# Problematic smartphone use & Attention economy

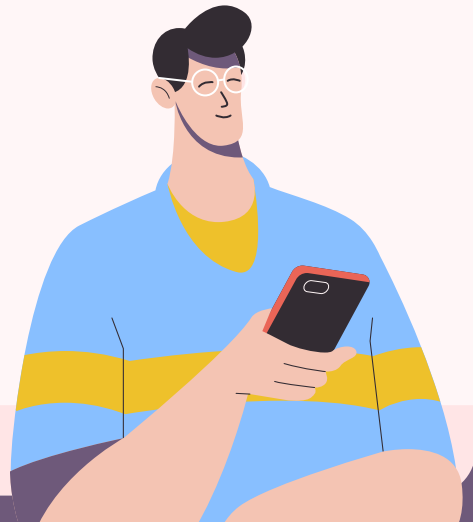
Jana Blahošová

# 01

# PROBLEMATIC SMARTPHONE USE (PSU)


Digitální závislosti jsou nová pandemie, Čechy ničí především sociální sítě
13
54
Translation:
Digital addictions are the new pandemic, Czechs are destroyed mainly by social media

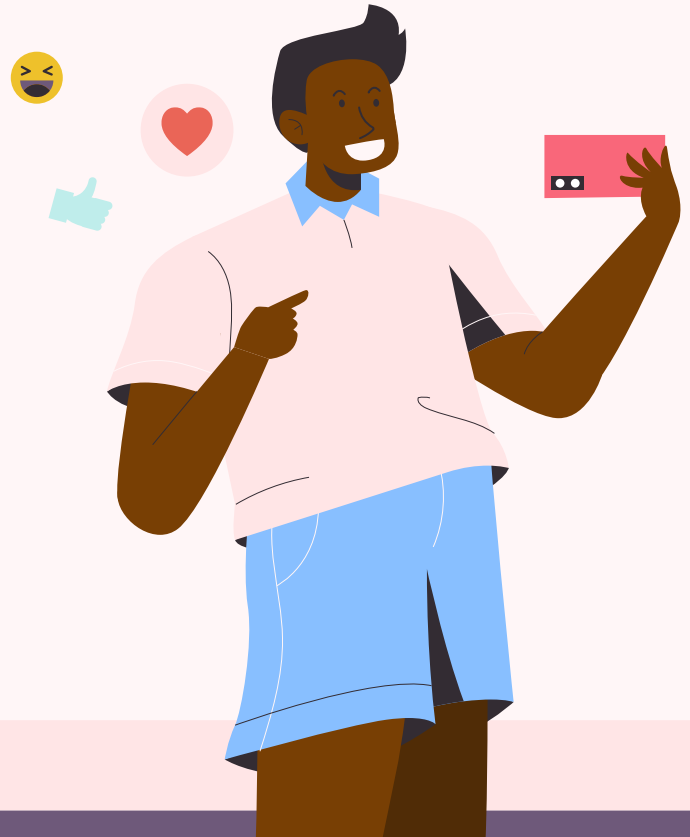
# QUIZ



# QUESTION 1

What percentage of the world's total population uses a mobile phone?

# KEY NUMBERS ABOUT PHONES



**68% of the global population**

Use mobile phone (5.44 billion of people)

**64.4% of the global population**

Use internet (5.16 billion of people)

**3 hours 46 minutes**

Average daily time spent using the internet on mobile phones

Kemp (2023)

# QUESTION 2

How much time do you spend on your mobile phone daily (in hours)?

# WHY IT IS SO HARD?

## RECALL BIAS

- Innacurate or incomplete recollection of events by study participants

## RAPID & FRAGMENTED USAGE

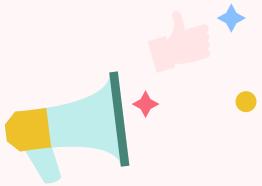
- Smartphones are typically used in rapid and fragmented ways throughout the day
- Hard to correctly estimate

## SOCIAL DESIRABILITY

- Respondents give answers to questions that they believe will make them look good to others
- Studies on sensitive topics (e.g., drug use, sexual behavior)

