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CRITICAL RESPONSE

Designing with Data

The rise of communication services in the past century has given people a chance to connect with each other quickly. Nowadays, our connected devices are giving us information and feedback from various inputs. We can capture, collect, and measure these inputs across multiple platforms. When we create these platforms, designers must center their information and goals around the people targeted to use the platform. They need to apply a human-centered design perspective to create a product that it meaningful to the user's goals.

On daily basis, information can be collected such that we can find patterns and insights into someone's life. Sometimes this data can be tricky to analyze since the quantity could be immense where we can't make the appropriate conclusions on the information received. As the authors explain how it is important to gather useful, efficient, and effective data, the designer must synthesize the information into a meaningful and appropriate collection which allows him to create a product that responds to consumer needs. There should be significant correlation between the data model collected and the user's motive. Otherwise, this data is irrelevant and will be inefficient for the designer to create appropriate conclusions. Edward Tufle declares how more information is better than less information because we can synthesize to a specific interpretation of the insights within collected data. In his book *The Visual Display of Quantitative Information*, he offers a few techniques for the designer to keep his attention on the right data inputs by averaging, clustering, and smoothing the information captured. (p.168) These skills can just help the designer towards the proper deduction and analysis which lead the design to the user's motives.

Sometimes it can be hard to organize data such that we find habits and trends with digital devices. It is mostly because the data is changing at all time, measured in real-time, and used in a dynamic environment while the information analysis is done at the same time. The authors propose four categories of data-driven products that organize our environmental data. Smart systems, ambient analytics, personal assistants, and quantified-self are directly related to our quest to automate our environment in a way where we collect the information that is surrounding us. In this context, it is hard to examine the information because there is usually an immense flow of information. We are currently allowing algorithms to analyze the information that is collected because they can do it faster than designers. But,

the algorithm designers must keep in mind the consumer that will use their product. As the authors state, the products must improve, serve and help the consumer to benefit his future actions. Daniel Norman describes in his book *The Design of Everyday Things* how we, as designers, should observe to find the user's motivations and desires which will allow the designer to understand its consumers in depth. (222-223) If we intend to automate our products, algorithm designers must create platforms that observe the environment, and allows the user to select a possible outcome in relation to the user's goals. Their approach must be human-centered for each algorithm they implement for the future.

The authors declare how the designer must keep his attention on the human motivations since the amount of data is increasing, and the human attention is a finite resource. Sometimes, these two aspects can clash which results into insignificant information for the user. An imposing way to eliminate this problematic would be to filter the noisy data that is not necessary for the main objective of the consumer. Datasets can be dense at times which might give false indications to the designer that the information is relevant. In fact, there is a large amount of noisy data which needs to be refined in a meaningful way such that the designer delivers the appropriate message. In the book *Visualization Analysis and Design* by Tamara Munzner, she explains the importance of an algorithm that can solve this problem of filtering inappropriate data by designing a "detailed procedure that allows a device to automatically carry out a desired goal". (72-73) Algorithm designs collect filtered evidence, and outputs a message to guide the user to his next meaningful action. This procedure is called inductive reasoning which is exactly what the authors of this chapter have been describing in depth. Everything is based on solving human problems that get people involved into their environment in a significant way.

Conclusively, data can be disturbing at times when there is large amount of information. Designers aren't always able to synthesize the information in a meaningful way such that it is hard to create a correlation between the user's motives and the data collected. They need to organize the raw information in a certain way that it guides the consumer towards his goals. The techniques used to model the data must keep a human-centered design which the user is at the middle of the information analysis.

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