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Experimental research in cyberaggression and media aggression

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What research methods can we use to study cyber/media aggression?

surveys

focus groups

interviews

content analyses

observations

…

experiments

Why do we use experiments?

Investigation of the manipulated effect under maximum control

Allows inference of causality

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Allows inference of causality
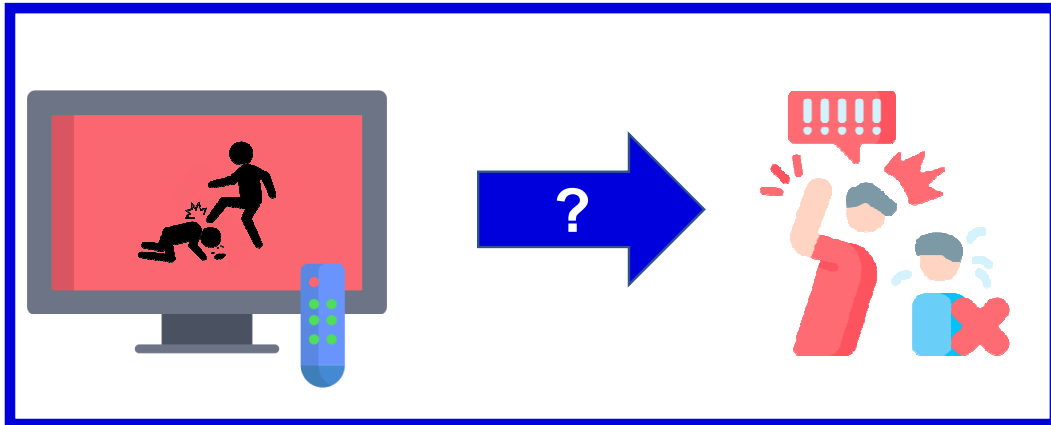
John Stuart Mill (1805-1873)

Method of agreement

X causes **Y**

Method of difference

If **X** does not occur, **Y** does not occur

Why do we use experiments?

Does watching violent TV make children behave aggressively?

maximum control

John Stuart Mill (1805-1873)

Method of agreement

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Method of difference

If **X** does not occur, **Y** does not occur

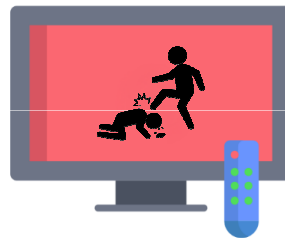# Terminology

Independent variable

    X

    manipulated variable

    factor

    it has 2 or more values/levels
(„**experimental conditions**")
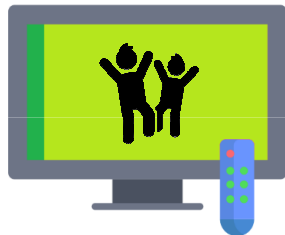
experimental
group

control
group

Photo by Anni Roenkae on Pexels

Terminology

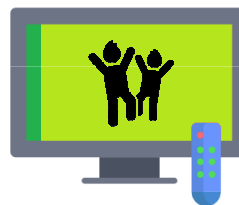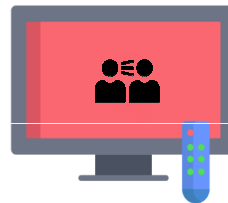**Independent variable**

X

manipulated variable

factor

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(„**experimental conditions**")

*What is the effect of **X** on Y?*
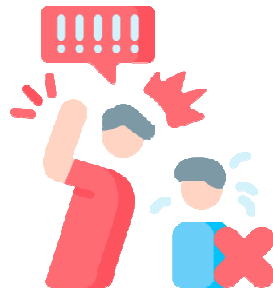
Terminology

Dependent variable

Y

outcome

*What is the effect of X on **Y**?*

Terminology

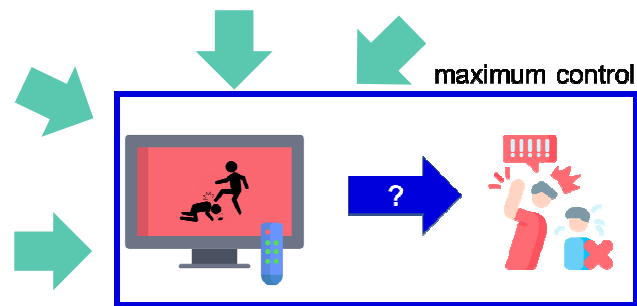**Extraneous variables,** „3rd variables"

z

Variables not of interest to the researcher

They might influence the studied effects

We hold them constant

Standardisation

of the research situation

maximum control

Terminology

Confounding variables

uncontrolled extraneous variables that co-vary with

the independent variable and could provide an

alternative explanation of the results

Terminology

Confounding variables

they change in the same way that an independent variable changes, its effect cannot be distinguished from the effect of the independent variable

we do not know if the results are due to the effects of independent variable / confounding variables / combination of those ⇨ **uninterpretable**

Terminology

Confounding variables

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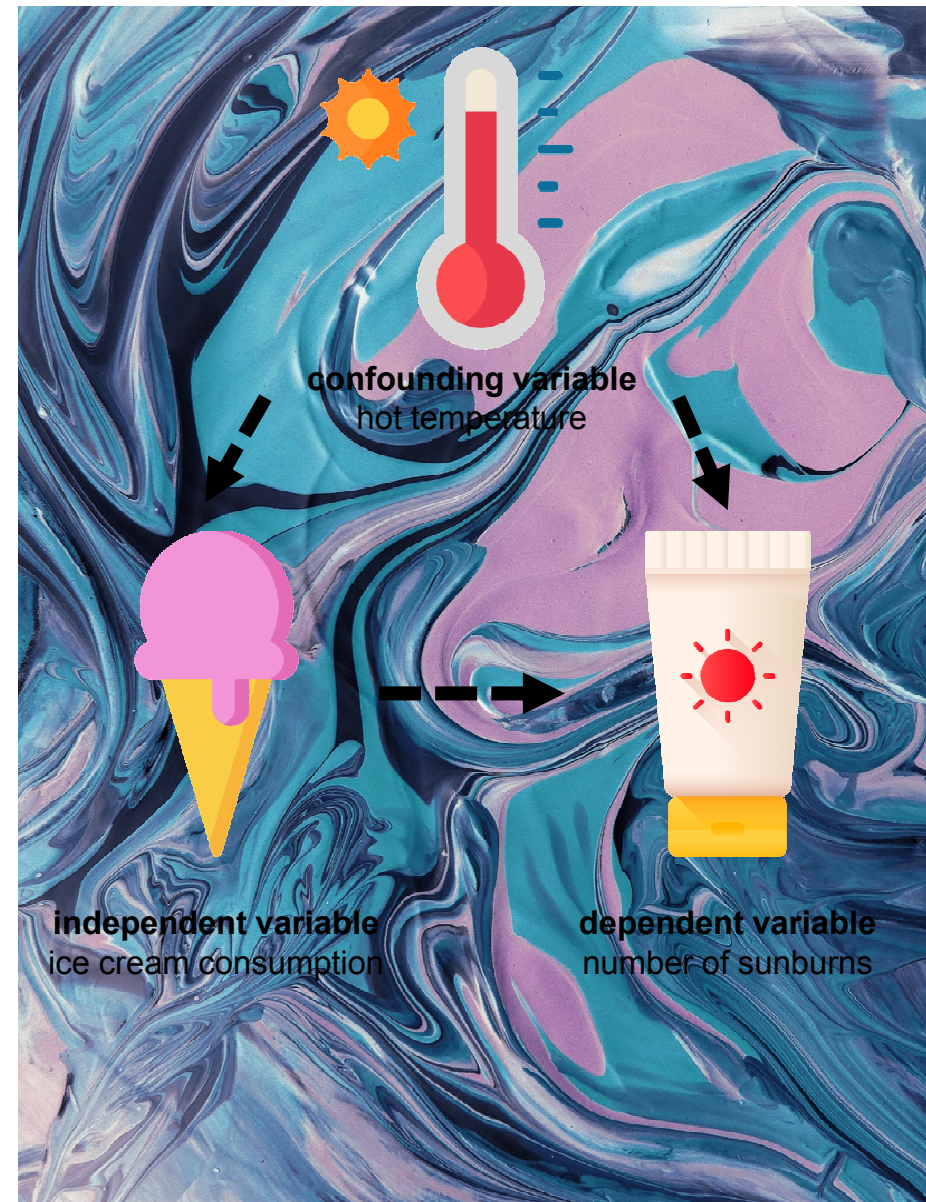**confounding variable**
hot temperature

