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Designing for the Human Experience: The Psychology Behind UX Design

Introduction

In the constantly changing world of technology, the study of user experience (UX) design has made a significant impact. Going beyond developing visually appealing and functional interfaces, UX design focuses on creating designs that cater to the needs of its user-group, utilizing extensive processes that include user research, testing, and iterative design. UX design, therefore, includes the process of creating a holistic and meaningful experience for users interacting with services or products (IxDF, 2016). However, the crux of effective UX design often relies on the application of human psychological principles within designed products.

Design Psychology is a field that explores how human behavior and cognition influence design decisions. When specifically applied in UX, design psychology uses a combination of neuroscience, cognitive psychology, social psychology, and human-computer interaction to understand UX design through the lens of human behavior (Ishan, 2023; Yablonski, 2020). Psychology has always been a part of the overall design process. The way humans interact with their spaces - physical and virtual - creates a neurological relationship between them. The subsequent reaction and emotion experienced by humans defines the interaction in their brains, and can have powerful implications, impacting their perceptions of the products, and future interactions. Therefore, users are able to interact with designs on a deeper, psychological level, developing certain behaviors and attitudes that can influence, or manipulate, their decisions. It is this impact of design on users that led me to explore this topic. We, as designers, hold a significant amount of power in how we influence users, and it is our responsibility to understand how and why users are impacted, and how we can ethically mitigate this effect for the better.

Research in the field of Design Psychology has bloomed in the last five to seven years, along with a growing emphasis on creating designs that cater to the human experience. For designers, it is essential to understand the user psychology leading to interaction decisions, so that they can be applied within the UX intentionally and cautiously. Through a synthesis of this research, the following essay explores the symbiotic relationship between design psychology and user experience design. It aims to outline the main applications of this relationship, creating a framework for designers who want to learn more about how to implement design psychology in their work. Therefore, this essay starts by describing the formulation and application of psychological UX heuristics, then delves further into the need for zooming into the psychology of specific behaviors, and ends with a discussion of the ethics involved in its application.

Understanding Psychological UX Heuristics

As designers, we often make design decisions that mirror human psychological principles, sometimes subconsciously. But, explicitly applying psychological principles in the design process can help establish and support many design decisions. In an ideal world, each product would be exactly tailored to its user group's psychology. Realistically, however, using the integration of design psychology in UX, some overarching psychological principles emerge that can be translated into UX rules of thumb. We refer to these principles as UX heuristics (Kohler, 2022). This section describes how design psychology can be applied in the UX design process, and has led to the development of many UX heuristics that are essential to implement in our work.

Design psychology can be applied throughout the UX design process. It helps designers understand user psychology, to create interfaces that connect with and engage users on a deeper level. Psychological principles also streamline information processing, helping designers understand and minimize the cognitive load on users, employing techniques such as information hierarchy, navigability, and simple and clear visual cues. The integration of design psychology also lends a hand to emotional design, which aims to evoke specific emotions in users through a product's visual and interactive elements. By studying and understanding users' emotional responses and their causes, designers can create interfaces that resonate emotionally with the user group, to provide a better user experience. Observation and analysis of user behavior can also be useful in identifying and optimizing interaction patterns, and provide valuable feedback for iterative designs.

The role design psychology plays in the UX design process is essential to understand. But how can we, as designers, synthesize these functions into operative, testable, and implementable characteristics of our designs? Yablonski (2020) provides an invaluable resource that answers this question. In his book, *Laws of UX* (2020), Jon Yablonski outlines how psychological principles can be transformed into UX heuristics, and discusses ten main "laws of UX" that stem from design psychology thinking, providing a framework for applying these principles. Each chapter describes a common design principle, discussing its origin, the psychological concept behind it, and how it is applied in UX, along with examples. Below, I will outline the *Aesthetic-Usability Effect*, one of the laws of UX that Yablonski discusses in their book.

The *Aesthetic-Usability Effect* supposes that "users often perceive aesthetically pleasing design as design that's more usable" (Yablonski, 2020). This principle postulates that humans have positive emotional responses to designs that they find visually pleasing, increasing the perception of usability and credibility. The origin of this principle is a study that tested the relationship between aesthetics and digital interfaces on users of ATM machines (Kurosu & Kashimura, 1995). They found that the visual attractiveness of the design positively influenced user perception of usability. The underlying psychological concept that explains this behavior is automatic cognitive processing. Humans are quick to react and judge objects around them for efficiency in perception, minimizing the cognitive load, and optimizing performance. This psychological principle of automatic cognitive processing is transformed into an implementable UX heuristic Yablonski calls the *Aesthetic-Usability Effect*. Therefore, an aesthetically pleasing

product can be perceived as more usable by users. Minor usability issues are more likely to be tolerated by users when in attractive designs; however, this perceived usability can mask issues from being discovered during usability testing. When presented as a UX heuristic, the psychological principle can be applied to relevant design problems, and can also provide justifications for design decisions (Yablonski, 2020).

There are many more UX heuristics that have been drawn from psychological principles, like the *Peak-End Rule*, *Miller's Law*, and the *Doherty Threshold*. While applying these may seem relatively instinctual, it is still important for designers to be well-versed in this subject to design intentionally, effectively, and sustainably. These principle psychological UX heuristics act as the foundation for the application of design psychology in UX design.

