

DEFINING AND IDENTIFYING ATTENTION-CAPTURE DECEPTIVE DESIGNS IN DIGITAL INTERFACES

ALBERTO MONGE ROFFARELLO, KAI LUKOFF, LUIGI DE RUSSIS



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di Torino



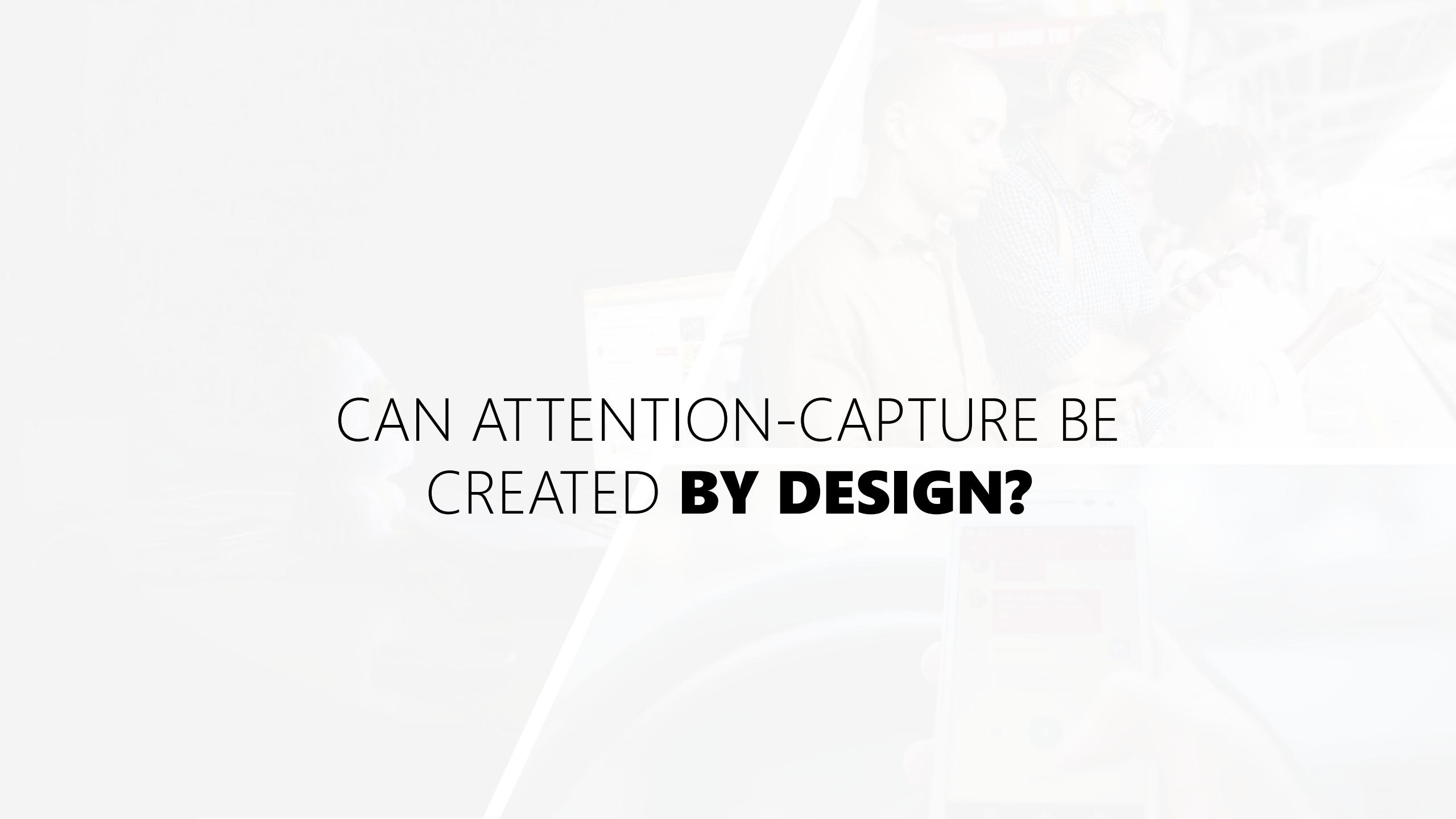
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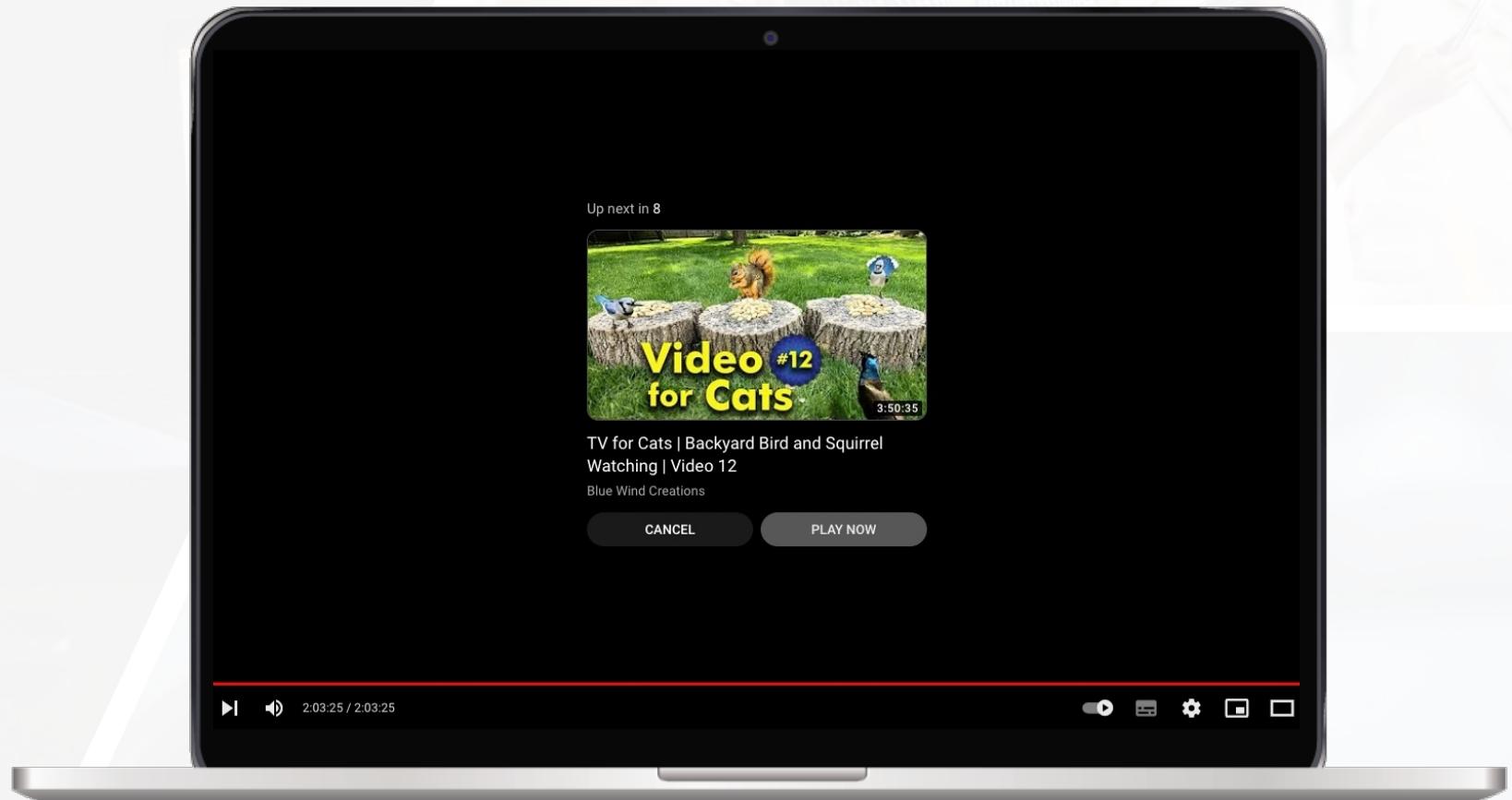
ADDICTIVE BEHAVIOR