independent variable
ice cream consumption

dependent variable
number of sunburns

How to deal with confounding variables?

1) Standardisation of the experimental situation

2) We hold extraneous variables constant

3) Random assignement

Summary

Basic characteristics of an experiment

1. We **manipulate independent variable(s)** – causes

2. We **measure dependent variable(s)** – outcomes

3. We **observe the co-variance of the independent and dependent** variables

4. We **control for possible confounding variables** – alternative explanations of changes in the dependent variable(s) = we **reduce the effect of 3rd variables**

Summary

Basic characteristics of an experiment

1. We **manipulate independent variable(s)** – causes… **X**

2. We **measure dependent variable(s)** – outcomes… **Y**

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John Stuart Mill (1805-1873)

correlation ≠ causality

Method of agreement

X causes **Y**

Method of difference

If **X** does not occur, **Y** does not occur

- **X** precedes **Y**

- **X** and **Y** are associated

- There is no plausible explanation for **Y** other than **X**

Group task

Think of an example of a media-related experiment about (cyber)aggression.

What is the independent („manipulated") variable?

What is the dependent variable (oucome)?

What are possible confounding variables? How would you

deal with them?

Advantages of experiments

Investigation of the manipulated effect **under maximum control** (= reducing the effect of 3rd variables)

Allows inference of **causality** (= X causes Y)

High **internal validity**
   = the degree of confidence that the causal relationship we are testing is not influenced by other factors or variables

   when we have a lot of control

Disadvantages of experiments

Low external validity – low **ecological validity**

„Lab environment"

Can we generalize to everyday life? To „normal" media consumption?

Balance of internal / external validity

Disadvantages of experiments

Low external validity – low **ecological validity**

„Lab environment"

Can we generalize to everyday life? To „normal" media consumption?

Balance of internal / external validity

more control … less „natural"

Disadvantages of experiments

Low external validity – low **ecological validity**

„Lab environment"

Can we generalize to everyday life? To „normal" media consumption?

Balance of internal / external validity

more „natural" … less control

Types of experiments

Lab experiment
highly controlled conditions
„artifical" situation, low ecological validity

Field experiment
everyday environment, reflecting real life, high ecological validity
low control, many possible counfounding variables

