



# **What Makes Online Services Tricky and Deceptive? Exploring Common Dark Patterns and Their Impact on User Experience**

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Xueqiang (Brandon) Wang, Computer Science, CECS

Yao Li, Institute for Simulation & Training, CECS

Cyber Security and Privacy Cluster

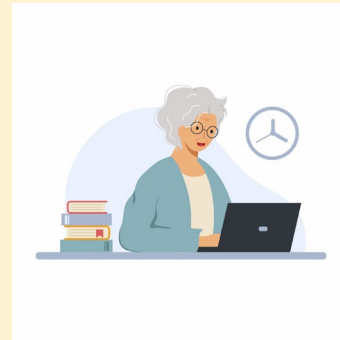


**College of Engineering  
and Computer Science**

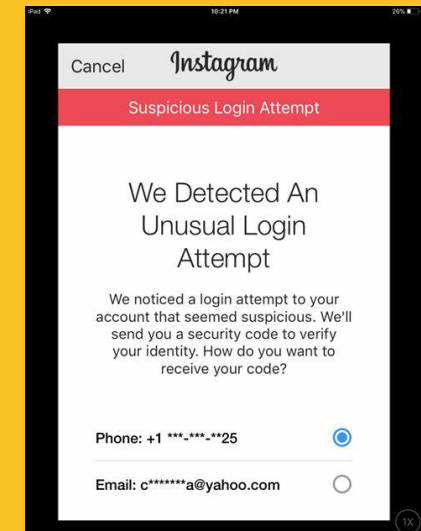
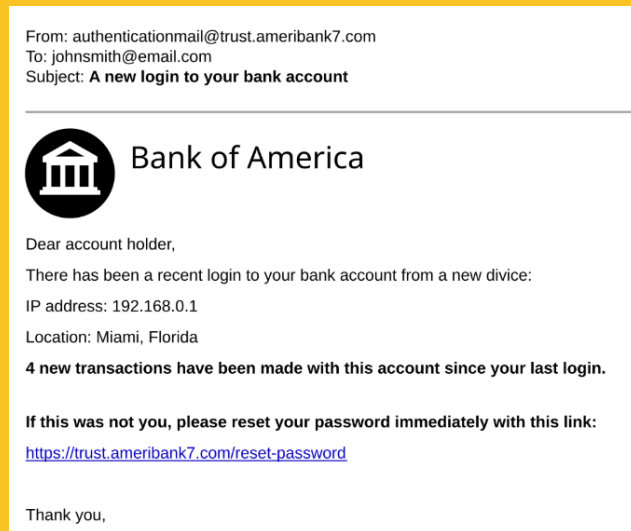


# How many of us use online services?

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# While online services have significantly transformed our life, they also expose us to cybersecurity threats.



These cyber threats are illegal! If you encounter any, report them to service providers, your IT office, or regulatory agencies such as the FTC.

# **"Not Always Illegal" Cybersecurity Threat – Dark Pattern**

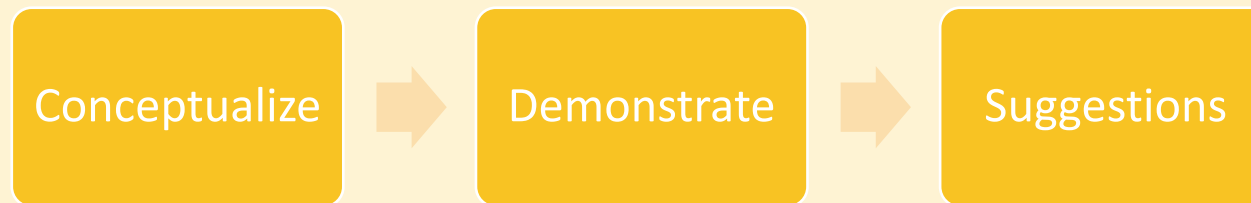
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- A wide range of **unethical user interface (UI) designs** that deceive and manipulate users into making unintended and potentially harmful decisions.
- **Benefit online services** while **harming users**.

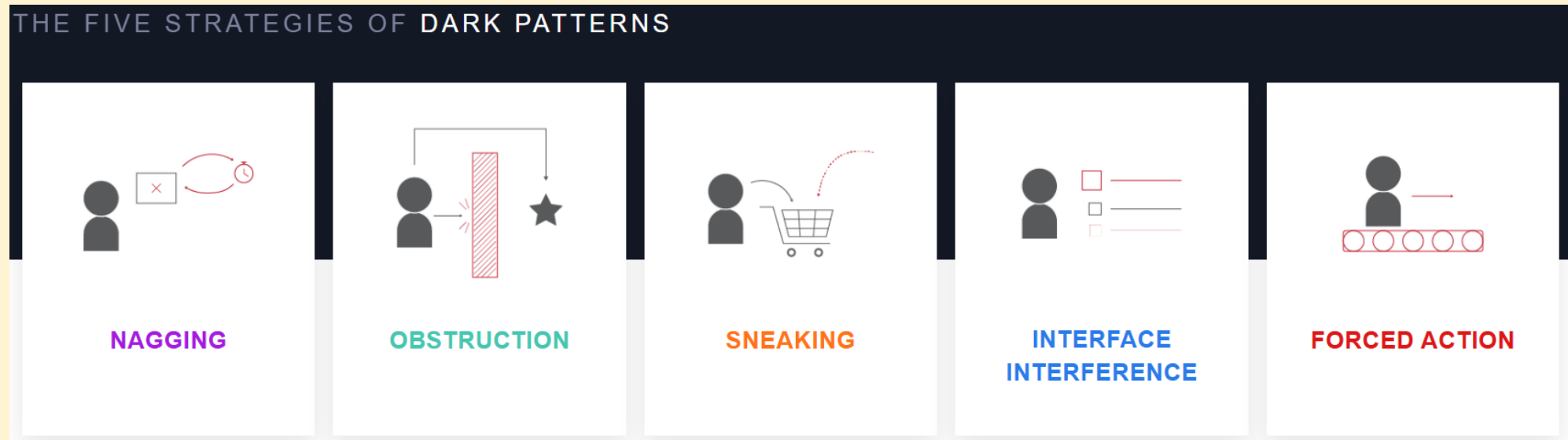
# Dark Patterns

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- Our plan for today is to:
  - **Introduce** common dark patterns, such as how they look and their consequences.
  - **Demonstrate them** with near real-world examples.
  - **Give suggestions** for avoiding the consequences of dark patterns.



