User Interfaces

EECS 3461 – Sections A & B
Fall 2021

Resource Pack: Design II
Dark Patterns

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Dependencies

This resource pack assumes that you are already familiar with:

- R-Humans-I

Inquiry

1. Is teamwork the norm in UX design?

2. What are some project management basics?

3. How can I be a good team member?

1. What is a dark pattern? But first, what is a non-dark pattern?

- who has heard of the term *dark pattern*?

Interaction Design Patterns

- A design patterns is a way of thinking about an approach to common design situations

- A design patterns is not a plug-and-play solution or a recipes; rather, it is approach that is generalizable to other situations

- A design patterns is an abstraction; it needs to be implemented in specific contexts

- Each implementation of a design pattern will differ a little bit from other implementations

Interaction Design Patterns

- If you see the term *design pattern*, it is assumed to be a 'good' design pattern.

  Interaction design patterns are a means of capturing 'good' **design solutions** and generalizing them to address similar problems [Cooper et al, 2014]

- Design patterns are meant to capture 'good' design solutions, the not-good design 'solutions' are called dark patterns

- the phrase "non-dark design pattern" is not used; I made it up!

- Of course, the distinction really boils down to what one considers 'good'
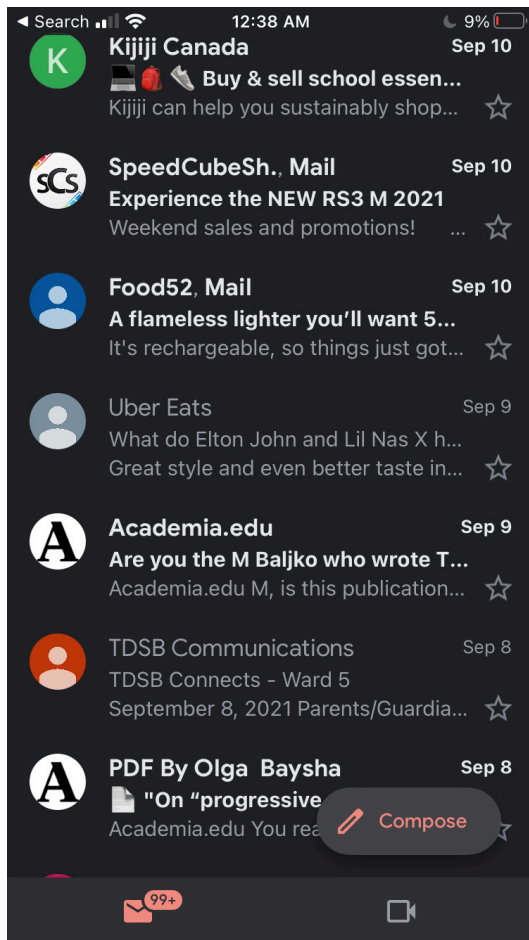
Example: The Drawer