Natural experiment
independent variables occurs naturally in real life (e.g., policy changes, weather events, natural disasters, …)
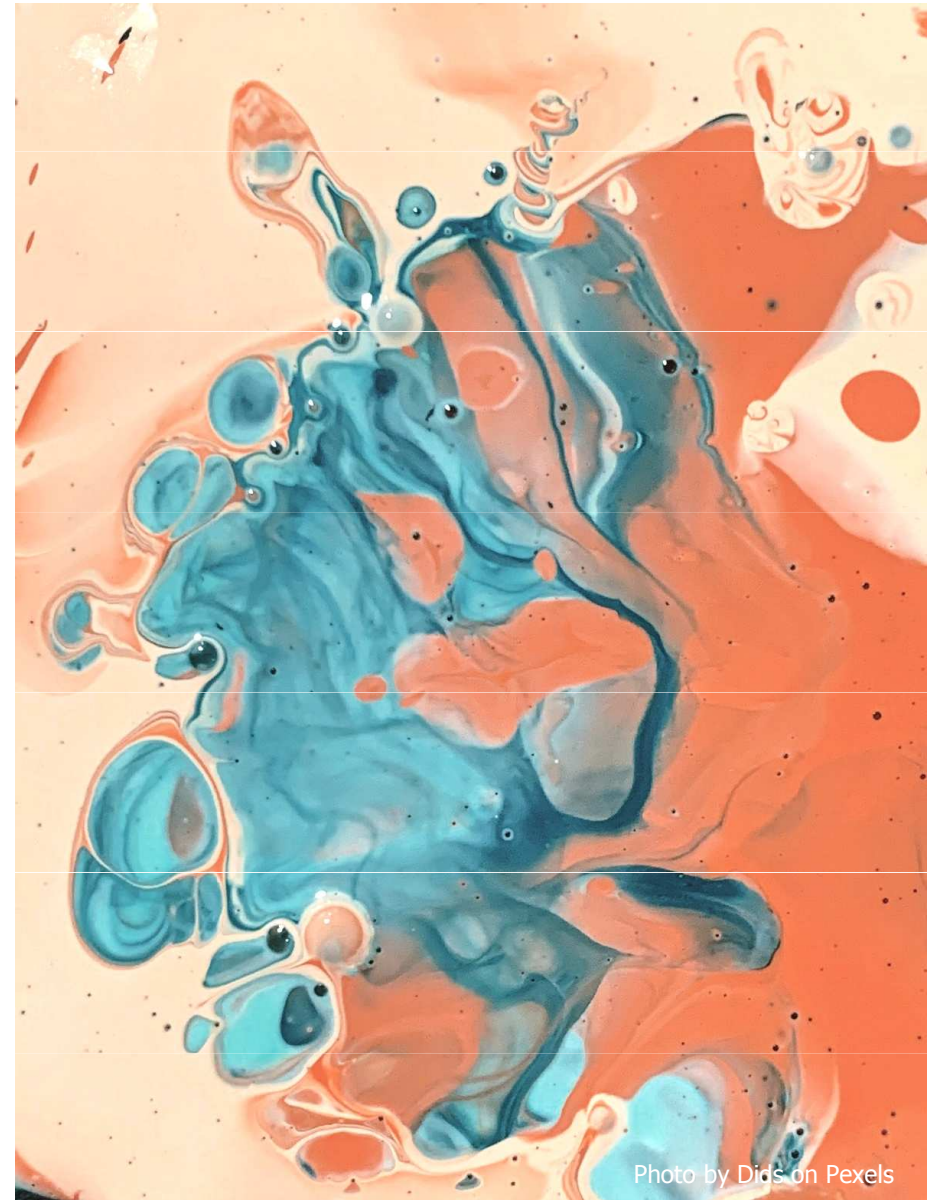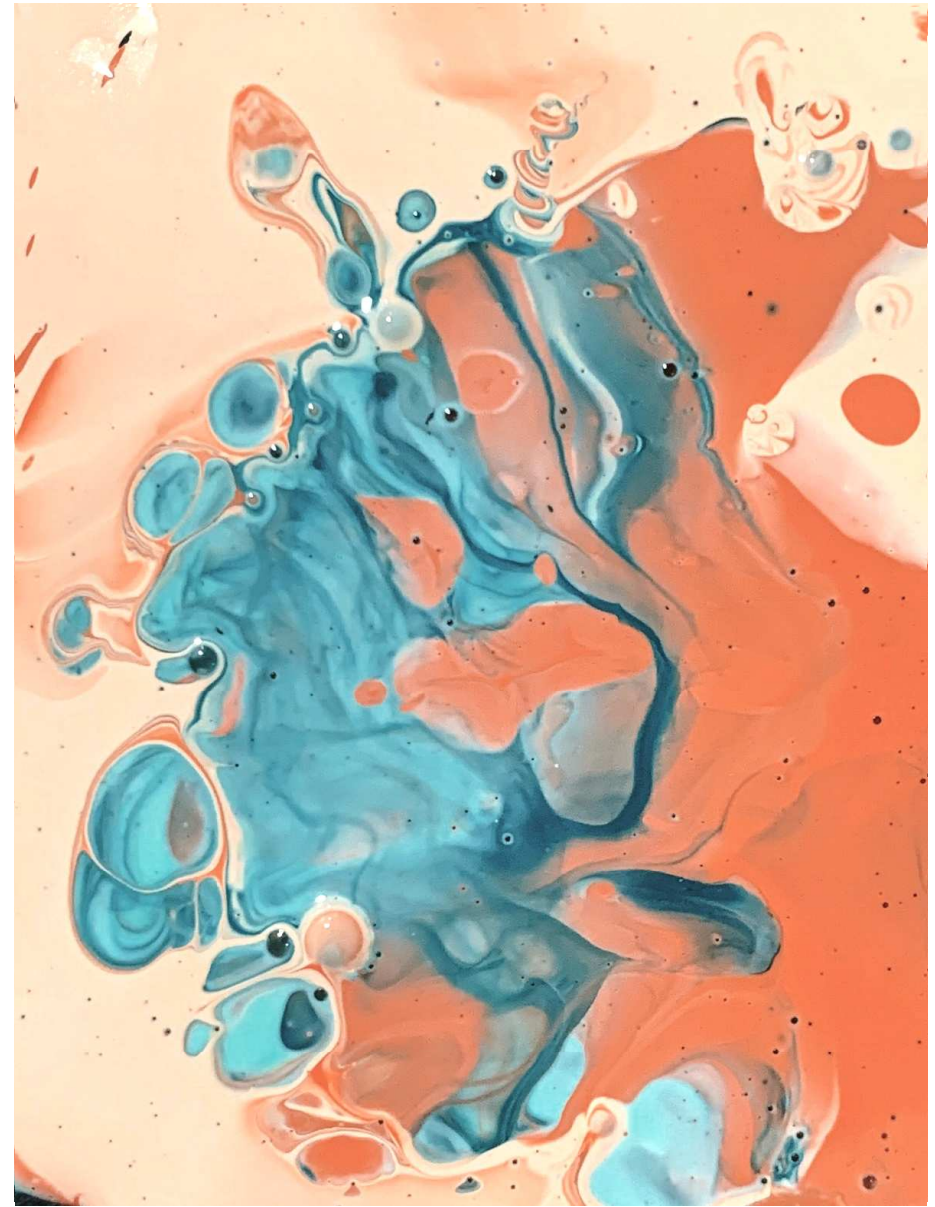researcher has no control over the independent variable(s)

Photo by Dids on Pexels

Types of experiments

Between subject design
we compare groups of people
different people in each experimental condition

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Within subject design
we compare the same people in different experimental
conditions
the same person is in all experimental conditions
repeated measurements

Types of experiments

Between subject design
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Within subject design
we compare the same people in different experimental conditions
the same person is in all experimental conditions
repeated measurements

Can you think of any problems connected to the second design?
different designs are suitable for different research questions

Example

Does playing aggressive video games with personalised avatars cause aggressive behaviour?

Experimental stimulus A – same group
1. playing aggressive video game with a non-personalised avatar
2. measuring aggressive behaviour

Experimental stimulus B – same group
1. playing aggressive video game with a personalised avatar
2. repeated measurement of aggressive behaviour

Comparing the measured aggressive behaviour **within the same people**

Ethics

Same rules as in other research designs

We need to **minimise risks and potential harm** for our participants

E.g., Do we need to show children realistic images of aggression and violence? How do we measure aggression? What is ethical?

We need to obtain **informed consent** from our participants

Photo by Dids on Pexels

Ethics

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What is an informed consent?