# Five Major Categories of Dark Patterns



Source: "The Dark (Patterns) Side of UX Design" by Gray et al.

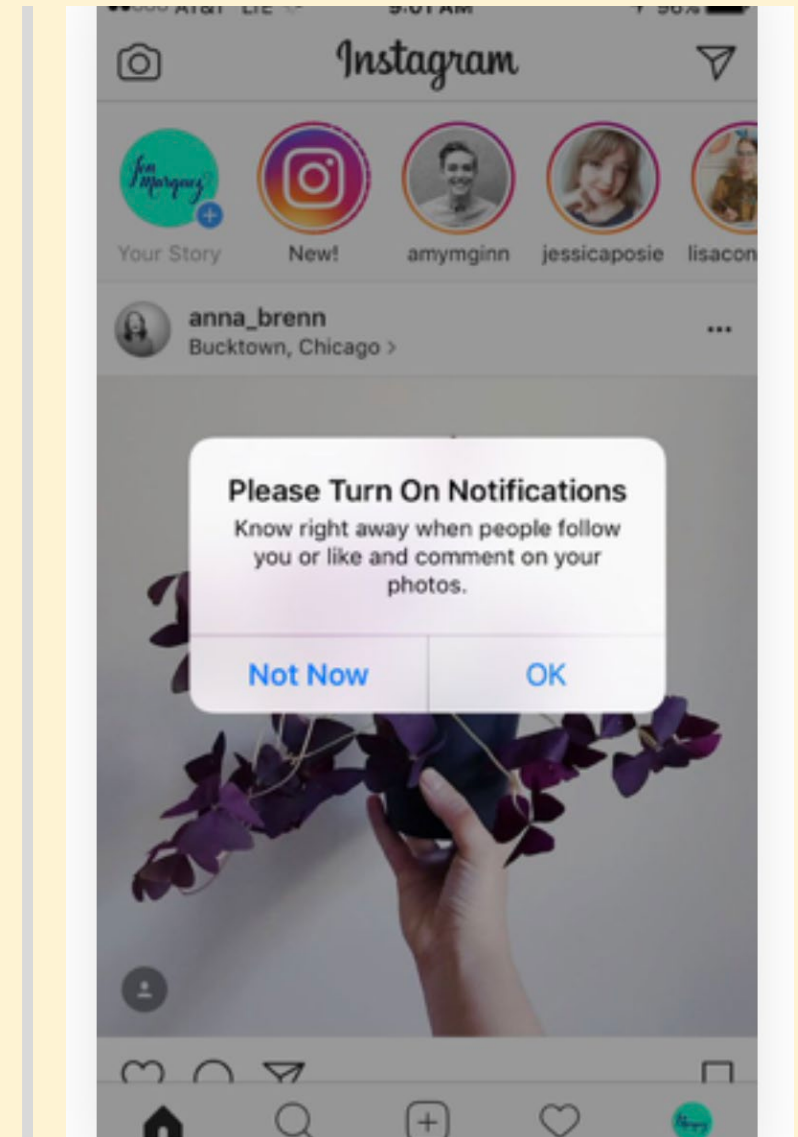
# Nagging

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- A design that persistently asks you to do something, which may not be in your best interest.
- It repeats and repeats, **until you agree.**
- Example: [Notification request of an app](#)

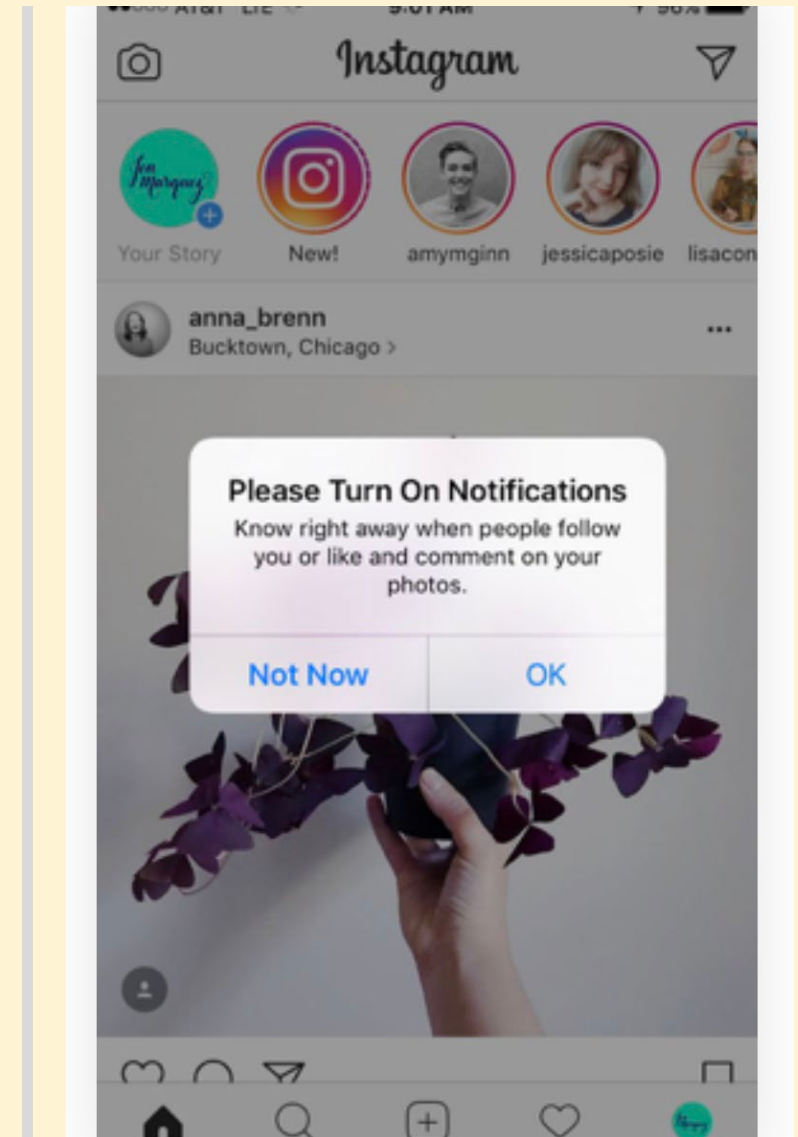
# Nagging

- Real-world example: **Notification request of Instagram**
  - “OK”: Receiving numerous promotional notifications.
  - “Not Now”: Receive tons of notification requests later.
  - *It is annoying, isn't it? But why does the company have this design?*



