

Designing Against the User: Dark Patterns as the Inversion of Human-Centered Design

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ABSTRACT

This paper describes how “dark patterns”—uses of user interface design crafted to trap users into making unintended and unwise decisions—are leading consumers astray. HCD begins with people and their needs and goals; dark patterns begin with the corporation and design for profit at the user’s expense. The paper traces these manipulative designs and their implications for the design professions, from the origins as a pattern library for practitioners to the systematic study of scholarly works. The prevalence of dark patterns among major shopping sites was measured at more than one in ten in a measurement study. Powerful experimental research demonstrates that even minor manipulations more than double uptake for an unwanted service; this increased uptake was borne disproportionately by the least educated shoppers. An extended case study analyzes the enrollment and cancellation flows of Amazon Prime and how these practices led to 2025’s \$2.5 billion settlement with the U.S. Federal Trade Commission. The paper reviews regulatory actions, including Article 25 of the European Union’s Digital Services Act and California’s new rule that - consent obtained through dark patterns is no longer considered valid consent. The paper offers hypotheses as to why manipulative design persists in spite of growing regulatory action. The paper argues that dark patterns are the inverse of human-centered design, which share research methods that make them usable and effective, and only the ethical choices of designers decide whose interests are served.

Keywords: dark patterns; deceptive design; human-centered design; user experience; consumer protection; Digital Services Act

INTRODUCTION

Don Norman, in his classic book on design, argues that a good product is a good communicator between the designer and the user. Good design is based on an accurate understanding of how users perceive, think, and act (Norman, 2013). Every interface communicates a system image. Users develop an impression of how the product works based on labels on the buttons, the controls they find, and the feedback the product gives them during use. It is the task of the designer to ensure that users develop the right expectations (Norman, 2013). A similar philosophy drives the international standards. The term human-centered design, according to ISO 9241-210, refers to an approach to interactive system design

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that aims to make systems usable and useful by focusing on users, their needs and requirements, and by applying human factors, ergonomics and usability knowledge and techniques throughout an iterative design process (International Organization for Standardization [ISO], 2019). The creation and application of plans, processes, or procedures meant to guide and improve a new product's design and development are based on the following principles: the design is based upon an explicit understanding of users, tasks, and environments, users are involved throughout the design and development, the design is driven and refined by user-centered evaluation, and the process is applied and integrated throughout the organization, considering the whole user experience, not just isolated interaction screens (ISO, 2019).

In the last 30 years, this matter has become central to software development, with nearly every major technology company now employing user experience (UX) researchers and designers who interview and observe users in usability tests, instrument products to measure behavior at scale, and iterate on prototypes until friction is eradicated. The professional apparatus of HCD (personas, journey maps, A/B experiments, analytics dashboards) is enlisted to close the gap between what people intend to do and what an interface makes them do.

That same experience can be used against them. The observations that a designer makes—where users look, what they skip over, how quickly they click without reading—can be used to help users or deceive users. Dark patterns are deceptive user interfaces, and this paper presents them as a case study of design ethics. This paper presents five case studies of dark patterns: (1) defining the phenomenon and presenting a taxonomy; (2) reviewing empirical evidence on prevalence and behavioral effect; (3) an extended case study of Amazon Prime's enrollment and cancellation flows, which recently led to a record-breaking \$2.5 billion federal settlement (Federal Trade Commission [FTC], 2025); (4) surveying the response from regulators; and (5) a discussion of why manipulative design persists and what we can do about it. This paper argues that dark patterns are human-centered design inverted and that they raise uncomfortable questions for designers and consumers.

DEFINITION AND TAXONOMY OF DARK PATTERNS

Introduced in 2010 by British user experience consultant Dr. Harry Brignull, dark patterns describes a concept he created to call attention to manipulative, deceptive, and coercive design practices through his pattern library website, <https://darkpatterns.org> (Brignull, n.d.). Brignull (2023) explains that dark patterns are a set of user interface design tactics that trick users into doing things that they either do not intend to do or do not want to do, such as purchase a product or subscribe to a service. According to Gray et al. (2018), dark patterns describe a “broader phenomenon where user value is supplanted in favor of shareholder value” (p. 1) and, according to Luguri and Strahilevitz (2021), “user interfaces whose designers knowingly confuse users, make it difficult for users to express their actual preferences, or manipulate users into taking certain actions” (p. 43). The focus on intent is the distinguishing factor between poor design and dark patterns.

