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Useful Untruth: The Utility of Deceptive Rhetoric in Apps, Websites, and Games

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by

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Under the Direction of George Pullman, PhD

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ABSTRACT

Deception is a prevalent digital rhetoric strategy used in websites, apps, and games to nudge user behavior. A deceptive design employs multi-modalities to influence how people perceive choices. In user experience (UX) design, deception is often seen as an unethical practice that leads to “dark patterns,” designs in digital media that take advantage of users by exploiting their emotions and cognitive biases to mislead them toward detrimental behavior. But not all deceptive designs are dark patterns. In fact, deception can be applied to purposes that benefit users’ digital wellbeing and improve the usefulness of digital media. This thesis explores the rhetorical utility of a deceptive design as useful untruth. It defines notions of harm and wellbeing to differentiate malicious deception from benign uses. The research also examines how the procedural interplay of feedback, navigability, and consistency serves as an indicator of whether a deceptive design is useful or harmful due to the interconnected ways these three factors shape choice architecture and mental models of use.

INDEX WORDS: Deceptive design, Useful untruth, Dark pattern, Rhetoric, User experience, Mental models, Procedural rhetoric

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DEDICATION

To my mom and sister, who have always supported me throughout my academic studies. And to all the professors I have had over the course of my education; their knowledge and expertise shaped me into the writer I am today.

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I would like to thank my committee chair, Dr. George Pullman, whose thorough feedback helped me develop, organize, and refine my thesis. I had never heard of dark patterns in UX design until I researched about them in one of his classes. What I learned inspired me to revisit and expand on that research with a look at the rhetoric of deception. With his guidance, I was able to focus the direction of my thesis and add more nuance to ideas I had initially struggled to connect. I am also grateful to Dr. Gu and Dr. Hocks for agreeing to be on my thesis committee on short notice and taking the time to review my thesis as it progressed. I greatly appreciate all the support and assistance I have received in the process of writing this thesis.

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1 INTRODUCTION

1.1 Influencing Behavior: Nudges and Hooks

User experience (UX) design is the practice of composing a digital product or service that is meaningful, persuasive, or useful to its target audience. This process involves the use of digital rhetoric to lead users down a particular path of interaction. The companies behind mobile apps, websites, and games often influence thoughts and actions without their users noticing. These digital media affect user behavior through strategically placed nudges and hooks. A nudge is any factor that affects decision making without limiting options; it is the act of presenting true or false information in a way that directs choice. Nudges are multimodal rhetorical strategies, appearing as the visual, textual, and sonic elements that make up a user experience, such as attention-grabbing buttons or countdown timers. Behavioral economists Richard Thaler and Cass Sunstein, who popularized nudge theory, aptly illustrated the nature of a nudge as something that directs rather than mandates: "Putting the fruit at eye level counts as a nudge. Banning junk food does not" (Thaler and Sunstein 8). A nudge does not change available options; it frames them as more appealing or less desirable. Nudge theory proposes that by introducing factors that shape the environment in which choices are made, it is possible to increase the likelihood that one option is chosen over another. Influencing the context of a decision in order to steer someone toward an intended behavior is called choice architecture, a term coined by Thaler and Sunstein. Choice architecture guides our understanding of options, risks, and outcomes by "ordering the information that we see and when we see it" (Kuang 269). Nudging allows businesses to persuade through suggestion and reinforcement, typically taking a generic, personalized, or social approach (e.g., push notifications, reminders, scoring, etc.). When designed around the users' interests and wellbeing, nudges are ethical; they point people down the appropriate course

of action to achieve their desired goals or discourage actions that are harmful to oneself and others. In their research on the social media platform X (formerly Twitter), Katsaros et al. (2021) provide an example of nudging used to discourage harmful behavior and improve the quality of the user experience. When a user is about to post potentially offensive content or language, X will sometimes nudge them to pause and rethink their decision with the prompt "Most posters don't post replies like this. Want to take another look before posting?" The nudge discourages the user with the idea that their intended behavior is not the social norm, but they are free to proceed at their own discretion. Sunstein explains that ethical nudges promote human agency by responding to behavioral biases as opposed to exploiting them. For instance, an alarm notification responds to inattention, and a warning pop-up could be used to counteract present bias. Some nudges guide people to make the right decisions in the same way road signs guide and caution drivers, but others function more like roadblocks or pitfalls.

A nudge becomes manipulative when it perverts a person's desired choice, such as when a lie or ambiguity is used to promote unintended decisions or inaction. For example, Google Maps used to show users the deceptive prompt "Enhance your Google Maps experience" without giving a clear explanation of what that meant. The idea of enhancing something is a positive enough nudge that most users would select the option thinking they are only improving their app experience. On the contrary, users were unknowingly giving consent for Google to collect and store their location data for geotargeted ads that had nothing to do with the usability of Google Maps (Bhuiyan 2023). In a similar vein, Amazon lies to users looking to cancel their Prime membership by claiming they will instantly "lose access to all [their] benefits," but the benefits remain until the membership period expires. Amazon intentionally uses this language to nudge users into inaction, and the company's misleading claims are further reinforced by a button

saying, “Use your Prime benefits today,” which navigates the user away from the cancellation process entirely. Manipulative and deceptive experiences are easier to create online because designers have greater control over what conditions affect choice and meaning-making (Brignull 8). Nonetheless, online spaces are full of information, and people have limited attention to give. For this reason, companies tend to be more focused on increasing user acquisition and retention than streamlining design choices for better usability. “When everything is virtual, anything can be tweaked to increase profitability,” and for many apps and websites, profit hinges on devising habit-forming strategies that hook users into consistent engagement with a product (Brignull 8).

Hooks are persuasive design techniques that manipulate users into a cycle of repeated action. The habit-forming process consists of a four-step feedback loop: “trigger, action, variable reward, and investment” (Eyal 6). Nudges serve as external triggers that motivate people into taking action to achieve an implied outcome. Triggers that are frequently encountered become difficult to recognize as manipulative because the emotional response and investment hook cycles condition become second nature to the person being hooked. Hooks compel people to make the same choice when encountering a particular trigger, raising the possibility that they will exhibit the same behavior in the future without even thinking about it. Therein lies the danger of hooks, their ability to eliminate thought from decision making. For example, with enough hook cycles, the hesitation someone might feel about spending excessive amounts of money on microtransactions in an app or game would gradually fade with each reinforcement, such as being thanked by a virtual character for their purchase or gaining social recognition for renewing a subscription. Hooks can encourage addiction. Growing market trends geared toward creating highly engaging and addictive products have led to an increased use of designs that manipulate users for profit: dark patterns.

1.2 What are Dark Patterns?

The term “dark pattern” was coined in 2010 by Dr. Harry Brignull, a user experience specialist and Head of UX Innovation at the London, UK-based retirement technology business Smart Pension. He defines dark patterns as “tricks used in websites and apps that make you do things that you didn’t mean to, like buying or signing up for something” (Brignull 2023). Although this definition illustrates the deceptive potential of dark patterns, it oversimplifies them. There are various emotional nudges, visual obstructions, omissions, and misleading statements that could be used to manipulate someone but not all of them function through deception. Brignull has acknowledged this fact and now advocates that the term “dark pattern” be phased out for more inclusive terminology, such as harmful online choice architecture, dark nudge, or sludge to name a few. Many of the alternatives are terms that originate from Thaler and Sunstein. In particular, the term “sludge” most accurately captures the essence of a dark pattern. Sludge refers to any obstructive design that either discourages behavior that is in the person’s best interest or encourages self-defeating behavior (Thaler 2018). Coercion and malicious deception can be considered sludge because they are manipulative practices that resist the user’s freedom of choice and impede autonomy. In fact, several laws regarding dark patterns, such as the California Privacy Rights Act (CPRA), Digital Services Act (DSA), and Colorado Privacy Act (CPA), highlight “subverting or impairing user autonomy, decision making, or choice” as substantial characteristics of dark patterns (Brignull 9). Some laws were specifically created to protect people’s freedom of choice from being exploited, such as the Restore Online Shoppers’ Confidence Act (ROSCA) which prohibits add-on sales of online goods or services that charge the user without their informed consent. All dark patterns exploit vulnerabilities in decision making (e.g., biases and fallacies), cognitive limitations (e.g., comprehension or a lack of time),

and expectations. However, design patterns are not always identical in how they are implemented in digital media; they may be functionally similar, but they vary in usage and appearance. The various combinations of rhetorical strategies a company could use to manipulate users are intentionally selected to have a specific compounding effect on the usefulness and quality of a product, making the average profile of a dark pattern multifaceted rather than something that is the same in all instances.

Recent studies were conducted to identify, categorize, and evaluate the different kinds of dark patterns employed on apps, websites, and games. Researchers from various areas of expertise such as behavioral economics, human-computer interaction (HCI), game design, and legislation have developed taxonomies that align with their fields of inquiry. While some focus on privacy laws, others provide an analysis of UX/UI design and user psychology. Mathur et al. (2019) examined attributes of dark patterns and categorized them based on how each modifies the choice architecture by either reshaping the decision space or manipulating the information flow. Their research articulates a normative perspective for why dark patterns are problematic practices, highlighting four lenses that could be used to evaluate and define the harm posed by dark patterns: individual welfare, collective welfare, regulatory objectives, and individual autonomy. The taxonomy crafted by Mathur et al. also connects each dark pattern to the cognitive biases they exploit, which gives their research a broader application in understanding the psychological motivations behind user decision-making. Gunawan et al. (2021) observed differences in the usage of dark patterns across web modalities and identified them with terms corresponding to the taxonomies of Brignull and Mathur et al., such as “privacy zuckering” and “roach motel.” Gunawan et al. found that the usage of dark patterns in digital services was 85% greater in mobile modalities than on the desktop websites of those same services. Moreover, their

research reflects how differences in the capabilities, affordances, and features of modalities like screen size limitations can "saddle people with inconsistent experiences of autonomy, privacy, and control" (1). Gray et al. (2018) analyze the ethics of user experience using a taxonomy that is structured around potential designer motivations for using dark patterns. They identify five dark patterns that designers strategically implemented to manipulate user behavior: nagging, obstruction, sneaking, interface interference, and forced action (Gray et al. 534). Their categorization uses Brignull's original taxonomy as a baseline but differs in its emphasis on interaction quality as opposed to specific contextual examples of dark patterns. Likewise, research on dark patterns in game design has focused on identifying strategies that manipulate players into microtransactions for virtual goods and analyzing the effect deception has on a player's in-game decisions and enjoyment. The Norwegian Consumer Council (NCC) published a report detailing the many dark patterns commonly used in games to nudge players into harmful spending habits, such as loot boxes, aggressive in-game advertising, limited-time offers, skewed drop rates, and pay-to-win content. It also observes how freemium and game-as-a-service (GaaS) business models, which are designed to increase in-game purchases, often enable dark patterns.

For the purposes of this thesis, the term "dark pattern" will be used due to its continued use in current research and to make a clearer distinction between benign and malicious deception. A dark pattern is any strategy of digital rhetoric that obstructs or subverts an individual's autonomy to manipulate their behavior toward harmful actions. These patterns should be distinguished from designs that use deception to enable user interests or improve the quality of using a product. A dark pattern will always do harm but not necessarily because they are deceptive. In fact, deception is just one possible characteristic of a dark pattern. Dark patterns can fall into five different categories: asymmetric, covert, deceptive, obfuscatory, and restrictive

(Mathur et al. 2019). While asymmetric, covert, and restrictive patterns modify choice architecture, designs that deceive or hide things from the user manipulate the flow of information to encourage uninformed decisions. The following is a list detailing the type of manipulation involved in each kind of dark pattern:

- **Asymmetric**: Emphasizes choices that benefit the company over the user
- **Covert**: Steers users to make specific purchases or choices without their knowledge
- **Restrictive**: Restricts the number of available choices
- **Deceptive**: Induces false beliefs through affirmative misstatements, misleading statements, or omissions
- **Obfuscatory**: Obscures or delays the presentation of necessary information to the user. (Mathur et al. 81:5)

Whenever deception is involved in a dark pattern, it is always malicious, carrying the danger of causing harm and often intentionally designed to do harm. As Brignull observed when he coined the term, a dark pattern is the unethical opposite of what UX design should be. A design pattern is a reusable solution to a problem that is consistent in its affordances and the outcome of its use. But a dark pattern feigns to offer a solution, taking advantage of users by exploiting their limited attention spans and cognitive biases. Dark patterns deceive a person's trust and expectations of the experience they will receive for their time and money, thus misleading a user into physical, financial, or emotional harm. And yet despite their potential for harm, dark patterns are still heavily used across web modalities.

Beneficial or harmful, many design elements are chosen simply because they are effective in habit-forming and leading user behavior. An effective design directs users on how to accomplish a task and enables them to complete it with a feeling of success. Users feel

successful when they can navigate through a digital space to reach their goal and their actions are met with corresponding feedback that their desired task has been completed. Navigability and consistent feedback loops give users a sense of control, making their decisions feel meaningful and the user experience enjoyable because it seems responsive to human agency. Perceived success is part of what makes a design effective. Behavior scientist BJ Fogg once stated that "if you don't feel successful using a tech tool, you won't continue using it" (qtd. in Ravenscraft 2020). Dark patterns tend to go unnoticed because they operate in the background of the user experience; they trigger user behavior but are intentionally made to blend into the function of the product. Digital media typically aims to be user friendly, intuitive in the sense that it can be easily understood and "you seem to know how it will work even before you've used it" (Kuang and Fabricant 103). A defining feature of user-friendliness is to require the least amount of cognitive effort for the user to complete a task. Because user friendly design elements are common, people often expect things to work how they assume and rarely second guess their initial thinking. Dark patterns take advantage of people's unconscious expectations of user friendliness; they pretend to enable a function or respond to user assumptions. The patterns people might consider manipulative or frustrating, such as pre-selected checkboxes and confirmshaming, are normalized by their widespread use, making the danger they pose harder to perceive. As a form of passive-aggressive manipulation, confirmshaming exemplifies how many dark patterns rely on subtle coercion to sway user choices. Confirmshaming involves using emotive language and visuals to make the user feel guilty about opting out of an offer or service. By provoking feelings of embarrassment and fear of punishment, confirmshaming creates a pause in the decision-making process, makes people doubt their best interest, and goads them into succumbing to the will of a company (e.g., staying subscribed, logging in daily, or making

an expensive purchase). It is a dark pattern that pressures users to conform to the behavior being framed as appropriate.