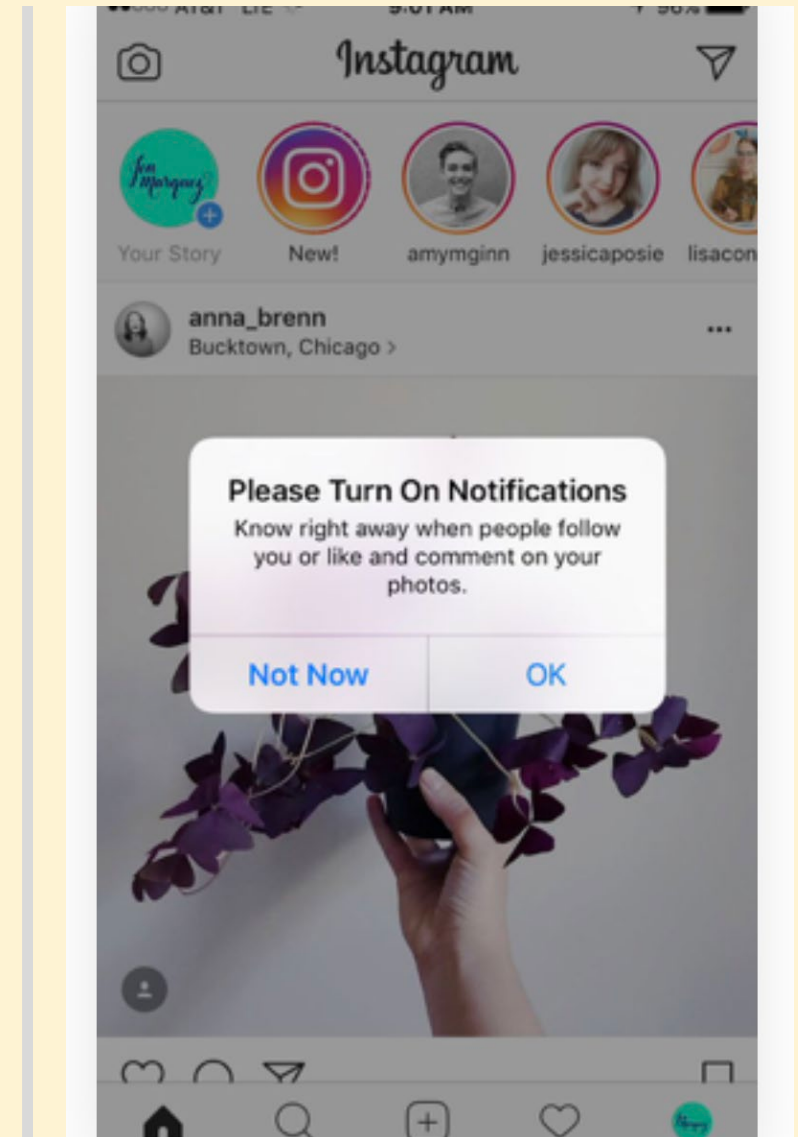
# Nagging

- Notification request of Instagram
  - “OK”: Receiving numerous promotional notifications.
  - “Not Now”: Receive tons of such requests later.
  - *It is annoying, isn't it? But why does the company have this design?*
  - They want you to turn on notifications.



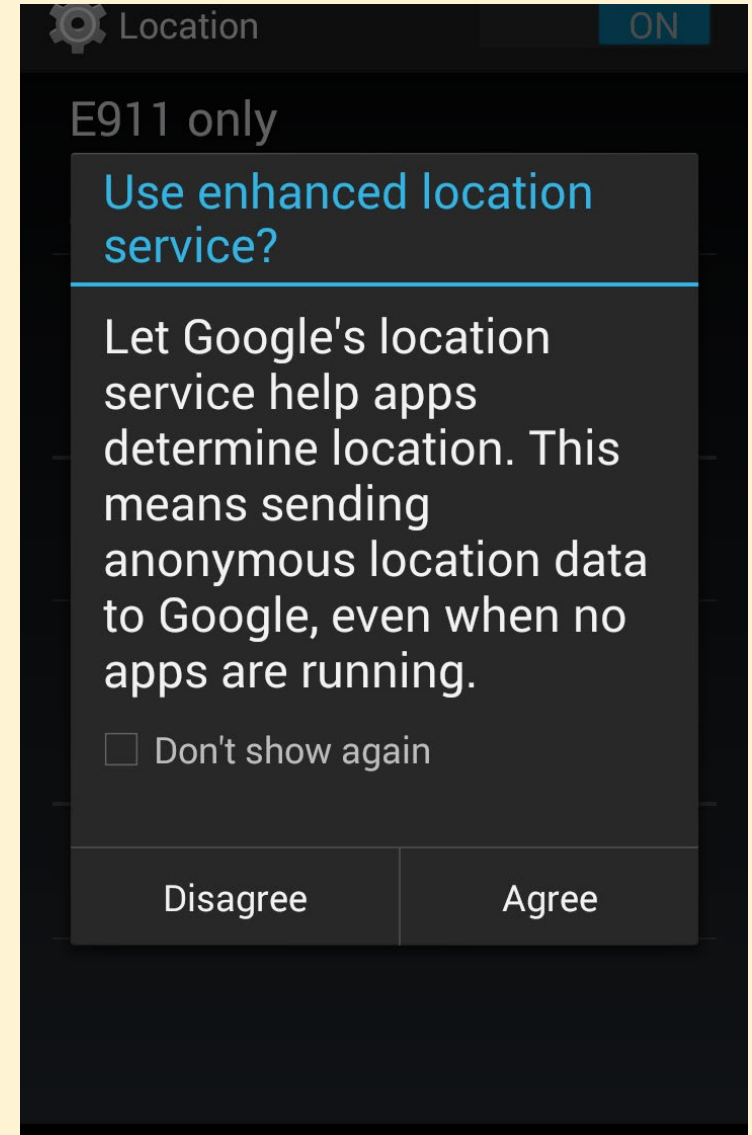
# Nagging

- Notification request of Instagram
  - *What can I do if I don't want to?*
  - **Solution: Exit the app.**



# Nagging

- Another example: Location request from Google:
  - “Agree”: Surrender control of your location data (80%+ agree rate).
  - “Disagree”: Receive tons of location requests later.
  - **Solution: “Disagree” + “Don’t show again”.**



# Sneaking

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- A design that intentionally hides or obscures important information from users.
- Example: [Sneaking items into your shopping cart](#)

# Sneaking

## ➤ Real-world example: Sneaking items

➤ If you miss it, you will pay for the sneaking items, even though you don't want it.