- on mobile devices, there is limited screen real-estate relative to the content

- an approach to this common design situation is the use of a drawer

- the drawer is a design pattern, also the double drawer

- drawers are exposed and hidden by swiping gestures

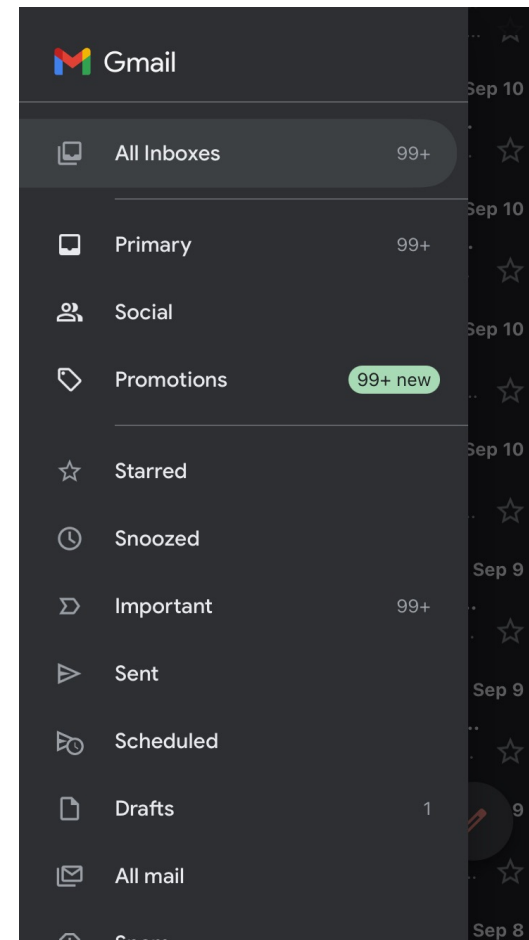- considered a good design solution

Examples of Drawers
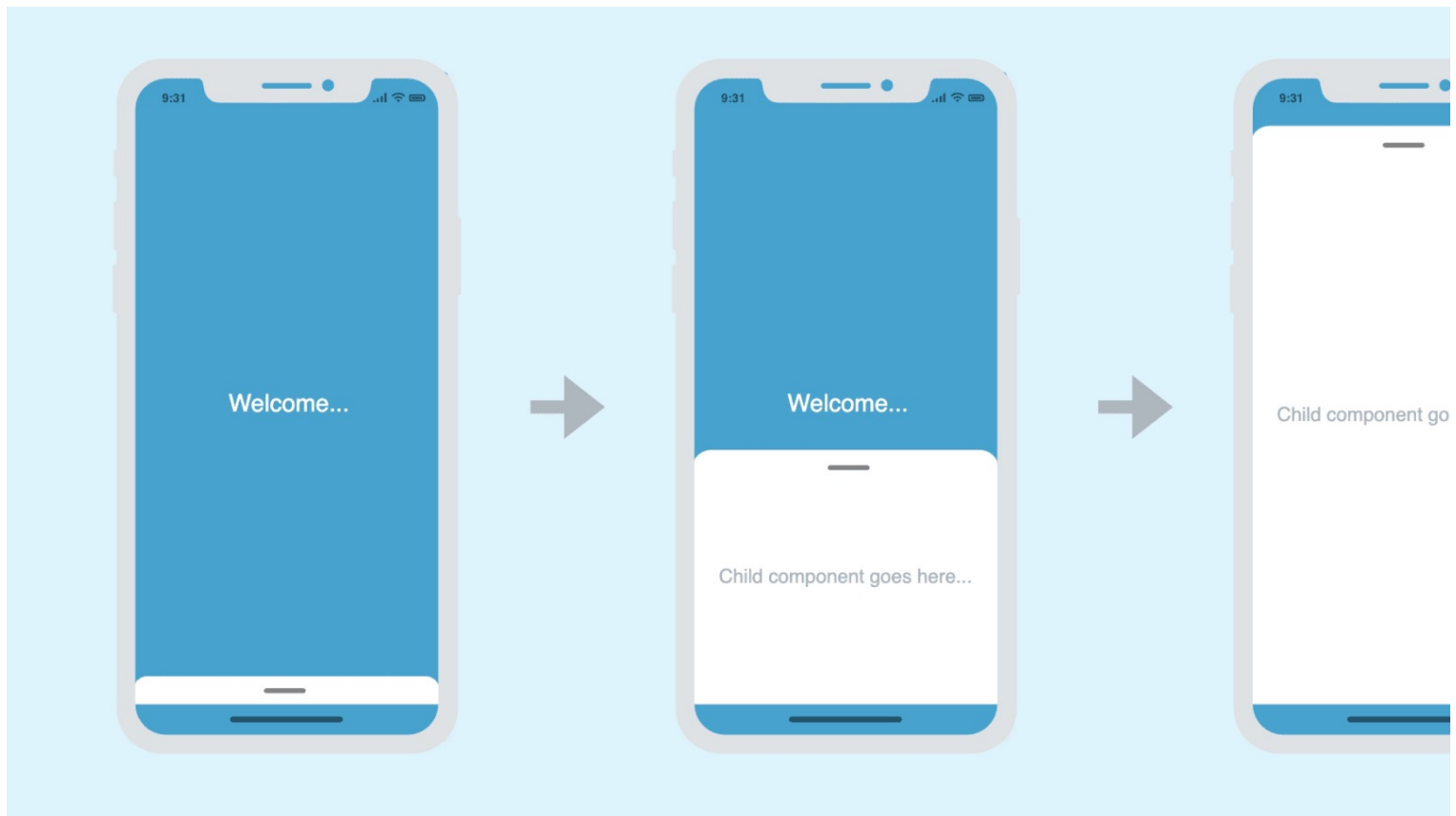
swipe up

Examples of Drawers

screen capture of gmail app on my mobile device

screen capture of gmail, after swiping right

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1. What is a dark pattern?

Dark Patterns

- a dark pattern refers to a design approach that is intended to influence user behaviour through means such as:
    - coercion
    - steering/guiding
    - misleading
    - deception

- the purpose of a dark pattern is to get users to make decisions or to undertake actions that they might not otherwise make (if they were fully informed and fully capable of selecting an alternative)

Dark Patterns Are Increasingly Common

- increasingly common occurrence on digital platforms

- social media websites
  - Frobrukerrådet. 2018. Deceived by design: How tech companies use dark patterns to discourage us from exercising our rights to privacy. (2018)

- shopping websites
  - Harry Brignull. 2018. Dark Patterns. https://darkpatterns.org/.

- mobile apps
  - 2018. Facebook has been collecting call history and SMS data from Android devices. https://www.theverge.com/2018/3/25/17160944/facebook-call-history-sms-data-collection-android. Accessed April 2, 2019.
  - Christoph Bösch, Benjamin Erb, Frank Kargl, Henning Kopp, and Stefan Pfattheicher. 2016. Tales from the dark side: Privacy dark strategies and privacy dark patterns. Proceedings on Privacy Enhancing Technologies 2016, 4 (2016), 237–254.

- video games
  - José P Zagal, Staffan Björk, and Chris Lewis. 2013. Dark patterns in the design of games. In Foundations of Digital Games 2013.

