Review Article

Uncovering Dark Patterns of PersuasiveDesign (UI/UX)

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I N F O

A B S T R A C T

This research paper aims to explore the pervasive use of dark patterns in user interface (UI) and user experience (UX) design, shedding light on the ethical implications associated with these manipulative design practices. Dark patterns refer to intentionally deceptive and misleading design elements that influence user behaviour to the benefit of the designer or a third party. The paper will delve into various examples of dark patterns commonly found in digital interfaces and analyse their impact on user decision-making. We understand the fundamentals of persuasive design and how the designer and the end user of the product play vital roles behind the motivation for designs created. A user's needs and habits are taken into consideration when designing a product, and adhering to those leads to a product that better suits their needs than other already existing alternatives. Persuasive design on its own is not inherently bad or evil, since all it does is reflect upon the user's needs and requirements from a functioning product. Understanding the user's perspective can help designers create products that function efficiently and offer convenience. The UX research that is conducted when developing a product is where persuasive design comes into play the most. Through steps like empathy mapping and user personas, we identify what our users's current pain points are and how they resonate with the problem statement. Persuasive design is also where the user can be influenced in a way that is beneficial for a third party financially or the designer themselves. This is where the dark patterns are drawn in; they are almost always on our faces, yet they are difficult to identify because they mask themselves as features or enhancements. Some examples exist in the products and services we use on a daily basis, from notifications we did not ask for to companies convincing us how their products are superior to existing alternatives. While a healthy competitive environment among industries is the backbone for innovation, it is important for us as end users to understand and identify dark patterns wherever they exist and make rightful decisions for ourselves. The product is designed for us and offers us the services we desire, and it is up to us to choose what fits our needs best.

Keywords: Dark Pattern, Uncovering, Persuasive

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Introduction

Persuasive design constitutes an aspect of design methodology dedicated to shaping human behaviour by leveraging the attributes of a product or service. Grounded in psychological and social theories, this approach finds application in diverse domains such as e-commerce, organisational management, and public health. Moreover, designers frequently employ persuasive design across various sectors where sustained audience engagement is sought, aiming to foster lasting connections and consistent user interaction.[1]

Fundamentals of Persuasion

"Emotions shape all activity in adaptive ways. In the absence of emotional markers, decision-making is virtually impossible." Saver & Damasio (1991)[2] Persuasion revolves around enhancing interaction between two entities. The art or practice of persuasion encompasses four key components:

- The initiator is the individual seeking to attain a desired outcome through persuasion.
- The objective is the aim of persuading the user, as all persuasion is purpose-driven.
- The communication channel is the message conveyed by the persuader to the audience.
- The recipients are the users who have the potential to assist the persuader in achieving their goals (in this context, those who encounter the design).

Persuasion in design is the art of subtly influencing user behaviour through intentional and strategic choices in the visual and interactive elements of a product or interface. It goes beyond aesthetics and functionality, delving into the psychology of users. By understanding human behaviour, emotions, and decision-making processes, designers can create experiences that guide users towards specific actions or outcomes. Persuasive design often incorporates elements like social proof, scarcity, and emotional appeal to engage users and motivate them to take desired actions. The goal is to enhance user engagement and satisfaction while achieving the objectives of the product or service.

Persuasion in design, while a powerful tool, also raises ethical considerations from the user's perspective. When design elements are crafted to subtly influence behaviour, there's a potential for users to feel manipulated or pressured into actions they may not have taken organically. The fine line between guiding users towards a positive experience and coercing them into unintended decisions is crucial. Designers must be mindful of how persuasive elements may impact the user's autonomy, ensuring that the design fosters a sense of trust, transparency, and respect for individual choices. Striking a balance between achieving design goals and prioritising the user's well-being is imperative to avoid negative perceptions and build lasting, positive user relationships.

Dark Patterns

The term "dark patterns" originated in 2010, coined by the UK-based UX designer Harry Brignell. He characterised it as "a deliberately crafted user interface aimed at deceiving users into performing actions, such as unwittingly purchasing insurance alongside their purchase or subscribing to recurring bills."