# HOW ARE CZECH ADOLESCENTS USING THEIR PHONES?

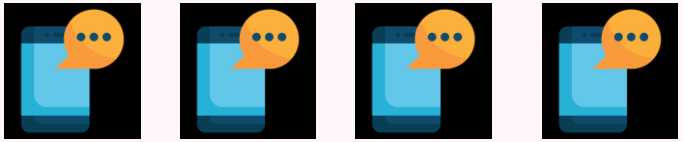
- 12-months research, project FUTURE, WP4
- **201 adolescents**, **aged 13 to 17 years old**
- Special research app called IRTIS App that participants installed into their mobile phones




REPORT LINK

# METHODS

May 2021



June 2022

**1. burst**
May/June

**2. burst**
September/
October

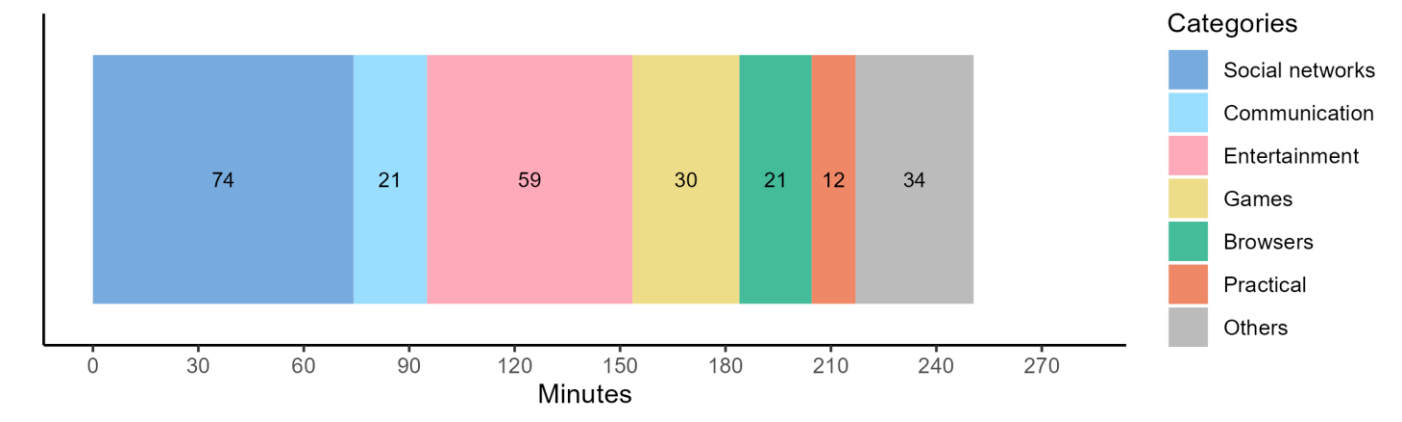
**3. burst**
January/
February

**4. burst**
April/May

4 surveys per day
**daily objective measurement of app use**
14 days, 2 weekends

# RESULTS

*Comparison of the average daily time spent on the phone by adolescents (in minutes per day)*




Adolescents spent more than 4 hours per day on their phones.

# CONCLUSION

Adolescents spent **4 hours and 11 minutes** per day on their smartphones (on average)

## IS IT TOO MUCH?
## IS IT OK?

# QUESTION 3

How much time spent on the phone daily is too much (in hours)?

# IS TIME GOOD INDICATOR OF ADDICTION?

## WHAT IS TOO MUCH? INCONSISTENT

- An individuals can be considered as problematic users if their time exceeds a predefined usage amount
- **the time vary across studies between 4 to 8 hours per day**

## TIME DOES NOT NECESSARILY INDICATE A PROBLEM

- Smartphone development
- Increased internet access via smartphone
- **They are used for a variety of activities (substite of computer)**

Ryding & Kuss, 2020

# QUESTION 4

**What is the best indicator to determine that someone is using the phone problematically?**

Phone use negatively affects individual's overall normal functioning in life

# PROBLEMATIC SMARTPHONE USE

„An inability to regulate one's use of the smartphone, which eventually involves negative consequences in daily life."

