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“Dark Patterns”

Manipulative UX Design and the Role of Regulation

March 11, 2022

 **FUTURE OF
PRIVACY
FORUM**

Speaker



Dr. Jen King

Privacy & Data Policy Fellow,
Stanford Institute for Human-Centered
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- Privacy scholar/researcher
- Ph.D information science, human-computer interaction
- 10+ years examining dark patterns in practice, as expert witness w/FTC & states
- Recent article: Jennifer King & Adriana Stephan, *Regulating Privacy Dark Patterns in Practice: Drawing Inspiration from California Privacy Rights Act*, 5 Geo. L. Tech. Rev. 2 (2021)

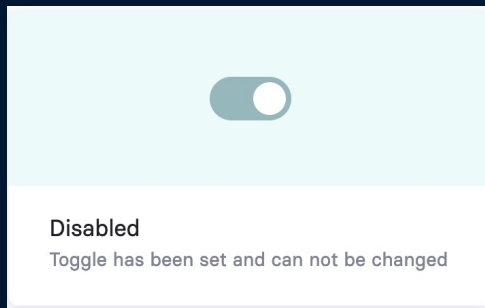
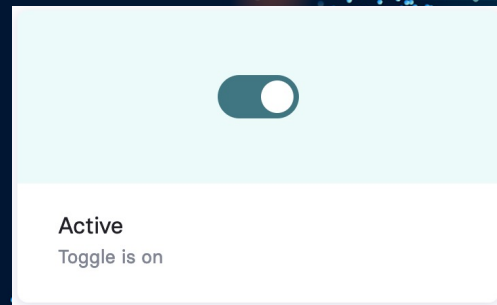
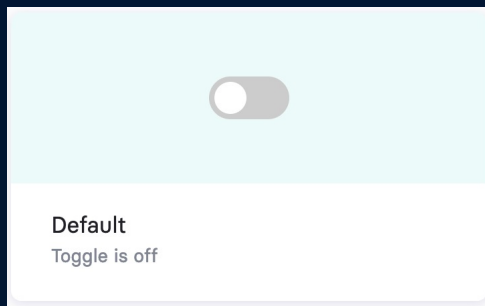
Agenda

- Defining “dark patterns” (& design patterns)
- Contexts: what do they target?
- How do they work? Cognitive biases, heuristics, and persuasive design
- Types of Dark Patterns
- Examples
- Discussion/Q&A



What is a design pattern?

“Design patterns are reusable/recurring components which designers use to solve common problems in user interface design.”



Sources: <https://www.interaction-design.org/literature/topics/ui-design-patterns>
<https://www.checklist.design/elements/toggle>

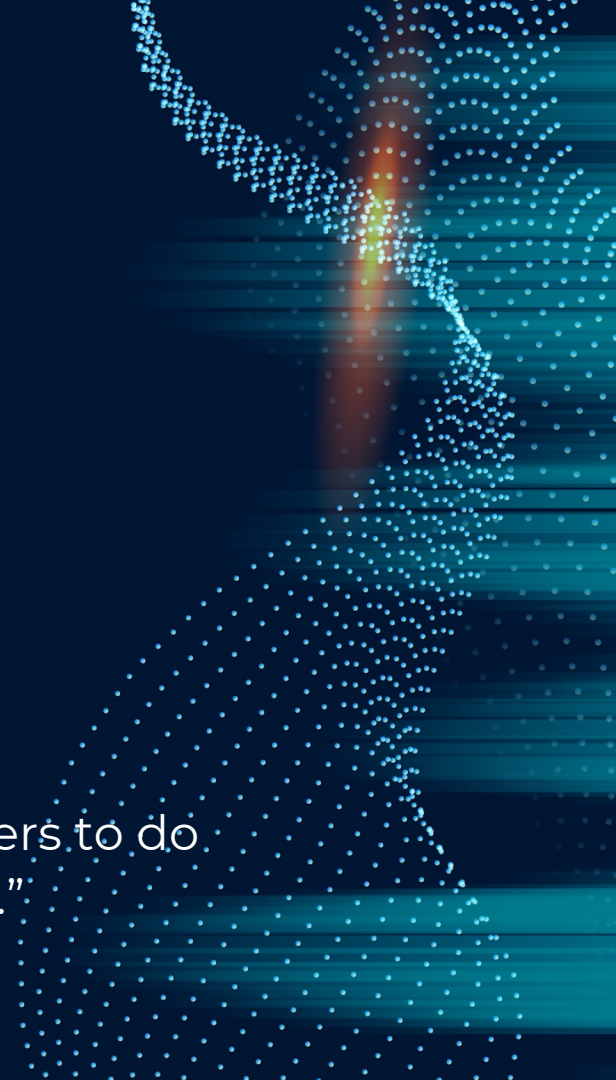
What is a “dark” pattern?