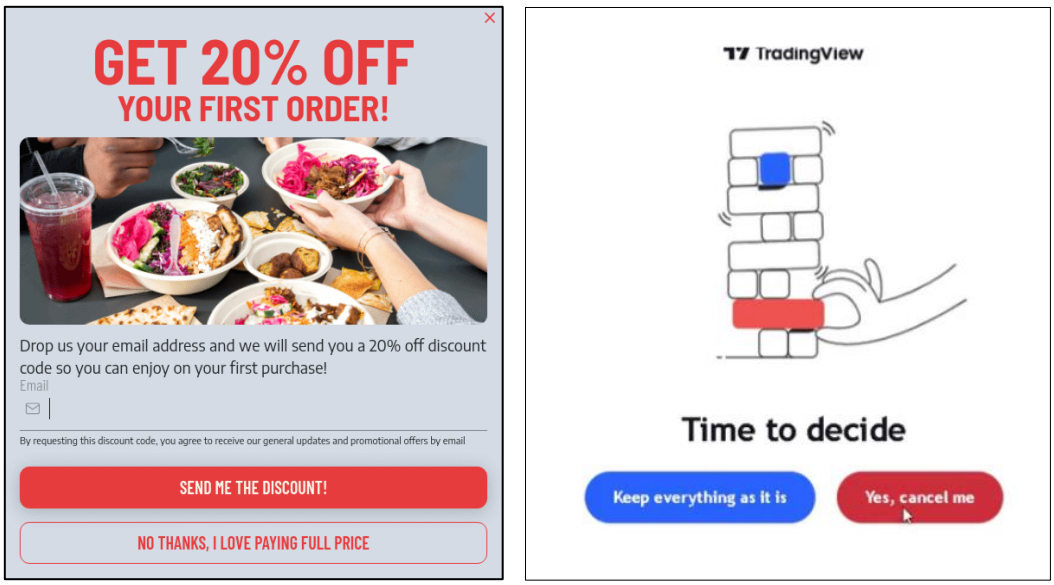

Figure 1: Confirmshaming (Rōti, 2021. TradingView, 2023)

Above are two examples of confirmshaming being used to mock users for their intended behavior and discourage them from exercising their freedom of choice. As displayed in Figure 1, the user is made to feel ashamed for turning down a discount on their food order. The option “no thanks, I love paying full price” is intentionally used to imply that there is a flaw in the user’s judgment. Language such as this or even an unsubscribe page message like “we’re sorry to see you go” prompts the user to reconsider their decision. The second example takes a more visual approach by using an animation of a wobbling Jenga tower that becomes more unstable when the user hovers their cursor over the option to cancel their subscription. This visual rhetoric is especially effective because the user is being shown the weight of their choice in real time as well as the consequence when the cancel button is pressed: a collapsed tower. In order to make sure the user hesitates to make their decision, the website shows them that they are doing something wrong by cancelling their subscription.

Despite how manipulative these dark patterns are, most people will overlook them because they typically only appear in exit-intent pop-ups or promotional ads on websites. So long as a website or app functions as the user expects it to and the presence of a dark pattern is not egregious, the feeling of success remains and people keep using the product. However, if the user discovers that the product presented to them has deviated from their expectations, they will feel deceived.

1.3 Identifying Deceptive Designs

Although dark patterns are rooted in deception, the act of deception itself is not an indication of a dark pattern. Any design that uses misinformation, vague explanation, and omission to lead users toward certain behaviors is deceptive. In fact, the deceptiveness of these manipulative strategies is not so much about the outcome but more so the effect it has on choice architecture, as defined by Thaler's nudge theory, and the user's understanding of the information presented to them. Choice architecture is constructed by the physical, social, and psychological factors (and changes) that influence decision-making in a given context (Thaler & Sunstein 83). When information is omitted or false ideas are implanted into the user's mental model for how a website or app works—typically though misleading language, sounds, or visuals—the choice architecture is manipulated so that the user is unable to make informed decisions. The user is not only deceived into believing false information but also nudged into self-deception by their own assumptions, which cause misinformed choices. A lack of information leads people to fill in the blanks with whatever emotional response or logical conclusion the available information suggests and conditions them to reach. However, deception is all about showing one thing but meaning another (or showing nothing and increasing the odds of human error). So, the assumptions people are driven to sometimes result in unintended

outcomes depending on how involved the deceptive design is in the overall user experience. The difference between ethical and unethical deception (dark patterns) is intent, which can be evaluated based on the rhetorical effect had on the user experience and if the deceptive design limits choice, completely denies choice, or enables the user to still make decisions to reach their desired outcome.

Deceptive designs are implemented to nudge people into behaving in ways they would not otherwise have if they were provided clear and accurate information. They might appear as emotional nudges or misstatements intended to trigger the user into immediate action. For example, in Figure 2, the fast-fashion retailer Shein uses a countdown timer and displays a percentage of items sold during its flash sales. These features influence the shopper's decision making with a sense of urgency and scarcity, but what makes them deceptive is that their meaning is vague and misleading. When the timer resets, the clothing items remain available for purchase and some items even offer the same price discount they had prior to the reset. The percentage sold meter shown below items further emphasizes the intended assumption that stock of the item is limited and quickly selling out. However, the percentage value can fluctuate and sometimes resets to zero, which implies the number presented is arbitrary. Customers have also encountered unexpectedly high prices at checkout due to Shein's deceptive wording of promotional discounts. As seen in Figure 3, the app shows customers what they are expected to save but does not specify that these discounts only apply if you qualify for them. For instance, there are some discounts that customers are only eligible for if they are Shein Club members. Certain discounts are also price capped, making the cart value more of an estimated price. As a result, there is often a significant difference between what someone thought they would save on their purchase and the actual price they end up paying.

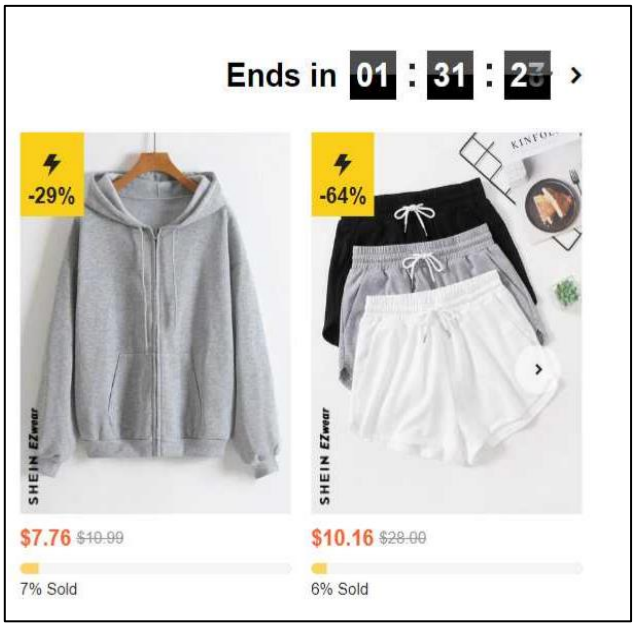

Figure 2: Fake Scarcity and Urgency (Shein, 2023)

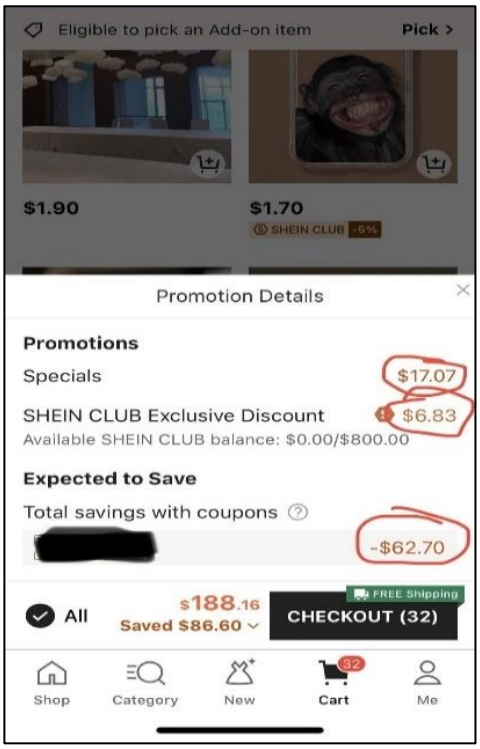

Figure 3: Hidden Cost (Shein, 2023)

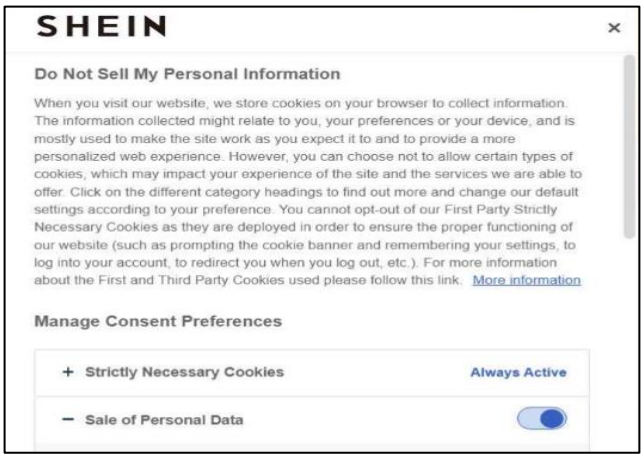

Figure 4: Bad Default (Shein, 2023)

Coupled with the dark pattern of a bad default as illustrated in Figure 4, these deceptive designs hint at the company's intention to take advantage of users. Bad defaults are pre-selected settings enabled against the interests of the user; they deny choice by hiding important information. The option to opt-out of Shein selling personal information is buried at the very bottom of the website, making it hard for customers to protect their privacy and denying them

the awareness to give consent. It is similar to the tactic that some websites use of putting crucial information in fine print at the bottom of a page where it would not draw any attention. Customers are emotionally manipulated into purchasing more, enticed by the promise of potential discounts, and unknowingly exploited for their personal information.

All Shein's nudges and choice architecture culminates into a harmful user experience that purposely lures customers into a cycle of compulsive spending. The entire website is so visually overloaded with discount percentages and pop-up reminders about coupons that it is difficult to keep track of how much items cost. These deceptive designs offer no benefit to the website's function, and they do not improve usability. Shein's fake countdowns are the clearest reflection of this point. A countdown timer typically offers utility to the user so they can stay informed, track their progress, make plans, and get the most benefit out of their usage. A fake countdown is not useful because, like many of Shein's design features, it is not a tool for the user; its only purpose is to boost sales. The telltale sign of malicious deception is when the design elements serve company agendas of gaining profit over providing convenience and accessibility for the user. It is worth reiterating that emotional nudges are not automatically deceptive or cause for concern. Brands appeal to emotion all the time to get people to act on desires and think of their products as a way to fulfill those desires. Like any other retailer, Shein is filled with nudges that do exactly that, but the issue is Shein's predatory way of hooking customers. Most people who visit Shein are looking for bargain prices on clothes, décor, and accessories. Shein lures its customers in with the promise of bargains and sneaks upcharges into their purchases so that people unknowingly spend more than they intended. Customers end up paying for the idea of a bargain rather than receiving one. Every piece of information on Shein's website is meant to persuade the user into thinking that everything is on sale for extremely low prices. The dark

patterns reinforce a false mental model of what the website offers to maximize spending with little regard for customer satisfaction. It might not matter to most people if the clothing items are actually in short supply, but Shein will continue to profit as long as its customers think so. The user experience Shein sells is a case of quantity over quality.

Games built around monetization have also used similar methods of deception to hook players into a cycle of engagement. Gacha is a highly addictive genre of free-to-play (F2P) mobile games where players can only obtain in-game items through a lottery system. Newly released content such as characters and cosmetics are added to pools of available loot called banners, which are limited-time events that offer a small chance to receive a featured item of high rarity. Players spend either virtual currency or real money to pull from banners, hoping to eventually obtain what they want from a pool that game developers have intentionally filled with mostly low-rarity items. For example, Figure 5 shows the results of a banner pull in *Honkai: Star Rail*, including the featured character highlighted in gold visuals and other miscellaneous items of lesser value. Each gacha game has its own probability algorithm that determines the odds of obtaining the rare item featured on the banner. Players spending resources on a banner in *Honkai: Star Rail* start with a 0.6% chance to roll a featured character, but like many gacha games there is what players call a "pity system," where the probability of a rare item increases after a number of pulls. A high-rarity item is guaranteed within 90 attempts, but the reward only has a 50% chance of being the featured event character. If a player loses the 50/50 chance, their next high-rarity drop is 100% guaranteed to be the event character. Unfortunately, unless the player gets lucky, they will have to spend more time building their pity counter up again to around 90 pulls, while being pressured by a time limit to spend real money before the event ends. Ironically, *Honkai: Star Rail*'s in-game store includes a message in fine print that urges players

to “play in moderation and spend rationally” despite the game rhetorically nudging them to make impulsive decisions. The persuasion in gacha games has such a significant influence that players frequently plan their current and future interactions with a game around what their pity rate is and how much time they have left to get the characters and cosmetic items they want.

Figure 5: Chance-based Rewards in Honkai: Star Rail (HoYoverse, 2023)

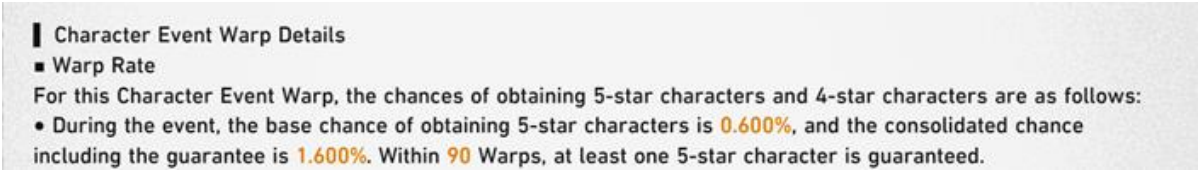
Character Event Warp Details
▪ Warp Rate
For this Character Event Warp, the chances of obtaining 5-star characters and 4-star characters are as follows:
• During the event, the base chance of obtaining 5-star characters is 0.600%, and the consolidated chance including the guarantee is 1.600%. Within 90 Warps, at least one 5-star character is guaranteed.