Billieux (2012), Billieux et al. (2015)

**Terms used in literature:**

- Smartphone addiction
- Smartphone dependence
- Nomophobia

# BEHAVIORAL ADDICTIONS

- Problematic smartphone use is generally conceptualized as a behavioral addiction together with pathological gambling or compulsive shopping
- The diagnostic manuals distinguishes two categories of addictions:

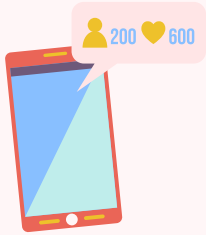

**Behavioral addictions or non-substance addictions**

Pathological gaming

**Substance addictions**

Drugs, alcohol, nicotine...

# DIAGNOSTIC MANUALS




## DSM

- **Diagnostic and Statistical Manual of Mental Disorders**
- Diagnostic tool published by American Psychiatric Association (APA)
- Actual versions is DSM-5

## ICD

- **International Classification of Diseases**
- Diagnostic tool published by World Health Organization (WHO)
- Actual versions is ICD-11

# BEHAVIORAL ADDICTIONS

- Smartphone „addiction“ or internet „addiction“ **are not officially recognized as the behavioral addictions** by these diagnostic manuals
- Only Internet Gaming Disorder was included into DSM-5 (2013) and ICD-11 (2019) as disorder requiring another research

**2 groups of researchers:**

- Use the term smartphone addiction
- Avoid the term smartphone addiction and even behavioral addiction and use problematic smartphone use


**Behavioral addictions**

# COMPONENT MODEL OF ADDICTION

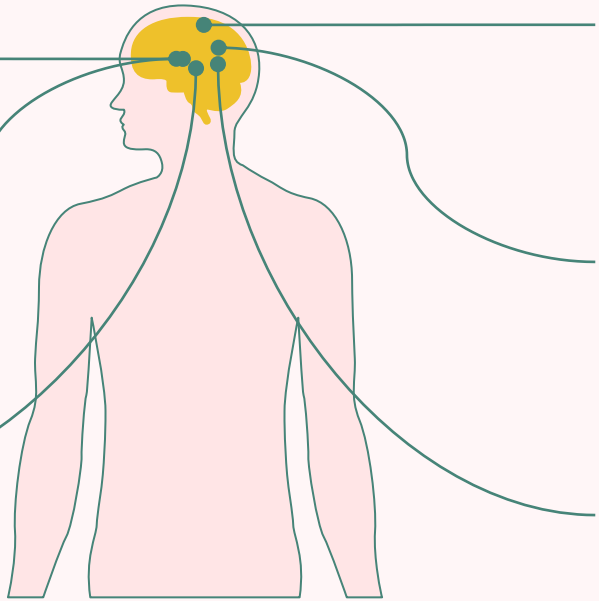
Griffiths (2005)

**Behavioral addiction can be identified by the presence of six core components:**

### Salience
Total preoccupation of smartphone use

### Mood modification
Mood changes experienced through the use

### Tolerance
The increase over time of daily hours spent using smartphones



### Withdrawal symptoms
Negative feeling when unable to use

### Conflict
Intrapersonal and interpersonal conflicts

### Relapse
Repeated use after period of abstinence

# MEASUREMENT SCALE OF PSU

Csibi et al. (2021)

All symptoms have to be fullfilled to be able to say that somebody is addicted.

- salience
- conflict
- mood modification
- tolerance
- withdrawal symptoms
- relapse

**Smartphone Application-Based Addiction Scale (SABAS)**

Please indicate the extent to which you agree or disagree with the statements below in relation to your smartphone use habits.

| | Strongly Disagree | Disagree | Slightly Disagree | Slightly Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| My smartphone is the most important thing in my life. | 1 | 2 | 3 | 4 | 5 | 6 |
| Conflicts have arisen between me and my family (or friends) because of my smartphone use. | 1 | 2 | 3 | 4 | 5 | 6 |
| Preoccupying myself with my smartphone is a way of changing my mood (I get a buzz, or I can escape or get away, if I need to). | 1 | 2 | 3 | 4 | 5 | 6 |
| Over time, I fiddle around more and more with my smartphone. | 1 | 2 | 3 | 4 | 5 | 6 |
| If I cannot use or access my smartphone when I feel like, I feel sad, moody, or irritable. | 1 | 2 | 3 | 4 | 5 | 6 |
| If I try to cut the time I use my smartphone, I manage to do so for a while, but then I end up using it as much or more than before. | 1 | 2 | 3 | 4 | 5 | 6 |