➤ *Why does the company have this design?*

**SPORTSDIRECT.COM** 24HR DELIVERY

search or enter webcode

Mens Ladies Kids Football Shirts Accessories Sports

### My Shopping Bag

[<< CONTINUE SHOPPING](#)

| Product Details                                                                                                                                                                                       | Quantity                                                                                                  |  | Unit Price | Total   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--|------------|---------|
|  Asolo Ascender Mens Walking Boots<br>Colour Graphite Size 12                                                    | <input type="button" value="-"/> 1 <input type="button" value="+"/> <input type="button" value="Remove"/> |  | £184.99    | £184.99 |
|  Forever Sports Sports Fantastic Value Magazine and Free Giant Mug (Go to your Bag to remove)<br>Colour - Size N | <input type="button" value="-"/> 1 <input type="button" value="+"/> <input type="button" value="Remove"/> |  | £1.00      | £1.00   |

[Clear All](#)

Sub Total **£185.99**

[<< CONTINUE SHOPPING](#)

**Compra única**  
13,50 €

Envío desde: Amazon  
Vendido por: Amazon

**Compra recurrente**  
13,50 € (5,70 € / 100 ml)

Activa la compra recurrente y ahorra hasta un 5%.

- Sin coste adicional
- Envío gratuito
- Cancela cuando quieras

[Más información](#)

Recíbelo el sábado, 4 sept.

En stock.

Cantidad 1

Entrega cada:  
3 meses (Más común)

Entregas automáticas vendidas por Amazon.es

# Sneaking

## ➤ Sneaking items

➤ *Why does the company have this design?*

➤ They want your money!

**SPORTSDIRECT.com** 24HR DELIVERY

search or enter webcode

Mens Ladies Kids Football Shirts Accessories Sports

### My Shopping Bag

[<< CONTINUE SHOPPING](#)

| Product Details                                                                                                                                                                                       | Quantity                                                                                                  |  | Unit Price | Total   |
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Entregas automáticas vendidas por Amazon.es

# Sneaking

## ➤ Sneaking items

➤ *What can I do about it?*

➤ **Solution: Double Check + Remove**

The screenshot shows the Sports Direct website's shopping bag. The bag contains two items:

| Product Details                                                                                                 | Quantity | Unit Price | Total   |
|-----------------------------------------------------------------------------------------------------------------|----------|------------|---------|
| Asolo Ascender Mens Walking Boots<br>Colour Graphite Size 12                                                    | 1        | £184.99    | £184.99 |
| Forever Sports Sports Fantastic Value Magazine and Free Giant Mug (Go to your Bag to remove)<br>Colour - Size N | 1        | £1.00      | £1.00   |

The second item is highlighted with a red box. The right sidebar shows a recurring purchase option for 13,50 €.

**Compra recurrente**  
13,50 € (5,70 € / 100 ml)

Activa la compra recurrente y ahorra hasta un 5%.

- Sin coste adicional
- Envío gratuito
- Cancela cuando quieras

[Más información](#)  
**Recíbelo el sábado, 4 sept.**

**En stock.**

Cantidad 1

Entrega cada: 3 meses (Más común)

[Configurar ahora](#)

Entregas automáticas vendidas por Amazon.es

# Sneaking

- Another example: **Bait and Switch**, where users are lured in with an attractive offer, only to find that the actual product or service is completely different or less desirable.
  - Something “FREE” is no longer available.
  - **Solution: Quit + Report**



# Sneaking

- Another example: **Hiding information** that is critical to users.
- For Rac.co.uk, the option for users to “opt out of sharing information and email spam” is hidden in “More info”.
- **Solution: Check "More info"**

The image displays two versions of a 'Basket' checkout page. Both pages show a 'Vehicle Check' for £14.99, a 'Promotion code' input field with an 'Apply' button, and a 'Total' of £14.99. A checkbox is checked with the text 'I have read and understood the Terms and Conditions'. The left page has a 'More info' link with a downward arrow. The right page has a 'Less info' link with an upward arrow, and the expanded section contains a checkbox with the text: 'By submitting your details you consent to RAC keeping you informed by mail and email of exclusive offers and services from us and from carefully selected partners. For more information about how we use'.

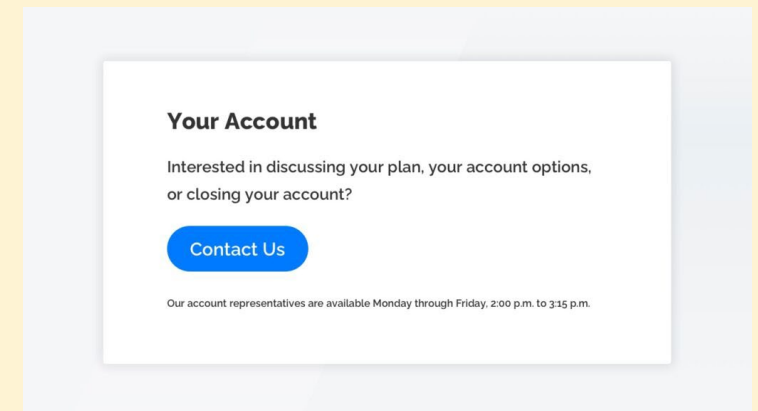
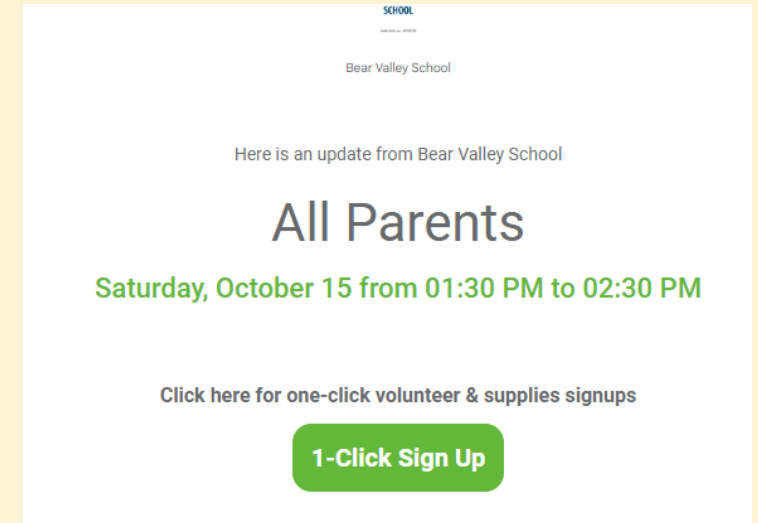
# Obstruction