“A user interface that has been carefully crafted to trick users into doing things...they are not mistakes, they are carefully crafted with a solid understanding of human psychology, and they do not have the user’s interests in mind.”

- *Brignull, Dark Patterns.org*

“Techniques used to manipulate users to do things they would not otherwise do.”

- *Luguri & Strahilevitz 2021*

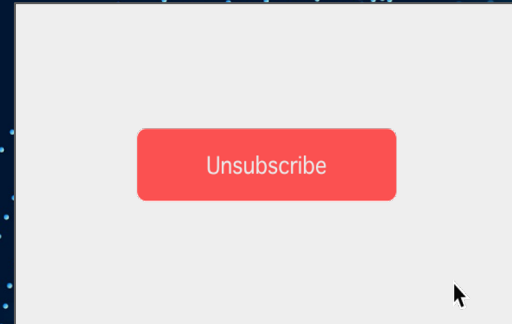


What is a “dark” pattern?

“Dark patterns are user interface design choices that benefit an online service by coercing, manipulating, or deceiving users into making unintended and potentially harmful decisions.”

- *Mathur, Mayer, & Kshirsagar 2021*

Arunesh Mathur, Jonathan Mayer, and Mihir Kshirsagar in What Makes a Dark Pattern...Dark?: Design Attributes, Normative Considerations, and Measurement Methods. Conference on Human Factors in Computing Systems (CHI '21), May 8–13, 2021, Yokohama, Japan. ACM, New York, NY, USA.



California: Deceptive Design Patterns in the CPRA & CCPA

- **CPRA:**
 - The California Privacy Rights Act (CPRA) defines dark patterns as: “[a] user interface designed or manipulated with the **substantial effect** of subverting or impairing user autonomy, decision-making, or choice, as further defined by regulation.”
 - Consent means any freely given, specific, informed and unambiguous indication of the consumer's wishes... **“agreement obtained through use of dark patterns does not constitute consent.”**
- **CCPA:**
 - California Consumer Privacy Act recently updated regulations: “A business shall not use a method that is designed with the purpose or has the substantial effect of subverting or impairing a consumer’s choice to opt-out.”

Context: Where do we find them?

Three primary contexts:

- e-commerce/online shopping
- privacy/disclosure/consent
- gaming/gambling (attention & addiction)

Deceptive design patterns are typically found at *decision points* -- places where individuals make a decision or execute an action -- and subject to coercion or manipulation



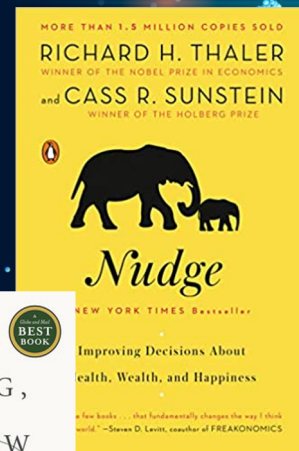
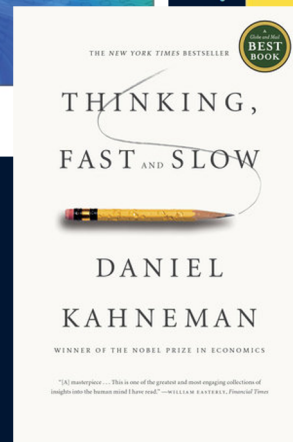
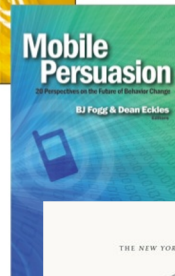
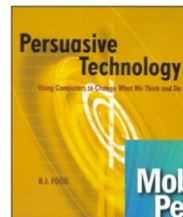
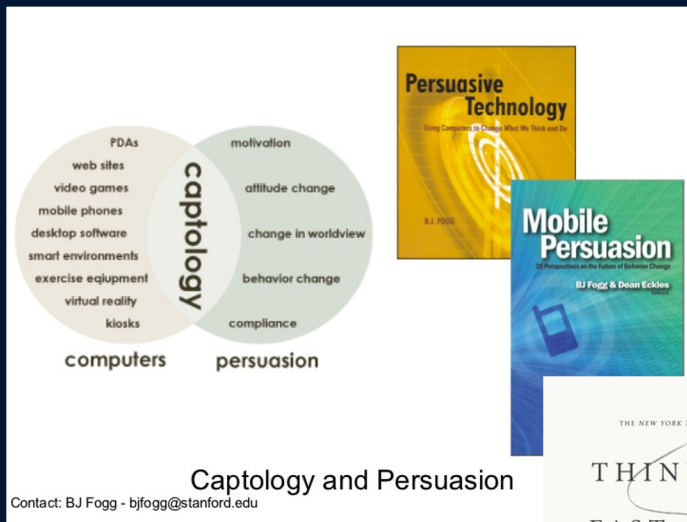
How do they work? Heuristics & Cognitive Biases

