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Data Physicality Research Summary

Source Summary:

- Moere, A. V. (2008)
- There are multiple degrees of mapping data to physicality, differing in levels of abstraction; ambient display, pixel images, object augmentation, data sculptures, and alternative modalities
    - Effectively, disregarding skeuomorphism or real world metaphors in data interpretation for better insight into how data is mapped

- Moere, A. V., & Patel, S. (2010)
- Focused on “data sculptures” and new methods of embodying abstract data through the design process
    - Data driven narratives are a process and not an outcome
    - Categories for data process
        - Indexical - based off objects data represent through direct relationship
        - Iconic - well defined metaphors for objects
        - Symbolic - somewhat arbitrary data mapping to physical form

- Vincent, J. (2016)
- Data sets used for inputs and training for AI have revealed otherwise unnoticed inherent biases
    - Through other means of data interpretation (i.e. physicality), nuances, biases, etc. can be found out and understood better

- Harding, S. (1992)
- Core feminist literature, effectively saying objectivity is a viewpoint that is fundamentally flawed and instead multiple viewpoints (each with their own validity and issues) need to be used to analyze any problem
    - Particularly in the realm of data which is typically held in scientific views of being only for technology; there is no universal, single, fully truthful piece of knowledge in a data set

- Jenkins, T., & Bogost, I. (2015)
- Claims that “making” culture is “cyberlibertarian”, i.e. just making for the sake of making or for individual, market based gain
    - Making is disconnected from the theories (seen as “data”) that allow it to flourish
    - Building/manufacturing needs to be tied more closely with its underlying structure and social/legal limitations

- Jenkins, T. et al (2016)
- Artefacts created via design and technology contain or create knowledge via their existence or use
    - Physical objects therefore are already mediums for carrying some inherent set of data (e.g. design choices to reach a final product)

- S. Bardzell, Bardzell, Forlizzi, Zimmerman, & Antanitis, 2012
- There is a movement towards creating designed products that have stronger relations between end use and process, suggesting that methods and tools (e.g. data) used to build products have significant importance

    - Critical design and commercial design will both be impacted by this trend suggesting that more and better ways to interpret data in physical form will be necessary
    - And maybe commercially viable too

- J. Bardzell & Bardzell, 2013
- Critical design is a research through design method, which exposes hidden issues and values as well as alternate methods of solutions
    - As data continues to impact all areas of study, its use and interpretation will become more important

- Freeman, J., Wiggins, G., Starks, G., & Sandler, M. (2018)
- Taxonomy for describing data as an art material
    - Useful for categorizing data and its uses within a design research methodology and communicating about different types of data

- Gaver, W. W., Beaver, J., & Benford, S. (2003)
- There is always ambiguity within a product (especially through the design process) and this ambiguity should be explored as design evolves
    - 3 Major types of ambiguity - information (within/inherent in the artefact), context (socialcultural nature), and relationship (point of view of the user)
    - Harnessing ambiguity may allow for deeper understanding of how to design products

Key Considerations

- Understand the types of data physical objects contain and can convey to users
    - Discover what influences the data contained
        - I.e. what design decisions impact the data of an object
    - Lay out what data may be more or less valuable as a designer/user
- Delve into more examples of critical design based on data
    - Understand how data maps as Indexical, Iconic, and Symbolic
    - Find more metaphors between objects and data
- Figure out how to embrace multiple viewpoints with multifaceted outputs in analyzing data
    - Employ a greater understanding of feminist ideology in technology
        - Liberal art perspective vs. scientific method vs. design research
    - Ambiguity can be a powerful tool but needs to be well balanced
- Investigate more projects' means of "manufacturing" products from data
    - What are the manufacturing/building methods
        - How do they impact the data within an object, if at all
    - Look for other mentions of data translated into physical form

Citations

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