective aspects of human life.

2. Background and Related Work

The portrait as a symbolic representation of personal identity tends to reflect the social, cultural and technical context in which it is created. At a moment where technological mediation is omnipresent, data portraits appear as forms of portraiture that evocatively represent the identity of individuals based on the visualization of their personal data, resulting from their daily activities and digitally registered by technological devices. According to Donath (2017, 187), data portraits can be defined as “depictions of people made by visualizing data by and about them”.

The portrait has been gradually reinvented following the tendency to detach itself from the mimetic representation of the physical body. This move towards abstraction accompanies technological and cultural advances, namely the dissemination of photography, which transformed the production of mimetic images into a mechanical task. Similarly, enumeration techniques and personal inventory methods are explored as forms of portraiture, shifting “attention from iconic qualities of portraiture to indexical ones” (West 2004, 212), and providing a conceptual ground for autoethnographic approaches to portraiture.

Therefore, the emergence of data portraits is tied to a cultural and ideological shift in the representation of identity since they prioritize “qualities that are not directly observable” (Donath 2001), relating to actions, behaviors and ideas, which cannot be deduced from appearance.

However, although different from traditional portraits, data portraits evoke the same functions of their classic counterparts, as essentially tied to the representation of the subject before the other and/or before himself. On one hand, they can act as *proxies* of individuals in online communities, revealing their behavioral patterns, rather than appearance, and having an impact on how others act towards them. On another hand, data portraits can act as a “data mirror”, or a “portrait designed to be seen only by the subject, as a tool for self-understanding” (Donath *et al.* 2014). Additionally, and by involving the re-appropriation of personal data that is scattered in a variety of distributed clouds, data portraits can also fulfil a political role by drawing attention to the loss of control over private information. Finally, these portraits can also promote an affective tie with one’s personal data, as an effect of its instantiation and due to its biographical qualities (Lupton 2016).

Data portraits are also the outcome of an interdisciplinary practice, as forms of portraiture whose visuality tends towards abstraction, seeking to reveal the subject’s identity traits while following a process of systematic self-observation through data collection and its visualization, that is mainly done in an automated way (Selke 2016). And since data are extracted from the real world, the outcomes of these practices can be coupled with a notion of “digital realism” (Min 2015), often involving the representation of time, as means of expressing change, but also a distance from an analytical stance concerned with legibility, that favors a subjective expression of the subject’s identity traits (Sampaio *et al.* 2019).

Data visualization is often about “rendering the phenomena that are beyond the scale of human senses into something that is within our reach, something visible and tangible” (Manovich 2002). Therefore, subjectivity is also inherent to the choices involved in the mapping of data, as abstract measurements, to sensory, tangible representations. In this sense, and as suggested by Manovich (2002), “data visualization artists should also not forget that art has the unique license to portray human subjectivity.” With the aid of technological means, these forms of portraiture can also be endowed dynamic properties, in order to express the changing nature of human experience over time. They can also allow the interactive exploration of different layers of information, reflecting the complexity of personal identity.

In sum, data portraits can be seen as visualizations of subjectivity but are also visualizations of a subjective nature, regarding design choices on what is to be represented and how, and to what end or expression. So, their primary goal is “to call into question the claims of transparency, certainty, and objectivity” of data visualization, insisting in “the situatedness of the observer and the phenomenon being observed” (Hall 2011).

3. Description of the Proposed Approach

Drawing on this framework, the study follows a theoretical, analytical and practice-based approach, according to the following objectives.

The study first seeks to conceptually frame the representation of personal identity through the use of personal data. To this end, the *theoretical component* proceeds to a bibliographic review, on the concepts of identity, portraiture, personal data and visualization. With this approach we seek to frame the emergence of data portraits and identify the expressive functions that they fulfill as aesthetic artifacts. We also seek to explore their potential to portray social interactions in digital environments, to aggregate dispersed personal data and to facilitate self-analysis via self-tracking to promote human agency through data.

The second objective is to understand the diversity of creative approaches to data portraiture. The *analytical component* of the study then follows a inductive approach that aims to examine the mechanics of these artifacts, through the description and analysis of works that a) address the visual representation of personal identity, b) use personal data as a raw material, resulting from the subject's daily activities, and c) resort to computational means for collecting, structuring and visualizing data.

Finally, the *practice-based component* is dedicated to the design and implementation of techniques for visualizing personal data, seeking to highlight the ethical implications of its use as a raw material for portraits and the aesthetic choices inherent to the representation of identity. The project involves the development of a computational system capable of producing different representations of identity. These can be visual, graphic or physical outputs which reflect the behavioral profile of an individual in the digital environment, and highlight issues related to the collection and recording of their everyday activities mediated by digital technological devices.