Cognitive Biases:

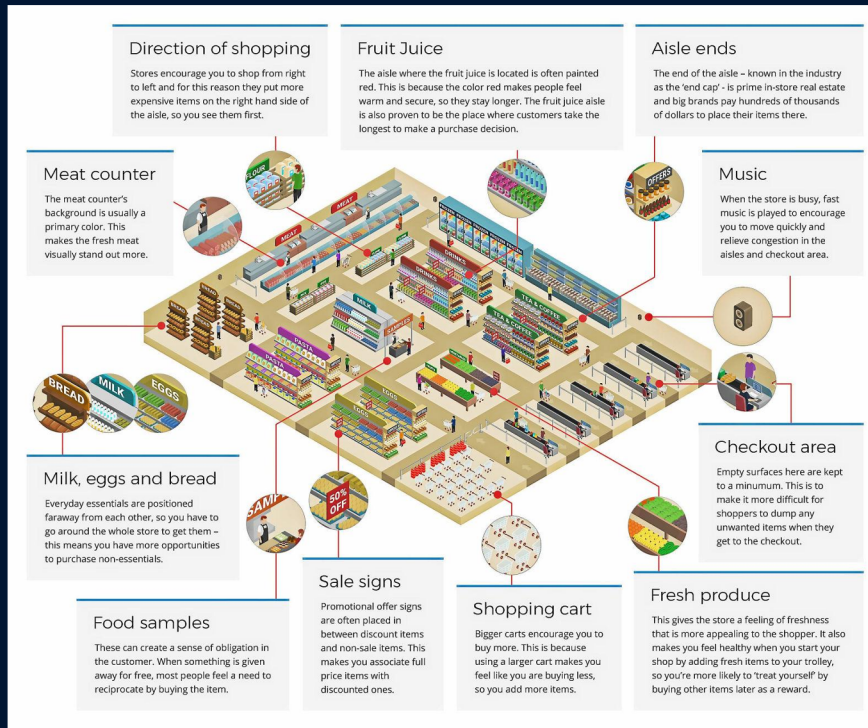
- Anchoring effect
- Confirmation bias
- Endowment effect

Heuristics:

- Availability heuristic
- representativeness heuristic



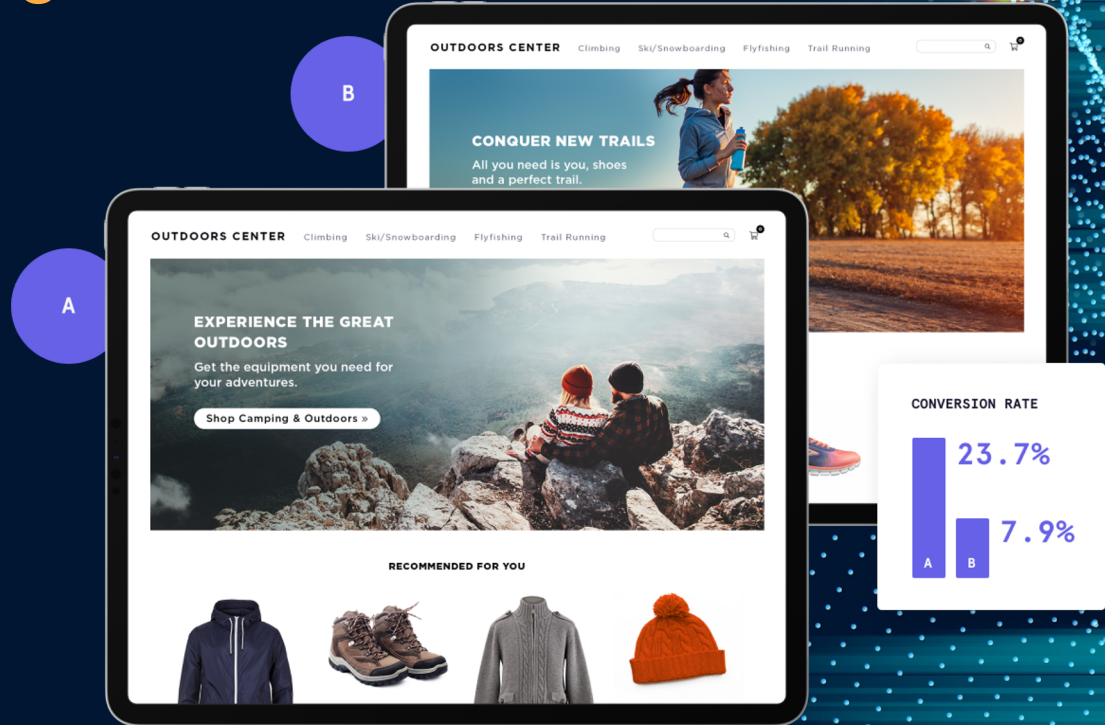
Manipulative design in the physical world: supermarkets