SOCIAL INTERACTION PROBLEMS

DISTRACTIONS

A faint, semi-transparent background image shows a group of diverse individuals in a professional setting, possibly a conference or office, looking towards a screen or a shared document. The scene is softly lit and out of focus.

CAN ATTENTION-CAPTURE BE
CREATED **BY DESIGN?**





DARK PATTERNS ... OR DECEPTIVE DESIGNS

Recurring patterns in digital user interfaces that intentionally manipulate users into performing actions that go against their best interests



SNEAK INTO BASKET



PRIVACY ZUCKERING

A SYSTEMATIC LITERATURE REVIEW ON
ATTENTION-CAPTURE DAMAGING PATTERNS (ACDPs)



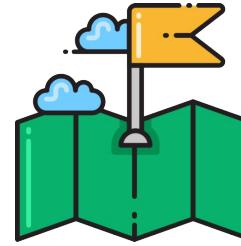
DEFINITION



IMPACTS



STRATEGIES



Types of Damaging Design Patterns

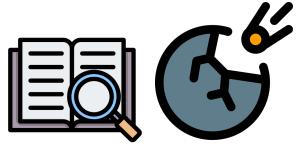
 Infinite Scroll As the user scrolls down a page, more content automatically and continuously loads at the bottom LEARN MORE	 Time Fog Designers reduce users' awareness of time spent on a platform LEARN MORE	 Grinding Users are forced to repeat the same process several times to unlock an achievement LEARN MORE
 Casino Pull-to-Refresh When the user swipes down on their smartphone, there is an animated reload of the page that may or may not reveal new appealing content LEARN MORE	 Fake Social Notifications Platforms send messages pretending to be another user or push notifications about some content the user has never interacted with LEARN MORE	 Playing by Appointment Users are forced to use a digital service at specific times, otherwise the user may lose points or achievements LEARN MORE
 Never-Ending Autoplay A new video is automatically played when the current one finishes, and the option to turn off autoplay is hidden or non-existent LEARN MORE	 Attentional Roach Motel Registering to and accessing attention-capture digital services is easy, while operations like logout or canceling an account are painfully difficult LEARN MORE	 Recapture Notifications Notifications are deliberately sent to recapture users' attention and have them start a new usage session LEARN MORE
 Disguised Ads & Recommendations Advertisements and recommendations are disguised as normal content into social networks' newsfeeds LEARN MORE	 Guilty Pleasure Recommendations Personalized suggestions target user's guilty pleasures and increase use time LEARN MORE	



TYPOLOGY

- 11 ACDPs leading to **attentional harms**
- Described in **everyday language** and for **specific contexts**