Figure 6: Pity System in Honkai: Star Rail (HoYoverse, 2023)

Gacha influences user behavior by inserting factors of scarcity and random rewards into players’ perceptions of a game’s entertainment value. These games maintain consistent engagement with emotional appeals that incite a fear of missing out (FOMO) and exploit the sunk cost of a player pulling on a banner, failing to get what they want the first time, and spending more to make their efforts pay off. Gacha games attribute language like “5-Star” or “S-Rank” to make the banners seem more enticing and valuable, emphasizing both exclusivity and a

potential advantage to players who have them. The games further incentivize players to continue spending on a banner even after getting the featured content by offering them upgrades for each additional copy of the item they obtain. Some characters in gacha games are intentionally designed to feel incomplete without these expensive upgrades, requiring the player to pay more if they want to fully access the usefulness of something they already own. Figure 7 displays the upgrades that can be unlocked for a specific 5-star character in *Honkai: Star Rail*. The visual rhetoric of fragmented pieces that the player must put together acts as a call to action, communicating imperfection or incomplete value that the player is being nudged to resolve through increased spending.

Figure 7: Visual Persuasion in Honkai: Star Rail (HoYoverse, 2023)

In gacha gaming communities, some players feel they have no choice but to collect upgrades for their characters because older ones can degrade in usefulness if a newer character is released that is better in comparison. In their minds, the extra investment is rationalized as a matter of futureproofing use. Gacha games take advantage of this mindset to maximize their company

profits, intentionally releasing newer items of greater quality that make previous ones obsolete. The monetization model of gacha games is often viewed as a predatory form of gambling because it resembles a slot machine in that a person can end up spending hundreds or thousands of dollars before they hit a jackpot. Spending a resource to gain something by chance is the definition of gambling, even if the circumstances involve virtual currency with arbitrary value. Deception in gacha games exploits the vulnerability that comes from the randomness of its monetization strategy rather than manifesting in gameplay features, and it is enabled by the fact players have no control over their chances of success and cannot always be certain that the banner probability described to them is accurate.

Although *Honkai: Star Rail* has been consistent in its drop rates, there have been other gacha games that have used false information to deceive people into gambling their time and money on odds that never existed. *Crossing Void Global* was permanently shut down in 2022 following controversy regarding its falsely advertised drop rates and pity system. The game claimed that players were guaranteed a featured character at 91 pulls, but many players reported having a 99% pity built up for an S-Rank character and were still unable to obtain it. In fact, the game was not actually using pity rate to calculate the probability but instead a different drop rate that remained hidden from players. In a user experience where engagement is reinforced by random rewards, pity systems give gacha games a semblance of predictability and players a basis for when to stop spending. A chance-based game that hides information about the probability of success puts the wellbeing of its players at risk. Both the App Store and Play Store require games that offer loot boxes and randomized virtual items to publish the odds of receiving those items prior to players purchasing them, so any deception is in violation of those guidelines. However, unless the gacha rates deviate as egregiously as *Crossing Void Global*'s did, the claim of a

deceptive design would be hard to substantiate without access to a game's source code. Moreover, because random outcomes are a defining characteristic of gacha games, deception is less noticeable. Companies can intentionally tamper with drop rates using small percentage decreases that roughly correspond with the information they publish on a banner, making it so the deception is not disruptive to the player's mental model of what they should eventually receive after a number of pulls and allowing any suspicion of malpractice to be dismissed as bad luck.

As reflected by both instances of deceptive design in retail websites and gacha games, deception in digital media misinforms people about what to expect from a user experience, such as the usefulness it offers or the results of their actions. In the same way that nudges transform choice architecture by swaying how a choice is perceived or implanting additional factors an individual must consider before making a choice, deception is a similar kind of persuasive reframing that manipulates the cognitive connections people make as they figure out how to use a digital space of discourse, learning, entertainment, or service. Mental models are a basis for understanding usefulness that rhetoric can either distort or guide to accuracy. Although the examples of dark patterns and deceptive designs discussed so far pose a threat to the wellbeing of users because they manipulate them into harmful mindsets and actions, deception can be helpful in user-friendly applications, which are those that aim to strike a balance between purpose and risk while heavily emphasizing digital wellbeing and usefulness. Specifically, persuasion that happens through deception must have a benign influence on the user experience, imposing no harm. A useful application of deception is expressed in UX design that uses partial falsehood about the meaning or function of something to enable the user's intended task and improve usability.

1.4 Purpose of Thesis Research

When deception in digital media is discussed, the focus is often on malicious forms of deception and the harm they do. A guiding principle of user experience design is that a good design is honest, one that clearly conveys function and consequence to users without misleading their understanding. As such, deceptive elements are generally addressed as design flaws because they are dishonest and thus "viewed negatively by users, rejected by designers, and largely ignored in HCI research" (Adar et al. 1863). The term "deceptive design" has increasingly become synonymous with dark patterns, perpetuating the idea that any deception is harmful. It has even been proposed within and outside the field of UX research that a risk of harm imposed on an individual is itself a harm or at the very least wrongful (Hung 2021; Placani 2017; Rowe 2021), which is indeed a valid argument and suitable mindset to have in order to refine usability and avoid unintentional harm. However, deception should not be deemed harmful solely because it is dishonest. As Adar et al. point out, the presence of deceptive design decisions that benefit the user is quite common. To illustrate, skeleton screens (i.e., placeholder shapes simulating the structure of a webpage while it loads) and fake progress bars are some examples of benign deception that can be found in any digital interface. These design elements are visual rhetoric employed to deceive users into thinking webpages are loading faster than they really are. They have a positive effect on the user experience by reducing perceived wait times and building anticipation as content appears on the screen. Digital media that give the impression of being fast solutions to completing a task are seen as more useful, making the subtle deception of these elements vital to user satisfaction and a key part of good design that many do not notice. Just as any other rhetorical strategy, the potential for deception to be a tool for harm or benefit depends on the intention behind its use and the circumstances that enable its rhetorical effect.

This thesis examines the rhetorical utility of deception in digital media by reframing deceptive design as "useful untruth," a term I propose that combines beneficial lying with the idea of a useful fiction, which originates from philosophies on idealism. I discuss useful untruth from an angle of pragmatism by emphasizing the practicality of deception as a tool for helpful persuasion. The thesis defines useful untruth using theories from behavioral economics, ethics, HCI, and philosophy. I apply Brignull's concept of dark patterns to an analysis of what makes a deceptive design useful or harmful, emphasizing the role human cognition and emotion play in understanding usefulness and being deceived. Usefulness and harm have different meanings depending on the intention of the UX designer and the individual perspectives of the users interacting with a digital platform, but research in HCI focusing on choice architecture as well as the relationship between system function and procedurality provide an objective look at the conditions of usability that indicate deceptiveness and shape the influence of deception on the user experience.

A central idea of this thesis is that deception involves the influencing of mental models to enhance or limit the discoverability of use. Since user experience design is persuasion that influences one's ability and awareness to act, I connect my idea of useful untruth to an application of Ian Bogost's concept of procedural rhetoric that focuses on how users are directed to understand usefulness and act within the limits of a perceived model of function. This thesis aims to provide an inclusive framework for evaluating usefulness and harm based on the procedural interplay of feedback, navigability, and consistency that is expressed in the rhetoric of digital spaces. These three factors are integral parts of a user experience that can be observed to determine if a deceptive design provides a state of useful untruth, and their presence or absence also serves as a sign of rhetorical intention, such as benefiting users or taking advantage of them.

2 UTILITY AND RISK IN DECEPTIVE DESIGN

2.1 Understanding Usefulness

The Interaction Design Foundation (IxDF) defines usefulness as “anything that helps you get closer to or meet your goals” (IxDF, 2016). From the perspective of an exploitative company, a dark pattern that effectively scams people out of their money is useful. But Brignull and others who conducted research on user experience and habit-forming frameworks (Mathur et al. 2021; Lukoff et al. 2019; Eyal 2019) emphasize that user experience design should benefit the user, provide utility that is meaningful to them, and respect their agency. Based on these criteria, dark patterns are not examples of useful design because they obstruct choice and deviate from what the user desires. Usefulness is the quality of being conducive to user interests. In order to maximize usefulness, a design must be user-centered. The concept of a user-centered design is connected to the rhetorical importance of knowing one’s audience and having a heightened awareness of what appeals to them. However, understanding what triggers people into action is not enough on its own to make a platform or product useful.

When influencing what people do or think is the main intention behind digital rhetoric, the user experience may lack relevance to what goals the user wants to accomplish through their interaction with a website, game, or mobile app. A user-centered design is one that uses rhetoric as a tool to facilitate self-dictated behavior, implementing the appropriate rhetorical nudge wherever it would best assist with either the potential user’s desires or the scope of the intended user experience. Kuang gives detailed instruction on designing around user habits and needs. He advises UX designers to build on existing behaviors and anticipate future behaviors. In the process, designers are able to reduce risk factors that would contribute to confusion or dissatisfaction. Still, even if changes in product function and rhetorical strategy are made to

improve usability, usefulness is not always perceived by the user. Even popular designs backed by market research and user feedback can sometimes fail to be useful to someone because it is impossible to guarantee every person will find a design element useful. For instance, Duolingo's gamified language learning uses daily streaks, experience points, competitive leaderboards, badges, and stamina (hearts) to nudge users into habitual lesson practice. In general, these gamified design elements are useful because they enable the goal of learning a new language by helping users practice consistently and rewarding their progress. However, some users see Duolingo's gamification as a distraction from the learning material. Even its stamina system, which only allows five mistakes daily, has been considered an obstacle on web and app modalities. Users must either wait five hours to restore stamina or complete practice lessons before they can resume making progress. This requirement creates resistance between the user and their goal, making the design potentially more frustrating than useful.

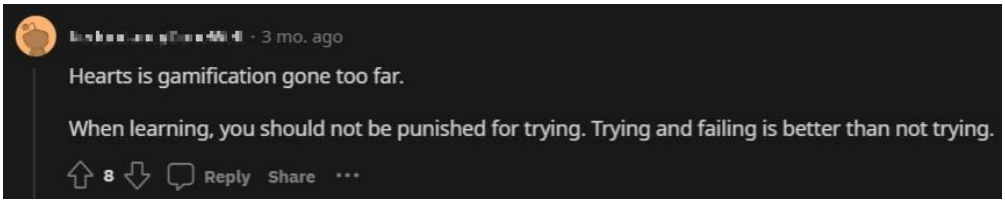

Figure 8: Duolingo User Opinion (r/Duolingo, 2023)

User error, mismatches between mental models of how something works and the actual function, accessibility issues, and personal preference have significant influence over how much the user experience varies from person to person. Kuang's observations highlight the importance of identifying patterns in behavior, evaluating ease of use, and speculating all the ways (expected or unexpected) a design feature could be used. What features are used most? What frustrates users and when does it happen? How do users react when certain feedback is presented to them and is the reaction intended? What effect would changing a feature have on subsequent user

behavior? These are all questions that might be asked to improve usability and mitigate the possibility of harm when deception is used to influence someone. Usefulness is cultivated by user-centered refining and risk prevention.

Jakob Nielsen, a pioneer in the field of web usability and human-computer interaction, developed a set of heuristics that emphasize the practice of designing for usefulness. Nielsen proposes that useful design elements provide users with rhetorical cues that enable them to perform intended actions, undo mistakes, and avoid high-cost errors (Nielsen 2020). This perspective on usefulness begs the question of what qualifies as a useful application of deception in digital media. The multimodal rhetoric that shapes a web experience is composed to communicate function and value; it can inform users about what actions they are able to take and persuade them about which they should take. However, deceptive designs frequently use misinforming feedback and distracting nudges to create cognitive interference that redirects behavior. Deception used excessively or with ill-intent can sidetrack the decision-making process with irrelevant information. Deceptive designs may also reduce user-friendliness in digital media because the implied affordances shown to the user through rhetorical appeals could be so different from its actual utility that the user experience is no longer intuitive for them. As mentioned earlier, a design pattern should be a reusable solution to a need or problem, offering a consistent, and thus predictable, outcome of its usage. A deceptive design can have a consistent effect and outcome, but there is a chance of deception introducing unpredictability in the user experience. Unpredictability affects digital spaces in different ways, but in each the user is unable to infer how something works or what the result of their choices will be. In UX design, predictability prevents unreliability. Many deceptive designs only affect a small part of the choice architecture to avoid interfering with the predictability of the whole, but some digital

products lean into the unpredictability of deception when unexpected interactions, discovery, trial and error, or chance are part of keeping users engaged.

A genre of video games called social deduction games are specifically created with deceptive designs, and their gameplay centers around human-to-human deception. Players in social deduction games are tasked with revealing the randomly assigned roles of other players in the game. These games usually pit players against one another by having them on opposing sides, a majority team that must complete tasks to win the game and a smaller, adversarial team whose goal is to sabotage the efforts of the majority by any means necessary. But only the antagonistic group knows who their allies are. In addition to players lying about what their hidden roles are, deceptive design elements are used to fuel paranoia and suspicion among the majority.