# CRITIQUE OF COMPONENT MODEL

Billieux et al. (2015a)

## LACK OF EVIDENCE

- Evidence supporting the identification of PSU as behavioral addiction

## TOLERANCE CRITERIA

- Substance use context: higher and higher dose of drug to receive the same reward
- Smartphone use: increase in the frequency of mobile use OR still new and new devices
- **BUT** – we can use the phone more in some situation

## ORIGIN OF COMPONENTS

- Components were directly transposed from those diagnosing other addictions
  - They do not consider specifics of mobile phones

## PATHOLOGIZATION OF COMMON BEHAVIOR

# CRITIQUE OF COMPONENT MODEL

Billieux et al. (2015b)

## OTHER ISSUES HIDING BEHIND „ADDICTION“ SYMPTOMS

- **Case study of Thalia from assigned reading**
  - She fullfilled several smartphone „addiction“ criteria (different set) – she could be perceived as smartphone addict
  - E.g., she was not able to control her phone use, she constantly called and wrote messages to her boyfriend

**BUT**

- **When using different approach than addiction model:**
  - Intensive use of mobile phone was result of other issues, e.g., higher impulsivity, reassurance behavior, bad coping strategies (regulation of emotions through smartphone use)

# QUESTION 5

**Which of the following can be connected with problematic smartphone use?**

- Boredom proneness
- Poor sleep
- Poor relationships with parents
- Frequent smartphone checking
- Loneliness

# RISK FACTORS & CORRELATES OF PSU

**Factors that are often present in people using their smartphones problematically.**

**Cause and consequence? Directionality of the relationship is often unknown**

Loneliness and stress

Mostyn Sullivan & George (2023), Tossell et al. (2015), Billieux (2012), Pivetta et al. (2019)

# RISK FACTORS & CORRELATES OF PSU

## Sociodemographic characteristics & environmental factors

- Older adolescents & young adults
- Loneliness and stress
- Parents education
- Monthly income
- Restrictive mediation
- Poor quality of relationships with parents
- Parental neglect
- Parental addiction (substance abuse or gambling problems)

Mostyn Sullivan & George (2023), Tossell et al. (2015), Billieux (2012), Pivetta et al. (2019)

# RISK FACTORS & CORRELATES OF PSU

## Personality traits

- Neuroticism
- Etraversion
- Impulsivity
- Low self-esteem
- Sensation-seeking
- Emotional instability
- Insecure attachment style
- Boredom proneness

## Mental health outcome

- Depression
- Anxiety
- Poor sleep

## Use patterns

- Smartphone checking behavior
  - Usage short in duration and more frequent
  - Proactive use – checking for notifications or messages without any trigger

Mostyn Sullivan & George (2023), Tossell et al. (2015), Billieux (2012), Pivetta et al. (2019)

# DEVICE OR CONTENT?

**„Individuals are no more addicted to the internet and smartphones than alcoholics are addicted to bottles.“**

Griffiths (2021)

- relative consensus that **smartphone content or more specifically smartphone applications** are the primary object of problematic smartphone use (Elhai et al., 2019; Griffiths, 2021)

# TYPES OF SMARTPHONE USE/CONTENT CONNECTED WITH PSU

## SOCIAL SMARTPHONE USE

- Social networking sites (Facebook, Instagram, Snapchat)
- Chatting, instant messaging (Messenger, WhatsApp, Telegram)
- Video and phone calls



## PROCESS SMARTPHONE USE

- Gaming
- Watching videos, movies (YouTube, Netflix)
- Music, radio and podcasts



Chan, Yeo & Handayani, (2023)

# MOTIVES ASSOCIATED WITH PSU

**Mostyn Sullivan & George (2023)**

- **Systematic review of 44 studies**
- Investigating motives categories that are associated with PSU

**Mood regulation motives**

to reduce negative emotions,
to maintain positive emotions

**Self-identity/conformity motives**

to gain approval from a social group,
to avoid social disapproval

**Pass time**

to avoid boredom

**Social motives**

to maintain relationships,
to obtain social benefits

**Entertainment**

Social smartphone use (social media & instant messengers)

Social motives

Self-identity/conformity motives

Process smartphone use (gaming, watching videos, movies, etc.)

