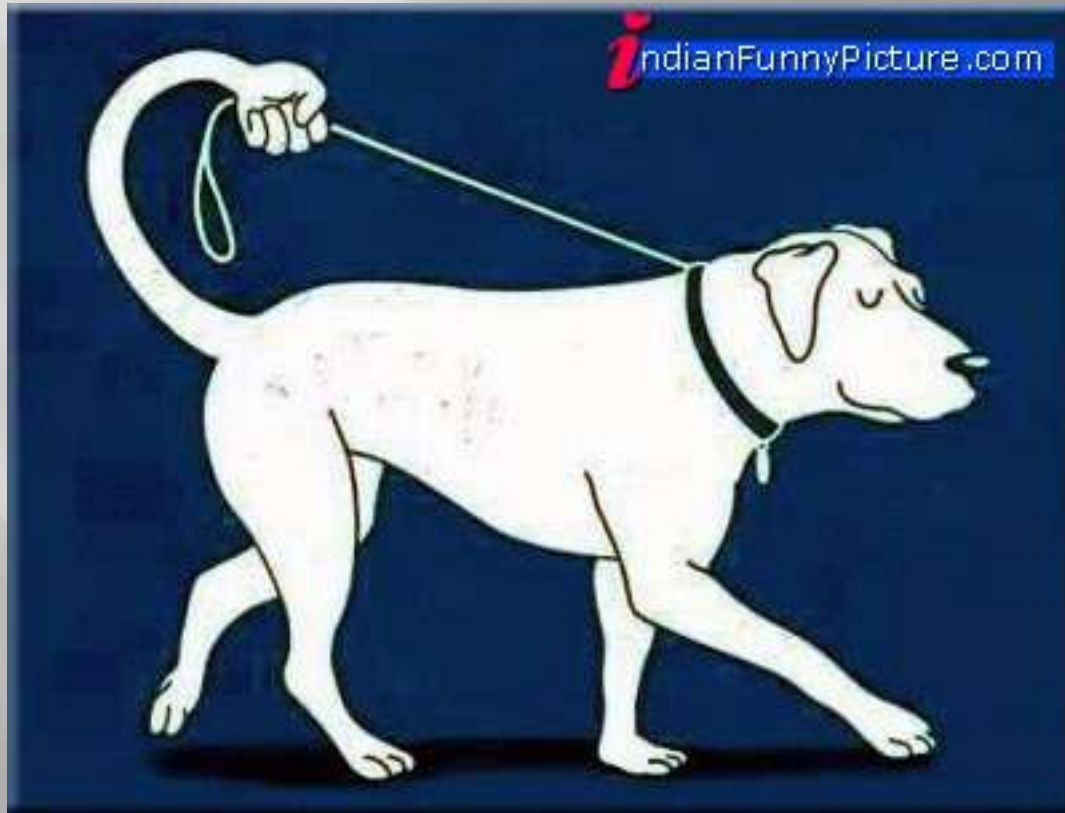


# The Principles of Human Struggle

## How Self-Control Fails and How It Works



# Irrational behaviour cont.

- ▣ *Expected Utility Theory:*

$$E_{\text{expectancy}} \times V_{\text{value}}$$



# Irrational behaviour cont.

- ▣ *Expected Utility Theory:*

$$E_{\text{expectancy}} \times V_{\text{value}}$$



# Irrational behaviour cont.

- ▣ *Expected Utility Theory:*

$$\text{Expectancy} \times \text{Value}$$



# Irrational behaviour cont.

## ▣ Planning Fallacy

*Daniel Kahneman*



# Irrational behaviour cont.

- ▣ **Planning Fallacy** – *Kahneman's examples:*

## Estimate

- ▣ *Plan to write a textbook on decision making*
- ▣ *Estimates of time needed based on available information on resources:*
- ▣ *1,5 to 2,5 yrs*

## Reality

- ▣ *Asked a colleague about other teams who attempted the same*
- ▣ **Only 40% success rate** (*others abandoned the plan*)
- ▣ *The others **took around 10 yrs***
- ▣ *Most teams' resources were better*

# Irrational behaviour cont.

- ▣ **Planning Fallacy** – *Kahneman's examples:*

## Estimate

- ▣ *New Scottish Parliament building – initial estimate*  
**£40 million**
- ▣ *Estimates of American homeowners of how much kitchen remodelling would cost:* **\$18,658**