Project Winter is a social deduction game that uses a lack of information and conflicting game mechanics to create artificial obstacles and disorient the player as they navigate a snowy wilderness. Aside from a compass and icons that show players the direction of nearby objectives, the game intentionally provides minimal visual aids for navigating the map to instill uncertainty and raise the possibility of players getting lost. As shown below in Figure 9, small signposts pointing to cabins and other key locations may point in the right direction or wrong direction, making them an unreliable form of visual rhetoric for the inexperienced player. Similarly, the game *In Silence* utilizes deceptive sonic and visual rhetoric to make the gameplay more frightening and immersive. One person plays as a monster and the other 2-6 players are survivors trying to either escape or hunt down the monster. The game has a proximity chat feature, which means players can only hear each other on voice chat when their in-game characters are close together. Proximity chat even gives players a sense of the distance and direction based on

changes in the volume of the voices being heard. For the survivors, proximity chat is a tool for communication, but its function as a deceptive design is expressed in the way the game manipulates the illusion of proximity to make it harder to tell what direction the monster is coming from. Auditory cues are a significant mode of deception that *In Silence* uses in a unique manner. The game describes the monster as partially blind with hypersensitive hearing. As such, the player taking on the role of the monster is given a user interface that reflects those characteristics: a blurred, rose-tinted screen with a reduced field of vision and a radar that pulses at the bottom of the screen whenever noise is made. However, the monster's user interface is deceptive because it picks up all noise, including objects and traps that the survivors can interact with to lure the monster or throw them off their trail.

Figure 9: Useful Deception in Video Games (Project Winter, 2021. In Silence, 2020)

As shown in Figure 9, a player has discovered that the source of one of the two noises they detected was coming from a television. The monster cannot be certain if the noise they are tracking is coming from a survivor or a product of deception. There are also environmental noises like rain, thunder, cawing crows, and squeaking rats that disrupt the monster's ability to track survivors and make the user interface even more unreliable.

Because deception is the focus of these games, it could be argued that its perceived usefulness is in part due to the fact people expect to be deceived in some capacity before even interacting with the game. Deception is more acceptable when used "for the purpose of entertainment, playfulness, and delight" (Adar et al. 1865). Games in the social deduction and horror genres are known to entertain through misdirection and unpredictability. Even someone unfamiliar with these specific games would quickly understand the rhetorical intention behind the deception because it is used in a context that invites participation in it or anticipation of it. Deception becomes a part of the user's mental model for what the game should be and is seen as something tolerable or even welcomed, but useful deception is expressed differently on digital platforms that are primarily designed around the service they provide and not their entertainment value. In those contexts where people are not expecting to be deceived and merely trying to complete a task, useful deception is achieved through discretion because "when users need to look behind the deception to perform their tasks, results are sometimes catastrophic" (Adar et al. 1871). Too much deception without useful purpose creates a high-risk environment. Deceptive rhetorical strategies should be involved in the user experience only as needed to place the user in the right mindset to confidently navigate toward success.

2.2 Deception as Useful Untruth

There are three rhetorical circumstances that allow for useful deception: (1) the user wants to be deceived; (2) deception enhances the user experience as an engaging feature or aid to navigation; and (3) the user would not understand how to use the digital platform in the absence of deception. To separate benign deception from the stigma surrounding lies and dishonesty, it could be referred to as "useful untruth," rhetoric of falsehood and misdirection that has a beneficial effect on the one being deceived. Telling falsehoods to benefit others is not an

uncommon concept or practice. When someone tells a falsehood they consider to be harmless or trivial in consequence with the intention of being polite or inoffensive, they refer to it as a "white lie." White lies are not complete fabrications but rather partial truths that tweak or hide the details of reality (Bryant 35). Greek philosopher Socrates once referred to such falsehoods as "impure falsehoods," verbal untruths that have the characteristic of being not entirely false. Socrates distinguishes these untruths from pure or true falsehoods, which are always harmful and never beneficial. These pure falsehoods could be likened to dark patterns in UX design that use malicious deception. He also observed that some false beliefs and lies can be useful when they are as close to the truth as possible (*Republic* 382d1–3; described in Baima 3). Although deception in digital spaces is multimodal and not limited to words, useful untruth is an impure falsehood in the sense that the mental model its deception persuades people to believe does not have their expectations veer too far from reality. A mental model influenced by useful untruth is misinformed, but it is as true to the actual function of a digital interface as necessary to be useful. Misleading someone means leading them astray, influencing them into mistaken beliefs and subsequent decisions that are unfavorable to their interests. However, if deception is being used as a rhetorical device to lead people in the right direction or provide the utility promised to the user, calling it misleading is unfitting. Useful untruth does not mislead; it is a misdirection of perception that persuades people into the mindset and behavior most likely to result in them having satisfying experiences, much like the attentional misdirection used by stage magicians in a deceptive but entertaining sleight of hand.

The usefulness of untruth lies in how deception leads people to idealize how something works or what it means. As Appiah explains in his analysis of philosopher Hans Vaihinger's views on idealism and useful fiction, idealization helps people navigate different spaces of

inquiry and discourse that might be complex, unfamiliar, or unclear. The assumptions people make when there is not enough information or there is misinformation are idealizations of reality, appealing imaginings of what could be true that guide the process of understanding and acting. As useful untruth, idealizations are instrumental in getting people to behave in ways that make it easier for them to negotiate meaning and make beneficial choices because the falsehood of the mental models people idealize as truth are purposeful. However, Vaihinger's perspective is concerned with "the role of untruth in thinking about reality, not in the usefulness of speaking untruth" (Appiah 4). His ideas center around the logical implications of idealism rather than the rhetorical ones. Vaihinger believes that what we perceive to be true is fiction in the sense that our assumptions and ideas are only substantiated once they have practical value. A false mental model that someone is deceived into believing becomes truth when it is validated by outcome and a feeling of success. Yet Appiah notes that neither deception nor the intention to deceive were the focus of Vaihinger's thinking. When Vaihinger discusses useful fiction, he is referring to cases where individuals are doing the idealization themselves without being prompted by some outside rhetorical influence and are often aware that the mental model they have built is not true. Some examples that closely relate to Vaihinger's framework are the suspensions of disbelief people do to enjoy a piece of media without criticizing its unrealistic qualities or scientific models where experiments are conducted based on ideal circumstances rather than true ones. In both cases, untruth is used to manage oneself or exercise control over environmental factors that might influence the outcome of their actions. These strategic manipulations through idealization are similar to choice architecture in their influence over cognition and setting; they are rhetorical in practice although more focused on self-persuasion.

In contrast, the useful untruth referred to in this thesis addresses the rhetorical side of falsehood that Vaihinger was not particularly interested in: the usefulness of deception in its capacity to influence others for good. I re-define useful untruth for application in UX design and frameworks of inquiry related to evaluating the benefit of deception in digital media. The term useful untruth is not meant to undermine the harm deception is capable of. A lie is still a lie. However, lies are untruths that carry the implication of being intentional. The intention behind deception is sometimes obvious, but it cannot be said for certain if something is intentional or unintentional until its effect on usability undergoes rhetorical evaluation, such as observing when and how consistently the deception occurs in the user experience. The concept of useful untruth, as I have defined it, does not suggest intention; it refers to a state of untruthfulness having a positive persuasive influence. Adar et al. identify the parts of a user experience that deception targets: system image, behavior, mental model, and user-to-user interaction.

- **System Image:** deceives users about what the system is doing
- **Behavior:** manipulates interactions between the user and system
- **Mental Model:** misinforms the user's perception of the system
- **User-to-User:** enables deceptive interactions between users. (Adar et al. 1867)

Deception becomes useful untruth in digital spaces where better choices (according to intended usage) and a greater appreciation for the user experience is made possible by the assumptions misinformation leads the user to believe. For instance, Spotify's shuffle feature is presented to the user in the traditional sense of any other media player. The user sees the icon and assumes its function should match their understanding: pressing the button will randomly shuffle the order of music in the playlist. However, the shuffle is generated by an algorithm that prioritizes songs the user frequently listens to and sometimes adds recommended music to the playlist as well. Many

users do not realize this and still consider the shuffle feature useful because the personalization that comes from this deception enables them to listen to their favorite songs and discover new ones—the main purpose of the app.

Useful untruth influences behavior through false suggestions of function that encourage context-specific engagement. Unlike how harmful deception exploits the gap between system function and user expectation, useful untruth bridges the gap and ensures intended interactions occur. Placebo buttons and artificial visual feedback about system status are frequently used forms of useful untruth that give users a sense of control and reassurance in the correctness of their actions. An animated bar filling up in response to actions or time passing may give someone the impression of progress and motivate them to continue a certain behavior even if the visual representation is completely inaccurate. Useful untruth is characterized by the placebo effect deceptiveness has on the user experience. People benefit from the idea of the false function being implied, and this benefit lasts even when they are made aware of the deception because the positive outcome it results in is real. What matters most is that deceptiveness is not so ingrained in the user experience that an awareness of it would destroy its usefulness and compromise the wellbeing of the user.

2.3 Defining Harm and Wellbeing

The potential to harm is characteristic of all deceptive designs and an inevitability of dark patterns. Because deception often subverts user expectations, people may get upset when realizing they have been deceived. A user might complain they have wasted time and money if they were manipulated into making a decision or failed to complete their desired task. While emotional distress, physical injury, and financial loss are evidence that someone has been harmed, user experiences are not always identical. “Harmful systems and environments are often

invisible to the majority," and sometimes what one user perceives as a harmful design might be useful for someone else (Persson 2021). The mixed opinions gamers have about fake multiplayer and bots (AI-controlled players) demonstrates how differences in user experience can influence perspectives of harm. Many games with online multiplayer features, such as *Pokémon Unite* and *Mario Kart Tour*, use bots to quickly fill matchmaking queues and limit the time real players spend waiting to start a game. Games often have a designated Co-op vs AI mode players can voluntarily enter, but sometimes bots are intentionally placed in PvP (player vs player) modes to compensate for a low playerbase while still giving the player "a feeling of interpersonal competition" (Gualeni et al 9). Players may also be paired with bots if they have a weak internet connection, and the matchmaking system cannot establish a stable link between them and other humans. A popular view in gaming communities is that these practices are deceptive when they are implemented in games that are being advertised as multiplayer experiences. A lot of the frustration gamers feel toward bots is because their presence in competitive games puts players at a disadvantage. Because a bot's actions are entirely scripted by code, it either overperforms or underperforms when paired against human players. This is a pain point that often lowers a competitive player's incentive to keep playing a game. Some games even make it difficult to identify a bot by having them borrow the usernames and profiles of human players. In *Pokémon Unite*, the appearance of bots in casual and ranked PvP matches is so frequent that players have resorted to using a third party-software to identify bots and opt-out of the match before the game loads. Players taking the initiative to avoid a deceptive design indicates that it is an obstacle for them, one that they struggle against to retain some control over their user experience.

The harm that can come from this example of deception in games is further expressed by other instances where bots are exclusively used to exploit players for profit. The app game

Hole.io describes itself as a multiplayer game, but it is actually a single-player game full of bots, microtransactions, and pop-up ads. *Hole.io* loads players into games with only bots, each using a flashy cosmetic that can be purchased from the in-game store for real money. As shown in Figure 10, the bots function as advertisements to trigger FOMO and nudge players into purchasing items they have been led to believe other human players are enjoying and will see them using too. Games that use either of the practices exhibited in these cases may leave players feeling like they were taken advantage of and cheated out of the product they were promised.

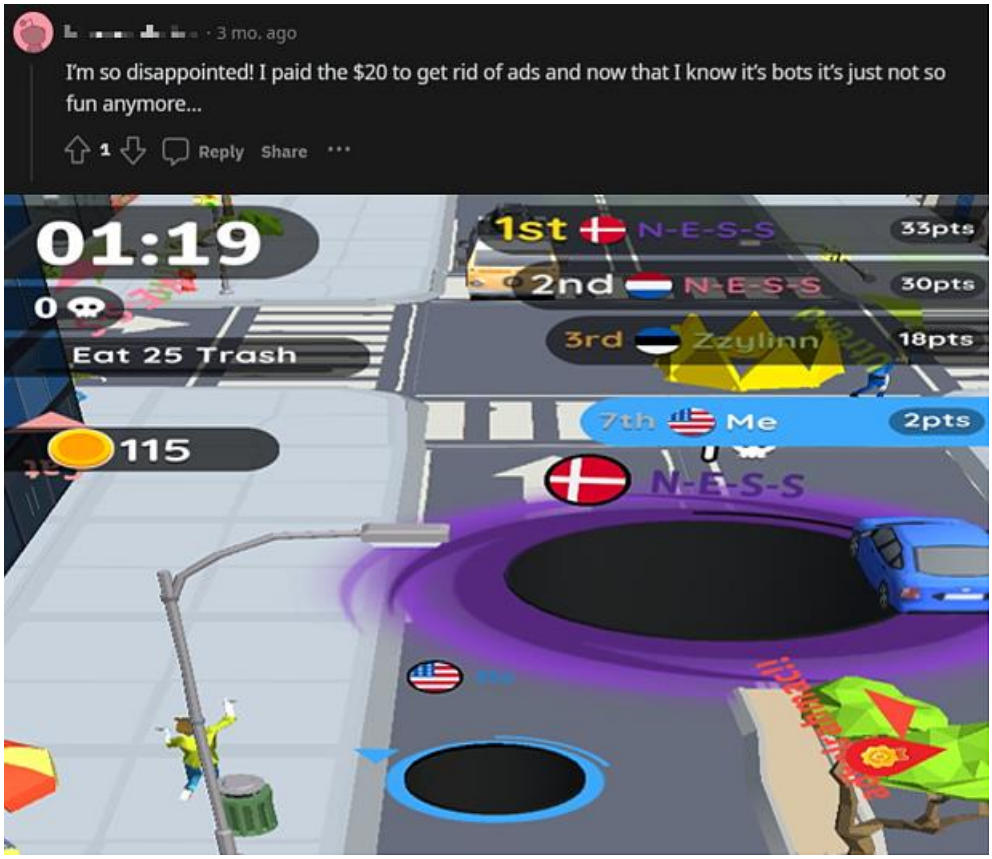

Figure 10: Fake Multiplayer (r/IoGames, 2018. Hole.io, 2023)

In contrast, some players who prefer a casual gaming experience might enjoy playing with bots even if they became aware of the deception. Bots allow casual players to enjoy a game without the stress of competitive PvP matches. They also have the added benefit of teaching newer

players the mechanics of a game while still providing the gratification of winning against an opponent. Gamers who are not competitive and only want to pass time would perceive little harm to themselves or the quality of their user experience. The "artificial stupidity" programmed into bots instead enhances the enjoyment of casual and beginner-level players by giving them an increased advantage (Adar et al. 1865). However, the harm a design pattern does cannot be discounted because some people are unaffected by it. What makes a design harmful is not necessarily its failure to meet the user's expectations, but its wrongful effect on their wellbeing.