Brignull's library included patterns with familiar names. The roach motel is where a subscription, for example, is easy to get into, but difficult to get out of. Confirmshaming offers the choice to opt out in a way designed to shame the user. Sneak into basket adds items to the user's online shopping cart without their consent, while hidden costs reveal extra fees at the final checkout stage. Trick questions are those posed in double negative language, resulting in the user's unintentional selection of the opposite of their intended choice. Other repeat offenders included forced continuance, when a trial period for a software subscription ends and silently converts to a subscription, and nagging, when a site continually asks a question the user has already answered, hoping for a different response (Brignull, 2023). The site has now been renamed *deceptive.design*, and the terminology has shifted away from dark patterns to deceptive patterns, at the recommendation of the World Wide Web Foundation's Tech Policy Design Lab, in an effort to avoid language with potentially negative connotations (Brignull, n.d.).

The psychological aspect of this is intuitive. Luguri and Strahilevitz (2021) point out that dark patterns function to push users toward making decisions via fast, intuitive System 1 thinking, as opposed to slower, more rational processing. They list several cognitive biases dark patterns use, including framing effects, sunk cost fallacy, and anchoring. They also note that most dark patterns differ from typical marketing, in that they aim to change consumers' behaviors in line with their existing preferences, as opposed to changing their preferences. This difference clarifies why dark patterns are a design problem rather than an advertising problem - the manipulation is in the product design, the defaults, the button hierarchies and forced click paths, and not in the advertising text per se.

Subsequent researchers organized these approaches into taxonomies. Observing a collection of examples assembled by practitioners, Gray et al. (2018) clustered dark patterns into five strategies: nagging, obstruction, sneaking, interface interference and forced action. At Princeton University, Mathur et al. (2019) analyzed dark patterns on shopping websites at scale, grouping seven broad categories: sneaking, urgency, misdirection, social proof, scarcity, obstruction and forced action (see Table 1). This study also describes each pattern according to how it influences decisions (e.g., exploiting information asymmetries, hiding the pattern, restricting choice) and the harms it may impose on decision-making (Mathur et al., 2019). These taxonomies have proven influential outside academia, providing regulators with a shared vocabulary. As discussed below, terms from the research literature have been adopted in statutes and enforcement actions on two continents (Brignull, n.d.).

These taxonomies further show the proximity of dark patterns to benign design. No category describes some exotic form of interface technology. Defaults, button design, message placement, and number of steps are the everyday features of any interface design, and each become dark patterns only by the manner in which they are employed and the information they obscure. Mathur et al. (2019) describe this well, characterizing dark patterns by the underlying influence and potential harm: the same visual hierarchy that nudges consumers to a safe default in a benign design nudges them to an undesired subscription in a manipulative design. This continuum explains the difficulty in identifying dark patterns both for consumers and for regulatory auditors; it is why dark patterns are understood in this paper as a perversion of human-centered design principles rather than as strictly new design elements.

Table 1. Seven categories of dark patterns in online shopping, adapted from Mathur et al. (2019).

Category	Mechanism	Illustrative example
Sneaking	Hiding, disguising, or delaying relevant information	Fees revealed only at the final checkout step
Urgency	Imposing a real or fabricated deadline on a decision	Countdown timer on a discount offer
Misdirection	Steering attention toward the profitable choice	Prominent accept button beside a subdued decline link
Social proof	Invoking other users' apparent behavior	"312 people are viewing this item" notification
Scarcity	Signaling that supply is nearly exhausted	"Only 2 left in stock" message
Obstruction	Rendering the unprofitable action tedious	Multi-page cancellation requiring repeated confirmation
Forced action	Requiring an unrelated step to complete a task	Account creation demanded before checkout