<https://attentioncapture.com/>



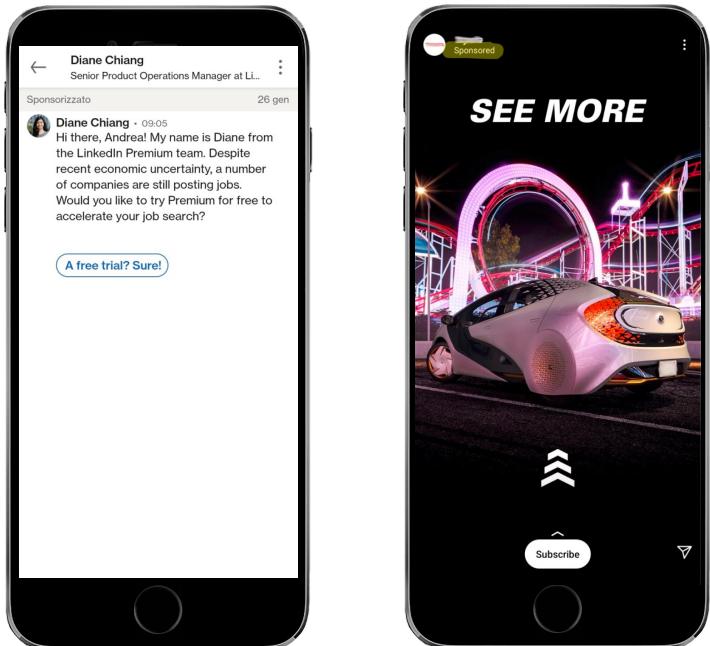
Attention-Capture Damaging Patterns

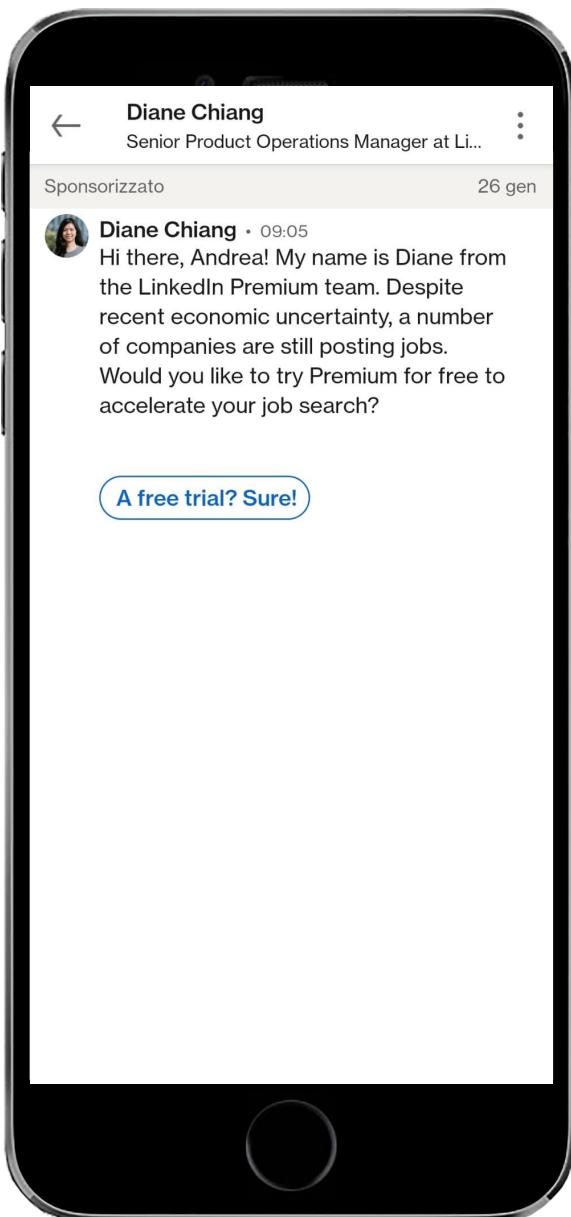
Recurring patterns in digital interfaces that a designer uses to exploit psychological vulnerabilities and **capture attention**, often leading the user to lose track of their goals, lose their sense of time and control, and later feel regret.



DECEPTIVE DESIGNS

ACDPs that manipulate or deceive users into taking actions that may not be in their best interests.