In *Harm to Others*, Feinberg provides a definition of harm that can be applied to UX design: a wrongful setback to a person's interests (Feinberg 31). The use of a design is wrongful when it jeopardizes someone's wellbeing, degrades the quality of their user experience, and impedes their ability to make decisions in their self-interest. Mathur et al. observe that users' individual or collective wellbeing can be used as values to identify harmful design. However, a broad concept like wellbeing changes meaning depending on who the target users are and what their intended usage looks like. Lukoff et al. states that digital wellbeing can be narrowed down as "the extent to which a person perceives their digital device use to be aligned with their own long-term goals" (Lukoff 2019). A product's influence on digital wellbeing can be measured based on what spheres of user experience it impacts: "life, behavior, tasks, and interface" (Peters et al. 2). This method of surveying digital wellbeing is useful for identifying shortcomings in the usefulness of a product and specific pain points users are encountering in a design pattern. For example, achievements and social features might make the task of using an app more engaging, but these gamified elements sometimes overcrowd interfaces and distract users from the behavioral goals they want to achieve (e.g., dieting, learning a language, etc.). Usefulness corresponds with a product's alignment with the user's long-term goals and its ability to benefit

their digital wellbeing. If a product is not useful to one's goals or interests, then they have no incentive to engage with it. As such, user data pertaining to daily activity, milestones, goal completion, and retention levels would provide further insight into areas of the design rhetoric that are acting as setbacks to wellbeing.

Harm is the result of sludge in the user experience and a choice architecture that is unconducive to the autonomy of users. Because UX design is persuasive at its core, using rhetoric to appeal to the psychology and behavioral tendencies of its target user, it is a user-oriented practice and thus subjective. However, the harm a design causes can be identified on two levels: subjective and objective. In the context of digital rhetoric, subjective harms are financial, emotional, social, and physical setbacks that directly or indirectly affect the user. These can be concrete or perceived and often vary in severity. Consider the difference between someone who has suffered financial loss after being deceived into renewing a subscription and another person who is disappointed because an app does not function how they expected. The harm described in the former case is more palpable because the user has been prevented from making an informed decision and suffered injury to their finances, while the latter results in emotional stress from the app's failure to meet their expectations. Objective harms are flaws, inconsistencies, and manipulative traps in the user interface that impose a risk of error onto the user by making the path to their goals harder to navigate. These harms include hard-to-cancel subscription formats, confusing site navigation, pop-ups, and other obstructive techniques designed to place a cognitive burden on the user and wear them down. Brignull points out that obstacles in the way of completing tasks make users fatigued, "less able to engage in difficult cognitive tasks, more likely to use shortcuts (cognitive biases) and more error prone" (Brignull 64).

Feinberg's emphasis on wrongfulness also allows for the distinction that some design elements or rhetorical strategies may act as setbacks without doing harm. For instance, among ethical nudges that aim to benefit people and unethical nudges that exploit vulnerabilities, there are nudges that neither harm nor increase the wellbeing of the person being influenced (Chock 89). Deceptive designs that deliver a minor setback to users' interests also fit into this classification of being harmless. A minor setback is one that hinders an individual's goals but does not make them impossible to achieve. When a design causes a minor setback, the user retains their freedom of choice, and their digital wellbeing remains intact. The deceptive trending page and newsfeed algorithms on social media websites, such as Facebook and X, are some examples of designs that may setback user interests but do minimal or no harm to digital wellbeing.

Facebook generates news based on who the user has on their friends list and their activity on the website. This feature provides a personalized touch to the newsfeed, but it is not as useful when the user is trying to find a general overview of current events outside of their browsing habits. If someone is not an active user of Facebook, they will have a limited assortment of news articles shown on the Home, News for You, and Local tabs. In some cases, Facebook may not display any news due to an account being too new or inactive to deliver a personalized selection of content. Moreover, the message "You're caught up for now" displayed at the bottom of the newsfeed deceives users who may use social media exclusively for their news into thinking their newsfeed covers all trending news topics. The language and framing used on Facebook can setback goals of finding breaking news; however, the newsfeed section of the website still aligns with user interests and maintains usefulness through a user-oriented design that responds to user behavior.

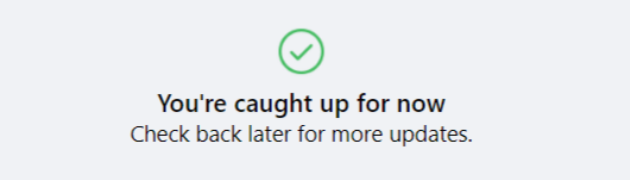

Figure 11: Limited Newsfeed (Facebook, 2023)

X (formerly Twitter) also has a similar kind of setback to user interests on its news and trending pages. X's newsfeed only displays words or headlines that users have frequently used in posts rather than actual trending news. Although many of the posts are recent, this section is often flooded with miscellaneous content that may not even be addressing news topics. As shown below in figure 12, users have expressed difficulty in trying to find news that aligns with their interests. Some users have even tried filtering out certain words or phrases to have their personal feeds more effectively cater to their interests, an action that puts additional steps between the users and their goals.

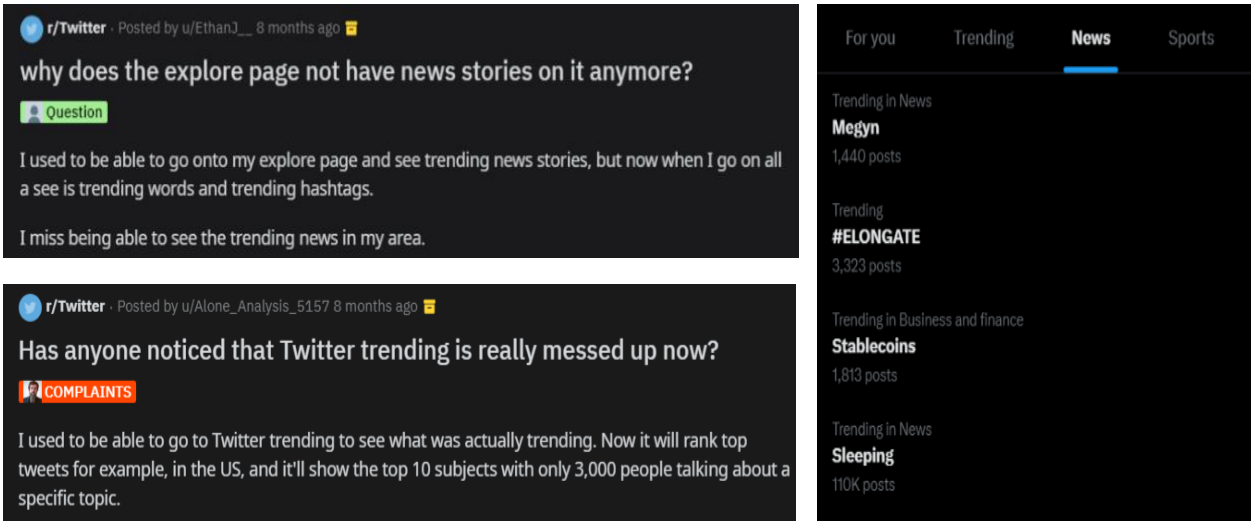

Figure 12: Deceptive Newsfeed (X/Twitter, 2023)

If someone wants to use X as a news source and platform for news-related discourse, they must either follow related news outlets or search through a trending page where only topics that are currently popular are visible. X exhibits a case of design flaws lowering the platform's

usefulness as a place to find and engage in discourse about topics of personal interest, but users are able to make adjustments to navigate through the website's setbacks and achieve their long-term goal of staying connected with current events and people. However, X has increasingly shown a lack of user-oriented design in its focus on artificial engagement, advertising, and promoting paid accounts. Because the posts of premium subscribers are made visible on the timelines of regular users that neither follow those accounts nor have any interest in them, some users find it impossible to filter them out and feel their personal spaces have been invaded by content they have no way to avoid. In addition, replies under posts are becoming riddled with spam unrelated to the original posts, giving the deceptive impression that a post is popular and making it difficult to engage in conversation about the post. The setbacks on X are likely to become unavoidable hinderances to users over time, but for now their influence on the user experience is navigable.

Doing no harm and protecting the user's wellbeing means ensuring users maintain control and self-regulation over their user experience; they must be able to make changes as they see fit and have access to the information necessary to opt-out whenever they wish. A website that is unresponsive to user intentions or an app that is impossible to navigate will likely cause harm. Even if users are nudged along by emotional appeals or deception, the rhetoric involved must be used in a way that improves usefulness or empowers the user to make choices that increase wellbeing and lead to fulfilling experiences. Falsehood can be used without causing harm if it guides the user down the right course of action. Deceptive UX design does this through its use of signifiers and procedural rhetoric, both factors in the rhetorical patterns of digital media that indicate harmful deception or useful untruth.

3 SIGNIFIERS AND PROCEDURAL RHETORIC

The line between malicious and benign deception seems apparent at a glance: one does harm, and the other does not. However, there is always intention behind rhetoric. Everything is said and shown for a reason. Intention plays a significant role in how deception is expressed in user experience design. Malicious and benign intentions have an observable influence on the path a user takes to complete tasks in a digital space. Intention translates into the guidelines, obstacles, or traps that make up the digital landscape of a user experience. The individual and combined features of a user interface can be identified as any of these three things, but good intentions do not always result in beneficial designs, nor is unintentional harm a sign of malicious intent. Mistakes in UX design do happen, and some digital media are just poorly designed. However, intention matters because effective and consistent deception requires a deliberate structuring of the user experience. Regardless of whether deception leads to a good or bad outcome, there is evidence of a company's intention to deceive in the rhetorical pattern of how it signals affordance and the procedures that enhance or limit someone's understanding of use.

3.1 The Effect of Signifiers on Mental Models

Digital media persuades through signifying affordances (how something can be used) and manipulating intent (how the user wants to use something). Affordance in websites, apps, and games is determined by the relationship between the function of those media and the cognitive or physical state of the user (Norman 9). The affordance of a digital platform might be obvious if its features are simple or specifically made easy for the target user to understand, but sometimes affordances are hidden—unintentionally buried under visual interference, not explained enough, or intentionally obscured for a rhetorical effect like making features vague to encourage trial-

and-error learning of what can be done or creating a deceptive user experience. Rhetorical cues such as arrows, icons, color, labels, and sounds are signifiers that communicate affordance and enable users to quickly identify function. Symbols and signals provide clues of how a design works and where action should be taken to perform the intended task. While there are some signifiers that have gained universal meaning through their widespread use in web design, such as the play/pause icon indicating that a video can be toggled on or off, culture influences how someone might understand and respond to signifiers. For example, during the 2018 launch of Amazon's website and app in Hindi, many customers in rural India thought the magnifying glass icon represented a ping-pong paddle. The symbol of a magnifying glass was not locally associated with searching, so customers were unaware that they could search for products to buy and did not even utilize this otherwise useful feature. The button labeled "Add to Cart" and shopping cart icon were also identified as potentially confusing for customers in rural India:

> "It is not just about the translation but about the mental model of dropping something into the cart," said Zahid Khan, senior manager of customer experience at Amazon India. "There are lots of places in India where customers have never seen a cart. We might have to change that into 'bag.'" (Bellman 2018)

The effectiveness of a signifier depends on the sociocultural context of where it is used and who it is meant to nudge. People develop mental models based on the assumptions and experiences that tell them what signifiers mean, how to repeat the same tasks, and what to expect when they encounter the same signifiers in the future. As signifiers become integral to a person's understanding of how something works, they also become extensions of personal intention because they are internalized as part of the process of performing a task. Intention is the thought that informs action, and signifiers tell people when to act. The fact that users of digital media

learn to look for signifiers before acting means those rhetorical cues are part of the cognitive processes involved in decision making. When people are so accustomed to seeing a certain signifier, removing it causes confusion or discomfort due to their inability to intuit how to successfully exercise intention without it. It is the same as being used to seeing a push or pull label on a door, attempting to open it, and having the awkward misfortune of the door not opening. Moreover, the loss of signifiers is often seen as a loss of perceived options. Something as simple as changing a “like” button from a heart icon to an “X” might make someone think the choice to give a like had been removed altogether. Signifiers provide the confidence and awareness to act according to personal intention. If they are not perceivable or interpretable, then unintentional things happen, and users are likely to make mistakes. Because signifiers are rhetoric that marks the appropriate navigational paths to complete objectives, they can be manipulated to prevent someone from taking the correct action or misdirect their understanding of what can be done.

A deceptive user interface is designed with signifiers that suggest an affordance that does not exist. The illusion of affordance might be closer to reality if it is designed for a benign purpose instead of harm, but regardless of intent all deceptive designs are made convincing because of the idealistic nature of mental models and the difference in how people learn affordance in digital spaces compared to physical ones. Mental models are personal beliefs of how something works and how it can be used. Norman emphasizes that mental models are not based on fact because they are abstractions that simulate the expected interaction of the individual user. People can have two completely different models about the same digital experience that might be true for them based on their behavior of usage but not for others. For instance, accessibility features like on-screen keyboards, eye tracking, speech recognition,

grayscale color filters, and switch controls create personalized ways of interacting with a website or app that are absent from the user experiences of those who do not have these settings activated. Assistive technology and personalized settings add or remove signifiers from the user experience to aid with navigation, and in doing so, they shape and reshape mental models of how to use digital media. The malleability of mental models is amplified by the fact that digital spaces impose a unique rhetorical influence on users as something that is accessed rather than lived in.