A form where we introduce the research

We explain **all potential risks and harms** from participation

But – can we reveal the research question? It might reveal also the nature of the experiment and influence our participants
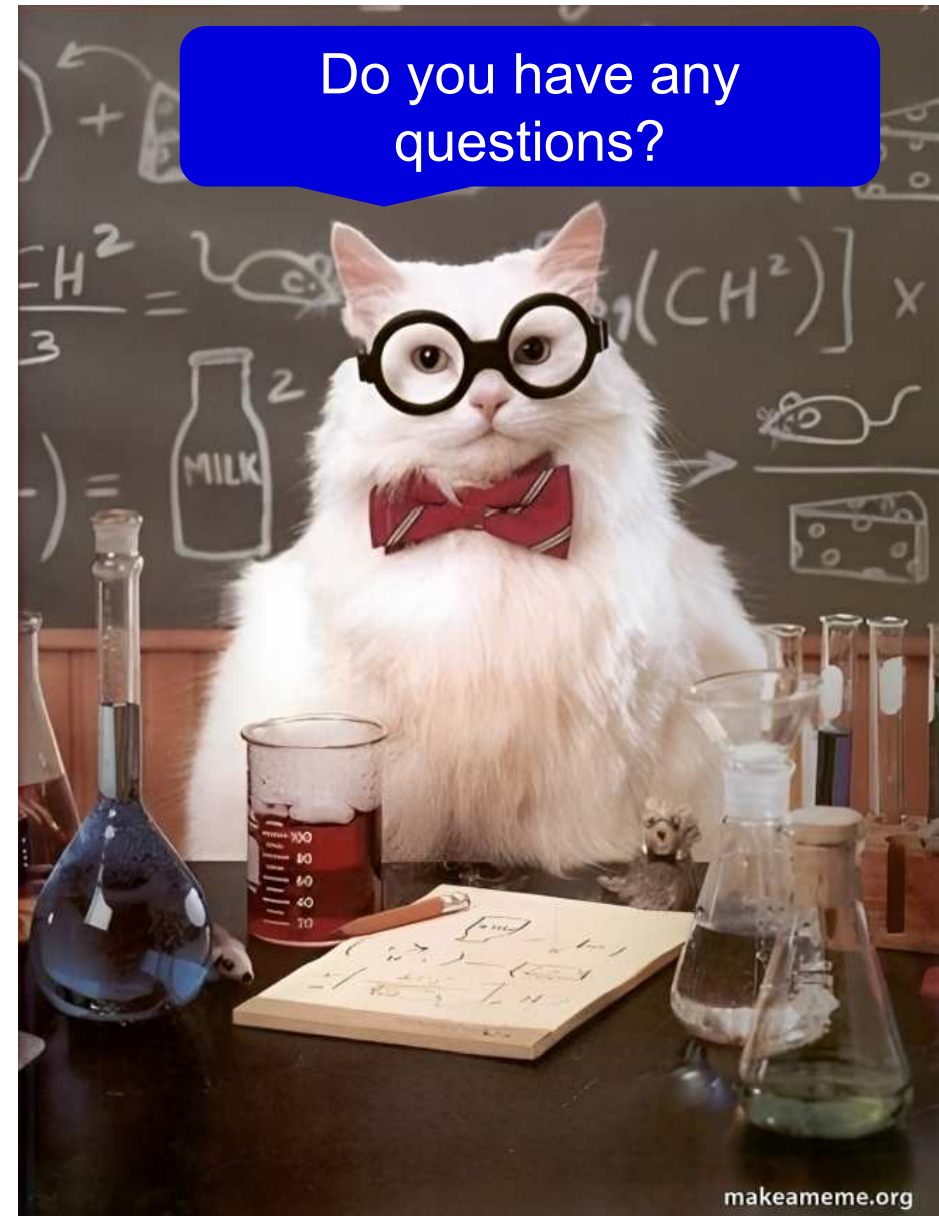
Debriefing

Experimental design

Investigation of the manipulated effect under maximum control

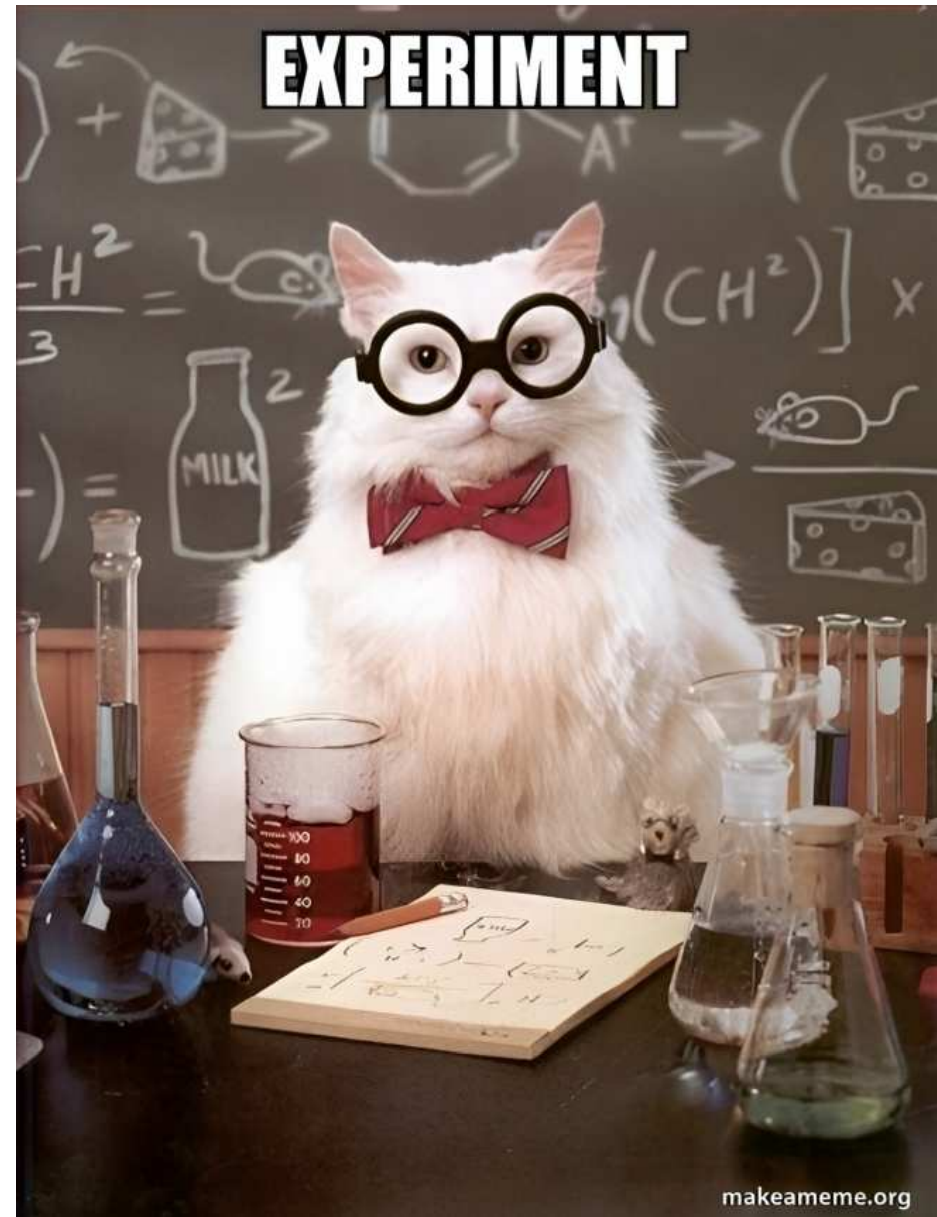Allows inference of causality

X precedes **Y**

X and **Y** are associated

There is no plausible explanation for **Y** other than **X**

Examples of experiments researching media aggression and cyberaggression

Bobo doll experiments – social learning

Albert Bandura (1925 – 2021)

Social learning theory / **social cognitive theory**

When observing other people, we are more likely to imitate their behaviour if it has been **rewarded** and if we perceive those people as **important** to us (parents, siblings, role models, celebrities)

Bobo doll experiments – social learning

Albert Bandura – **bobo doll experiments**

(Bandura et al., 1963)

Several experiments – real-life / on TV observations
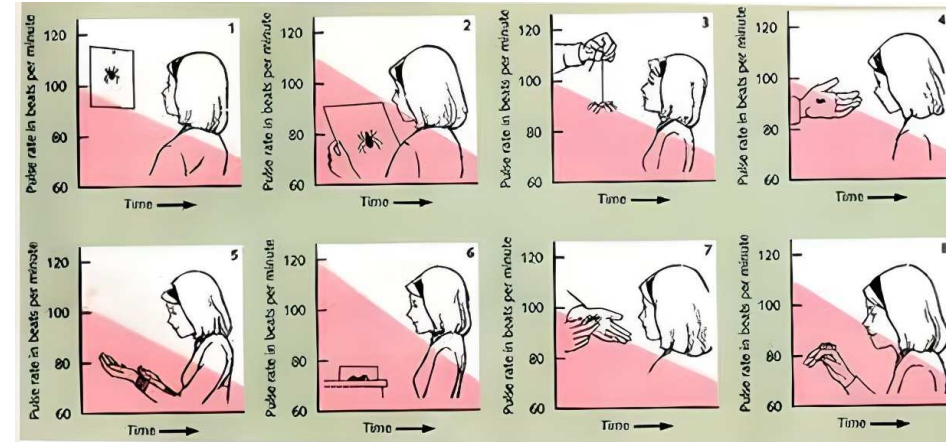
Children observed adults being aggressive toward the doll