4. Expected Contributions

This research aims to contribute to design solutions that respond to the growing dematerialization of social interactions by creating visualizations that can be integrated into interfaces of virtual social spaces and collaborative systems to represent identity based on interaction data. These data portraits then take advantage of the objectivity of data to represent the human subjectivity. They can also be applied to self-tracking devices, acting as interfaces between users and their own behavioral and biometric data. Finally, data portraits also have the potential to express our existence through our 'digital footprint' as biographical repositories of a technologically mediated life.

According to this approach, we believe that data portraits can promote a reflexive awareness on one's personal identity, but also make us conscious of the implications of personal data collection practices, through design practices that privilege the individuals agency over their personal data.

5. Progress Towards Goals

This research draws on a previous study developed in the Masters in New Media and Communication Design, which contributed to define the theoretical and conceptual framework of this research, as well as its aims and corresponding methodological approach. In continuity with this study, and in the scope of the PhD research we have initiated in September 2019, we intent to refine their analytical and practical components. Having done a large part of the literature review, we have framed the nature of these data portraits as tools for self-knowledge and awareness, in line with the aims of the project *Data Self-Portrait* previously developed.

Considering the analytical component of the study, we began to refine the selection of aesthetic artifacts focusing on automated processes of data collection and computational techniques of data visualization. We also started to further develop the model of analysis (Sampaio et al. 2019), drawing on the methodology of data visualization proposed by Fry (2008)¹.

We will then proceed to the development iterations of our ongoing project *Data Self-Portrait*, with the aim of exploring the creative possibilities inherent to data portraits and the implications of digital data collection.

1. The process of deriving information from a given data set, as described by Fry (2008, p. 5), implies the obtention of that data (*acquire*), structuring them (*parse*), the usage of methods of quantitative analysis such as statistics (*mine*), its representation according to a visual model (*represent*), the refinement of the same representation in order to make it clear and visually appealing (*refine*) and, finally, the integration of interactive features that allow viewers to select data and control how it is displayed (*interact*).

References

Donath, Judith.

2017. *The Social Machine - Designs for Living Online*. Massachusetts: MIT Press.

Donath, Judith.

2001. "Mediated Faces", *Sociable Media Group*. [accessed: 05-01-2019] <http://smg.media.mit.edu/papers/Donath/MediatedFaces/MediatedFaces.CT2001.pdf>.

Donath, Judith, Alex Dragulescu, Aaron Zinman, Fernanda Viégas, Rebecca Xiong, and Yannick Assogba.

2014. "Data Portraits", *Sociable Media Group*. [accessed: 18-05-2019] <http://smg.media.mit.edu/papers/Donath/DataPortraits.Siggraph.final.graphics.pdf>.

Fry, Ben.

2008. *Visualizing Data*. Sebastopol, CA: O'Reilly Media, Inc.

Hall, Peter.

2011. "Bubbles, Lines, Strings: How Information Visualization Shapes Society", *Data Design*. [accessed: 04-05-2019] <https://datadesign.files.wordpress.com/2016/03/bubbles-lines-and-string.pdf>.

Lupton, Deborah.

2016. "You are Your Data: Self-Tracking Practices and Concepts of Data", *Lifelogging - Digital Self-tracking and Lifelogging – Disruptive Technology and Cultural Transformation*. Berlin: Springer VS. (pp. 61–79).

Manovich, Lev.

2002. "Data Visualization as New Abstraction and Anti-Sublime", *Lev Manovich Personal Website*. [accessed: 04-05-2019] <http://manovich.net/index.php/projects/data-visualisation-as-new-abstraction-and-anti-sublime>.

Min, Sey.

2015. "Data Visualization Design and the Art of Depicting Reality", *MoMA*. [accessed: 12-12-2019] https://www.moma.org/explore/inside_out/2015/12/10/data-visualization-design-and-the-art-of-depicting-reality/.

Sampaio, Catarina, Luísa Ribas, and Pedro Ângelo.

2019. "Data (self) Portraits: An Approach to the Visualization of Personal Data from an Autoethnographic Perspective". *Proceedings of xCoAx 2019: 7th Conference on Computation, Communication, Aesthetics & X*.

Selke, Stefan.

2016. *Lifelogging - Digital Self-tracking and Lifelogging – Disruptive Technology and Cultural Transformation*. Berlin. Springer VS

West, Shearer.

2004. *Portraiture*. Oxford: Oxford University Press.

Zuboff, Shoshana.

2019. *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London: Profile Books Ltd.