PREVALENCE AND BEHAVIORAL EFFECTIVENESS

A clear picture emerges from two sets of studies: measurement studies that investigate the prevalence of dark patterns and experimental studies that examine the impact of dark patterns on consumer behavior. For nearly a decade after Brignull coined the term, the understanding of dark patterns was based on collected examples. Early research efforts focused on identifying and categorizing the various techniques employed by dark patterns, but no one had measured the scale of the problem (Gray et al., 2018; Luguri & Strahilevitz, 2021). To the best of our knowledge, the seminal measurement study is the crawl conducted by Mathur et al. (2019). They developed a semi-automated system that crawled the interface text of approximately 53,000 product pages from 11,000 popular shopping websites, grouped similar text, and then used human judges to identify potential dark patterns. They found 1,818 instances of dark patterns of fifteen types in the seven categories described above. Dark pattern prevalence increased with site popularity. Over eleven percent of the sites contained dark patterns, with the most popular sites being the most likely to employ them (Mathur et al., 2019; Luguri & Strahilevitz, 2021).

Two other results from the crawl are worth reporting here. First, at least 183 of the sites used deceptive patterns, such as countdown timers that falsely create urgency by simply resetting when they expire (Mathur et al., 2019). Second, the researchers found 22 third-party companies that offer dark patterns for sale. For the asking, the owner of a manipulative site can purchase fake urgency banners, activity alerts, and low-inventory messages the way one can purchase a payment processor (Mathur et al., 2019). Finally,

dark patterns are not restricted to shopping sites; manipulative design patterns appeared in ninety-five percent of free Android apps in a recent study of mobile applications (Di Geronimo et al., 2020, as cited in Luguri & Strahilevitz, 2021).

But, prevalence alone does not establish that these designs work. Luguri and Strahilevitz (2021) present the first large-scale controlled experiments that quantify the effectiveness of dark patterns. In their first study, census-weighted samples of American adults were told, mid-survey, that they had been signed up for an identity-theft protection service and given the opportunity to accept or decline it. Eleven point three percent of participants in the neutral control condition accepted. More than twice as many (25.8%) participants in the mild dark pattern condition, in which acceptance was the pre-selected “recommended” option and required selecting an unobtrusive alternative, accepted. Even more (41.9%) participants in the aggressive condition, which added obstruction, trick questions, and screens nagging them to reconsider, accepted, nearly four times the rate of the control condition (Luguri & Strahilevitz, 2021; see Figure 1). Effect sizes of this magnitude are enormous by the standards of social science research, the authors note.

The breakdown of results is as telling as the headline results. The most effective manipulation was also the mildest: the default setting of the first screen’s “Accept and continue (recommended)” button was responsible for about three quarters of acceptances in the mild condition (Luguri & Strahilevitz, 2021). A trick question worded in an unclear way accounted for a further percentage of acceptances, while the final confirmed shaming screen hardly persuaded anyone. In a second experiment, the authors examined the effects of the individual manipulations and found that hidden information, obstruction, trick questions, and social proof were the most effective tactics, while countdown timers and recommending acceptance caused no significant change to the number of purchases (Luguri & Strahilevitz, 2021). In the second experiment, the authors also found that even sharp increases to the price of the offered service did not significantly alter the effects of the dark patterns; “decision architecture, not price, drove consumer purchasing decisions” (Luguri & Strahilevitz, 2021, p. 43).

The first finding has implications beyond the experimental setting. The most aggressive dark patterns caused the strongest backlash among consumers, in terms of both self-reported mood and willingness to patronize the pressured business following the experiment, whereas the milder dark patterns generally did not (Luguri & Strahilevitz, 2021). A business can enjoy most of the benefits of manipulative designs while remaining largely immune to its effects on customer satisfaction metrics, and the authors believe that it may be the mild, rather than the aggressive, manipulation techniques that present the strongest case for regulatory intervention. The second finding beyond the experimental setting shows that less educated participants were significantly more susceptible to the mild dark patterns than their well-educated counterparts, especially the subtlest designs (Luguri & Strahilevitz, 2021). The burden of manipulative design falls hardest on those who are least equipped to understand or resist it.