## Reality

- ▣ *Finally completed for* **£431 million**
- ▣ *Real cost:* **\$38,769**

# Planning Fallacy

## People tend to...

- ▣ *Only consider best-case scenarios*
- ▣ *Disregard “statistics” on actual success rate of previous similar attempts*

## Why?

- ▣ *Because we do not consider unexpected events and random disruptive factors, which are **almost always** present*
- ▣ *As specific information on them is **unavailable**, we do not pay attention to them*



# Availability Heuristic

## People tend to...

- ▣ *Rely on immediate examples that come to mind when considering a situation / problem = AVAILABILITY HEURISTIC*
- ▣ *Make decisions based on this immediate information*
- ▣ *This information is **primed** by context (different cues remind us of different things)*
- ▣ *The cues may include attributes of the situation, of the present alternatives, of surrounding objects, previous events, inner states, etc.*
- ▣ *In addition, we seem to be “hard-wired” to pay more attention to certain pieces of information rather than others (losses, beginnings and endings, unique features, etc.)*

# Availability heuristic

**What the eye doesn't see the heart doesn't ache for.**

*(Czech proverb)*

**How powerful are priming effects?**

# Behavioural/social priming



Ever heard of  
subliminal  
advertising  
messages?

# Behavioural/social priming

*Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. Journal of Personality and Social Psychology, 71(2), 230-244.*

## **STEREOTYPE PRIMING**

*Showing participants words associated with certain concepts can influence their behaviour*

- ▣ **EXPERIMENT 1: Priming rudeness made participants interrupt the experimenter more quickly and frequently**
- ▣ **EXPERIMENT 2: Priming old age made participants walk more slowly**
- ▣ **EXPERIMENT 3: Subliminally priming African American stereotype made participants react with more hostility to the experimenter's request**

# Behavioural/social priming

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71(2), 230-244.

## STEREOTYPE PRIMING – problems?

- ▣ **EXPERIMENT 2: Priming old age made participants walk more slowly:** *“For the elderly prime version, the critical stimuli were worried, Florida, old, lonely, grey, selfishly, careful, sentimental, wise, stubborn, courteous, bingo, withdraw, forgetful, retired, wrinkle, rigid, traditional, bitter, obedient, conservative, knits, dependent, ancient, helpless, gullible, cautious, and alone.”*

# Behavioural/social priming

Messner, C., & Brügger, A. (2015). Nazis by Kraut: A playful application of moral self-licensing. *Psychology*, 6(9), 1144-1149.

- ▣ **Drinking sauerkraut juice as opposed to less healthy drinks makes people respond more positively to Nazi-esque right wing ideology, *which supports the idea of moral licensing*** (“If I do something really beneficial though unpleasant, I have a right to do loosen my moral standards for a while.”)



# Behavioural/social priming

- ▣ **Is it plausible that our mind works this way?**
- ▣ Most studies on behavioural/social priming have **NOT** been replicated
- ▣ What is going on?
  
- ▣ *Whether and how a prime will affect our behaviour, attitudes and feelings depends on what motivational value it already has to us and what associations the prime triggers in us based on our unique experience.*

*If you hate Coke, that subliminal ad won't work on you. If you sell Coke or work for the Coca-Cola company, it probably won't work either.*



**What *definitely* works**

# Classical Conditioning

## ▣ I. P. Pavlov

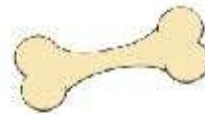


# Classical Conditioning

Before conditioning

**FOOD  
(UCS)**

**SALIVATION  
(UCR)**



**BELL**

**NO RESPONSE**



During conditioning

**BELL +  
FOOD  
(UCS)**

**SALIVATION  
(UCR)**



After conditioning

**BELL  
(CS)**

**SALIVATION  
(CR)**



# Classical conditioning

Why is this important to us (humans)?