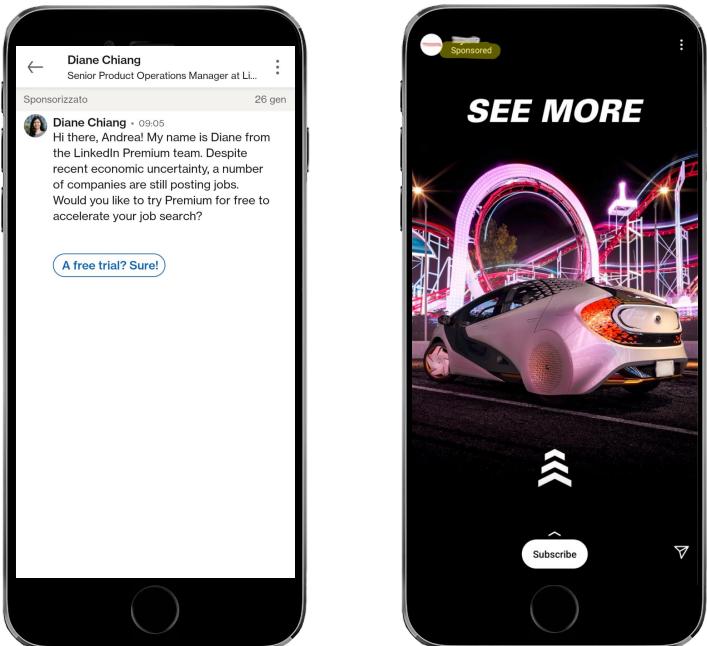


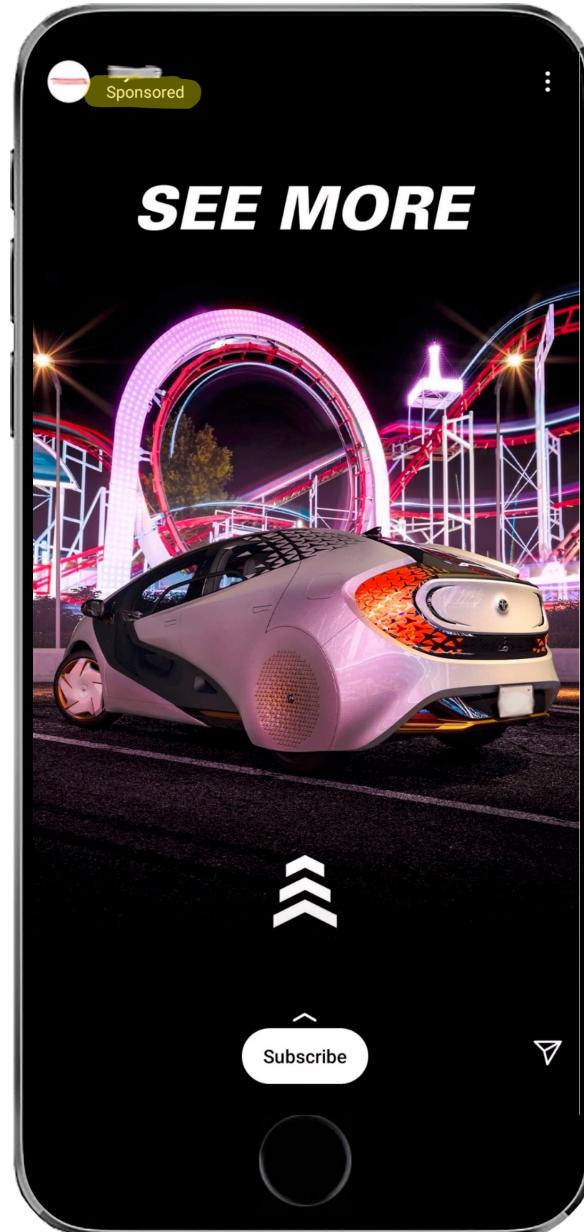
FAKE SOCIAL NOTIFICATIONS



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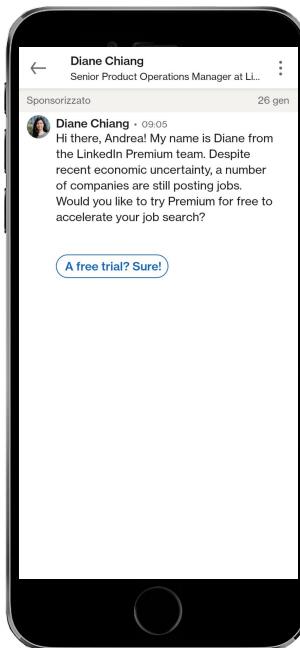


**DISGUISED ADS AND
RECOMMENDATIONS**



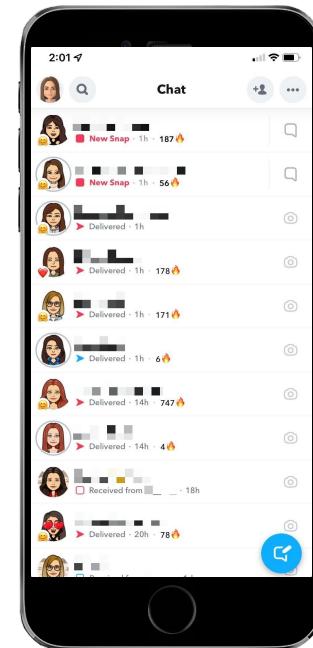
DECEPTIVE DESIGNS

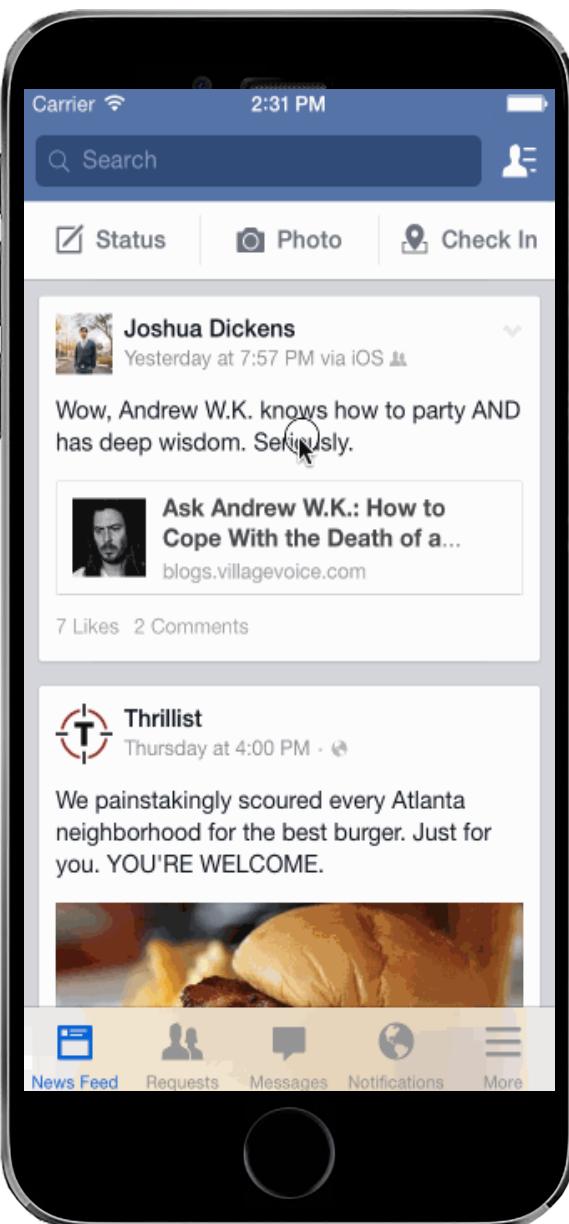
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SEDUCTIVE DESIGNS