The experiments also have implications for the legal concept of consent. Luguri and Strahilevitz (2021) note that many of their test subjects were not aware that they had consented to the expensive service, and raising the price of the service was largely ineffective at discouraging consent, suggesting that the act of clicking had been severed from any meaningful decision. If checkboxes and buttons can be fabricated en masse by choice architecture, then the click is no longer meaningful evidence of consent. The California

legislature recently codified this logic, concluding that consent obtained through dark patterns is not true consent, which is the reason for the regulators' focus on the design of a flow rather than the text within it.

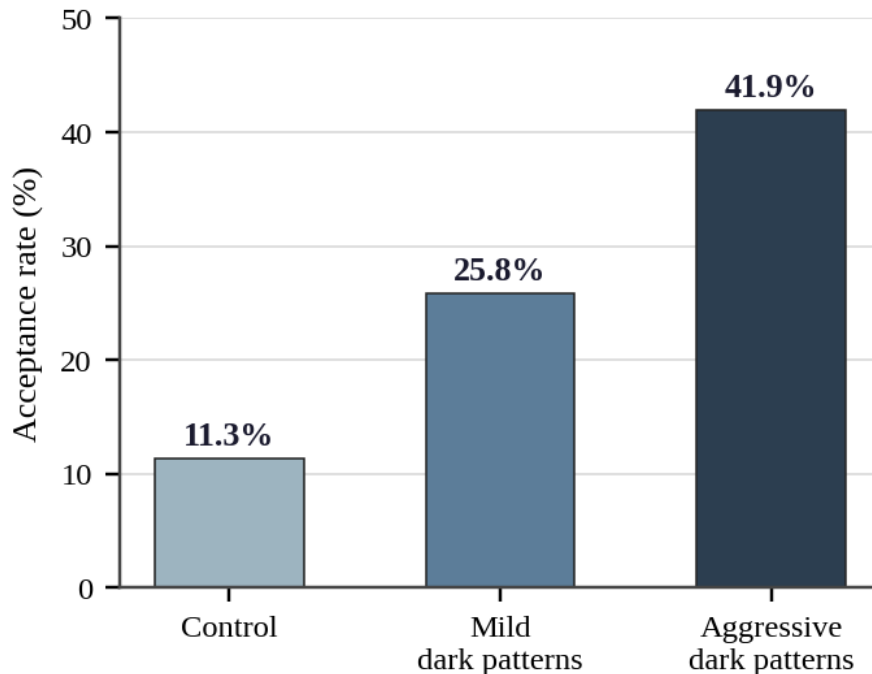


Figure 1. Acceptance rates for a dubious service by experimental condition. Acceptance rose from 11.3% in the control condition to 25.8% under mild dark patterns and 41.9% under aggressive dark patterns. Chart created by the author from data reported in Luguri and Strahilevitz (2021).

CASE STUDY: AMAZON PRIME AND THE “ILIAD” CANCELLATION PROCESS

The most poignant example, perhaps, is Amazon Prime. In June 2023, the FTC filed a complaint against Amazon in the U.S. District Court accusing the company of knowingly enrolling millions of consumers into automatically renewing Prime subscriptions without informed consent, and knowingly making it difficult for consumers to cancel their subscriptions, violating Section 5 of the FTC Act and the Restore Online Shoppers' Confidence Act (FTC, 2023a). The complaint states Amazon “used manipulative, coercive, or deceptive user-interface designs known as 'dark patterns' to trick consumers into enrolling” in the Prime subscription service (FTC, 2023b, p. 2), putting the research community's tongue-in-cheek phrase front and center in a federal enforcement action.

Concerning enrollment, the complaint reports that the checkout upsells used a "prominent button to enroll in Prime and a comparatively inconspicuous link to decline," which consumers could not avoid without clicking one or the other (FTC, 2023b, p. 7). Some screens presented the key terms of the subscription, including price and auto-renewal, in small print below the decline link, where there's little incentive for a

consumer who found the accept button to check: Here, "Your Amazon Prime membership continues until cancelled" (FTC, 2023b, p. 33). In some flows, the button that finalized the purchase was not explicit that doing so also signed the shopper up for a paid membership (FTC, 2023a). The complaint also alleges that higher-ups at Amazon "slowed, avoided, and even undid user experience changes that they knew would reduce Nonconsensual Enrollment because those changes would also negatively affect Amazon's bottom line" (FTC, 2023b, p. 3).