- source: Mathur et al. 2019. Dark Patterns at Scale: Findings from a Crawl of 11K Shopping Websites. Proc. ACM Hum.-Comput. Interact. 3, CSCW, Article 81 (November 2019), 32 pages. DOI:https://doi.org/10.1145/3359183

Why are Dark Patterns Problematic?

- annoy users

- frustrate users

- mislead and deceive users

- cause financial loss

- trick users into giving up vast amounts of personal data

- induce compulsive and addictive behavior in adults and children

- these range from mild to severe problems

Do Dark Patterns Represent 'Good' Design Solutions?

- one could argue that dark patterns are good for someone, just not the users

- there are beneficiaries to dark patterns:
    - increased sales
    - increased subscribers
    - reduced de-subscribers
    - access to private information
    - …

- *labelling something 'good' or 'bad' depends on perspective, better to use a more nuanced framework for inquiry*

Types of Dark Patterns

- There are many different lists of types of dark patterns

- There are different categorization schemes for dark patterns

- Here is the scheme from Mathur et al (2019)
    - Sneaking
    - Urgency
    - Misdirection
    - Social Proof
    - Scarcity
    - Obstruction
    - Forced Action

- all of the following examples are from Mathur et al (2019)

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Sneaking

- this category of dark patterns refers to attempts to misrepresent user actions, or hide/delay information

- if the full information were made available to users, they would likely choose otherwise

- For example
    - sneak purchase into shopping basket
    - add in a hidden cost
    - add in a hidden subscription

SHOPPING CART

Item		Qty	Price	Subtotal
	Dreaming of Tuscany Selected: "As Shown" 2nd choice: similar as possible, same look and feel	1 ⇅	$52.99	$52.99
	Greeting Card Service Selected: "STANDARD"	1 ⇅	$3.99	$3.99

(a) Sneak into Basket on `avasflowers.net`. Despite requesting no greeting cards, one worth $3.99 is automatically added.