An article in Smashing Magazine titled 'Persuasion Triggers in Web Design' explores decision-making in people, how one weighs out pros and cons, and then makes a decision based on logic. Some people are more emotion-driven than logical and tend to favour and make decisions based on how they feel emotionally about the outcome of the respective problem. We understand that cognitive biases play a major role in the way we make decisions, and that exactly is being examined to see how to exploit them in the designs of various websites (figure 1).
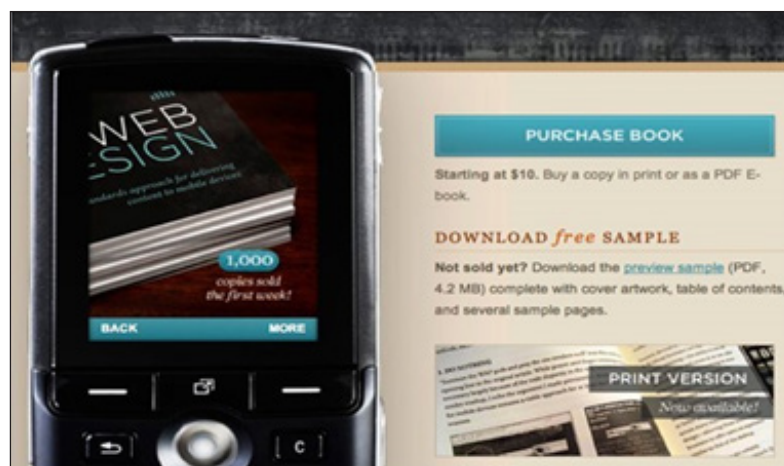

Figure 1.Book publisher offers free sample chapters in hopes that user will feel to reciprocate the favour and buy the book. [3]

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Classifications of Dark Patterns

"A dark pattern is a type of user interface that appears to have been carefully crafted to trick users into doing things that are not in their interest and are usually at their expense."

- **Bait and Switch:** When someone tricks you by sharing false information that matches your interests, and when you get interested and click on it, the information suddenly changes. This is called "bait and switch." Businesses sometimes use this trick to get more clicks. For example, a sneaky version of this happens in the Windows 10 dialogue box. When you click the X to close it, instead of closing, it starts the upgrade process without your clear consent.
- **Hidden Costs:** When a product or service shows a certain price, and then, surprisingly, the cost goes up significantly (due to taxes and delivery fees) when the user proceeds to the checkout.
- **Forced Continuity:** In forced continuity, you're compelled to provide your card details to begin a free trial or enter your email to continue using a website or app; there's no choice but to skip these self-interest tactics.
- **Confirm Shaming:** When the language used in your pop-up messages attempts to manipulate and toy with a user's thoughts, the outcome is confirm shaming. Confirmation shaming refers to the technique of using guilt or pressure in confirmation dialogues to coerce users into taking a desired action, often by making them feel guilty or embarrassed if they choose not to proceed.
- **Disguised Ads:** A hidden advertisement is a deceptive design tactic known as a dark pattern. In this scenario, an ad banner within a website or app is crafted to resemble valuable content that a user is actively seeking. Users might mistakenly click on it, only to discover later that they have been misled into engaging with spam or promotional content.
- **Roach Motel:** The entry process is a simple and straightforward two-step procedure, creating the illusion of ease and value. Conversely, exiting is a laborious and nearly impossible task. For instance, subscribing is uncomplicated, but when attempting to cancel the subscription, the option is neither easily found nor readily apparent.
- **Asking More Than Intended:** The major blunder that leads to a loss of customer trust is soliciting more personal information than users originally intended to share. This dark pattern persists online under the guise of "knowing your users."
- **Triggering Fear:** In these dark design patterns, users are discouraged from opting out of subscriptions or feature selections by implying potential negative consequences. For example, Facebook utilises "intrusive default settings" and employs "misleading wordings" to influence user choices.
- **Social Proof:** Encouraging user actions and behaviour by narrating success stories of similar users, whether they are paid or in-house members, is a common strategy employed by brands. Such content is frequently promoted on websites and social media platforms to attract more visitors and boost purchases.
- **Triggering Fear of Missing Out:** This tactic is widespread on eCommerce platforms, where users are informed that there are "only a few left" in order to prompt a purchase. Nearly every eCommerce business utilises this strategy today to enhance order volumes.[3]