The cancellation process is telling. The online flow, used since 2016, which remained largely unchanged in the United States until April 2023, required consumers, "to navigate a four-page, six-click, fifteen-option cancellation process to unsubscribe from Prime that took one or two clicks to sign up for," according to the complaint (FTC, 2023b, p. 43). After locating the deliberately hidden flow, consumers clicked through pages of reminders of what they would lose, discounted alternatives, and an option to bypass outright cancellation by merely disabling auto-renewal (FTC, 2023b; see Figures 2 and 3). Internally, Amazon referred to the process as "Iliad" after "Homer's epic about the long, arduous Trojan War," and per the complaint, the primary purpose of the cancellation flow "was not to enable subscribers to cancel, but rather to thwart them" (FTC, 2023b, p. 3). Under pressure from the Commission, shortly before the complaint was filed, Amazon did make significant changes to the flow.

Obstruction was not limited to the flow itself; it shaped paths toward the flow as well. According to the complaint, consumers on Amazon's own site seeking cancellation assistance via the search bar could be returned to a page that, when linked from, did not actually cancel their membership, but instead led to a second page with a button labeled "End Your Prime Membership," which also did not end their membership, but instead brought the consumer to the Iliad Flow (FTC, 2023b, p. 45). The path returned via the search bar varied based on the consumer's search terms, and consumers who had subscribed via some devices, such as Amazon's television apps, were not able to cancel via those devices at all (FTC, 2023b). The details of each are small, but together they evoke a system in which the effort of exiting was an engineered feature of the product.

In an unprecedented \$2.5 billion settlement in September 2025, Amazon, along with Senior Vice President Neil Lindsay and Vice President Jamil Ghani, agreed to pay \$1 billion in civil penalties, the largest ever for violation of an FTC rule, and \$1.5 billion in refunds to the estimated 35 million consumers impacted, the second-largest restitution amount ever obtained in an FTC case (FTC, 2025). According to reports, internal documents that were obtained prior to the trial reveal employees referring to the practices in less than flattering terms, describing the subscription steering work as "a bit of a shady world" and unwanted enrollments as "an unspoken cancer" (FTC, 2025, para. 3). The settlement not only involved the payment of funds, but also included Amazon making sure there is now a "big button to click if you don't want Prime" so that the company "can no longer have a button that says, 'No, I don't want Free Shipping,'" providing clear disclosures of the material terms of the subscription at the time of enrollment, making it easy to cancel as it was to enroll, and providing an independent supervisor of how the refunds process is being handled (FTC, 2025, para. 5).

It is the case anatomy, rather than the case size, that makes it important for the study of design. Each and every element of the Iliad process required user experience expertise: How many steps would users

endure before giving up on the cancellation? Which benefits would be shown to users at the point of decision? How would the options for decline be worded so that refusal would feel like a loss? The methods were human-centered, the objective was not. The case troubles the comfortable assumption that manipulative design is the domain of unsophisticated actors on the industry fringe. It was practiced, documented, and defended inside one of the most design-mature companies in the world.