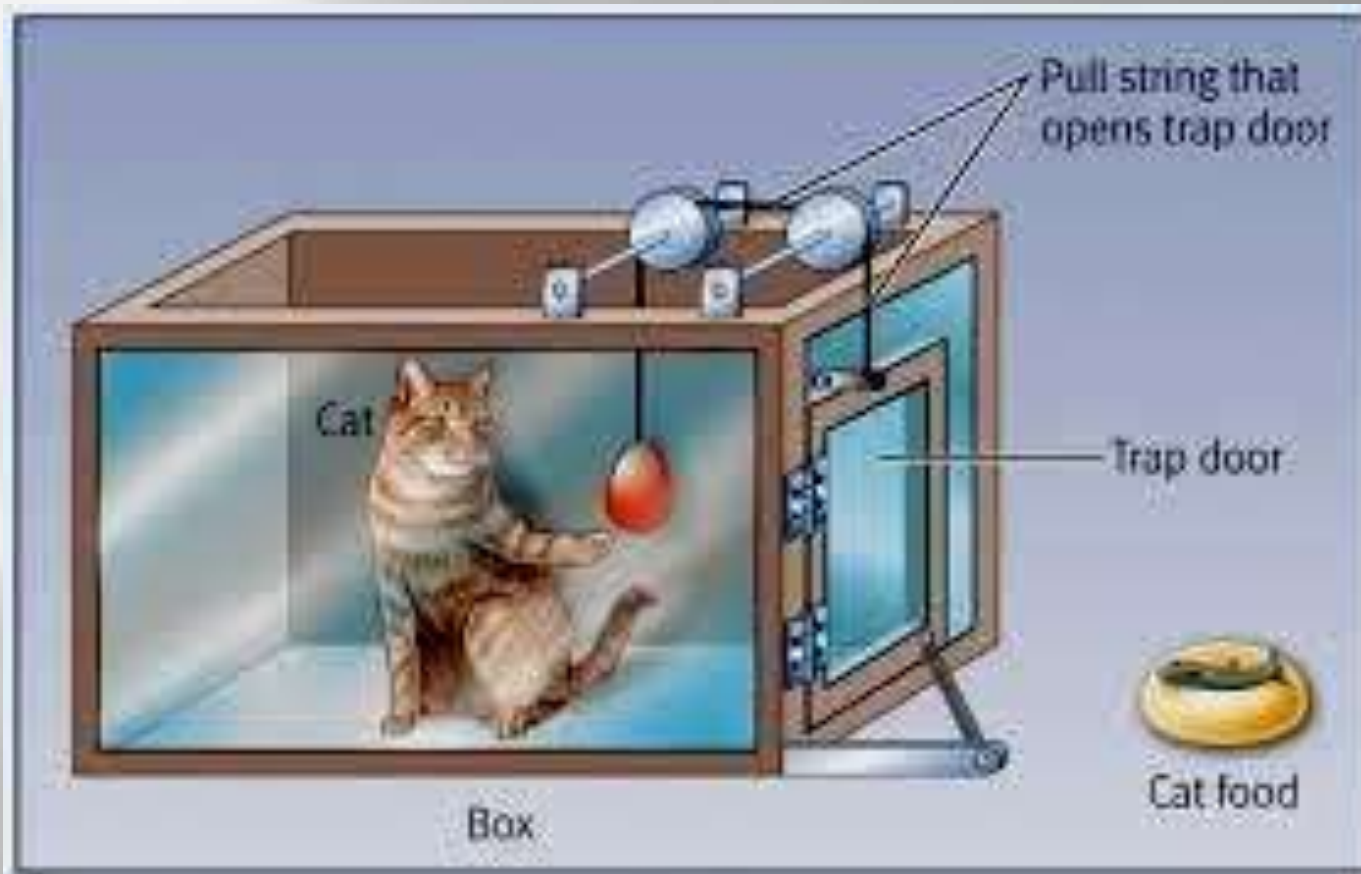
- ▣ *Salivation in Pavlov's dogs signals increased anticipation of reward = increased need*
- ▣ *Cues in the environment previously associated with motivational states will become **triggers of those motivational states** in the future regardless of whether the reward/punishment is currently present or not.*

# Instrumental learning

## ▣ E. L. Thorndike



# Instrumental learning



# Instrumental learning

Why is this important to us (humans)?