Mood regulation motives

Pass time

Entertainment

# 02

# ATTENTION ECONOMY


THE
ATTENTION
ECONOMY

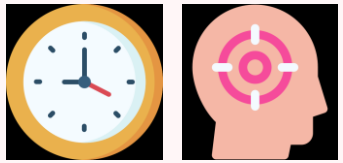
# ATTENTION ECONOMY

## Human attention as a commodity

Human attention is perceived as a scarce recource, a commodity or a form of capital, and therefore it is regarded as valuable.

## Natural economy of cyberspace

It is a system that's all about seeking, receiving and paying the attention of other human beings (that is limited and not replaceable) (Goldhaber, 2006)



our time, our attention

money

# ADDICTIVE FEATURES OF PLATFORMS

## 1 UNPREDICTABLE VARIABLE REWARDS

- Rewards, mainly in form of dopamine, are random, at unknow frequencies
- Rewards from usage vary


Bhargava & Velásquez (2020), Montag et al. (2019)

## Slot machine effect

- **Slot machines work in similar way** – you never know when you'll win money and you tend to repeat the behavior that can lead you to the reward
- **Anticipation of reward** is almost as good as the reward itself at releasing dopamine



Bhargava & Velásquez (2020), Montag et al. (2019)

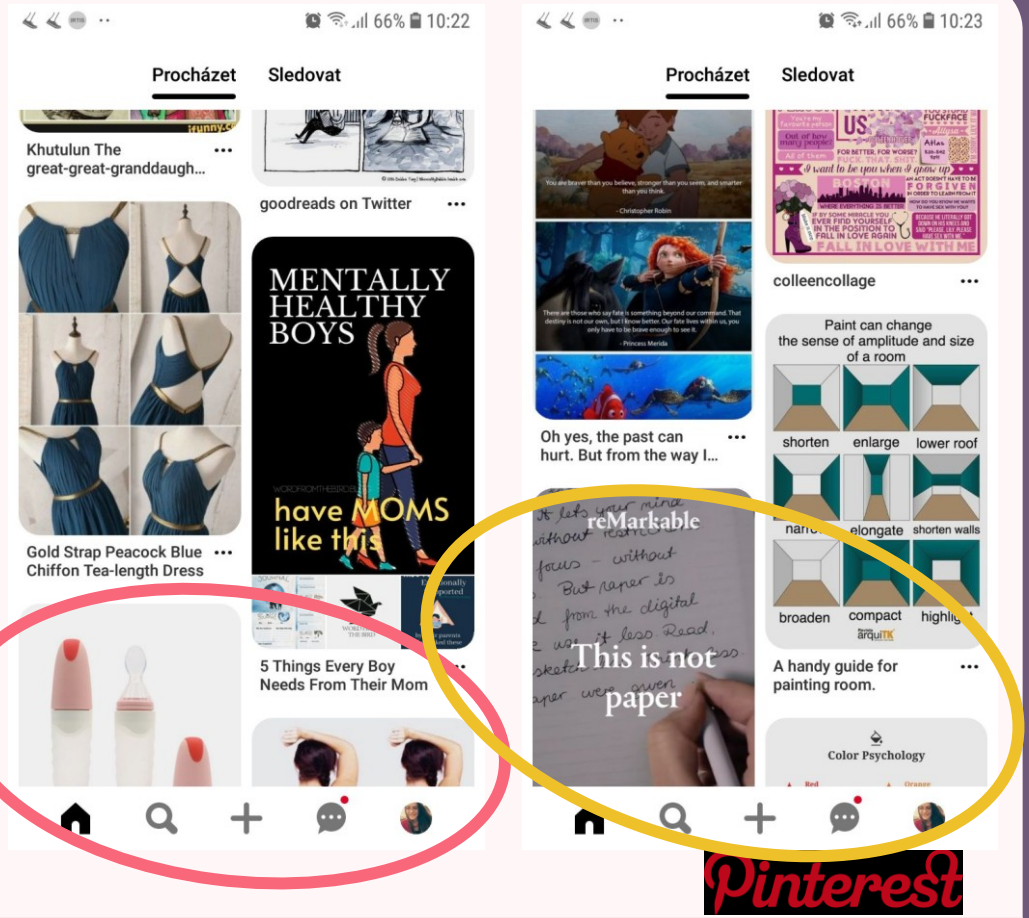
## Pull-to-refresh

- Seen in a number of social media platforms
- It mimics the motion and variable reward schedule of a **slot machines**
- You never know what you'll get (**the anticipation of the reward)**