Order Subtotal	$50.98
Standard Delivery	$14.99
Care & Handling	$2.99
Tax	$4.56
Total	**$73.52**
Savings Today ⓘ	$9.00

Get a Delivery Rebate up to $15 for your Proflowers purchase! Learn More

(b) Hidden Costs on `proflowers` `.com`. The Care & Handling charge ($2.99) is disclosed on the last step.

Shipping Rates

☐ Enjoy **FREE shipping** with WSJwine Advantage

Learn More

Add to Cart

Item No. M09559

Item Description

Luscious Chardonnay ADD-ON
Item #: M09559 – 12 btls

WSJwine 1 Year Advantage Delivery Membership
Item #: 15245UL

(c) Hidden Subscription on `wsjwine.com`. Left: The website fails to disclose that the *Advantage* service is an annual subscription worth $89 unless the user clicks on *Learn More*. Right: The service in cart.

Fig. 3. Three types of the Sneaking category of dark patterns.
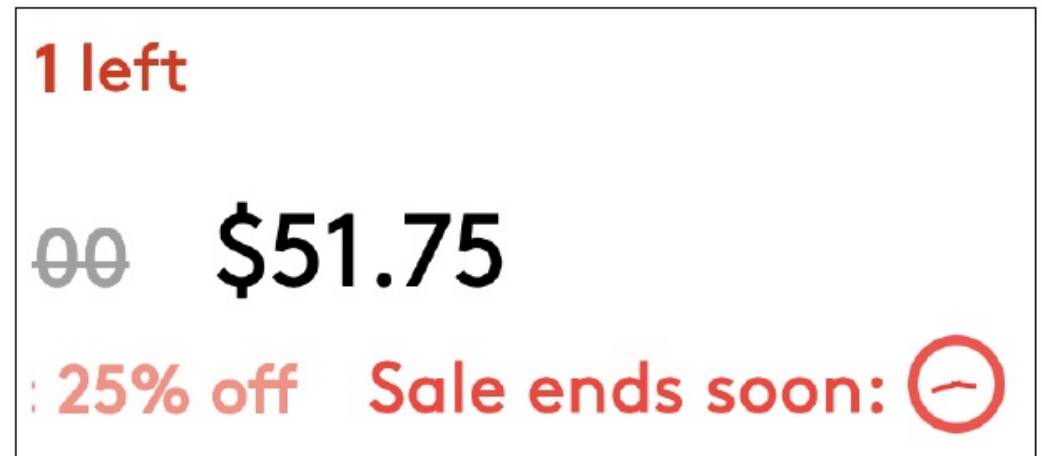
Urgency

- this category of dark pattern is a design approach of imposing a deadline on a sale or deal, thereby accelerating user decision-making and purchases

- For example:
  - countdown timers
  - limited-time messages

(a) Countdown Timer on mattressfirm.com. The header displays a *Flash Sale* where the majority of discounted products remain the same on a day-to-day basis.
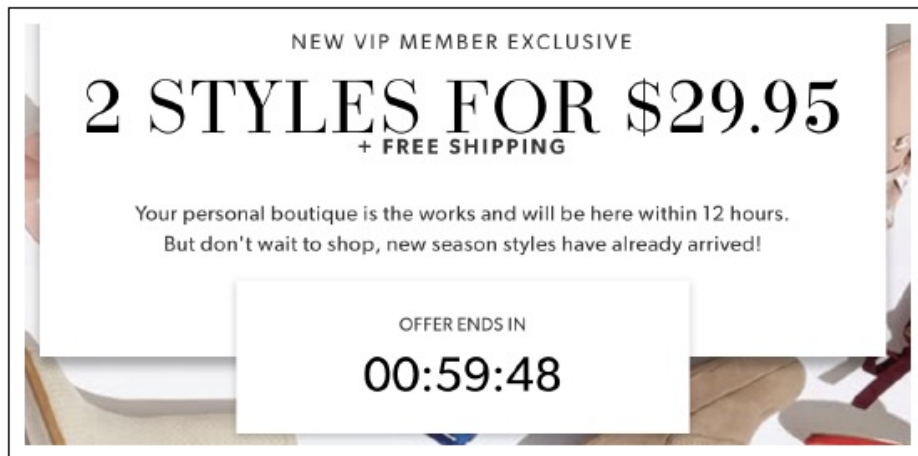
(b) Countdown Timer on justfab.com. The offer is available even after the timer expires.