- ▣ *Objects and situations can trigger automatic behavioural responses = HABITS*
- ▣ *Intertwined with classical conditioning (a stimulus triggers a motivational state as well as a behavioural response)*

# Summary: Why our behaviour is not rational

- ▣ *Our decisions and behaviours are dependent on immediate (here-and-now) cues previously associated with motivational states or general human heuristic systems rather than global judgment of advantages and disadvantages in different situations*
- ▣ *While we are capable of making **relatively** more global judgments, the quality and perceived necessity of these judgments is ALSO influenced by the present context*
- ▣ *This is because our capacity of information processing is limited*



**Fighting off bias:**  
*How to resist temptations?*

# How to resist temptations?

## Emotion regulation

- ▣ *J. Gross*
- ▣ **PREVENT THOSE PESKY LITTLE TRIGGERS FROM ENTERING THE BRAIN AND PRODUCING AUTOMATIC RESPONSES!!!**
- ▣ **How...?**



# How to resist temptations?

## Emotion regulation

- ▣ *Choose situation*



# How to resist temptations?

## Emotion regulation

- ▣ *Choose situation*
- ▣ *Change situation*



# How to resist temptations?

## Emotion regulation

- ▣ *Choose situation*
- ▣ *Change situation*
- ▣ *Divert attention*



# How to resist temptations?

## Emotion regulation

- ▣ *Choose situation*
- ▣ *Change situation*
- ▣ *Divert attention*
- ▣ *Change thinking*



# How to resist temptations?

## Emotion regulation

- ▣ *Choose situation*
- ▣ *Change situation*
- ▣ *Divert attention*
- ▣ *Change thinking*
- ▣ *Act as if nothing happened*



# How to resist temptations?

Emotion regulation – EFFECTIVENESS:

- ▣ **Situation selection**
- ▣ **Situation modification**
- ▣ *Attentional deployment*
- ▣ *Cognitive change*
- ▣ *Response modulation*











# Reappraisal v. suppression

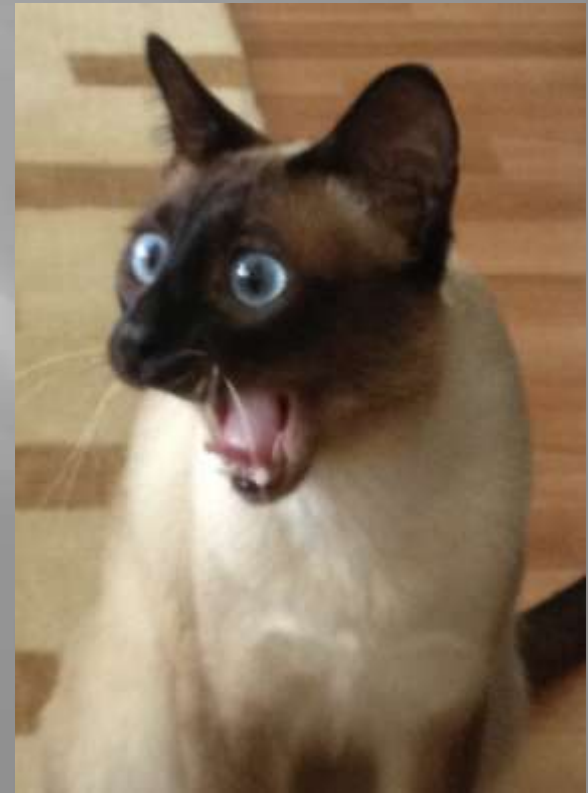
Gross, J. J. (1998). *Antecedent-and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology.* *Journal of Personality and Social Psychology*, 74(1), 224.

## Three groups watching a disgusting movie:

	Facial expressions	Physiological reactions
Group 1: No instruction		
Group 2: "Think of the movie in way that you'll feel nothing."		
Group 3: "Behave in a way so that others think you feel nothing."		

# Human brain

**The fact that we can exercise self-control should not be taken for granted...**



# Analogy of three brains

- ▣ **Reptilian brain** - *basic reflexes*



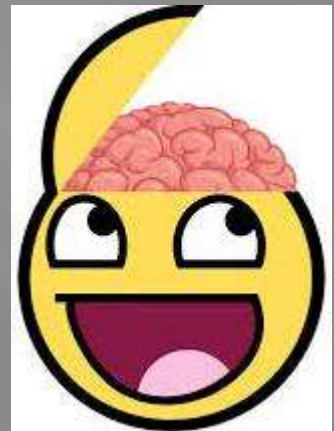
# Analogy of three brains

- ▣ **Reptilian brain** – *basic reflexes*
- ▣ **Mammalian brain** – *emotions*



# Analogy of three brains

- ▣ **Reptilian brain** – *basic reflexes*
- ▣ **Mammalian brain** – *emotions*
- ▣ **Human brain** – *reasoning, mental representation, planning – delay of gratification*



**How does self-control work?**

# How does self-control work?

- ▣ Based on inhibition of automatic responses

blue

green

red

yellow

- ▣ *Turning our attention AWAY from what unwanted thought/feelings/objects*
- ▣ *Turning our attention TOWARDS what we need to deal with*
- ▣ *Switching attention back and forth when needed*
- ▣ *Being able to manipulate with ideas in our minds*
- ▣ **EXHAUSTING!**



# Is our self-control like a muscle?

- ▣ **Ego depletion**
- ▣ *Roy Baumeister*





# Ego depletion

Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). *Ego depletion: is the active self a limited resource?* *Journal of personality and social psychology*, 74(5), 1252-1265.