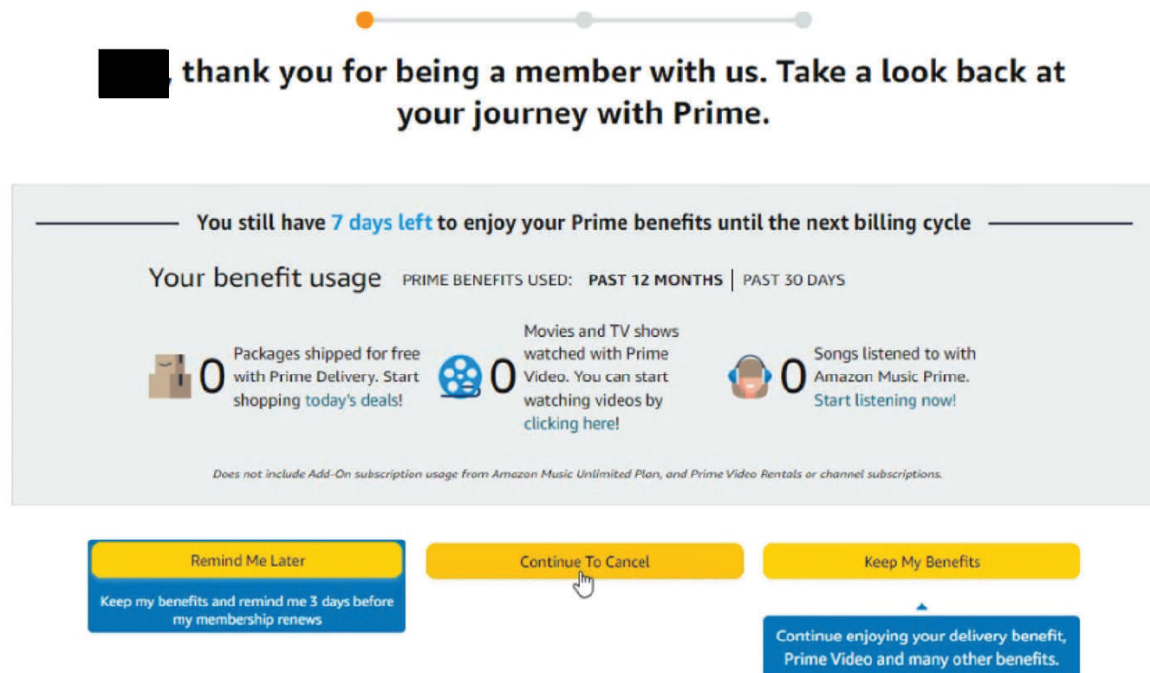


Figure 2. Second page of Amazon's “Iliad” cancellation flow. Rather than confirming cancellation, the page presents the consumer's “journey with Prime” and three visually similar buttons, only one of which continues the cancellation. Screenshot reproduced from the exhibits to the FTC's complaint (FTC, 2023b); the black rectangle is a name redaction in the court filing.

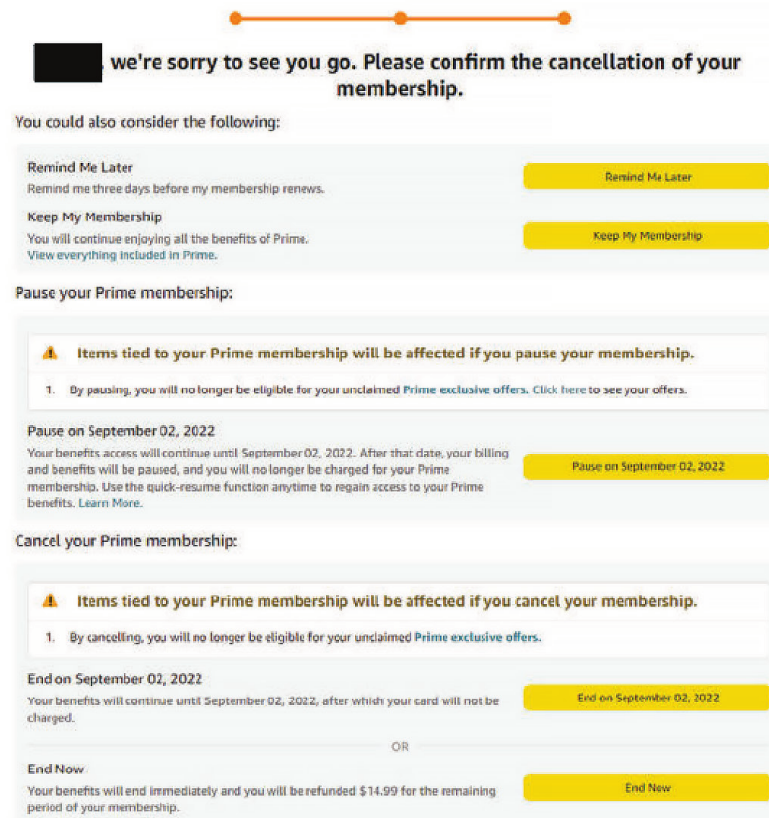


Figure 3. Final page of Amazon's "Iliad" cancellation flow. The concluding screen interposes reminder, retention, pause, and deferred-end options, several styled identically to the cancellation button, before a consumer can select "End Now." Screenshot reproduced from the exhibits to the FTC's complaint (FTC, 2023b); the black rectangle is a name redaction in the court filing.