Bhargava & Velásquez (2020), Montag et al. (2019)

## Not fully visible content

- The content is arranged zigzag, some images appear to be cut off
- To relieve their curiosity, the users have to scroll down to reveal the full picture




Bhargava & Velásquez (2020), Montag et al. (2019)

# ADDICTIVE FEATURES OF PLATFORMS

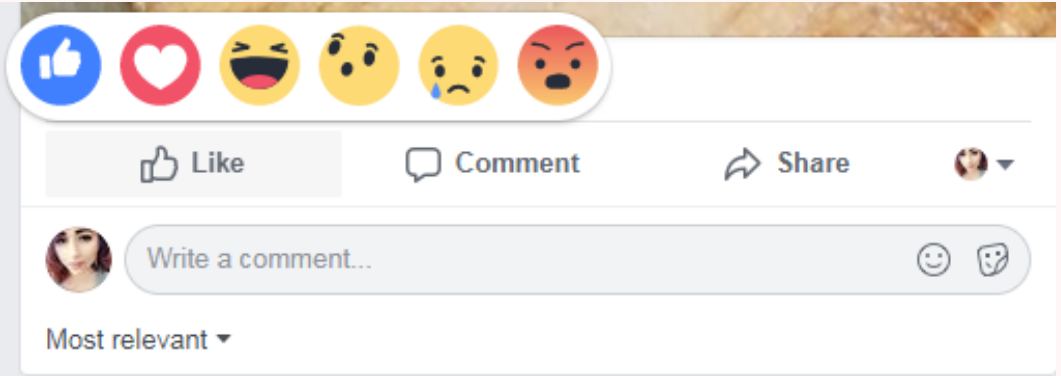

## DESIRE FOR SOCIAL VALIDATION & SOCIAL RECIPROCITY

- To be in contact with others, to be validated by significant others – one of the main psychological needs
- **Craving for validation** – to be part of group, consistent with group norms
- **Reciprocal liking** – the tendency of liking those people who like us

Bhargava & Velásquez (2020), Montag et al. (2019), Eastwick & Finkle, (2009)

## Like button, comments

- It may be the reward that user is expecting while using social media
- **Form of social validation – we belong to other, we are consistent with a group norms**




Bhargava & Velásquez (2020), Montag et al. (2019)

## Notifications

- **Reciprocal liking** – when a user gives a Like to someone, it is then likely that the individual will also give him a Like
- Social media notify their users that these things happened – Likes, comments, shares



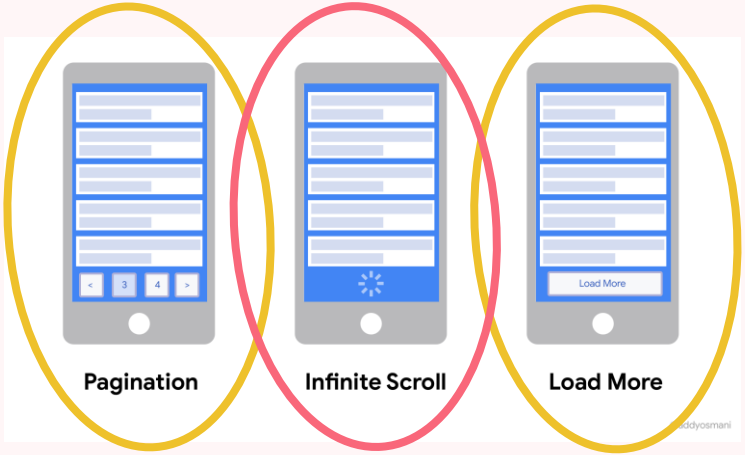
Bhargava & Velásquez (2020), Montag et al. (2019)