(c) Limited-time Message on chicwish.com. The website claims the sale will end 'soon' without stating a deadline.

Fig. 4. Two types of the Urgency category of dark patterns.

Misdirection

- the category of dark patterns uses visuals, language, and emotion to steer users toward or away from making a particular choice

- For example:
    - Confirmshaming
    - Visual Interference
    - Trick Questions
    - Pressured Selling
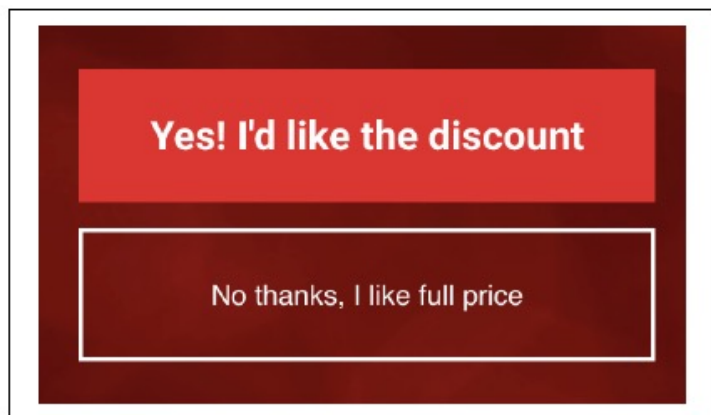
(a) Confirmshaming on radioshack.com. The option to dismiss the popup is framed to shame the user into avoiding it.
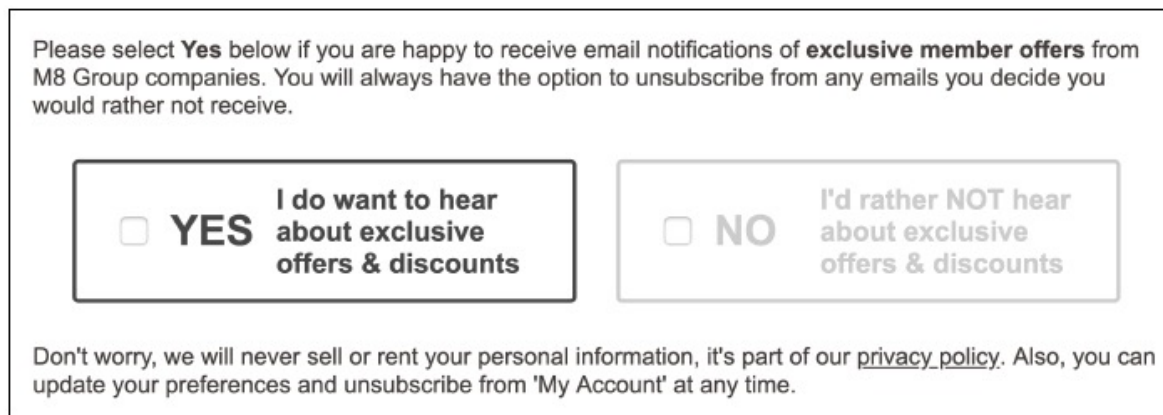
(b) Visual Interference on greenfingers.com. The option to opt out of marketing communication is grayed, making it seem unavailable even though it can be clicked.

(c) Trick Questions on newbalance.co.uk. Opting out of marketing communication requires ticking the checkbox.

(d) Pressured Selling on 1800flowers.com. The most expensive product is the default.

Fig. 5. Four types of the Misdirection category of dark patterns.

Social Proof

- this category of dark pattern uses the social proof principle to influence to accelerate user decision-making and purchases; it exploits the cognitive bias of bandwagon effect to its advantage

- studies have shown that individuals are more likely to impulse buy when shopping with their peers and families.