THE REGULATORY RESPONSE

Regulators on both sides of the Atlantic have moved from criticism to prohibition. In the European Union, Article 25 of the Digital Services Act, which became fully applicable in February 2024, forbids providers of online platforms from designing, organizing, or operating their interfaces in a way that deceives or manipulates users or otherwise materially distorts or impairs their ability to make free and informed decisions (European Union, 2022). The regulation's recitals address dark patterns expressly, describing them as practices that materially distort or impair, purposely or in effect, the ability of users to make autonomous and informed choices, and citing examples such as presenting choices in a non-neutral manner, repetitively requesting decisions a user has already made, and making the procedure for terminating a service significantly more cumbersome than signing up for it (European Union, 2022). Article 25 operates alongside the EU's existing consumer and data-protection law, applying where the Unfair Commercial Practices Directive and the General Data Protection Regulation do not already govern

the practice, and serious violations of the act can draw fines of up to six percent of a provider's annual worldwide turnover (European Union, 2022).

In the United States, there is no single federal dark-patterns statute. Instead, the FTC applies its general authority over unfair and deceptive practices under Section 5 of the FTC Act, together with ROSCA's specific requirements that online sellers of subscriptions with automatic renewal clearly disclose material terms, obtain the consumer's express informed consent, and provide simple mechanisms to stop recurring charges, as the Amazon litigation demonstrates (FTC, 2023a, 2025). Legal scholarship anticipated this trajectory. Reviewing the case law, Luguri and Strahilevitz (2021) found that the FTC's most successful actions against manipulative interfaces had proceeded under its Section 5 deception authority, concluded that many dark patterns already violated federal and state prohibitions on unfair and deceptive trade practices, and argued that consent procured through such interfaces could be voidable under ordinary contract principles. The same article noted that bipartisan legislation aimed squarely at dark patterns, the proposed DETOUR Act, was already pending in the Senate in 2019, and proposed that dark-pattern audits be incorporated into the FTC's consent-decree process (Luguri & Strahilevitz, 2021). The 2025 Amazon order, with its independent compliance supervisor and its interface-level mandates, realizes much of that program (FTC, 2025).

State law has gone further and codified the concept by name. California's privacy statute defines a dark pattern as “a user interface designed or manipulated with the substantial effect of subverting or impairing user autonomy, decisionmaking, or choice” and provides flatly that “agreement obtained through use of dark patterns does not constitute consent” (California Consumer Privacy Act, 2018/2023, § 1798.140(h), (l)). The provision is notable for regulating the interface itself rather than the underlying transaction: it renders certain design choices legally void regardless of what the user nominally clicked. These developments amount to a rapid change in the legal status of design. Interface decisions that were recently treated as clever growth tactics are now cited in complaints as evidence of intent to deceive, and terminology that began in a practitioner's pattern library now appears in statutes on two continents (Brignull, n.d.).

DISCUSSION: PERSISTENCE AND IMPLICATIONS FOR DESIGN PRACTICE

If dark patterns carry a risk of legal action and ethical consequences, then why do they persist? One reason, Luguri and Strahilevitz (2021) suggest, lies in how technology companies measure success. Product teams at modern technology and internet companies are constantly conducting A/B testing, where the version of a product that produces more sign-ups or fewer cancellations is used going forward. They speculate that the reason dark patterns are spreading is because proprietary A/B testing within companies showed they maximized profits. The very strong incentives that firms have to suppress those experimental results as trade secrets explains why public evidence of efficacy only appeared a decade after the practices emerged. In the conversion dashboard of A/B tests, manipulation and persuasion are indistinguishable, and the finding that mild dark patterns rarely provoke consumer backlash means the harm will not show up in the dashboard (Luguri & Strahilevitz, 2021).