ACDPs that tempt users with short-term satisfaction to encourage passive and continuous usage.



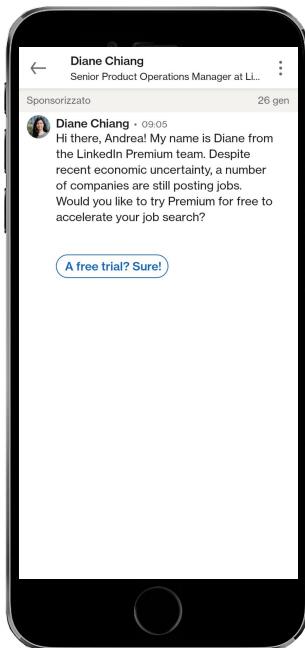


CASINO PULL-TO-REFRESH



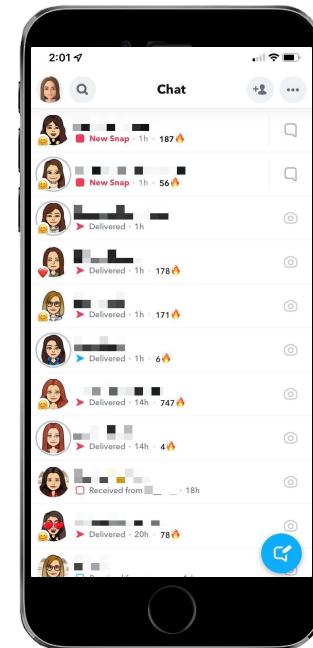
DECEPTIVE DESIGNS

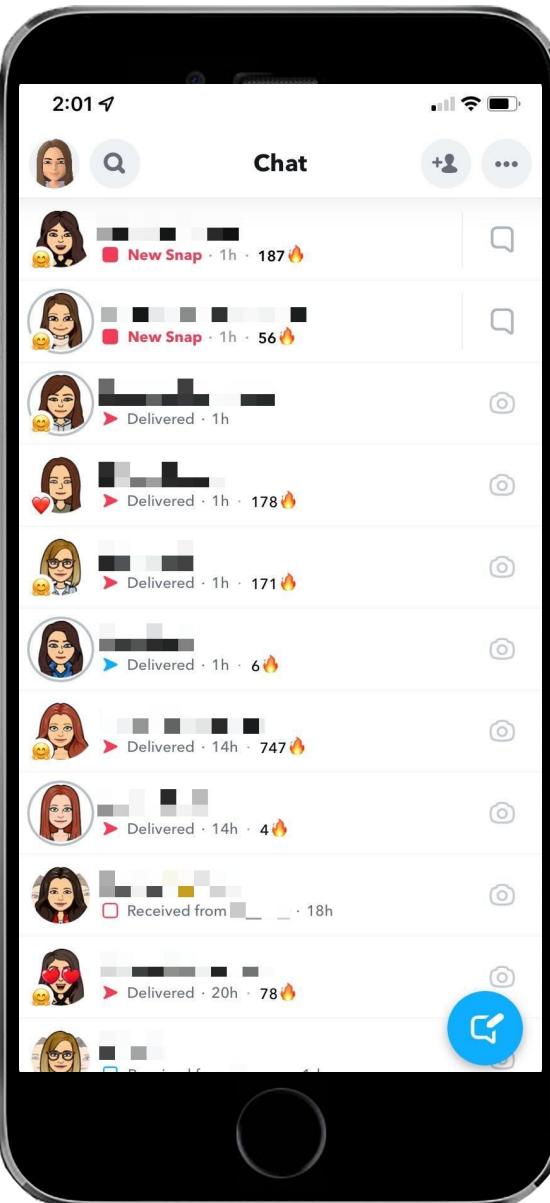
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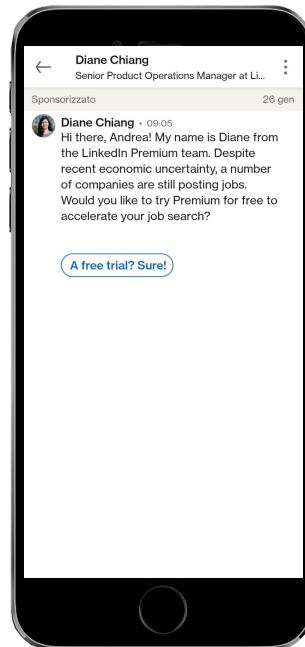