Design and Perception of Control

The perception of control in UI/UX design refers to the user's sense of empowerment and mastery while interacting with digital interfaces. It involves creating a design that allows users to navigate effortlessly, make informed decisions, and confidently engage with the content or functionality presented. Elements contributing to the perception of control include intuitive navigation structures, consistent and predictable interactions, clear feedback mechanisms, and a design that respects the user's preferences and choices. When users feel in control, they are more likely to have a positive and satisfying experience with the digital product or service.

"UX Consultant Nadine Kintscher says, Today, you can adjust your screen's brightness, disable notifications,, and decide whether your phone should connect to both the data and phone network or not. Even if these adjustments only extend your phone's battery life by a few minutes, it gives you a warm and fuzzy feeling of accomplishment. You are in charge."[4]

Psychology in design explores how human behaviour, cognition, and emotions can inform the creation of user-friendly and engaging experiences. In this context, mimetic desire plays a crucial role. Rooted in social psychology, mimetic desire suggests that people often imitate the desires and behaviours of others. In design, understanding mimetic desire helps professionals create interfaces and products that resonate with users' shared aspirations, tapping into the power of social influence to enhance user engagement and satisfaction. By aligning designs with the way users naturally emulate others, designers can leverage mimetic desire to craft more effective and appealing experiences.

Mimetic Desire

Mimetic design in the context of UI/UX design involves leveraging the principles of mimetic desire to create

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interfaces that resonate with users on a social and psychological level. This approach acknowledges that users often imitate the behaviours and preferences of others, and it aims to capitalise on this tendency to enhance the overall user experience.

Mimetic design also plays a role in establishing a sense of community on digital platforms. By designing features that encourage users to showcase their preferences or achievements and allowing others to emulate or interact with them, designers can foster a sense of connection and shared experiences.[2]

Why Avoid Dark Patterns[4]

- **Ethical Concerns and Legal Ramifications:** Dark patterns are widely condemned for their unethical nature, with some jurisdictions even passing laws against their use. Despite this, some companies have normalised them, risking legal repercussions and damage to their reputation.
- **Exploitative Nature:** Dark patterns exploit user psychology, taking advantage of common browsing behaviours and visual cues. By hiding clauses or opt-ins in inconspicuous places, they deceive users, leading to frustration and self-blame.
- **Brand Reputation:** Deceptive practices damage a brand's reputation and erode trust with customers. Negative feedback stemming from frustrating user experiences can spread rapidly, deterring potential customers and alienating existing ones.
- **Contradiction to UX Principles:** Dark patterns are fundamentally at odds with the principles of good UX design, which prioritise understanding user needs and facilitating positive, friction-free experiences. While UX design aims to advocate for users, dark patterns serve the interests of the company by manipulating and confusing users.

Perception Means Prediction, Prediction Means Error[5]

Our perception isn't just about seeing things; our brains also predict what's coming next. These predictions help us plan our actions. But sometimes, our predictions are wrong, leading to mistakes. Understanding how these predictions work is important for design, as it can help prevent errors. Bad design often leads to errors, not problems with our brains. Designers need to consider how people think when creating products. Ignoring this can lead to mistakes and unhappy users.

Psychology in Design

Psychology in design, particularly within the realm of persuasive design, involves a deep understanding of human behaviour, cognition, and emotions to influence users to achieve specific outcomes. Persuasivedesign aims to guide user behaviour through the intentional and strategic use of psychological principles. Here's a brief note on the subject:

In the realm of design, psychology serves as a powerful tool to create compelling and effective user experiences. Persuasive design, a subfield that applies psychological insights, focuses on influencing user behaviour and decision-making. Designers employ various psychological strategies to subtly guide users towards desired actions, such as making a purchase, signing up, or engaging more deeply with a product or service.