- For example:
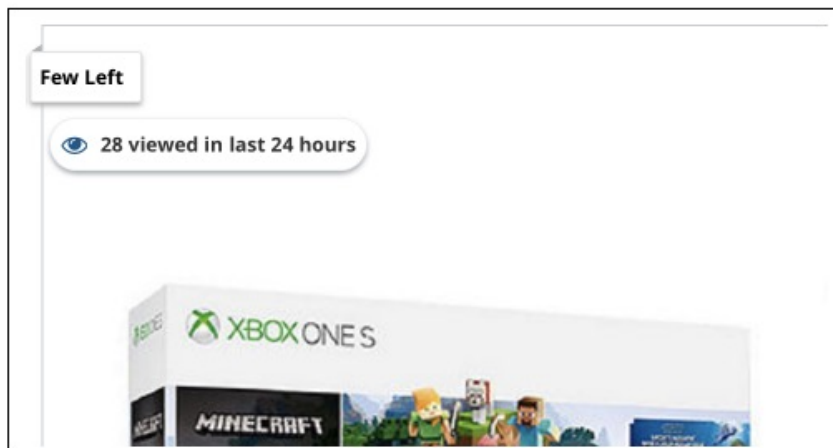 - activity notifications
  - testimonials

(a) Activity Notification on tkmaxx.com. The message indicates how many people added the product to the cart in the last 72 hours.

(b) Activity Notification on thredup.com. The message always signals products as if they were sold recently ('just saved'), even in the case of old purchases.

(c) Activity Notification on jcpenney.com. The message indicates the number of people who viewed the product in the 24 hours along with the quantity left in stock.
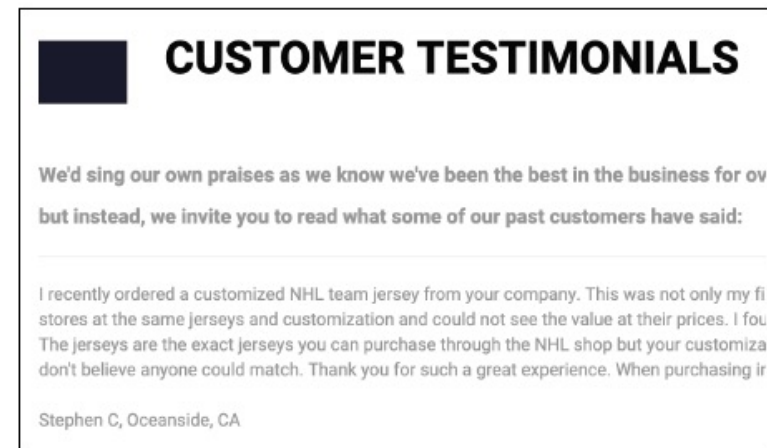

(d) Testimonials of Uncertain Origin on coolhockey.com. We found the same testimonials on ealerjerseys.com with different customer names.

Fig. 6. Two types of the Social Proof category of dark patterns.

Scarcity

- this category of dark patterns uses signals of limited availability or high demand of a product, thus increasing its perceived value and desirability