Zooming In: Psychology of Specific Behaviors

While UX heuristics are overarching general principles that should be employed within every interface as needed, it is essential to understand where more research into user psychology is required. These might be instances where there is a need to delve deeper into specific behaviors and responses of a user group based on the requirements of the product, and the interactions it encourages. When interaction with a product has high stakes and can have a significant impact on user behavior, it is a designer's responsibility to learn the psychological responses and create appropriate human-centered approaches to designs. This section provides an overview of designs that follow the psychology of specific behaviors using an example to help illustrate how it can be applied to UX design.

A good example for further delving into human psychology of specific behaviors are products that involve high stress responses. In Swindler's recent book *Life and Death Design* (2021), the author breaks down the human stress response in the context of UX design, and how understanding the psychological reactions are essential in creating human-centered products. Swindler dissects the human acute stress response, giving detailed descriptions of sub-responses, including the startle reflex, intuitive assessment, the fight, flight or freeze response, reasoned reactions, and recovery. With each of these accounts, there are examples to help readers further understand their impacts. After Swindler sufficiently describes the psychology behind the responses, she discusses the implications human responses should have on UX design. This includes mitigating an expected negative intuition, reinforcing positive reactions, and teaching designers how to support, empower, and protect users in moments of crises (Swindler, 2021).

It is important to be able to understand when there is a need to further delve into human behavior for a product. Swindler (2021) identifies that the human stress response is essential to include within designs for products used in fields with life-and-death stakes (healthcare, aviation), products used in high-stress industries (day-traders or customer service representatives), products intended to be used in moments of stress, and products that may not be inherently stressful, but may be used by users that are stressed in any capacity (Dähnert, 2023). Similarly, it is essential to identify how your product may impact your users psychologically, and learn to mitigate this impact by specifically designing for those responses.

Ethics of Design Psychology

While the knowledge and implementation of psychological principles in UX design is extremely important, it is also essential that designers do so ethically, proceeding with caution and intention. Integration of design psychology in UX can be extremely beneficial to user experiences, and the success of a product or service. However, recent ethical issues in the industry show how designers have used their knowledge of human psychology and behavior to manipulate and exploit users for their personal or company gain. The final section of this paper outlines the role of ethics in integrating psychology into design decisions; it evaluates how designers can resolve to reduce negative impacts of technology on users, and create products that have an overall positive impact on human experiences.

The dangers of manipulative design practices are well exemplified in the concept of dark patterns. Dark patterns are instances where designers use their knowledge of human behaviors to deceptively manipulate users into unintended or harmful functions (Gray *et al.*, 2018). A concept first introduced by UX practitioner Harry Brignull, dark patterns are intentional design choices that trick users (Brignull, 2013). Some common ones include the use of defaults, where preselection of actions are used to steer user decisions, or forced continuity, where a subscription is renewed from a free trial without appropriate notification (Brignull *et al.*, 2015). Today, these deceptive techniques are found all over the internet, with some of the most exploitative dark patterns emerging in social networking sites.

In a recent study, Mildner *et al.* (2023) identified forty-four different dark patterns in popular social networking sites like Facebook, Instagram, X (formerly Twitter), and TikTok, aimed to limit a user's autonomy and influence their decisions. This is supported by the global outcry about the dangers of social media. Increasingly, social networking sites like Facebook, Instagram, X (formerly Twitter), and TikTok are being heavily criticized for their negative impacts on the well-being of users. Meta is currently being sued by thirty-three states in American federal court over its conscious negative influence of children and teenagers (Martin & Allyn, 2023). The lawsuit intends to explore design decisions made by Meta to knowingly induce children into addictive and compulsive social media use, and mislead the public about the dangers of their platforms, with a motive for profit (Stempel *et al.*, 2023). Earlier this year, TikTok was hit with a €345 million fine for making use of deceptive design and dark patterns to encourage younger users to choose more privacy-intrusive options, failing to protect users' privacy rights on the platform (Woollacott, 2023).

It cannot be argued that technology has a significant impact on people's lives. Despite the positive impact of design psychology on user experiences, there are substantial ethical considerations that need to be understood by designers. Design is inherently a persuasive act directed towards the users. However, in this process, UX designers can be complicit in manipulative and exploitative practices, causing harm to the users. This places a massive responsibility on designers to be intentional about practicing ethical design, mitigate unintentional side-effects of products, take responsibility for the impact of a product, and advocate for the end-user community.

Conclusion

The integration of design psychology in UX design is an ongoing process. Overarching psychological UX heuristics provide a good starting point for designing in concert with human behavior. When there is a need, the psychology of specific behaviors should be researched to inform high-stakes designs. Finally, the ethics of design psychology are essential to consider when influencing human behavior, to mitigate negative impacts on well-being.

While there is an abundance of independent resources about the integration of psychology in design, there is a significant lack of standardized protocol that advises designers how, and to what extent, psychological principles should be applied within UX design. Many industries rely on incoming designers to self-learn how psychology can be applied in design, which leads to contention on the industry standards of integration. This also leads to dubious ethics in the application of psychology in design. There is a need for future research in creating a framework for how psychological principles can be applied to design, and standardized training for incoming designers to learn its benefits and impacts.

It is often easy, as designers, to think of the application of psychological principles in design as merely “common design sense,” something that we *must* already include when creating our designs. However, we must also be aware of the unconscious ignorances that we foster because of our access to, familiarity with, and knowledge of technology, and pivot to intentional design strategies. It is the fear of the potential continuous negative impact of technology that led me to evaluate how design psychology can be applied ethically, and how we can teach incoming designers of this responsibility effectively. This is our fundamental duty to create products that align with the well-being of our users, augment the established human experience, and engage with the overall impact of technology on society.

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