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- A design that makes it extremely difficult for users to do what they want.
- Example: [Website cookies setting](#)

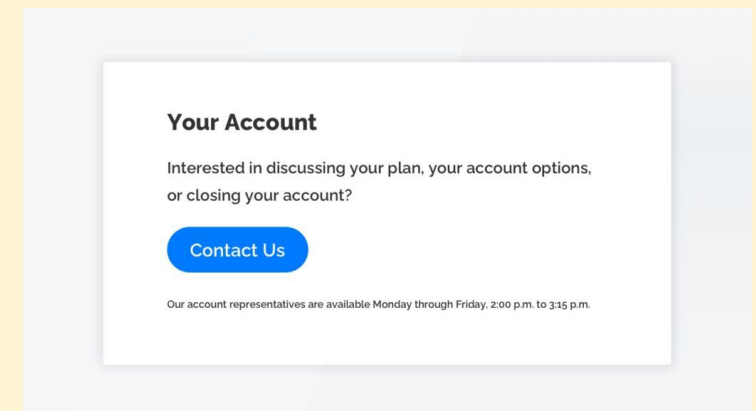
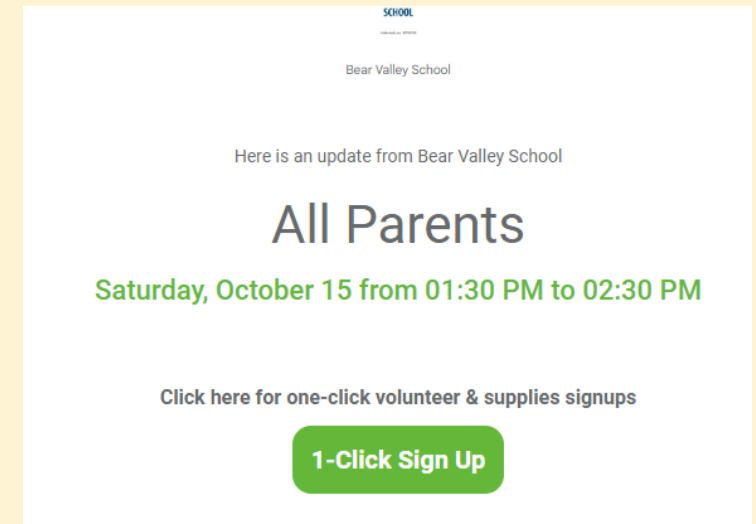
# Obstruction

- Real-world example: **1-click sign up**.
  - *What will happen if I want to close my account?*
  - Extremely difficult to get out of it
  - *Why does the company have this design?*



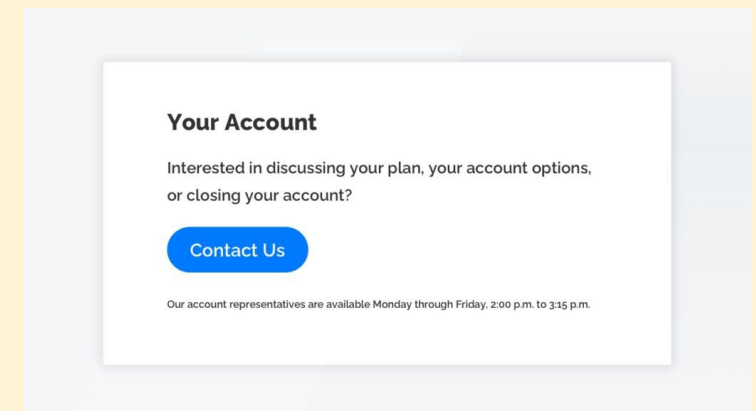
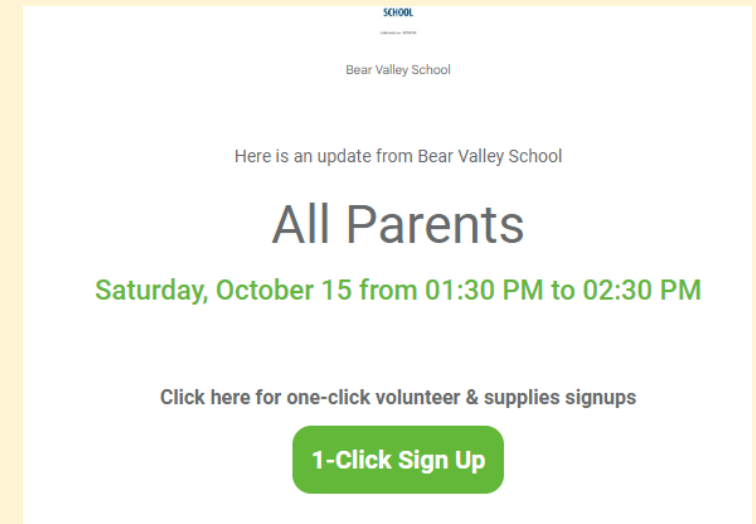
# Obstruction

- 1-click sign up.
  - *Why does the company have this design?*
  - They don't want you to close.