Key Psychological Principles in Persuasive Design Include

- **Cognitive Biases:** Understanding common cognitive biases, such as confirmation bias or loss aversion, enables designers to present information in ways that resonate with users' natural thought processes.
- **Emotional Design:** Incorporating elements that evoke specific emotions can significantly impact user perceptions and actions. Emotional design establishes a connection between users and products, making the experience more memorable and persuasive.
- **Social Proof:** People are influenced by the actions of others. By showcasing positive user reviews, testimonials, or social media endorsements, designers tap into the psychological phenomenon of social proof to build trust and credibility.
- **Scarcity and Urgency:** Creating a sense of scarcity or urgency can motivate users to take immediate action. Limited-time offers, countdowns, or notifications about diminishing stock are examples of persuasive elements that leverage the fear of missing out.
- **User Feedback and Iteration:** Constantly gathering user feedback and iterating based on their responses is a psychological approach that aligns with the user-centred design process. It ensures that the design remains attuned to users' evolving needs and preferences.

By integrating psychological insights into the design process, persuasive design seeks not only to make products aesthetically pleasing but also to influence user behaviour in a way that benefits both users and businesses. However, ethical considerations are paramount, and designers must strike a balance between achieving goals and respecting user autonomy and well-being.

Practices to Overcome Influence of Persuasive Design

In today's fast-paced world, where people crave instant results, the first thing on their minds when tackling a task is usually, "How much time and effort will this take?" Recognising this inclination is key for designers aiming to create experiences. By acknowledging that designers

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can effectively cater to this behaviour online by providing clear expectations from the start and integrating prompt feedback and outcomes,

Designs that opt for simplicity and prominently showcase essential information for the ongoing task contribute to expediting interactions. The goal is to minimise the time and effort users need to invest in accomplishing their objectives. Users appreciate straightforward interfaces that prioritise relevant details, allowing them to swiftly navigate and complete tasks with efficiency. This design approach aligns with the desire for instant gratification in a world where time is of the essence.

When people tackle tasks, their minds instinctively weigh the time and effort involved, and they often choose the easiest path. The prospect of saving time acts as a persuasive force that nudges them to proceed. Take, for instance, Travelocity, where they pride themselves on a quick two-minute booking process, even for first-time users without an account.

Consider The Zebra, a site for comparing insurance. Instead of bombarding users with a seemingly endless form full of questions, they smartly break it down into smaller, more manageable segments. This technique, known as "chunking" in the design world, makes a task seem less overwhelming, encouraging people to eat an elephant. One bite at a time. The Zebra simplifies the insurance quote process, making it easy for users to digest the information and take manageable steps towards their goal (Figure 2).[6]

Avoid the urge to cram every persuasive pattern into your design solution, as this can lead to cluttered and confusing user experiences. Overloading your product with too many patterns not only complicates matters but also diminishes their individual effectiveness. Instead, opt for a streamlined selection of patterns that complement each other harmoniously. By focusing on a concise set of strategies, you can better evaluate their impact and refine your approach for more successful behavioural outcomes.[7]

