Persuasion and Persuasive Technology

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Learning objectives

- Define persuasion
- Explain why it is important
- Describe persuasive technologies (PT)
- List its application areas with examples
- Explain personalization of PT and how it is done
- Describe the ethics of persuasion

Will you drink these?

- Friends on social media say you should drink it
- Health authority says you should drink it
- Limited in edition/scarce
- I drank something you offered me in the past without questions
- You promised to do what I asked you to do
- You like exploring new drinks

Persuasion

- Changing a person's attitude or behaviour without coercion
  - Commonly used by salespeople, fundraisers, marketers, recruiters, etc.
- There are many tactics (influence/persuasive principles) that are used by these people to influence others
- The communicator's prime goal at the time determines which influence principle they should use
  - When cultivating a positive relationship -> *liking*
  - When reducing uncertainty after a relationship has been established -> *social proof, authority*
  - When actual behaviour change is the goal after a long established relationship -> *consistency*

Changing Human Behaviour

- ## What is human behaviour?
  - An individual's habits, decisions, courses of actions, goal-setting, attitudes
- ## Changing human behaviour
  - Setting the environment so that it supports, cues, triggers the desired behaviour
  - Motivating people to do certain things
- ## Theories of Persuasion from Psychology
  - Persuasion can be used to influence participation in a social network

Human behaviour

- Human behaviour. The way people act, conduct themselves, their habits, emotions and values
- Can be biological; I write with my right hand
- Can be based on social interactions/identity; how one acts on Facebook could differ from how they act on LinkedIn
- Can be based on intellectual abilities; some people are more challenged by problem solving summary writing
- Can be cultural; people of certain cultures respect people in authority and will most likely do what they (authority figures) say
- Can be based on status; a new iPhone is out. To maintain one's social status, one needs to upgrade
- Can be based on gender; certain genders are more nurturing

Why change human behaviour?

- Social good
  - Stop bullying, start treating people better
- Health benefits
  - Lose weight, eat better, be more active, smoking cessation
- Economic benefits
  - Buy certain products (phone, clothes, books etc.)
- Academic rewards
  - Do better in school

Challenges of changing human behaviours

- People behave differently
  - How can a system adopt to a particular person's behaviour
- Motivation can be intrinsic or extrinsic
  - How can both be implemented in a system
- Ethical issues of behaviour change
  - Is it ethical to persuade someone to shop for certain products? To adopt healthier lifestyles?

Persuasive strategies used in designing Persuasive Technologies

- BJ Fogg's 7 persuasive strategies
  - **Reduction** – Simplifying a task, e.g., one click by Amazon, click to share post
  - **Tunneling** – Sequence of steps to accomplish a task, e.g. install a new application
  - **Tailoring** – Customizing application to the user, e.g. When logged in, no need to **re-enter** shipping address on Amazon, being able to see your previous orders
  - **Suggestion** – "Recommended items similar to your past purchases" on Amazon, Netflix, YouTube etc.
  - **Self-monitoring** – Track one's behaviour e.g. past orders on Amazon, completed courses on Coursera
  - **Surveillance** – observe user in order to influence a target behaviour, e.g. surveillance camera in stores to prevent theft
  - **Conditioning** – reinforcement or punishment to a user to influence a target behaviour, e.g. rewards (badges, points) in Stack Overflow
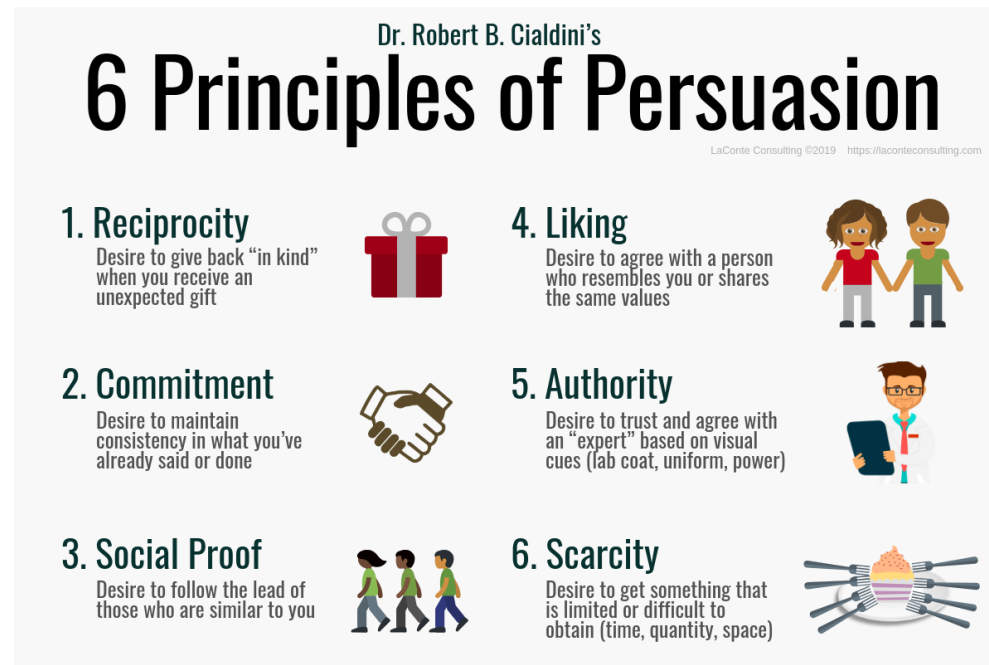
Persuasive strategies used in designing Persuasive Technologies