⇨ imitated adults' behaviour (stonger effects for boys)

Effect of **reward and punishment**

3 experimental conditions
- Aggressor was rewarded
- Aggressor was punished
- No reward/punishment

Desensitisation theory

Long-term influence of media

Gradual habituation to repetitive violent content – e.g., over time, we do not perceive it as emotionally strong

Media content creators increase the quality and quantity of violence to gain attention

Desensitization and hate speech

What is cyberhate (online hate speech)?

Hateful and bias-based expressions via ICT

Attacking **group characteristics or group membership**

Motivated by an **intergroup bias** (connected to stereotypes and prejudice)

Exposure to hate speech increases prejudice through desensitization

Soral et al., 2018

N = 75 students, between-subject design

Laboratory experiment

Study about the relationship between web design and memory processes – reading 5 pages from discussion fora and *assessing esthetics of the page design*

Control group + experimental group → Neutral comments → Hateful comments

+ *Study about reception of Internet content*

Sensitivity to hate speech

Outgroup prejudice

Exposure to hate speech increases prejudice through desensitization

Results

Even relatively short exposure to hate speech desensitized participants to its offensiveness

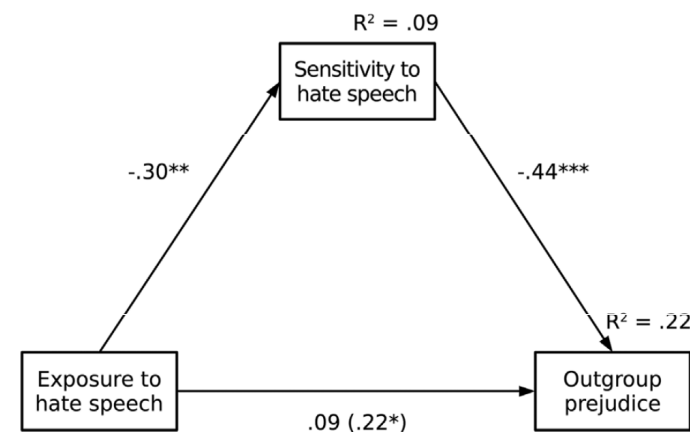Exposure to hate speech increased the level of prejudice (mediated by desensitization)

FIGURE 2 Causal mediation model of the effects of exposure to hate speech on sensitivity to hate speech and outgroup prejudice. Estimated coefficients are presented in the standardized form.
$^*p < .05, ^{**}p < .01, ^{***}p < .001$

Comfortably numb: Desensitizing effects of violent media on helping others

Bushman & Anderson, 2009

Study 1, N = 320 students, between-subject design

Lab experiment

2 conditions
- Violent videogame (Carmageddon, Duke Nukem, Mortal Kombat, Future Cop)
- Nonviolent videogame (Glider Pro, 3D Pinball, Austin Powers, Tetra Madness)

Survey about videogames

Overhearing staged fight … how long does it take to help the victim? If not during 3 minutes, did the participant admitted hearing the fight? How seriously did they rate it?
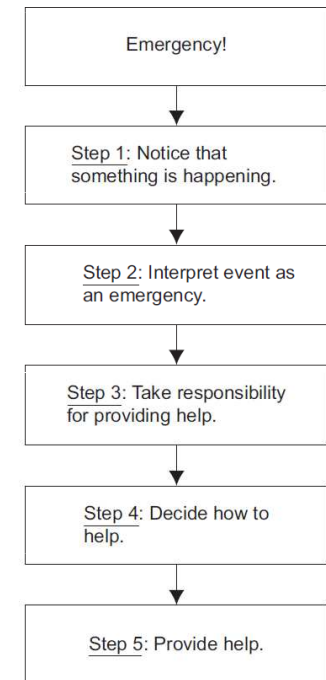

Emergency!

Step 1: Notice that something is happening.

Step 2: Interpret event as an emergency.

Step 3: Take responsibility for providing help.

Step 4: Decide how to help.

Step 5: Provide help.

Fig. 2. Five steps to helping. Adapted from Latané and Darley (1970).

Comfortably numb: Desensitizing effects of violent media on helping others

Results

Participants playing violent game
- Took significantly longer to help
- Were less likely to notice the fight
- Rated the fight as less serious

Comfortably numb: Desensitizing effects of violent media on helping others

Bushman & Anderson, 2009

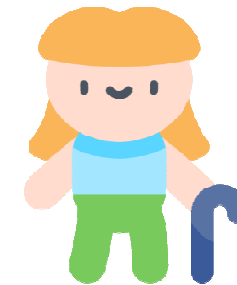Study 2, N = 162 adult moviegoers, between-subject design
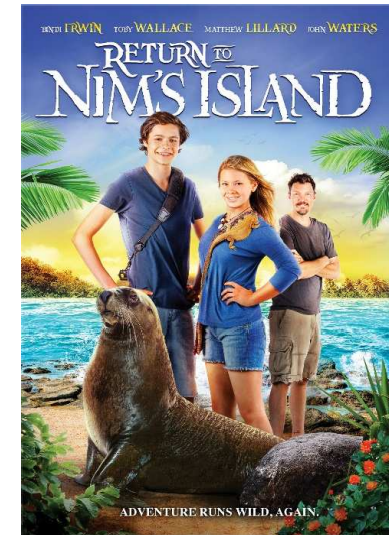Field experiment

2 conditions → Violent movie (The Ruins)
→ Nonviolent movie (Nim's Island)

Staged emergency: young woman who dropped her crutches

+ control (emergency before violent/nonviolent movie)
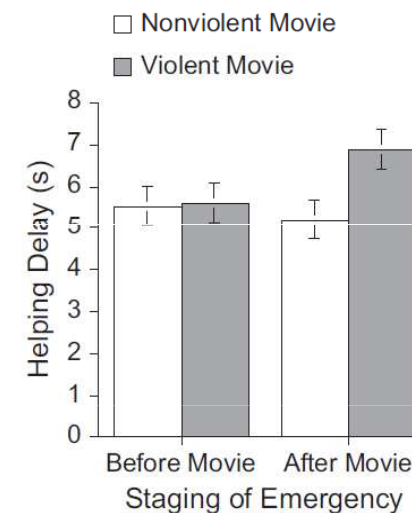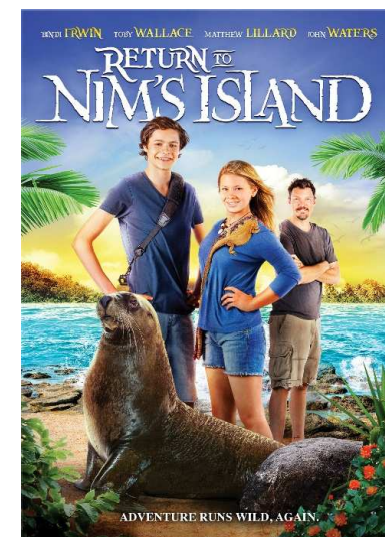
… how long does it take to help the woman?