- For example:
  - 'Low-stock Messages'
  - 'High-demand Messages'
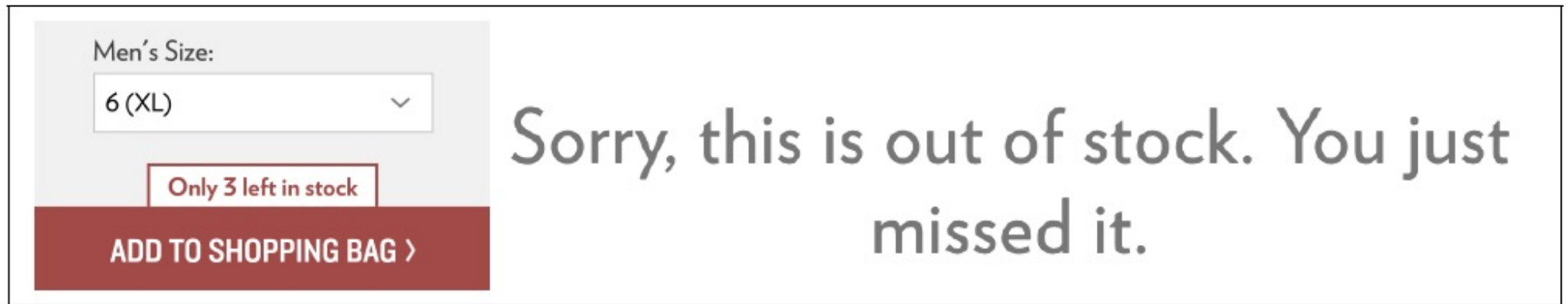
(a) Low-stock Message on 6pm.com. Left: Choosing product options shows *Only 3 left in stock*. Right: The out-of-stock product makes it seem that it just sold out.
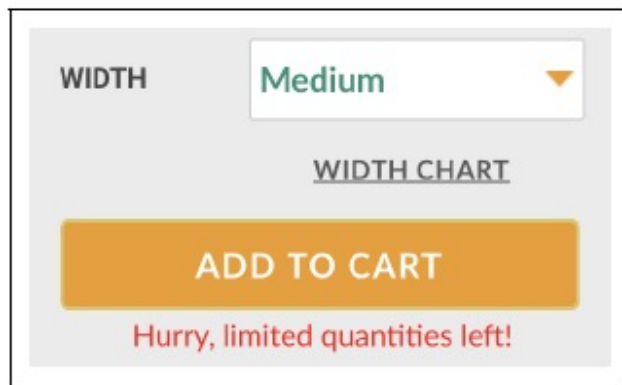
(b) Low-stock on orthofeet.com. Appears for all products.
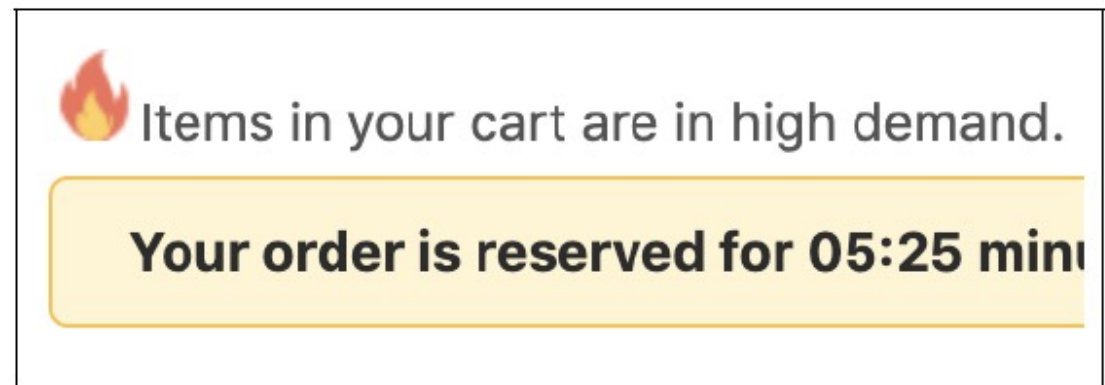
(c) High-demand Message on fashionnova.com. The message appears for all products in the cart.

Fig. 7. Two types of the Scarcity category of dark patterns.

Obstruction

- this category of dark patterns refers to approaches that make a certain action harder than it should be, this serves to dissuade users from taking that action.

- Example:
  - 'Hard to Cancel'

> during the Membership term. To cancel your membership, please contact our customer service department by contacting us at 1-800-375-3006.

(a) Hard to Cancel on sportsmanguide.com. The website only discloses in the terms PDF file that canceling the recurring service requires calling customer service.


(b) Hard to Cancel on savagex.com. The website discloses upfront that the recurring service can only be canceled through customer care.