The affordance of physical objects is often understood through observation; people learn how something is used by seeing how others interact with it. The entire time that someone remains in a physical location, they exist relative to the social context of the setting, anyone else sharing the space, and all the things that happen within it. As a result, much like in digital spaces, people typically adapt their behavior to a setting based on sensory information that they attribute meaning to and develop mental models from, such as what they see, hear, or feel. However, while things in a physical space are experienced simultaneously in that they are perceived in a multisensory present, digital experiences and their rhetorical influences are mediated by predetermined interactions on a computer or phone screen. Thought can translate into self-determined action when someone is navigating through the physical world, but the amount of autonomy digital media users have and their perception of affordance is moderated by the limitations of the device they use for access and the purpose of the digital space. This does not mean that digital spaces cannot deliver a level of autonomy similar to physical spaces. Games featuring virtual environments, multiplayer interactions, and controllable avatars can provide a sense of embodied decision-making as well as the ability to develop mental models by observing other players. Still, the intention of the UX designer imposes a greater rhetorical influence over the development of mental models in digital spaces because the user’s cognition is targeted in a

way that compels them to adapt their understanding, emotions, and behavior to the persuasive advances of the product.

The intention to deceive is reflected in UX design patterns that misinform through emotional conditioning and take advantage of familiarity to lead potential users into a vulnerable or more impressionable state. Deceptive signifiers are often coupled with feedback like sounds or images that falsely communicate successful action has been taken. In this common rhetorical strategy, rhetoric misinforms someone's emotional response of feeling "pleasure when things work smoothly and frustration when [their] plans are thwarted" to make them more receptive to following a pattern of behavior (Norman 38). Because people build emotional associations with signifiers based on the success or failure they feel when following an implied mental model of how something should work, deceptive signifiers may act as emotional triggers arranged to mislead people and make them less perceptive of falsehood in digital spaces.

In his book *Evil by Design*, Nodder emphasizes that malicious deception in digital media is intentionally designed to "make users emotionally involved in doing something that benefits the designer more than them" (Nodder xv). The urgency felt by the color red or excitement caused by the sound of a ping notification are emotionally engaging enough to compel someone to act without thinking. A user can certainly be unmoved by the pull of emotional triggers; they can ignore notifications or exit out of a website entirely. However, effective persuasion makes users of digital media always feel the need to engage and never consider opting out. Since emotional triggers can also deter action, the placement of deceptive signifiers could be used to cognitively block someone's escape from a harmful situation. Norman explains that the blockage of passage is anti-affordance, a real or imagined barricade that prevents someone from doing something (Norman 12). A signifier of anti-affordance could be an image, sound, or vibration

that communicates the presence of a restriction even if it does not exist. When someone has a belief that there is an anti-affordance, they are inclined to act within the limits of those set constraints. In navigating a digital space, the assumption that something cannot be done often prevents people from trying to do it. Moreover, rhetoric that gives a false positive of success if someone abides by those restrictions reinforces the idea that they are helpful. Deceptive signifiers are made to seem useful by being placed in parts of the user experience where they would get the most interaction and be hard to miss such as a navigational menu, input field, or front page. Placing a functional emphasis on a deceptive feature or idea makes people assume it is important to successful usage of a digital product, so users willingly respond to the deception and give it undeserved value in their mental model as something to remember. Frequent interactions and the strong positive or negative emotions tied to them can make someone think they understand how something works, and emotionally driven confidence is very exploitable. Norman mentions that “when there is understanding it can lead to a feeling of control, of mastery, and of satisfaction or even pride” (Norman 10). His observation also applies to misinformed understanding and not just true understanding, so maintaining a feeling of understanding and validating the emotions that come with it through a rhetoric of false positives is crucial to deceiving someone.

Likewise, familiar interactions with signifiers on websites, apps, or games that share similar UX designs often make people fall for the cognitive bias that similar rhetorical cues point to the same affordances as other digital media they previously found useful, a generalization that makes people less likely to recognize deceptive designs. Jakob’s Law, a principle of usability coined by Nielsen, addresses this tendency of users to build their understanding of design conventions around a familiar product then apply those expectations to any user experience they

perceive to be the same. Nielsen explains that people gravitate to digital media that works the same as other services they already know how to use. Unfamiliar designs can be intimidating for new users, but it also takes time and effort to learn something new. People develop preferences for user experiences that align with the mental models that brought them fulfillment, so making someone adjust their understanding to find usefulness in an unfamiliar alternative is a cognitive burden that the average user of digital media would rather avoid for their own convenience. Taking ease-of-use and the comfort of familiarity into account, Jakob's Law advises that digital products be "design[ed] for patterns for which users are accustomed" (Nielsen 2017). Most apps and websites provide familiarity by using popular icons that signify available functions through their resemblance to physical objects, such as a folder for storing files or an envelope to check and send mail. These icons feel intuitive because they visually reflect the affordance of the objects they represent and reinforce mental associations with the function of those objects when the user interacts with them. Moreover, the connection someone makes between an icon and a physical object can directly influence their behavior.

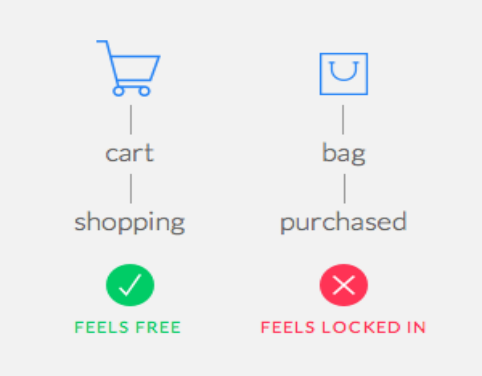

Figure 13: Persuasive Iconography (UX Movement, 2016)

As illustrated in Figure 13, a shopping cart is understood to hold items a customer might want to purchase, whereas a bag holds items that have already been purchased. Given the difference between these two understandings of affordance, someone who visits a website with icons

resembling either of these objects would exhibit different purchasing behaviors. The metaphor of adding things to a cart encourages people to spend more time browsing for items and purchasing a greater quantity of them, because the implied affordance of freely selecting or removing items makes their actions feel leisurely and self-controlled: “there’s less pressure on the user when they add items to their cart” (Thomas 2016). In contrast, a bag suggests a completed purchase or a commitment to buy what has been selected that could lead to less engagement and fewer items purchased than on a website using the visual rhetoric of a shopping cart. The use of visual rhetoric to communicate a familiar affordance is frequently done in deceptive design because it can nudge people to behave just as they would if they were in a rhetorically similar context they trust and remember. Familiar settings allow users to quickly recognize usability and encourages them to act faster. However, trust in the familiar is a potential vulnerability to deception. It can be taken advantage of to convince someone that there is a consistent meaning and single pattern to the rhetoric digital spaces use to communicate their usefulness.

Many websites and apps use the same signifiers, but they do not always point to the same affordance. YouTube and Facebook are both social media platforms that are used to create and share multimedia content. Although YouTube is designed around video sharing and Facebook deals more with social networking, they are somewhat similar as sites that can be used to share videos and livestream. In fact, the platforms once used the same icon resembling a camera with a plus symbol inside to signify video-related features. However, the icon signified two completely different affordances: YouTube’s “upload a video” and Facebook’s “create group video chatroom.” Someone who is accustomed to seeing this icon and intuited its meaning from their past experiences on either website would assume that these digital platforms with some similar features have identical functions and thus follow the same patterns of rhetoric, but YouTube does

not have designated group chatrooms and video uploads are done directly from the user's Facebook profile by clicking a different icon. Digital platforms can also offer the same usability and yet inform the user's mental model of a conventional function using different signifiers. As shown in Figure 14, various icons are used to signify the standard share function that most websites with social features have. Although most of these visuals are recognizable, a couple have been used to signify other functions too. Instagram uses its icon to indicate sharing media and sending direct messages to other users, whereas X's icon for sharing has also been associated with uploading files. The fact that signifiers can look the same but have multiple meanings or look entirely different but mean the same thing can make their familiarity a piece of unreliable evidence for what something does and how to do it.

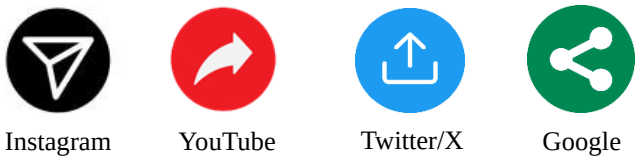

Figure 14: Share Button Signifiers (2023)

To minimize confusion and enhance the discoverability of use, text labels are typically displayed near icons or appear when the user hovers their cursor over them. Labels differentiate similar signifiers and provide the clarification someone might need to follow through with an action or adjust their understanding to avoid making a mistake. However, deceptive designs often omit any guidelines that would truthfully confirm or deny the correctness of what someone understands so that people are likely to believe familiar or vague signifiers indicate conventional functions. Similar to how websites and apps might use deceptive signifiers in order to appear conventional, digital games that are designed to deceive will rationalize snap judgments based on familiarity using ludic unreliability, a kind of deception that occurs when a game "signals certain

possibilities and functionalities that diverge from how the game actually functions" (Gualeni and Van de Mosselaer 6). As Gualeni and Van de Mosselaer explain, the adventure role-playing game (RPG) *Undertale* shows how familiar signifiers can be used to influence player behavior in an instance of useful untruth. *Undertale* uses the conventional labels of 'LV' and 'EXP' to deceive players into thinking it follows the same rules of progression as other games in its genre. LV and EXP are traditional signifiers in the user interface of games and gamified media that represent the player's progression and mastery. In almost every gaming community, players interpret these abbreviations to mean level and experience, so they behave according to the commonly held mental model that in order to progress through a game they must raise their LV and EXP by completing quests, unlocking achievements, or defeating enemies.

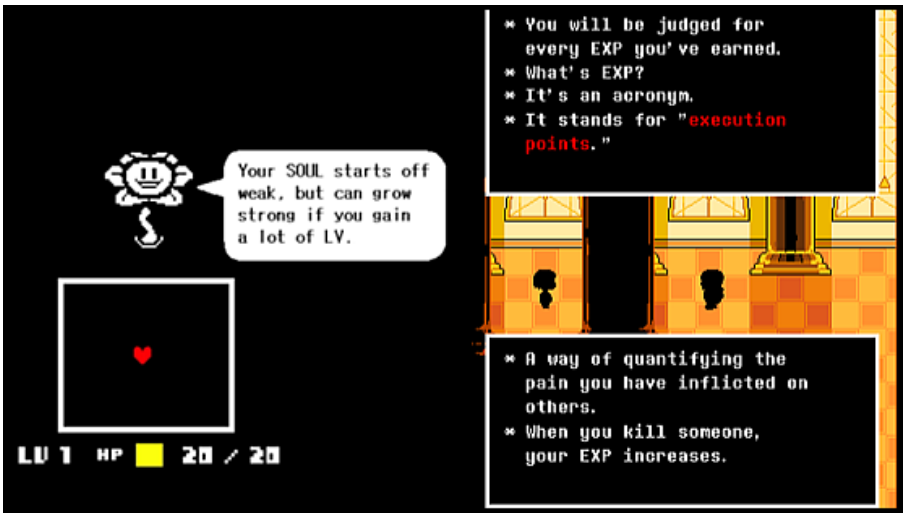

Figure 15: Deceptive Signifiers in Undertale (2018)

Undertale aligns itself with this mental model when the game explicitly tells the player to increase their LV to get stronger, initially framing this as a good or correct course of action toward success in the game. On the contrary, the game can be completed without raising LV or killing a single monster. *Undertale* gives players the option to fight or spare enemies, but EXP is only rewarded when enemies are killed. This is a gameplay mechanic that implies the importance

of one playstyle over another and uses misleading feedback to resemble a familiar mental model. However, the game later reveals that LV and EXP stand for "Level of Violence" and "Execution Points," variables that the game frames as a negative thing. Players are made to feel guilty for increasing their LV and EXP when non-playable characters (NPCs) express fear around the player character or outright judge them during in-game dialogue, and those who reach LV 19 are punished with an extremely difficult boss battle that has taken players an average of 50-100 attempts to defeat. *Undertale* subverts the rules and procedural logic of its genre to get players to "reframe and re-evaluate their own understanding of—and engagement with—the game" (Gualeni and Van de Mosselaer 13). Its deception is a useful untruth that creates an entertaining twist where the player gradually learns the actual significance of their actions and the consequences that come with them. *Undertale*'s use of deceptive signifiers to misinform the player about the process of completing the game exemplifies that intuition can lead people astray, but more importantly it highlights that deception in digital media operates through procedurality and simulating ideologies of process.

3.2 Procedurality in Deception

Because deception in digital media has a significant influence over the user's ability to learn the process of using a digital space and their perception of what control they have over it, deceptive UX designs can be understood as procedural rhetoric. Ian Bogost defines procedural rhetoric as the "practice of persuading through processes," which entails the manipulation of symbols to influence thought or action (Bogost 3). Bogost's concept of procedural rhetoric addresses the capacity for digital games to be used argumentatively as a persuasive medium that can represent the real world or convey ideologies about how things should work in different settings of discourse and choice. He argues that in the process of interacting with a game and

navigating its rules, people gain new perspectives about the world and the meaning of their choices within it. Bogost specifically mentions games that use their gameplay mechanics to represent social or cultural values, just like the procedural representation of morality expressed by players having the option to fight or spare monsters in *Undertale*. Despite Bogost's particular focus on games as procedural rhetoric that "explains processes with other processes," his theory can be extended to all digital media and repurposed to studies for understanding deceptive design and useful untruth with an emphasis on the procedurality of deception (Bogost 9).