Comfortably numb: Desensitizing effects of violent media on helping others

Results

People who saw violent movie
- Took longer to help

Limitations?

Violent video games and hostile expectations: A test of the General Aggression Model

What was the study about?

Bushman & Anderson, 2012
N = 224 students, between-subject design

2 conditions
- Violent videogame (Carmageddon, Duke Nukem, Mortal Kombat, Future Cop)
- Nonviolent videogame (Glider Pro, 3D Pinball, Austin Powers, Tetra Madness)

Three ambiguous stories … What happens next? What would the character do/say, think, or feel?

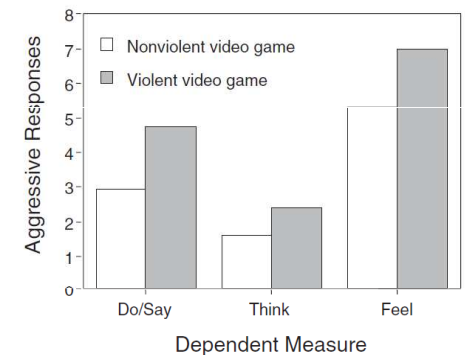**Results:** violent videogame – increase in hostile expectations

Figure 3   Number of aggressive responses for each dependent measure as a function of type of video game.

BUT – do media cause violence?

MOVIE VILLAINS THAT WE SECRETLY LOVE
These bad guys may be evil but they are undeniably charming
by CHRISTIAN SACLAO
10 months ago

off the mark.com by Mark Parisi
offthemark.com
SO... MAKIN' FUN OF ME?
Some people have a hostile attribution bias—they interpret the ambiguous actions of others as hostile actions.

Experimental studies
Low ecological validity
Short-term effects
Small effect sizes
Possible effects of many confound variables

Effect of media contents
Rewarding violence and aggression
Not/realistic violence
Not/showing the consequences for victims
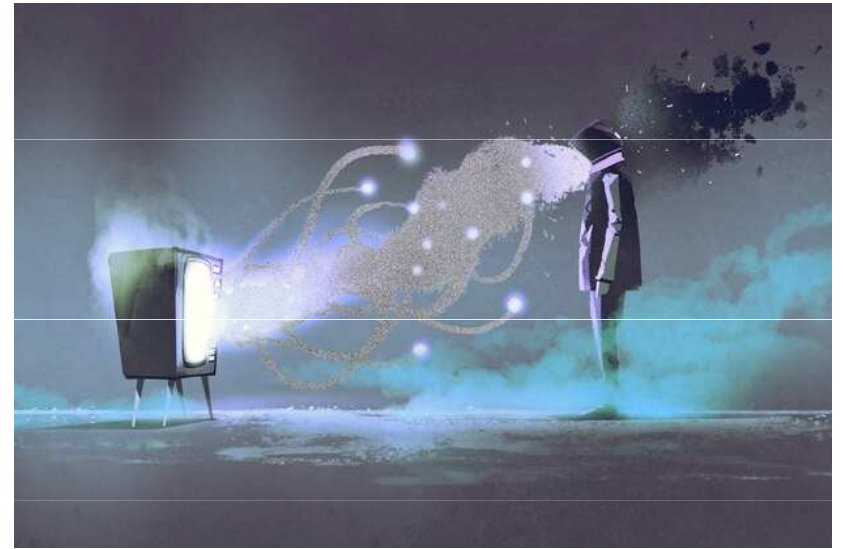Positive portrayal of the aggressor
Avatar personalisation

Effect of individual characteristics
Individuals' aggressivity, hostile attribution bias, normative belifs about violence, empathy, moral identity, …

Effect of social environments
Family conflicts, parental mediations, parental media consumption, …

BUT – do media cause violence?

Vulnerable population

The influence of the media on violent behaviour is less than the influence of socio-demographic characteristic

At the same time, these characteristics predict the preference and frequency of consumption of violent content

Boys

Adolescents (short-term effects)

Individuals with aggressive tendencies

Psychological characteristics (ADHD, personality disorders)

Other types of problematic behaviours (alcohol, drugs, school truancy)

Conflicts in family

Low SES

Other examples of experiments: Bystanders of Instagram aggression and their moral disengagement

Cyberbystanders – witnesses of cyberaggression

Moral disengagement – selective deactivation of the self-regulatory system and self-sanctions for immoral behaviour (Bandura 1999; 2002)

Victim blaming – rationalising the aggression as being provoked by the victim or as justified due to the victim's behavior or characteristics

Minimizing consequences – reframing of the harmful effects that aggression can have on its victims by ignoring them or minimising them

Bystanders of Instagram aggression and their moral disengagement

Online experiment, between-subject design
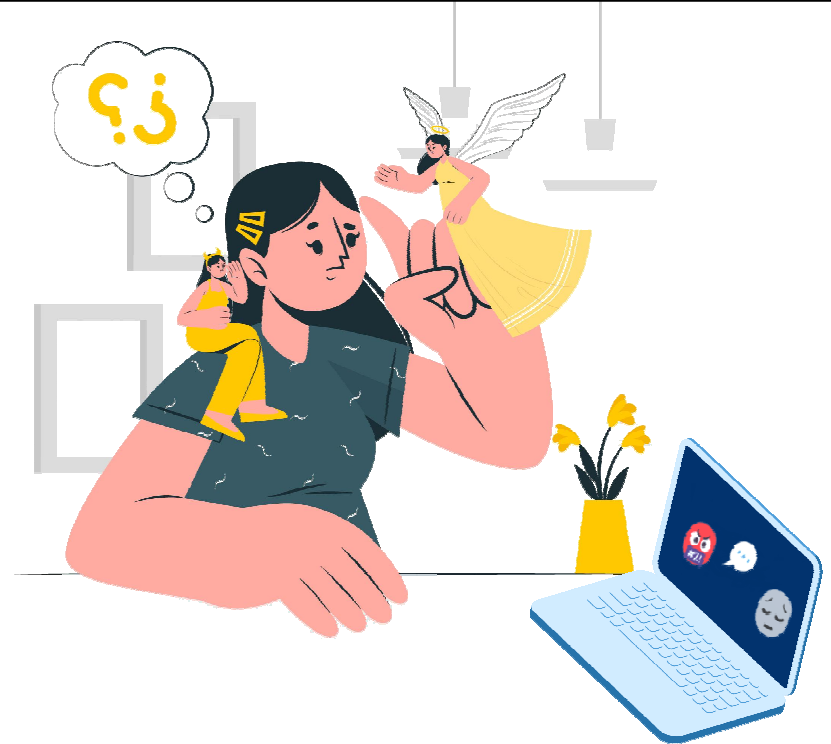
N = 658 Czech adolescents

2 conditions →
- IG post from a girl who is thinner + negative comments
- IG post from a girl who is plus-size + negative comments

Negative comments about the girl

How do bystanders (our participants) evaluate the incident? What is their moral disengagement?