Fig. 8. The Hard to Cancel type from the Obstruction category of dark patterns.
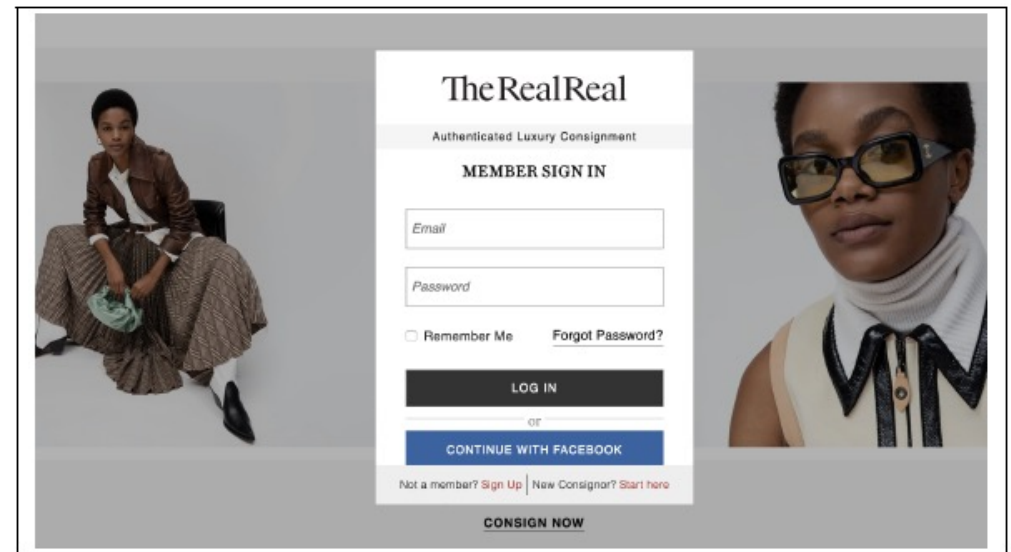
Forced Action

- this category of dark pattern refers to approaches that require users to take certain additional and tangential actions to complete their tasks

- this type of dark pattern explicitly coerces users into action, such as signing up for marketing communication, creating accounts (so users surrender their information)

- For Example:
    - 'Forced Enrollment'
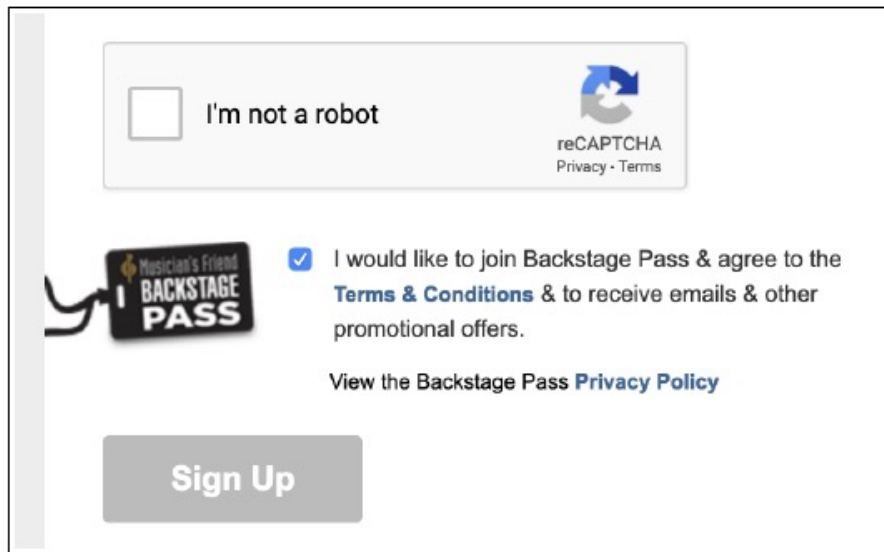
(a) Forced Enrollment on musiciansfriend.com. Agreeing to the terms of use also requires agreeing to receive emails and promotions.

(b) Forced Enrollment on therealreal.com. Browsing the website requires creating an account even without making a purchase.

Fig. 9. The Forced Enrollment type from the Forced Action category of dark patterns.

In Sum

- a dark pattern is a deceptive approach to user experience design

- dark patterns have beneficiaries

- for users, dark patterns at best are a source of annoyance and frustration, and at worst mislead and deceive