# Obstruction

- 1-click sign up.
  - *What can I do about it?*
  - **Solution: Contact + Close**



# Obstruction

- Another Example: **Privacy Maze**, where users have to go through lengthy steps to cancel advertising.
- **Solution: Be patient + Cancel**



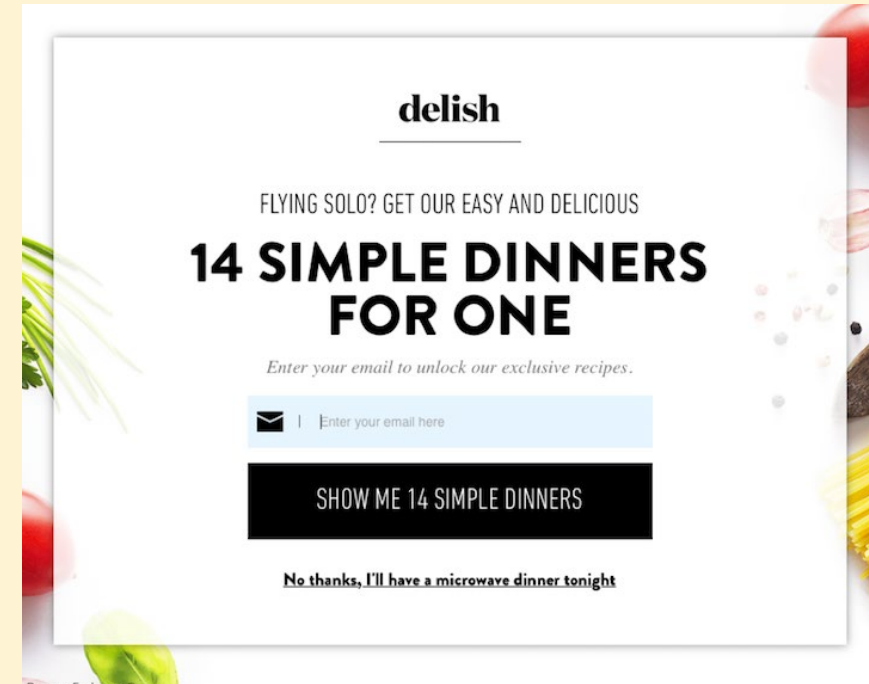
# Interface Interference

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- **A design that** manipulates, misleads or pressures you into making choices you might not otherwise make.
- Example: [By-default advertising opt-in](#)

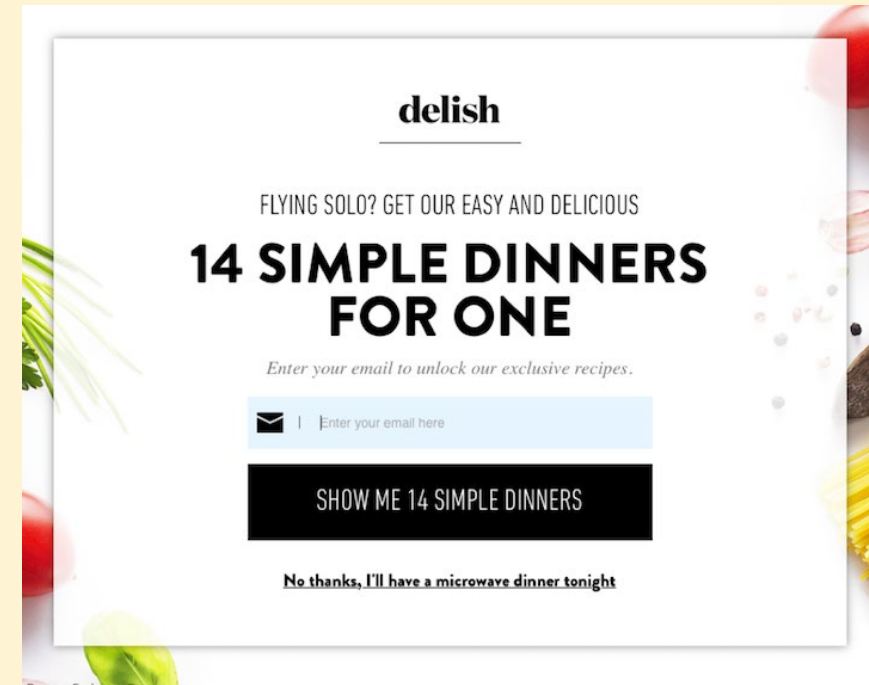
# Interface Interference

- Real-world example: **Highlighted Opt-in**
  - *What if I want to opt out?*
  - "No thanks" is less noticeable.
  - *Why does the company have this design?*



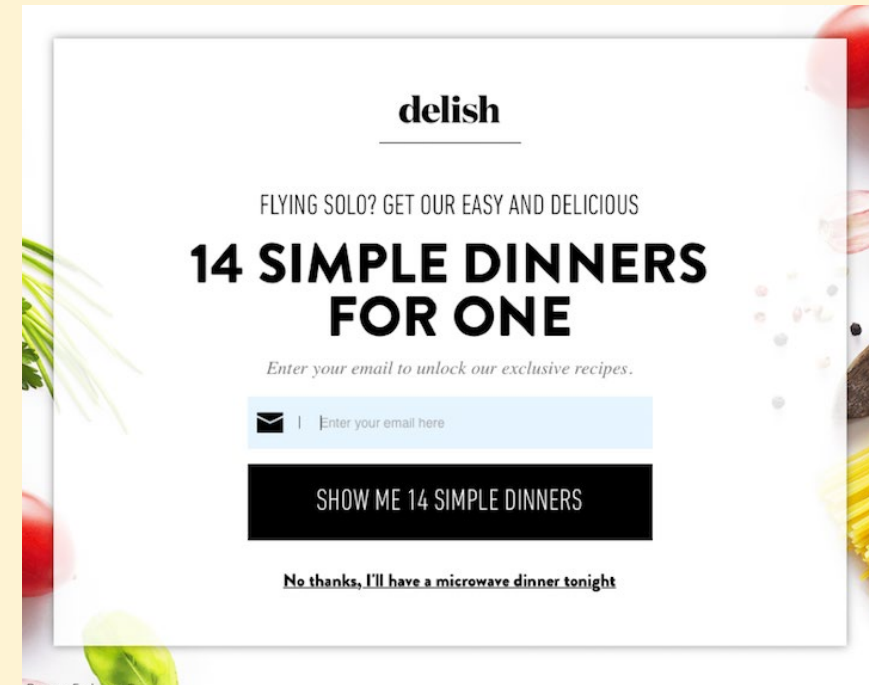
# Interface Interference

- Highlighted Opt-in
  - *Why does the company have this design?*
  - They want you to subscribe and buy.