A further hurdle to measurement is organizational structure. The chore of a manipulative flow is shared among many—the designer who made the button more obvious, the data scientist who reported the conversion lift, the manager who chose the target metric that informed the design change; none of them is aware that what they are collectively doing is disingenuous. A prominent example of this incentive is the whisper down the lane complaint about Amazon being the alleged victim of a managerial directive to slow or reverse user experience improvements when those improvements harmed the conversion rate (FTC, 2023b). In such an environment, individual inclinations are no match to the agency of measurement.

The remedies are directly informed by the diagnosis. First, the teams can measure what users will achieve, as opposed to just what the business wants: the time the cancellation takes, the share of people who didn't mean to subscribe, the rate of regret among users, and so on are all measurable, all convertible user harms into the numerical currency that product teams understand. Second, in design reviews, product teams can ask, as the FTC implicitly asked Amazon during the investigation: Would we be comfortable seeing this flow explained to users? This check is more effective at distinguishing legitimate persuasion from manipulation than a proscriptive list of forbidden design elements. Third, regulators can specify what lawful design looks like in specific interface terms, from prominently displayed decline buttons to cancellation processes as easy as sign-up, providing teams an unusually clear sense of what compliance looks like (FTC, 2025). Fourth, the experimental tools firms use to discover fruitful tricks can be pointed outwards: Luguri and Strahilevitz (2021) show that A/B testing methodologies can be used to determine which dark patterns are sufficiently manipulative to be proscribed by law, providing regulators the basis to determine where the line between persuasion and deception should be drawn. Finally, enforcement changes the incentives: a \$2.5 billion settlement crystallizes the diffuse costs of dark patterns to users into that to the balance sheet, aligning the legal risk with the financial metrics firms are already optimizing for (FTC, 2025).

These findings suggest implications for design education. If dark patterns were unfamiliar, dispelling them from students' design repertoires would consist of cautions against each named trick. Because they are familiar techniques turned to a different purpose, students need the practice of questioning purpose. Coursework that pairs the methods of human-centered design with the primary documents of its failures, the taxonomy of Mathur et al. (2019), experimental evidence of Luguri and Strahilevitz (2021), and allegations at the interface level seen in the complaint against Amazon (FTC, 2023b) prepares students to recognize the moment when optimization becomes manipulation. The same materials provide practicing designers the vocabulary of the profession to protest a recommended flow on grounds more easily defended than personal disquiet. This is important in organizations where, as argued in the previous section, no one takes responsibility for the final deception. This is not hypothetical: in their analysis of practitioner discourse, Gray et al. (2018) found a shared concern among UX professionals that they might easily become complicit in manipulative or unreasonably persuasive practices" (p. 1), and made recommendations for design education nearly a decade before the enforcement actions reviewed here.

LIMITATIONS

The current review has several additional limitations. First, the empirical research we reviewed focuses on e-commerce websites and American consumers, and the regulatory overview focuses on the European Union and the United States; both the practices and enforcement might differ in other regions and for other products. Second, the headline experimental estimates come from a single, albeit large and well-designed, pair of studies on one hypothetical service; effects might vary across contexts, prices, and levels of consumer sophistication. Third, the case study is based largely on claims and evidence presented in an active lawsuit that was ultimately resolved by settlement rather than being based on findings from a court trial.

CONCLUSION

Human-centered design is taught as a method: research, prototyping, and testing repeated until an interface matches the people who use it. Dark patterns teach us it is better described as a commitment, since the method is just as efficacious when used against the people it studies. The literature discussed here shows manipulative design is common among leading e-commerce and mobility websites and apps (Mathur et al., 2019), sufficiently effective to double or quadruple adoption of an undesired product (Luguri & Strahilevitz, 2021), commercially available, and most harmful to its most vulnerable users. It also shows the window for an era when it bore no consequences is closing with the concept's codification by legislatures and cost-setting by enforcers (European Union, 2022; FTC, 2025). The Amazon example shows human-centered and manipulative design share a toolkit, but not a set of aims. For the designers of tomorrow, the Iliad has legs, and there will still be the question of who profits from design.

CONFLICT OF INTEREST

The author declares no conflicts of interest related to this work.

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