What is the role of „anti-fat attitudes", exposure to body-positive online content, and gender?

Bystanders of Instagram aggression and their moral disengagement

Bystanders of Instagram aggression and their moral disengagement

Results

Experimental condition:
Girl who is plus-size / who is thinner

Victim blaming

Minimizing consequences

Anti-fat attitudes

Gender

Exposure to body-positive online content

Bystanders of Instagram aggression and their moral disengagement

Results

Experimental condition:
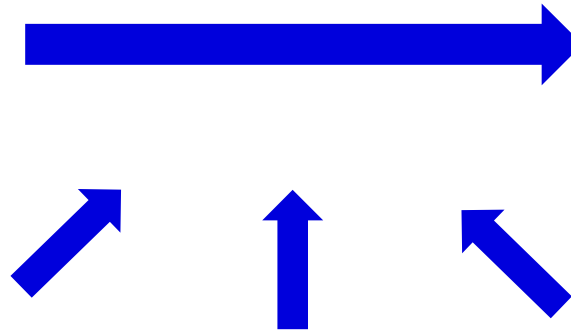**Girl who is plus-size** / who is thinner

Victim blaming

Minimizing consequences

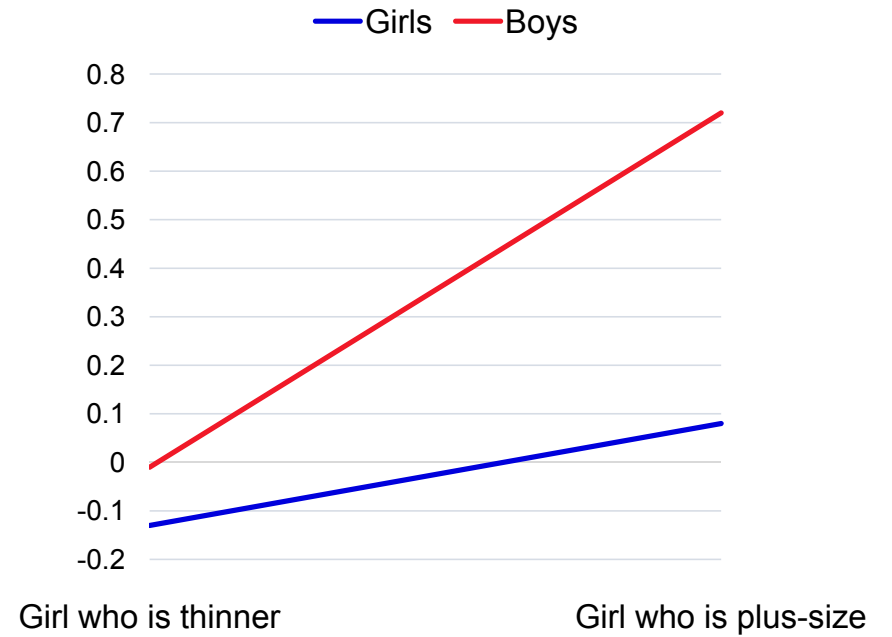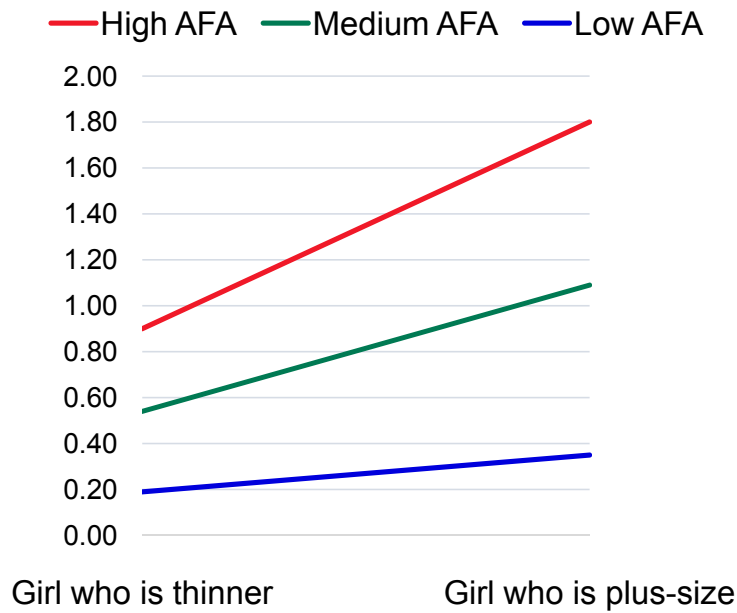**Anti-fat attitudes**

Gender (boys more)

Exposure to body-positive online content
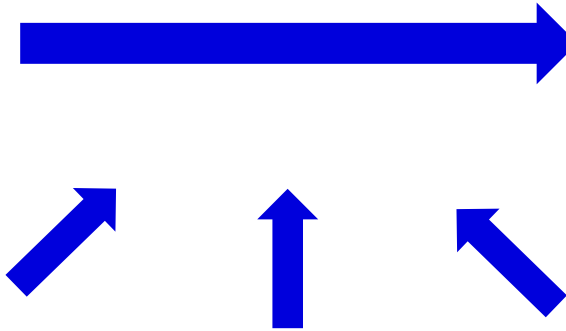
Bystanders of Instagram aggression and their moral disengagement

Victim blaming

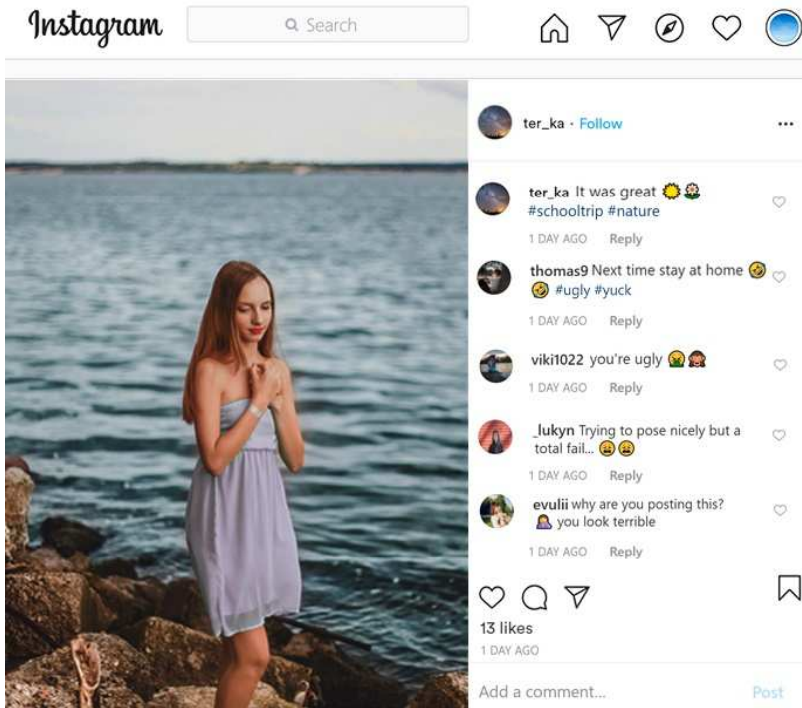## Results

Bystanders of Instagram aggression and their moral disengagement

Limitations?