PLAYING BY APPOINTMENT



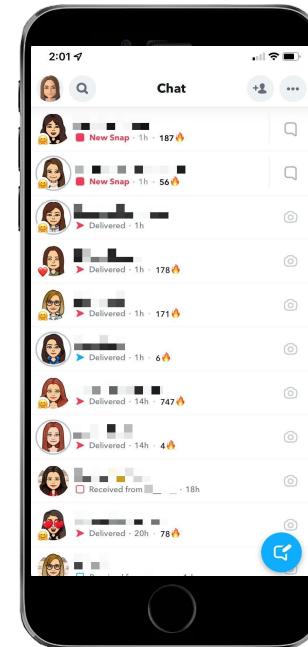
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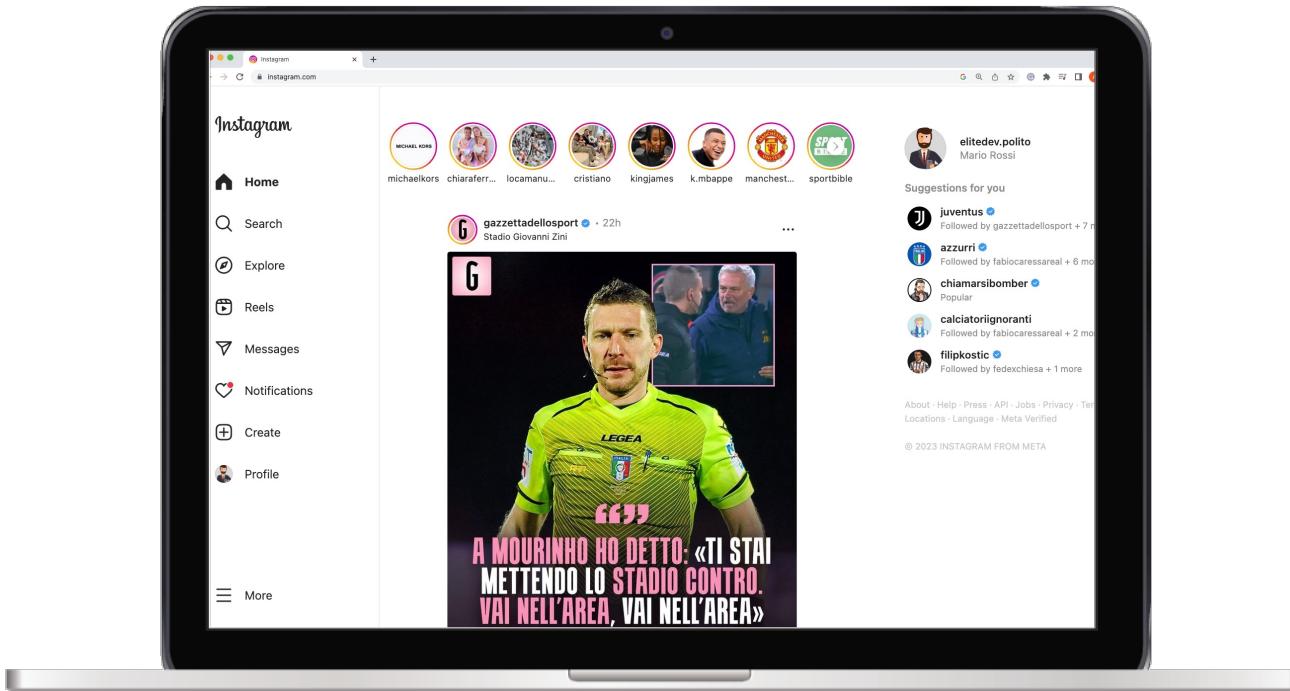


Automate The User Experience

ACDPs may reduce the need for **autonomous** decision-making. Although this may improve usability, it also induces **normative dissociations** and **meaningless use**.