# ADDICTIVE FEATURES OF PLATFORMS

## 3 REDUCTION OF NATURAL STOPPING CUES (EXTENSION OF TIME OF USE)

### Infinite scroll

- Before that – at the end of the page, user have faced some decisions (to load the next page, to exit platform, and so on)
- **Infinite scrool removed the opportunity to make such decisions**, to reflect their behavior, to decide what to do next




Bhargava & Velásquez (2020), Montag et al. (2019)

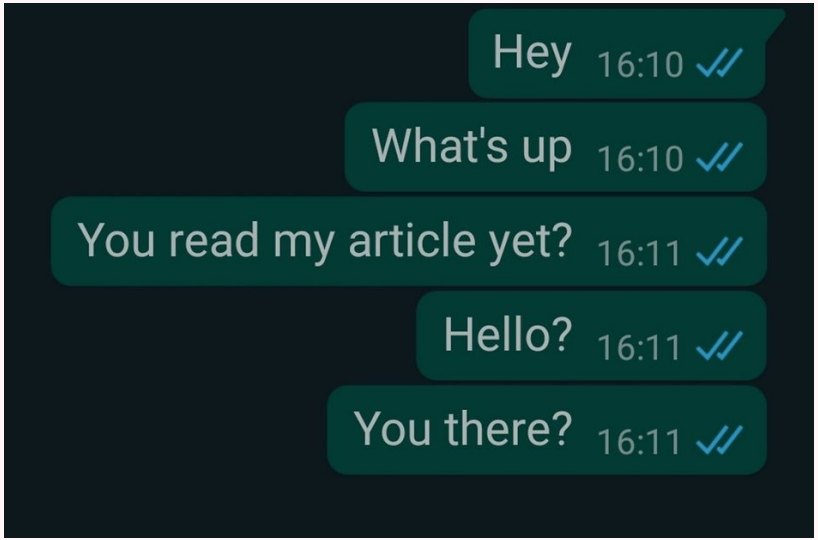
NETFLIX

# ADDICTIVE FEATURES OF PLATFORMS

## 4 SOCIAL PRESSURE

### Double ticks

- Marking the read messages by coloured double ticks
- Both sides of the conversations know these rules
- **Social pressure** – if the message has been read, both sides expect a fast answer




Montag et al. (2019)

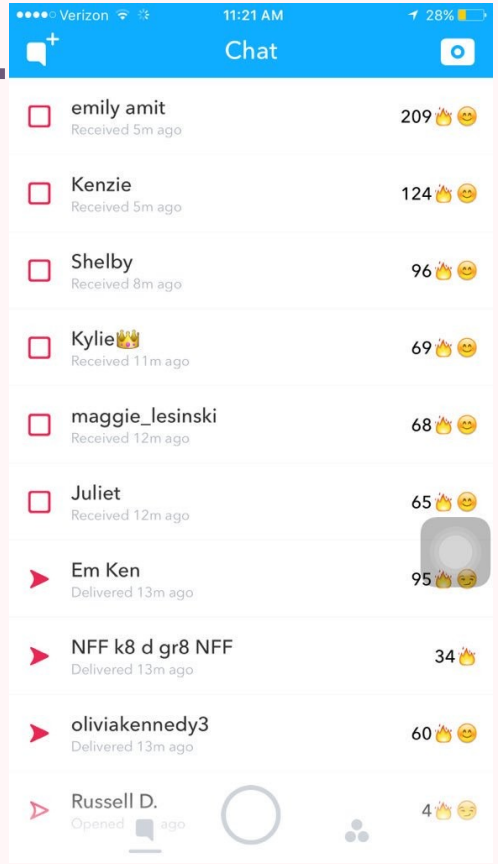
# ADDICTIVE FEATURES OF PLAT

5

## PSYCHOLOGICAL INVESTMENT

### Snapstreaks

- **Sunk cost bias** – the more the individuals invest in something (time, money, effort), the more they tend to persist in the behavior
- **Snapstreaks** – the number of consecutive days that individuals have been snapping on Snapchat
- Pressure to continue with these streaks




Bhargava & Velásquez (2020), Griffiths, 2018

# TAKE-HOME MESSAGE

**What's the most interesting thing you learned today?**

**What will you take away from the le**

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# THANKS!

## DO YOU HAVE ANY QUESTIONS?

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