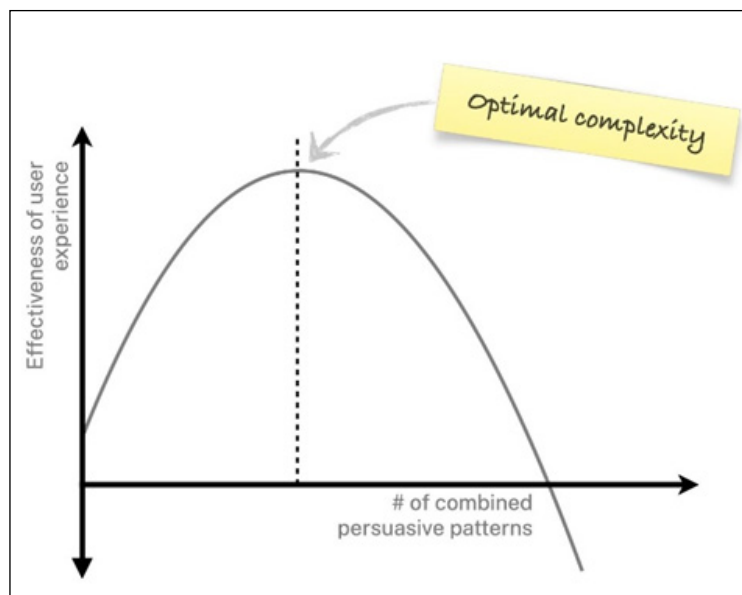**Figure 2.Zebra, an insurance comparison site[6]**

Figure 3.Law of Diminishing[7]

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How Laws and Regulations can Stop the Worst Dark Patterns[8]

For instance, California has taken significant steps to combat the detrimental effects of dark patterns through legislative measures. Attorney General Xavier Becerra, in one of his final actions before assuming the role of Secretary of the Department of Health and Human Services, enhanced the state's Consumer Privacy Act (CCPA) with regulations specifically targeting dark patterns. These regulations prohibit the use of dark patterns that obstruct consumers from exercising their rights under the law, such as opting out of data sales. The banned dark patterns include tactics like presenting users with multiple screens to navigate, lengthy and convoluted privacy policies, discouraging language aimed at dissuading users from opting out, and using confusing terminology. This demonstrates how laws and regulations, such as those enacted in California, can effectively curtail the proliferation of harmful dark patterns, safeguarding consumer rights and privacy (Figure 3).[8]

Importance of Educating Consumers[9]

In India, as digital services become more prevalent, there's a growing need to educate users about persuasive design and dark patterns. The Central Consumer Protection Authority released a list of 13 practices that include dark patterns and deceptive design, which include 'basket sneaking', 'false urgency, and others.[10]

With the proliferation of personal data sharing online, there's a crucial requirement to raise awareness about data privacy and digital literacy. Education campaigns, school curricula, and collaborative efforts by government agencies, NGOs, and industry players can empower users to make informed choices and protect their privacy rights. By promoting transparency and accountability, India can foster a safer digital environment for all.[11]

Conlcusion

In conclusion, this research delves into the intricate landscape of UI/UX design, shedding light on the often-unseen aspects of dark patterns, persuasive design, psychology in design, and the influence of mimitic desire. The exploration of these elements underscores the nuanced ways in which digital platforms can shape user behaviour, impacting both ethical considerations and user experiences.

Dark patterns reveal the potential for manipulation within design, raising ethical concerns about user autonomy and trust. The persuasive power of design, rooted in psychology and mimetic desire, highlights the need for responsible practices to ensure positive user interactions.

Dark patterns, though still prevalent, pose significant risks to user experiences, undermining loyalty, fostering negativity, and driving customer attrition. By advocating for transparent and clear choices, UX designers can champion a more respectful approach towards users. While such an approach may not yield immediate benefits akin to dark patterns, it promises a less vexing and markedly enhanced customer experience (CX). Ultimately, this shift fosters customer retention, affording companies a competitive edge in the long run, as customers are more inclined to remain loyal to businesses that prioritise their needs and preferences.

However, as technology advances, users can take action to overcome the influence of persuasive design. Simple yet effective strategies, such as mindfulness of design choices, education on persuasive techniques, reliance on user reviews, and advocating for ethical design practices, empower users to navigate digital spaces with awareness and autonomy.

In the ever-evolving landscape of digital design, it is imperative for designers, users, and industry stakeholders to collectively foster an environment that prioritises transparency, respect for individual choices, and a commitment to ethical practices. By acknowledging the implications of persuasive design and implementing strategies to counter its potential negative impacts, the digital realm can evolve into a space that not only meets user needs but also respects their autonomy and well-being.

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