How did we get here? A/B Testing at Scale

“A/B testing is a methodology to compare two or more versions of an experience to see which one performs the best relative to some objective measure.”

Rochelle King, Elizabeth Churchill, and Caitlin Tan. *Designing With Data*. Sebastapol, CA: O'Reilly Media, Inc. 2017.



Persuasion vs. Deception, Coercion, and Manipulation

Deception

Planting of false beliefs (form of manipulation);
FTC: “a representation, omission, or practice is deceptive if it is likely to mislead consumers acting reasonably under the circumstances”

Coercion

Coercion influences someone “by constraining their options, such that their only rational course of action is the one the coercer intends.”

Manipulation

Manipulation is hidden influence: “intentionally and covertly influencing [one’s] decision-making, by targeting and exploiting their decision-making vulnerabilities.”

Types of Dark Patterns:

Dark Patterns at Scale

(Mathur, et. al.)

1. Asymmetric

Does the user interface emphasize particular choices more than others?

2. Covert

Does the interface steer the user to make certain purchases or choices without their knowledge?

3. Restrictive

Does the user interface restrict the number of choices available to the user?

4. Hides Information

Does the user interface obscure information or delay the presentation of key information?

5. Deceptive

Does the interface use misleading statements, or omissions, to induce false beliefs?

Guiltshaming/Confirmshaming

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I want to make a 'Do Not Sell My Personal Information' request. Note: this action will make it harder for us to tailor content for you.

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Deceptive: False Urgency


SELECT YOUR SUBSCRIPTION

Single site Temporary offer, only 1 left!
~~\$ 79.99~~ \$ 76.99


6 sites Temporary offer, only 3 left!
~~\$ 129.99~~ \$ 92.00


30 sites
\$ 169.99



A subscription license entitles you to 1 year of updates and support. Each installation of the plugin will require a license key.



 **ADD TO CART**
the premium version

Burgundy Room, 1 King Bed, Non-Smoking

 Last booked for your dates 1 hour ago

1 king bed 

 390 feet²  Air conditioning

 Attached bathroom  Flat-screen TV

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I'll reserve

- Confirmation is immediate
- No registration required
- No booking or credit card fees!

8 other people looked for your dates in the last 10 minutes

Privacy: Coercive (& Confusing!?) Consent

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Stephanie Lucas (She/Her) @eyesondesign00 · Mar 9

Cookie consent notice of the day: Tiny controls text with "Necessary" checked, but the dominant button (likely the one to be clicked) says "Accept all," meaning it will check all the options.

Confusing interface + unreadable controls text = #darkpattern

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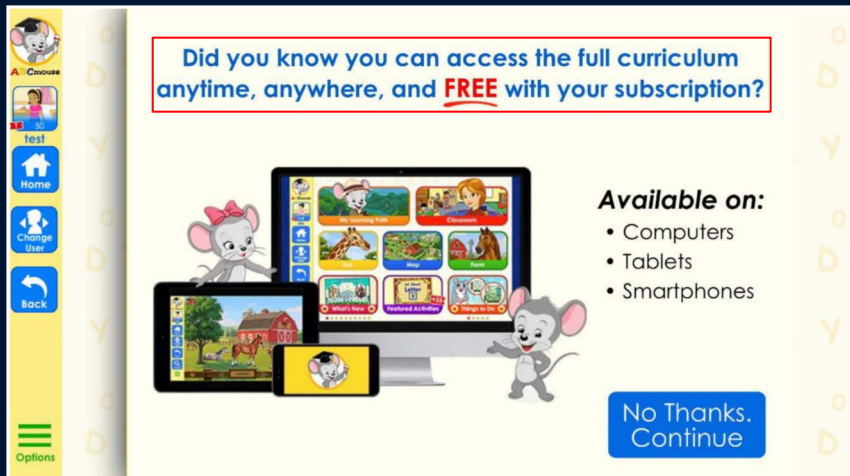
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Purpose	Accept
> Survey Outreach <small>Legal Basis: Consent - Opt In</small>	<input type="checkbox"/>
> Market Relevant Services <small>Legal Basis: Consent - Opt In</small>	<input type="checkbox"/>
> Analytics (Business Enhancement) <small>Legal Basis: Consent - Opt In</small>	<input type="checkbox"/>
> Targeted Advertising <small>Legal Basis: Legitimate Interest - Objectable</small>	<input type="checkbox"/>