Procedurality refers to the "way of creating, explaining, or understanding processes" (Bogost 3). Since UX design involves creating usable digital spaces made up of processes that lead to an outcome, signifying how those spaces work, and influencing the way people understand how to use them, there is a procedurality to deceptive designs. Bogost's framework of procedural rhetoric states that processes define the way things work, so procedurality is the inner working rhetoric that determines how a process of using a website, app, or game is functionally and logically expressed. Deception then is a strategy for manipulating processes through procedurality, one that creates a procedural misrepresentation of the possible affordances and limitations in a user experience. Procedures have rhetorical influence as systems of action that people work within and interpret based on the constraints they encounter while using digital media. Bogost emphasizes that the persuasive potential of procedures comes from their interactivity as models and possibility spaces. When digital media uses rhetoric to shape the mental models of users during their interactions or preemptively conform to potential users' expectations of how something should work, it is persuading through its arrangement of procedures. The procedural organization of a digital interface (i.e., navigational pathways, signifiers, and feedback) influences the way people interact with a website or app. For example,

the procedural rhetoric of being able to scroll infinitely on a social media site structures the behavior of the person using it around continuous engagement. Procedurality provides a model for how parts of a process relate to each other, and it contributes to whether an impression of usefulness or uselessness is given to the user. Bogost compares a procedural model to a system of enthymemes that make procedural claims about a digital process, which the user interrogates through their interaction with a website, app, or game. He calls the difference between what is represented in a model and the user's understanding a "simulation gap" (Bogost 43). Bogost's concept of a simulation gap relates to the utility of deceptive design in that deception is useful when it bridges these gaps and harmful when it widens them. In fact, deceptive designs could also be rhetorically examined from the perspective that they are simulations, procedural representations that imitate the look and feel of a particular process but operate under different rules. Reframing the practice of deceptive design as simulation emphasizes its persuasive dealings in cognitive suggestion via choice architecture. Moreover, the way falsehood creates a simulation that reflects an idealized affordance further relates useful untruth to Bogost's concept of possibility spaces.

Bogost's notion of possibility spaces offers insight into the role procedurality has in the discovery of affordance. As his focus is primarily on games, Bogost develops this idea by connecting it to the process of playing a game: "the possibility space of play includes all of the gestures made possible by a set of rules" (Bogost 120). This is no different in websites and apps. The possibility spaces of all digital media can be defined as the parameters of affordance that the user can navigate to figure out how a process works. Procedurality creates the possibility for a user's actions to result in certain outcomes, allowing some functions and excluding (or hiding) others. A possibility space is not necessarily a limitation but more so how a digital medium is

procedurally expressed. However, possibility space can be intentionally designed large or narrow to manipulate someone's perception of what they can and cannot do. Bogost highlights the effect different-sized possibility spaces have on the user experience of digital media. Although large possibility spaces offer a greater number of affordances, they tend to be so complex that the relationship between their numerous features is difficult for users to remember or understand (Bogost 43). When there are too many processes to navigate, people take longer to find functions they might potentially consider useful. In contrast, a narrow possibility space can give the impression of simplicity but also fewer affordances. Deceptive UX design is procedural rhetoric that artificially inflates or shrinks the possibility space by manipulating signifiers, imposing defaults, or denying access to parts of a digital space. These effects on the possibility space become useful untruth when constraints and freedoms procedurally expressed to the user contribute to their ability to find functions and successfully use a digital medium for its intended purpose.

A useful manipulation of possibility space is exhibited by websites, apps, and games that use progressive disclosure, a usability strategy that involves "defer[ing] advanced or rarely used features to a secondary screen, making applications easier to learn and less error-prone" (Nielsen 2006). It divides the procedural model into parts, gradually offering more information and features at different points in the user experience. Progressive disclosure involves some deception in that it initially presents users with a narrow possibility space of a few options, intentionally hiding additional functions and only revealing the larger possibility space if the user requests them or meets certain criteria. A conditional or step-by-step expression of the possibility space can be deceptive as evidenced by its potential to give someone an incomplete mental model depending on their usage habits and interactions. It is a common occurrence for someone

to have used a website for years without discovering a feature that was always available to them. However, the deceptive framing of a possibility space as something smaller than it actually is helps reduce the cognitive load of navigating a digital space with many procedural pathways. Progressive disclosure is made useful through labels, buttons, and other rhetorical cues that signify the existence of a larger possibility space and how to access it. A notable example of useful untruth shaping the possibility space to benefit users is the dieting app Noom, which uses progressive disclosure to ease new users into its weight loss program (Naji 2018). The app initially displays only basic features new users would need to get started, like tracking calories or setting up meal plans. Noom purposely misrepresents the scope of its affordance as something simple, but as the user makes progress it expands the possibility space to include live coaching, group chats, and wellness lessons. The disclosure of these new resources encourages greater engagement with the app.

Since mental models are procedural understandings of how something works, it is appropriate to think of deception in UX design as rhetoric that signifies possibility rather than usability. Deception is lying about a potential use and using rhetoric to make it seem plausible. Even useful untruth is just a convenient framing of what should happen during an interaction, but deception still influences the usability of digital media because the possibility of something happening motivates people to make choices with pursuit or avoidance in mind. The procedural arrangement of nudges and constraints shapes the possibility of usefulness as people navigate digital media. That is, deceptive procedural models persuade users about what is possible through a step-by-step concealment or misinforming that manipulates the distance between someone and the possibility of a useful experience. As such, useful untruth can be identified by the interplay between navigability, feedback, and consistency in the expression of procedurality.

4 EVALUATING USEFUL UNTRUTH

Useful untruth is falsehood applied to user experience design in ways that benefit usability, creating an image of possibility in the minds of users that has a positive influence over how they understand and interact with the procedural model of a digital medium. Even though useful untruth is deceptive, it must maintain consistency in what it is rhetorically signifying to ensure that the user makes the right assumptions and follows the course of action that will result in fulfillment. As exhibited by useful untruth in games and gamified media, not all instances of useful deception will lead to successful interactions, but they can still be satisfying and thus perceived as useful. With this in mind, analyzing useful untruth as procedural rhetoric that is defined by successful outcomes would be less representative of all useful deception and subjective. The usefulness of deception should be evaluated based on fulfillment in an objective sense. From this perspective, fulfillment is a procedural end goal where the user has received the affordance of a digital medium without error (excluding the error experienced when someone is deceived in digital media focused on entertainment as it still brings fulfillment). A procedural model built on a deceptive arrangement of rhetoric does not contain useful untruth if its deception creates inconsistencies in the possibility space or sludge that makes it difficult for users to navigate according to their intentions, understand affordance, and achieve fulfillment.

4.1 Navigability

Navigation has the greatest influence over the rhetorical effect deceptive designs have in digital media. All persuasion that happens during a user experience is made possible because a sequence of signifiers nudges the user down a specific navigational path. Navigation is a series of choices a user makes to reach fulfillment. What design features someone is able to find, how they come to understand affordance, what they perceive as useful, and why they make the

choices they do are determined by the arrangement of rhetoric they navigate through. Signifiers and feedback in digital media communicate a procedural connection between the choices users make that gives them contextual meaning as a course of action, which is an implied or actual procedure someone must navigate to receive fulfillment. Deception is the manipulation of how a course of action is expressed in the function of a digital interface that influences the way people decide to move within its possibility space. Because falsehood misinforms people about a possible affordance and the procedure required to use something, it is only useful in digital media when it does not make the course of action unnavigable. In other words, useful untruth can misrepresent or temporarily hide the right course of action but cannot eliminate it from the user experience. Even games that deceive for entertainment still maintain the navigational pathways for someone to play them without error. Navigability refers to the user being able to follow a course of action to reach their intended goal of fulfillment. For deceptive rhetoric to be useful untruth in a digital experience, it needs to provide enough information to maintain navigability, a strong information scent.

Information scent is a concept that comes from information foraging theory, which states that when people navigate digital spaces for information or to meet a goal, they adapt their behavior to their information environment (Pirolli 2007). The content displayed on a website, app, or game interface makes up the information environment, but not all of it is related to the same task because “the same source of information may have different information scents for different information needs” (Budiu 2020). Information scent helps people track relevant information and discover its procedural significance; it is the strength and correlation of words, visuals, and sounds in signaling a course of action and its usefulness to the user. A signifier may indicate some steps in a procedural model but not always everything someone needs to navigate

and use a digital medium. People gather an understanding of how something can be used based on its surrounding context, its meaning relative to text, links, and visuals displayed alongside it. UX design communicates usefulness through a manipulation of the surrounding context, making the information scent a crucial factor in deception. The navigability of a digital medium depends on how clearly the information scent indicates that an action will get the user closer to fulfillment. “If the scent gets stronger, the user follows the cues to the goal. If the scent gets weaker, the user abandons the cue and back tracks or abandons the site entirely” (Datt 2017). The influence information scent has on behavior is evidence that it gives people an understanding of the possibility space they can navigate. As such, information scent can be designed weaker in some areas of a user experience and stronger in others to trigger engagement with certain features while making the rest less discoverable. Digital media has a weak information scent when its rhetorical cues lack context and connection to the course of action that would lead to fulfillment. What this means is that the information used to direct the user is irrelevant to their objective, has an inconsistent meaning, or creates resistance against the user’s attempts to navigate.

Amazon’s hard-to-cancel subscription format, internally called the “Iliad Flow,” exemplifies the intentional design of a weak information scent, which the company used to prevent users from navigating its cancellation process. In 2023, the Federal Trade Commission (FTC) sued Amazon for tricking its customers into an auto-renewing subscription without their consent. Amazon obscured options to shop without enrolling in its Prime subscription by making them harder to locate, and it also hid its subscription button in the checkout process so customers would unknowingly sign up for Prime thinking they were only confirming an item purchase. Amazon’s deceptive design caused harm by hiding crucial signifiers that would have given

customers the awareness to avoid these pitfalls. But it was never Amazon's intention to implement useful untruth; their design was malicious deception. Amazon's executive leaders actively slowed, prevented, and undid any internal efforts to improve the user interface design because they wanted to preserve the profitability and recurrence of non-consensual enrollment. They even tried to justify their deception by suggesting that the benefits of being subscribed outweigh the harm done:

> "In a meeting with Amazon designers, Defendant Lindsay was asked about Amazon's use of dark patterns during the Prime enrollment process," the FTC writes. "Lindsay explained that once consumers become Prime members—even unknowingly—they will see what a great program it is and remain members, so Amazon is 'okay' with the situation." (Hurler 2023)

To entrap customers who were deceived and wanted to opt-out of their subscription, Amazon created its Iliad Flow, a "four-page, six click, fifteen-option cancellation process" (Brodkin 2023). The Iliad Flow caused a weak information scent through unrelated links, discount offers, and misleading information intended to confuse and redirect customers away from the "End Membership" button buried at the bottom of the final page under five other options to remain subscribed. Even when customers clicked the "Continue to Cancel" button, they still had many more pages of distractions to go through before they could reach their objective. The Iliad Flow demonstrated that "users can be manipulated by distractions into belief or behavior," and it capitalized on this fact by making it so interaction with anything other than the continue button would immediately end the cancellation process (Adar et al. 1869). With customers needing to go through the entirety of the process to confirm cancellation, the weak information scent had an effect of widening distance between the user and fulfillment. In some cases, customers gave up

on trying to navigate the Iliad Flow and cancelled through Amazon's customer service. When people start looking for alternative methods to navigate a digital space or go elsewhere to complete a task, it is a sign that the information scent does not clearly indicate how to use something.

A strong information scent enables deceptive UX design to be useful because it provides error prevention in digital media that influence through falsehood. There is a strong information scent when procedural context and feedback are provided to cue users about the significance of the actions they take. Although a strong information scent could be seen as counteractive to the misinformation presented by deceptive designs, that is only the case for deception intended to make navigation to fulfillment impossible. Useful untruth is complemented by a strong information scent as both have a rhetorical influence that improves usefulness. Useful untruth adjusts mental models to bring the user's understanding closer to how something works, and a strong information scent ensures the user can find and remain on the course of action regardless of any inaccurate implications made by deceptive designs. The benefit a strong information scent has on the usefulness of deception is best reflected when deceptive signifiers of function are used.

YouTube's "not interested" button gives users the impression that they can filter videos on certain topics from being recommended, but the button only removes that specific video currently shown and has little to no influence on future recommendations. Related videos from other YouTube channels can still appear on the recommended page, and the videos that were previously dismissed with the "not interested" button frequently return. In fact, a study from Mozilla found that when users selected the "not interested" option, it only prevented about 11% of unwanted content from being recommended (Ricks and McCrosky 2022). As the button still

has some effect on the user experience, it is not a placebo. However, it is still a form of deceptive design because the videos removed through this function do not stay gone, which suggests that they are not actually being filtered. YouTube's strong information scent is what reinforces the idea that they are. The "not interested" button is displayed alongside other personalization options, which is a surrounding context that implies the significance of the button as something that will allow users to control what they see on the website. In addition, the appearance of an undo option and a message claiming the video has been removed from the page convinces users that they followed the right course of action to improve their user experience and that these changes will remain unless undone.

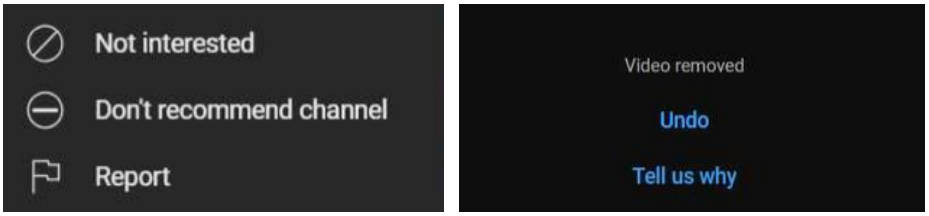

Figure 16: "Not Interested" Button (YouTube, 2024)

YouTube's information scent consists of channels and tabs that organize content and give a sense of where users should navigate to see specific videos. Video recommendations are part of that information scent, making it easier to find content the website has curated based on the user's activity. As a result of this strong information scent, the videos marked as "not interested" are simply buried under the ones that are not. Despite the user being deceived about what the button actually does, the information scent maintains their ability to navigate to relevant content and lowers the chance that they unintentionally see or click videos they are not interested in. YouTube hiding the button's ineffectiveness with a strong information scent also makes its deception useful since the idea of the button working contributes to their enjoyment of the

website as personalized entertainment. However, navigation and deception's rhetorical influence on mental models would not be possible without feedback.

4.2 Feedback

Feedback gives people an understanding about where they are, what is happening, what has happened, and what will happen as they navigate digital media. Since digital media persuades through its procedurality, its usefulness depends on the support it provides when someone uses it. This is true even for deceptive user experiences that misinform with the feedback they present. Even if the feedback given is falsehood, it is useful if its implications allow the user to progress to fulfillment. Useful untruth must guide users through the procedure of use, "each step should be interlinked through a series of feedback loops that propel you forward" (Kuang 323). The action and reaction that happens when cursors are hovered, buttons are pressed, links are clicked, and screens are swiped helps people learn how to navigate. Feedback is any perceivable alert of occurrence, appearing as the images, sound notifications, vibrations, or messages that pop-up after an interaction. It is how digital media responds to actions and communicates where they should happen. Feedback must be three things: immediate, informative, and planned (Norman 23-24).