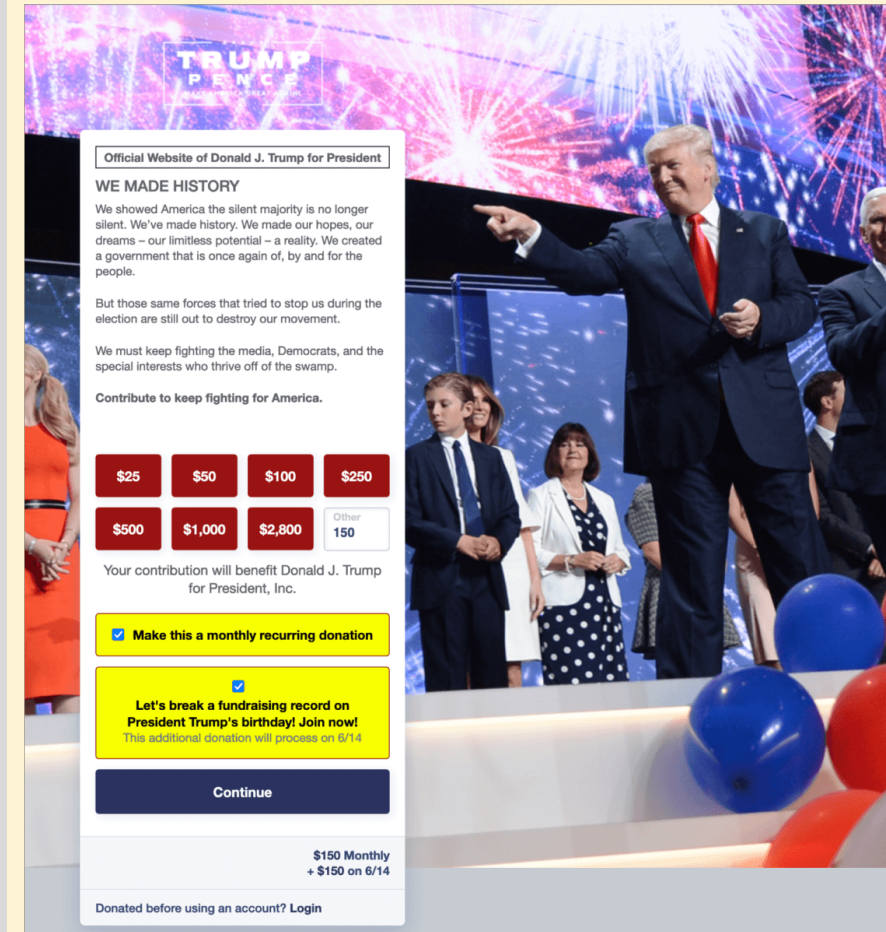
# Interface Interference

- Highlighted Opt-in
  - *What can I do about it?*
  - **Solution: Pay attention to less noticeable options**



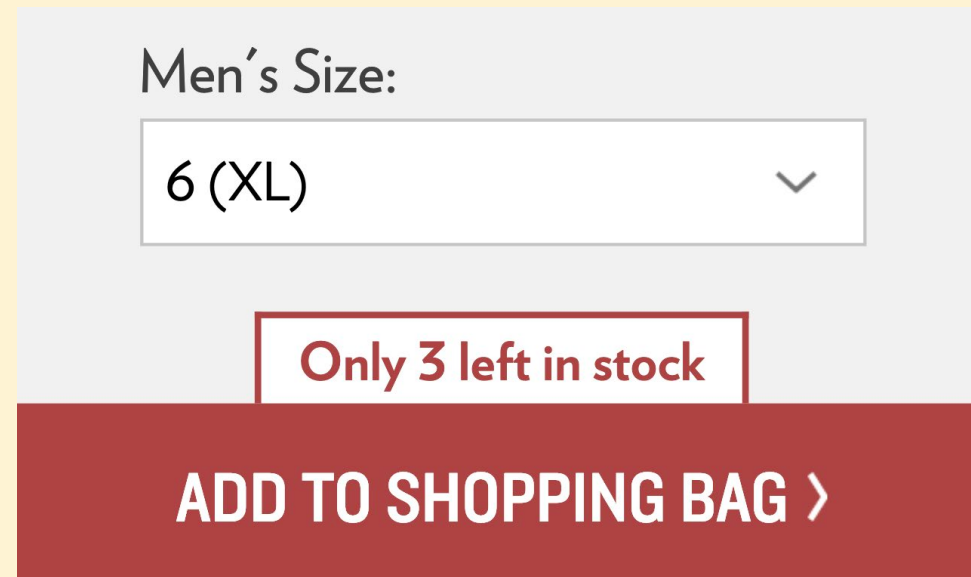
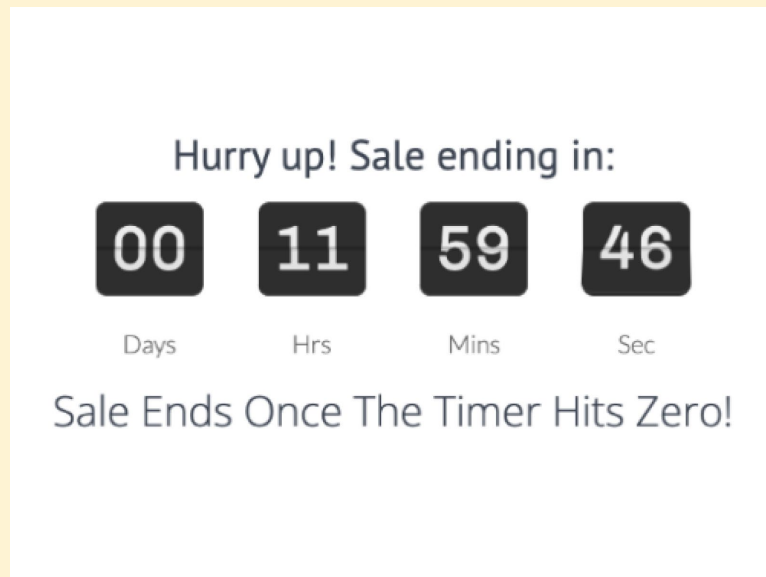
# Interface Interference