Automate The User Experience



INFINITE SCROLL

I go on Instagram and I just scroll through even though there's no real purpose.

Tran et al., 2019

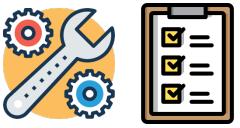
I hate when I spend time just scrolling and scrolling...it's all mind-numbing, and I don't benefit from any of it.

Aranda et al., 2018



Exploit Psychological Vulnerabilities

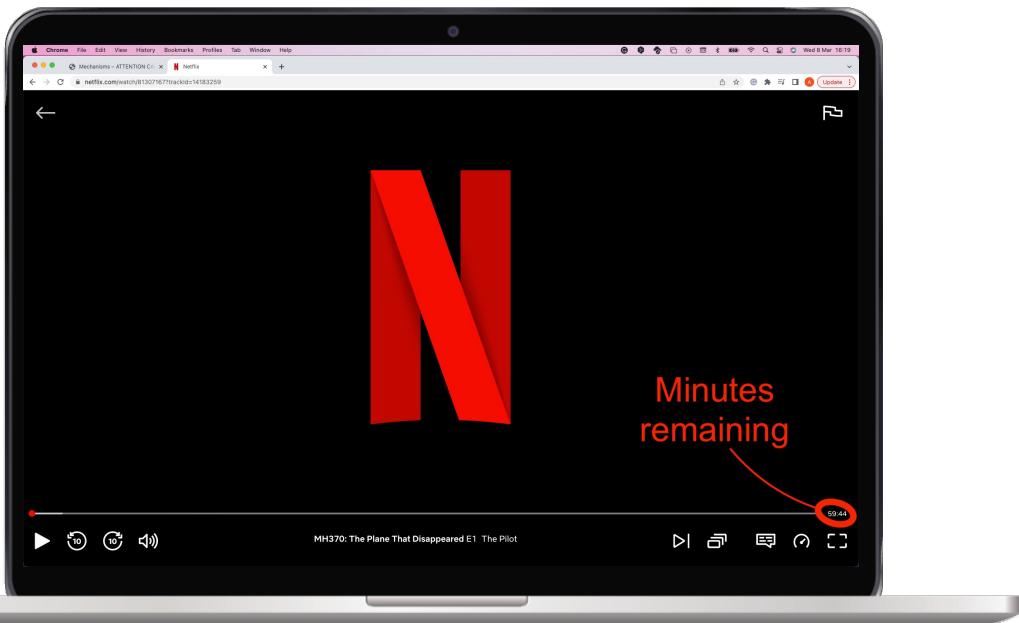
Leverage psychological **biases** and **heuristics** to shove people towards actions that they may not rationally choose if they were making a considered decision.



**GUILTY-PLEASURE
RECOMMENDATIONS**

Variable Reward

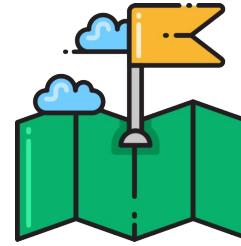
Create the illusion that new **interesting** content will «flow» **forever**, e.g., scrolling through posts and videos that you have already seen, while **hoping** for new items to appear (*reward depletion*).



TIME FOG

Salience Bias

Use **deceptive visualizations**,
e.g., to create optical illusions
and alter **people's**
perceptions of the different
elements on the user interface.



Types of Damaging Design Patterns

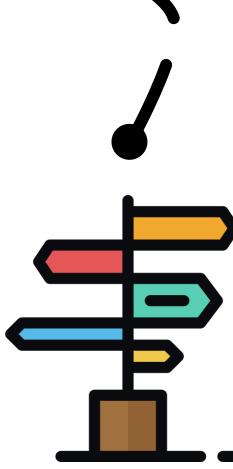
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STUDYING ACDPS ACROSS **DOMAINS** AND **INTERFACES**

Do ACDPs go beyond social media and GUIs?

EVALUATE INTERFACES AND **SUPPORT** DESIGNERS

How much is too much?

PROMOTE **REGULATIONS** AND **POLICIES** AGAINST ACDPs

Can we regulate seduction?

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