## Three groups:

Instructed to eat:	Group 1	Group 2	Group 3
			No food
Persistence on subsequent unsolvable figure-drawing task	18.9 min.	8.85 min. + more fatigue	20.86 min.

# Our self-control is like a muscle

*Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? Psychological Bulletin, 126(2), 247-259.*

- ▣ *It is a **limited but renewable resource** – it can get depleted*
- ▣ *It is **common for all types of self-control** (inhibition of automatic reactions)*
- ▣ *This means that if we use it up for one activity (studying for a test) there won't be enough for another activity (being nice to your boss)*

**blue**

**green**

**red**

**yellow**

# Our self-control is like a muscle

*Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? Psychological Bulletin, 126(2), 247-259.*

## **GOOD NEWS:**

- ▣ *It can be restored – rest, motivational reinforcement, good plans/structure*
- ▣ *It can be used economically when necessary*
- ▣ *It can be trained*
- ▣ **OVERTRAINING IS NOT TRAINING!!!**

# Ego depletion - real?

COVER STORY

READ THIS FIRST.

MARCH 6 2016 8:02 PM

## Everything Is Crumbling

An influential psychological theory, borne out in hundreds of experiments, may have just been debunked. How can so many scientists have been so wrong?

By Daniel Engber



14.1k



1.3k



618

Slate

FROM NEW YORK MAGAZINE



11 TV Shows That Fill the Abbey Life



Trump Punch Says I Have

# Ego depletion - real?

- ▣ Not sure which tasks are depleting in which situation and how the mechanism works in general
- ▣ *Meta-analyses of ED research: Self-control is probably a much more complex and diverse phenomenon that the Ego Depletion Model assumes = the theory oversimplifies how self-control works*

# Irrationality in science

- ▣ **Confirmation bias („Experimenter Effect“)** – *overstate evidence supporting my theory and neglecting evidence against my theory*
- ▣ **Congruence bias** – *looking for evidence to support my hypothesis rather than test alternative hypothesis*
- ▣ **Observer-expectancy effect** – *subconscious manipulation of experimental situation in order to achieve the desired effect*
- ▣ **Hindsight bias** – *modifying or creating hypotheses after results are known, „I knew it all along“ fallacy*
- ▣ **Availability heuristic** – *only considering “here-and-now evidence”, not the entire body of research*
- ▣ **Publication bias** – *non-significant results are seen as unimportant, hence unpublishable*

# “Good science”

*Mind the principles of inductive reasoning...*

- ▣ One research study is never enough to draw conclusions
- ▣ Hypotheses have to be formulated before conducting new research, should be based on previously well-established observations
- ▣ Finding plausible explanations for what already happened is easy – **this is not science!!!** These explanations have to be tested as hypotheses, and alternative explanations have to be tested as well
- ▣ All results (positive, negative and inconclusive) have to be reported
- ▣ No adjustments in data or hypotheses can be made post-hoc
- ▣ Theory has to be formulated very carefully so that there are no logical errors or unfounded assumptions

# More cognitive biases...

[https://en.wikipedia.org/wiki/List\\_of\\_cognitive\\_biases](https://en.wikipedia.org/wiki/List_of_cognitive_biases)



# Summary

- ▣ **Automatic responses have primacy over deliberate actions**
- ▣ **Automatic responses are often non-conscious and undisputed**
- ▣ **Automatic responses are context-dependent**
- ▣ **Overcoming automatic responses requires exercise of WILL which seems to be based on limited resources**
- ▣ **It is therefore best to avoid triggers of automatic responses rather than trying to suppress the responses**

# Additional materials

- ▣ Before attempting the second quiz, watch the video on the “Stanford marshmallow experiment” available in the interactive syllabus in the IS
- ▣ Recommended materials:  
*Roy Baumeister’s videos on ego depletion (for research examples)*  
*James Gross’s video on emotion regulation*

# The Principles of Human Struggle



Thank you!