- Another Example: **Pre-ticked options**
  - "Make this a monthly recurring donation" is pre-ticked.
- **Solution: Double check the pre-ticked options**



# Interface Interference

➤ Example: False urgency



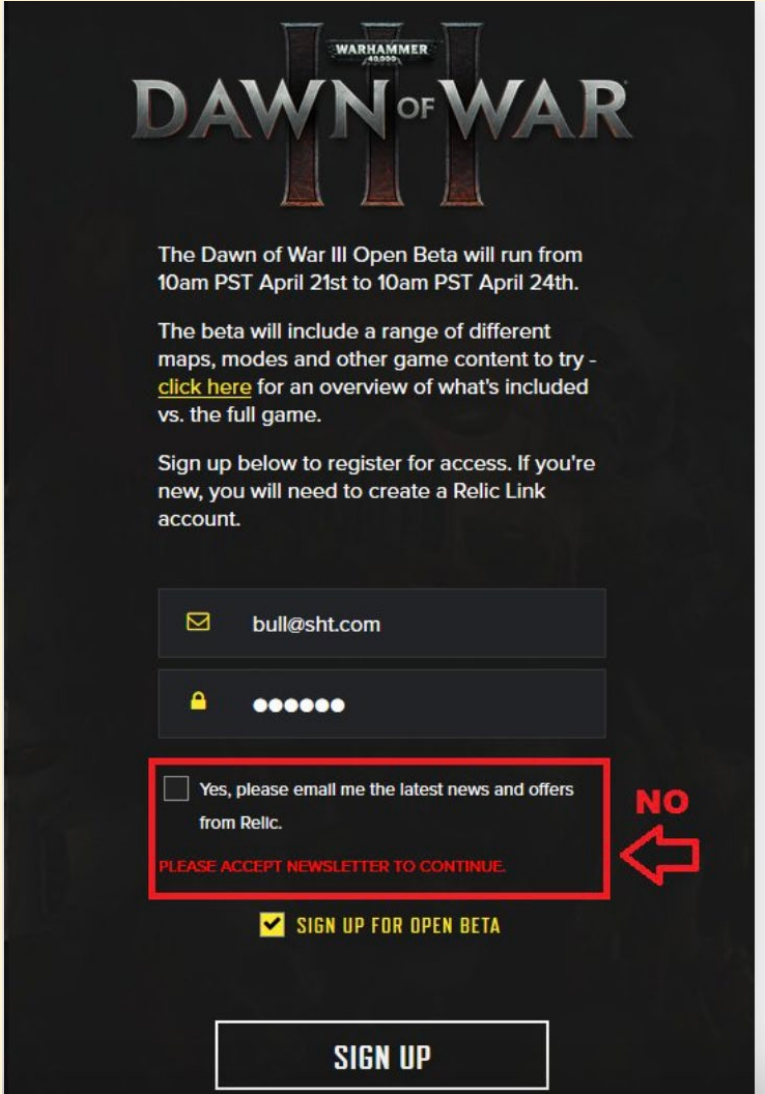
# Forced Action

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- A design that forces users to do something.
- Example: [SMS Subscription](#)

## Forced Action

- Real-example: The “Sign Up” page
  - What if I want to sign up without "email me the latest news and offers"?
  - There is no way but to accept it
  - Why does the company have this design?



**WARHAMMER**  
**DAWN OF WAR III**

The Dawn of War III Open Beta will run from 10am PST April 21st to 10am PST April 24th.

The beta will include a range of different maps, modes and other game content to try - [click here](#) for an overview of what's included vs. the full game.

Sign up below to register for access. If you're new, you will need to create a Relic Link account.

☒ bull@sht.com

☐ ●●●●●●

☐ Yes, please email me the latest news and offers from Relic.

PLEASE ACCEPT NEWSLETTER TO CONTINUE.

☒ SIGN UP FOR OPEN BETA

**SIGN UP**

**NO** ←

## Forced Action

- The “Sign Up” page
  - *Why does the company have this design?*
  - They want to send you emails as many as possible

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PLEASE ACCEPT NEWSLETTER TO CONTINUE.

☑ SIGN UP FOR OPEN BETA

**SIGN UP**

**NO**

## Forced Action

- The “Sign Up” page
  - *What can I do about it?*
  - **Solution: Exit the website**
  - **Solution: Accept then unsubscribe**

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PLEASE ACCEPT NEWSLETTER TO CONTINUE.

☑ SIGN UP FOR OPEN BETA

**SIGN UP**

## Forced Action

- Another example: **Paywall**
- It requires users to register or subscribe before use.
- **Solution: Exit the website**

THE WALL STREET JOURNAL.

Continue reading your article with  
a WSJ subscription

**Special Offer**  
\$2/Week for 1 Year

[Subscribe Now](#)

Already a subscriber? [Sign In](#)

# Current Status of Dark Patterns

- Dark patterns remain prevalent in online services.

FTC, ICPEN, GPEN Announce Results of Review of Use of Dark Patterns Affecting Subscription Services, Privacy

Results come as FTC assumes presidency of ICPEN, an international network of consumer protection authorities

July 10, 2024 | [f](#) [X](#) [in](#)

Nearly 76% of sites and apps use at least one dark pattern, with 67% employing multiple.

8/2/22 · RESEARCH

## A rise in unfair online commercial practices in the European Union

*97% of the most popular websites and apps used by European consumers engaged in at least one of these practices*

97% top websites and apps use dark patterns.

## Current Status of Dark Patterns

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- Increasing research are addressing dark patterns.
  - Using AI to detect dark patterns, but not practical.
  - More regulations, but difficult to implement.



**We have to face dark patterns  
for a considerable amount of  
time.**

# Suggestions

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- Companies use dark patterns to:
  - Advertise more to you
  - Maximize profits from you
  - Collect more personal data from you
  - Ensure you register
  - Get you to agree to everything...

## Suggestions

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- To combat dark patterns, you need to:
  - Pay attention to less noticeable options
  - Double-check your shopping cart before completing purchases
  - Be cautious of options that are pre-selected for you
  - Avoid registering unless absolutely necessary
  - Stay vigilant and aware of potential manipulative designs

**Thank You! Questions and Discussions?**