Other examples of experiments: **Cyberostracism: Emotional and behavioral consequences in social media interactions**

Galbava et al., 2021

(Cyber)ostracism – social exclusion, being ignored or excluded (online)

H1a. Ostracized people will derive **lower satisfaction from belonging**, **self-esteem**, **control**, and **meaningful existence** than non-ostracized people.
H1b. Ostracized people will be in a **worse mood** than non-ostracized people.

H2. Ostracized individuals with higher social anxiety will experience **lower needs satisfaction**.

H3a. Ostracized people who are less satisfied in the needs of **belonging** or **self-esteem** will tend to choose a **prosocial response**.
H3b. Ostracized people who are less satisfied in the needs of **meaningful existence** or **control** will tend to choose an **antisocial response**.
H3c. Ostracized individuals with higher **social anxiety** will tend to choose an **evasive response**.

Cyberostracism: Emotional and behavioral consequences in social media interactions

N = 246, CZ

Laboratory experiment, between-subject design

Survey … „**group**" **task 1** … survey … „group" task 2 (interactions with „real people" - preprogrammed)

Task 1 – create profile, meet other „participants" and see their profiles, give likes (and receive likes from „others")

2 conditions

- participants received 1 like (ostracism)
- participants received 4 likes (control)

Annie

Hi, my name is Annie and I am 22 years old. I study chemistry at the Faculty of Science, MU in Brno. I like travelling and I watch series a lot. Also, I enjoy trying new things in my life, and that's one of the reasons why I took a diving course lately.

Likes 2   Like 👍

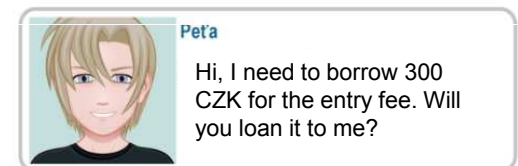# Cyberostracism: Emotional and behavioral consequences in social media interactions

Survey … „group" task 1 … survey … **„group" task 2** (interactions with „real people" - preprogrammed)

Task 2 – cooperative financial game. Goal was to maximize the groups' profit, minimum amount of money to play was 500 CZK, pariticipant received 800 CZK but one other „player" received only 200 CZK. The „player" asked participant for a loan.

Possible reactions:
- Loan money (prosocial)
- Refuse to loan money (antisocial)
- Choose to not to play the game (evasive)

Results: Most common pro-social reaction (opportunity of re-inclusion)
But – people in an ostracized condition choose an antisocial response more often than people in a control condition

Peťa
Hi, I need to borrow 300 CZK for the entry fee. Will you loan it to me?

Kája
Hi, I need to borrow 300 CZK for the entry fee. Will you loan it to me?
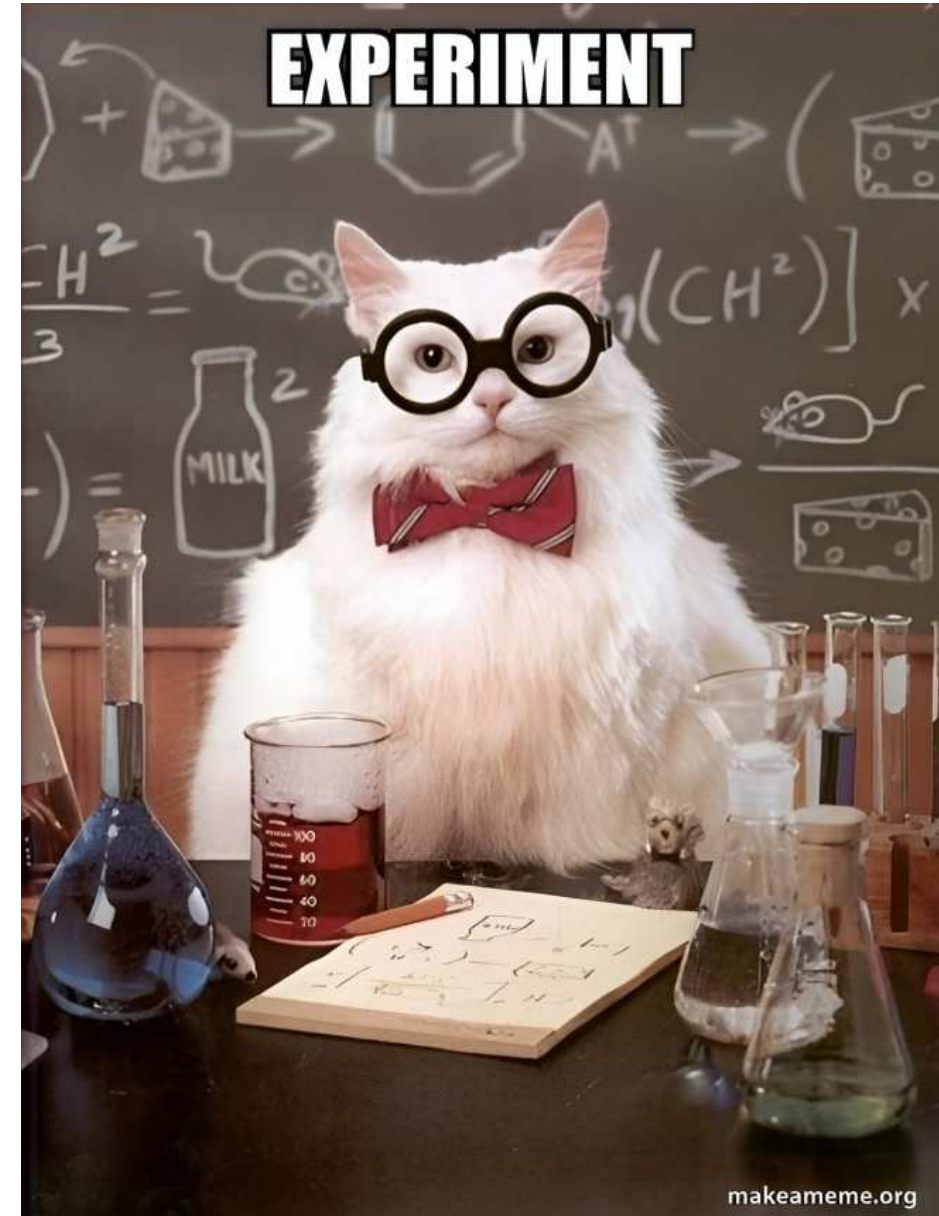
Experimental research in cyberaggression and media aggression

What **two main things** I learned today at the lecture?

Do I have any remaining **questions**?

https://padlet.com/cyber_marie/lfln8i99o374qs4

References

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