In order to effectively persuade someone and guide their every interaction, the rhetoric used as feedback must be immediately delivered once the user completes an action. Immediate feedback gives people a seamless user experience and the go-ahead they need to either continue navigating the course of action or backtrack to correct a mistake. Without immediate feedback, the user is left wondering if their actions accomplished what they intended and never quite develops a consistent mental model of how digital features should work. Many deceptive websites, apps, and games will omit immediate feedback to make the user uncertain about the

consequences of their actions. As discussed earlier in the example of horror games and social deduction games, removing feedback is only useful in the context of entertainment. It is an otherwise harmful or high-risk strategy of deception because it involves using rhetoric to weaken the information scent. A lack of immediate feedback has the same effect as a weak information scent: “people often give up, going off to do other activities” (Norman 23). Providing informative feedback alongside deceptive rhetoric that misinforms might seem like an impossible compromise, but it is possible for useful untruth. When something is described as informative, it is often assumed to be truthful and based in fact. However, informative things are really just useful ideas that are beneficial because they provide insight about a topic or setting and can potentially enable someone to follow a course of action. Useful untruth does just that, using falsehood to make a digital experience more navigable and understandable. Despite useful untruth resulting in a somewhat inaccurate mental model, its falsehood can serve as informative feedback—a useful idea that helps someone navigate the procedurality of digital media. Useful untruth is misinformation that has informative use. In contrast, harmful deception is marked by uninformative feedback loops that “tell us that something has happened, but convey very little information about what has happened, and then nothing about what we should do about it” (Norman 23). As deception is a rhetorical strategy that must be planned around the fulfillment of user goals to be useful, deceptive feedback must also be planned. Planned feedback is arranged to prioritize the most important signals. In doing so, digital media can turn attention away from uninformative distractions, increasing the visibility of nudges that are procedurally relevant to the user’s tasks and thus enhancing navigability.

Sound and tactile feedback are often manipulated to make digital interfaces feel more tangible and influence how people learn to interact with them. Adar et al. provide the example of

skeuomorphism in digital products. They specifically refer to the fake sounds used to make a digital thing more reminiscent of its physical counterpart, such as the digital cameras on smartphones making a physical shutter sound even though they lack the mechanical parts to do so. Some smartphones even play a shutter-click noise whenever screenshots are taken, despite their cameras having nothing to do with the screenshot function. This artificial feedback is useful untruth because it communicates when an image has been captured either through the camera app or browser. It also influences how the user might use their smartphone's camera, perhaps holding the phone in a better position for picture taking or choosing settings based on the assumption that there is a physical shutter that must have the same limitations or capabilities as a regular camera (Adar et al. 1869). Similarly, many games pair audiovisual cues with controller vibrations to tell players what is happening so they can respond appropriately. Feedback conveys meaning that the player interprets and follows.

Figure 17: Feedback (The Elder Scrolls V: Skyrim, 2017)

In *The Elder Scrolls V: Skyrim*, tactile feedback is used to guide the player through a lockpicking feature. As the player rotates the lockpick, their actions trigger visual feedback of the lock moving, and the game controller vibrates to indicate when the player is getting closer to opening

the lock. This immediate feedback reinforces the player's assumption that vibrations mean they are rotating the lockpick in the right direction. However, the vibrations are deceptive because a strong vibration can also mean the lockpick is about to break. Players cannot always be certain what the tactile cues are signifying, but the deceptive aspect of its feedback adds a layer of difficulty to the task of lockpicking that makes the game more immersive for the player.

Feedback is procedural rhetoric that has a direct influence on the usability of digital media. Too much feedback is overwhelming, and too little is misleading. Digital deception is a gradual process that requires feedback to make it convincing whenever encountered, which is true for dark patterns and useful untruth. However, when deception is rhetorically designed to be useful, the culminating effect of its falsehood leads to a cognitive state of informative misunderstanding, where not knowing exactly how something works places someone in a position to stay on the right course of action and get fulfillment from their digital experience. That is the basis of useful untruth that is reflected in its procedurality. Feedback is a way of maintaining deception's pattern of influence and keeping it aligned toward usefulness, but feedback has no meaning without consistency.

4.3 Consistency

Consistency is the linchpin of usability. It refers to cohesion and uniformity in the visual, functional, internal, and external features of a UX design. Consistency allows the user to quickly learn to use digital media and recognize the procedural meaning of the rhetoric it uses to nudge their interactions. All four layers of consistency benefit usability, such as using the same visual signifiers, having all menus and buttons behave the same when used, and following the design conventions of similar digital products. However, the usefulness of deceptive rhetoric hinges most on its contribution to internal consistency, the consistent pairing of visual and functional

designs that create a coherent user experience. Without a consistent choice architecture and system function, digital media is neither persuasive nor learnable. Usefulness is the result of something being consistent in what it offers and in the procedure it nudges users through to reach that affordance. Digital media is navigable when someone can make the same choices and consistently reach the same outcome, and it is usable when the feedback it gives is consistently relevant to the course of action.

Deception is often thought to cause inconsistency because deceptive rhetoric creates a misunderstanding that is inconsistent with how something actually works. Although falsehood is inconsistent with reality, useful untruth is not a departure from a consistent user experience. The deception of useful untruth recontextualizes the affordances of digital media so they are easier to use and consistent with what people expect. Digital media embodies rules and executes them, allows people to manipulate objects and exchange information, and creates worlds that people can navigate and observe (Murray 2024). Useful untruth makes it so those rules and possibility spaces are understood in a different way that is still consistent to how they are functionally expressed within the UX design of digital media. Moreover, deception can also be used to make digital media look and feel consistent.

For instance, a fake loading screen is useful untruth that can make navigation to different parts of a user experience consistent if content loads too slowly or too quickly. Progress bars are designed to move at predefined speeds and display random numbers or animations that are unrepresentative of the actual processes happening after each interaction. It is visual feedback that is inconsistent but useful through the consistency of its deception: “spinning wheels, creeping numbers, and growing bars eases the mind of the user more than something that processes in a mere instant” (Piper 2023). When someone sees the immediate feedback of a

loading screen every time they visit a website or start a game, they feel assured that things are working as they expect, and the user experience is given an organized procedural structure despite shortcomings that would create delays or gaps in its usefulness like slow loading speeds. However, even if the visual feedback presented is fake, it is still important that it is suitable for the task the user is conducting or else the deception might be frustrating. As Figure 18 reiterates, consistency relies on the user being able to (or being convinced they can) perceive a response immediately after their actions.

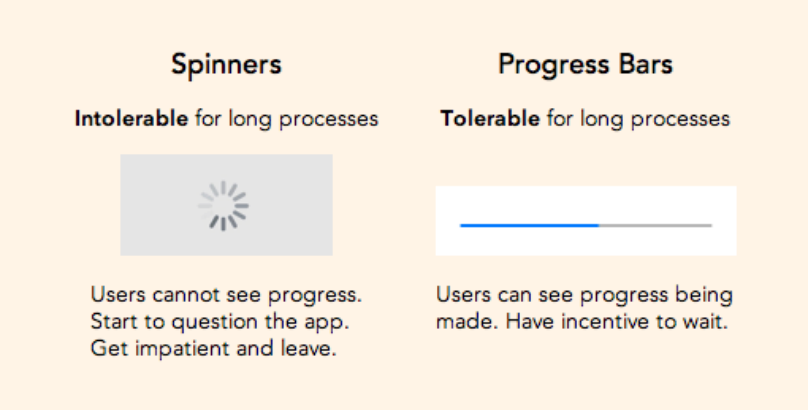

Figure 18: Effect of Fake Progress Indicators (UX Movement, 2016)

Consistency is what separates useful untruth from dark patterns; it is the procedural connection between the rhetoric used to nudge someone and the course of action. When and where feedback is integrated into the process of using digital media determines if it is navigable and if deception is useful. A dark pattern can be consistent in its lies and present a choice architecture that makes those lies seem true, but it will always lead people down a path that resists their intentions and buries the possibility of fulfillment. The feedback of malicious deception distances the user further from their goal with each interaction until they hit a false positive or dead-end. Malicious deception is a procedurality designed to prevent navigation, whereas the rhetoric of useful untruth is a convenience rather than a burden.

5 CONCLUSION

5.1 Implications of Useful Untruth

Rhetoric is a neutral tool of communication that can be used to benefit or harm those it persuades. Useful untruth reflects the duality of rhetoric, presenting a beneficial application of deception despite deceptive rhetoric typically being seen as harmful. Falsehood is often looked at as something that distracts and exploits because truth enables people to avoid making mistakes, but the idea of useful untruth offers an avenue into examining the rhetorical influence of deception and the potential of falsehood as a benefit to digital media designed for discourse, learning, and entertainment. As emphasized by principles of usability in UX design, digital media is built to support a particular use. All the rhetoric involved in the design of digital media is meant to communicate a procedure that should be followed. Deception misrepresents that procedure. Procedurality is a term that is almost exclusively used in game design studies, but it should be applied to all digital media since they are procedures that are explained, created, and understood through rhetoric. Procedurality explains how deception works in digital media and gives insight into the distinction between dark patterns and useful untruth.

Deceptive practices in UX design demonstrate that deception in digital media is persuasion through procedural rhetoric. Deceptive design manipulates limitations and possibility spaces to influence how people understand and navigate digital media. Deceptive signifiers, feedback, and emotional nudges in the choice architecture are strategically arranged to misinform the mental models people develop as they try to figure out how something works. As mentioned in Chapter 2, deceptive rhetoric can be identified as harmful using a subjective or objective lens. This thesis proposes that to identify useful deception, a more objective look at the rhetoric that makes up its procedurality is required. Whether deception is harmful or useful

depends on its rhetorical cues and feedback being consistent with the course of action required to complete a task. Dark patterns obfuscate the course of action with inconsistency, but useful untruth recontextualizes the course of action either to entertain users or help them follow it to fulfillment.

Useful untruth is not meant to be a substitute for non-deceptive communication of how to use and navigate digital media. Much in the same way that rhetorical strategies can be effective in one setting but ineffective in another, deception is not applicable to every user experience. The effectiveness of deception is affected by the constraints of the device being used to access digital media and the scope of their usage. Too much visual feedback would overcrowd an app designed for a simple process, and a fake loading screen would be redundant on a website that has infinite scrolling. This thesis explains that deception needs to complement the digital setting it is used in and respond to the needs of the user in order to be useful. In the examples of useful untruth I found, deception had a greater influence on the procedurality of games than in websites or apps. This suggests that useful untruth has a higher applicability in games and gamified media, where people might expect to be deceived and thus benefit from rhetoric that misinforms them. Gamification is similar to useful untruth in that both are strategies used to reframe conventional UX design patterns into something more engaging, intuitive, or understandable. The entertainment focus of games and gamified media also makes them more tolerant to deceptive designs, while deceptive rhetoric on websites and apps may need to be subtle to maintain consistency with the course of action and prevent confusion. Still, this difference in the extent that deception can be applied to different kinds of digital media does not diminish its utility in guiding how people learn to use digital spaces and interpret their rhetorical context.

As discussed in Chapter 3, useful untruth adjusts mental models to bridge the gap between user expectations and reality. The use of deception to help someone understand something or use it properly presents the idea that falsehood can be informative in one's interactions with digital media, not in the sense that it is truthful but rather a useful idea or way of thinking that is beneficial to believe in a particular setting. The consideration of useful untruth as informative misinformation distinguishes it from lies told for the sake of lying. I emphasize that useful untruth should be distanced from the word "misleading," because it contradicts the benefit deceptive rhetoric has to offer in keeping users on track to their goal or improving their user experience. The redefinition of deception as useful untruth is an invitation to rethink the persuasive value of deceptiveness in the practice of digital rhetoric and explore the nature of useful persuasion.

5.2 Future Research

As useful untruth is a common yet often dismissed practice in user experience design, there are more angles of research that could be taken to consider the use of deception in different digital settings of discourse, entertainment, and learning. For instance, what is not discussed in this thesis are the pedagogical uses of deceptive rhetoric in digital learning spaces. How might the re-framing of limitations or possibility spaces within the digital interface be used to guide the discovery of new topics and learning material? Can deceptive feedback be used in a way that contributes to someone's motivation to learn and engage with educational content? I imagine that deceptive UX design is used much less on educational websites and apps due to the risk of deception causing confusion, so it would be interesting to see if deceptive rhetoric could be used in a consistent and beneficial way. It could also be worth observing how deception might be implemented to help students retain information either by teaching them to identify errors placed

by the deceptive rhetoric or re-framing how the learning material is understood so that it is easier to memorize.

Another direction for potential research deals with the effect useful untruth has on the learnability of games. This research could be connected to the concept of embodied learning in digital settings. Embodiment is the relation between cognition and action, referring to how the environment shapes one's expectations, choices, and the meaning of their actions (Ryan and Siegel 2009). A concept that appears in rhetorical studies and interaction design, embodiment concerns the idea that people learn based on their perspective of the environment and their engagement with it. Interaction design deals with how digital interfaces can be used to communicate affordance and guide action. Embodiment is how people connect to digital media, and rhetoric can be used to influence the perspective part of embodied experiences. However, embodied learning is not only affected by rhetoric but also the physical devices people use to access digital media. For instance, perspective physically changes when someone is using a smartphone to access a website as opposed to a desktop computer. Likewise, someone might be more cognitively familiar playing a game with a controller than a keyboard.

Embodiment relates closely to the persuasive influence of useful untruth on digital media. While this thesis explores the nature of deception and usefulness, its concept of useful untruth provides a framework that can be applied to examine the usefulness of deception in interactive entertainment. Connecting useful untruth to embodiment presents an opportunity to study how people adapt to deceptive environments and what form embodied learning would take in the presence of deception. The significant influence deception can have over perception and learnability makes useful untruth a rhetorical practice worth researching further.

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