[Accept](#)

FTC Action: Age of Learning, Inc. (ABCmouse)



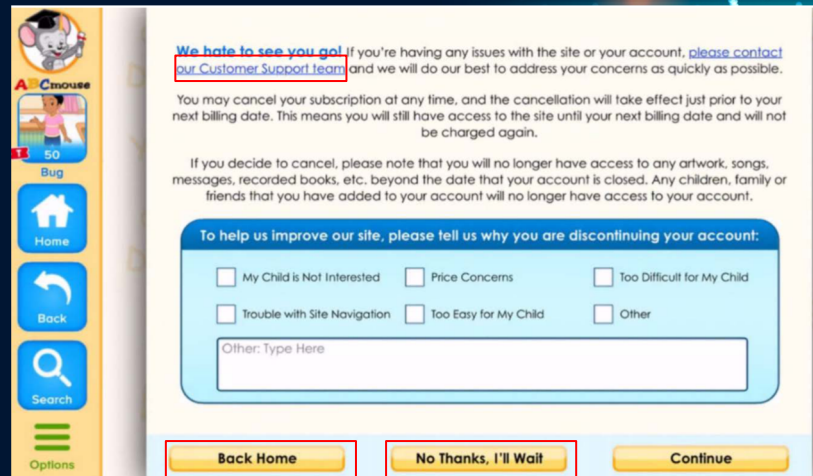
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No Thanks. Continue

The screenshot shows a sidebar on the left with icons for 'test', 'Home', 'Change User', and 'Back'. The main content area features a large monitor displaying the ABCmouse interface, with a mouse character pointing to it. Below the monitor are a tablet and a smartphone, both displaying the same interface. A 'No Thanks. Continue' button is located at the bottom right of the promotional area.



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To help us improve our site, please tell us why you are discontinuing your account:

<input type="checkbox"/> My Child is Not Interested	<input type="checkbox"/> Price Concerns	<input type="checkbox"/> Too Difficult for My Child
<input type="checkbox"/> Trouble with Site Navigation	<input type="checkbox"/> Too Easy for My Child	<input type="checkbox"/> Other

Other: Type Here

Back Home No Thanks, I'll Wait Continue

The screenshot shows a sidebar on the left with icons for 'Bug', 'Home', 'Back', 'Search', and 'Options'. The main content area contains a cancellation notice and a survey. The survey has a blue header and a light blue body. Below the survey is a 'Back Home' button, a 'No Thanks, I'll Wait' button (highlighted with a red box), and a 'Continue' button.

CCPA Do Not Sell



Continue Sharing under California Law

Disagree Agree

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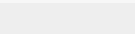
Do Not Sell: Yes or No? On or off?

General

Change privacy options

Let apps use advertising ID to make ads more interesting to you based on your app usage (turning this off will reset your ID)



Is this toggle on or off? In , a state descriptor (the word Off) is used to identify the current state of the toggle (off). Unfortunately, this descriptor is ambiguous: because the word Off appears on the right of the switch and the toggle dot is on the left, users can also interpret the state of the toggle as on (that is, away from the label Off).

If using toggles, then make them clearer

Note: radio buttons may be a better choice than a toggle

CCPA Do Not Sell My Personal Information Right

May we sell your personal information?

No: do not sell my personal information



CCPA Do Not Sell My Personal Information Right

May we sell your personal information?

Yes: you may sell my personal information



Considerations for Lawmakers

- Is current FTC Section 5 authority enough to address dark patterns generally? Or is expanded authority necessary? For example, to cover “manipulative design.”
- Empirical considerations: how to measure, and by whom?
- Identifying the “dark” vs. the “gray”: what defines the line between permissible persuasion and manipulation/coercion?
- Are neutral designs a realistic and enforceable option, particularly at decision points, such as opt-ins/outs?
- What are the implications for Privacy by Design? How is success in privacy measured?
- How does the CPRA’s “effect” standard differ from a potential “intent” standard? Which standard is most measurable/enforceable?