- Cialdini's 6 persuasive strategies
  - Reciprocity
  - Commitment
  - Social proof
  - Liking
  - Authority
  - Scarcity
- Recently added a 7th
  - Unity

Dr. Robert B. Cialdini's

6 Principles of Persuasion

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1. Reciprocity
Desire to give back "in kind" when you receive an unexpected gift

4. Liking
Desire to agree with a person who resembles you or shares the same values

2. Commitment
Desire to maintain consistency in what you've already said or done

5. Authority
Desire to trust and agree with an "expert" based on visual cues (lab coat, uniform, power)

3. Social Proof
Desire to follow the lead of those who are similar to you

6. Scarcity
Desire to get something that is limited or difficult to obtain (time, quantity, space)

https://laconteconsulting.com/2019/07/08/mlms-psychology-of-influence/

Reciprocity

- Desire to give back when we receive an unexpected gift
- Span is not unlimited; desire to repay fades over time
- Following people in social media who follow us
- Buying products from companies that give us discounts

z started following you. 1h   **Follow**

na started following you. 2h   **Follow**
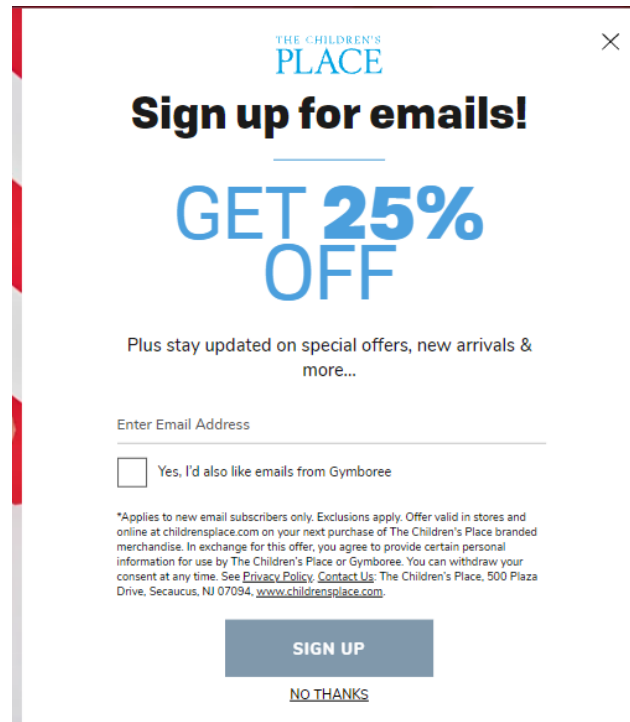
urchyxe started following you. 1d   Following

Commitment (& consistency)

- Desire to maintain consistency in what we have said or done

- Inconsistency is undesirable; people tend to be consistent so they commit to what they said they would do

Social proof

- We look onto others to determine what we think is correct
- When unsure how to act, we look to see how others are acting/behaving

Liking

- Desire to agree with a person who resembles you (who you like) or shares same values as you

- We follow people on social media based on what we like about people

- Liking can be
  - Physical attraction
  - Similarity – opinions, views, culture, location etc.

Authority

- Desire to trust and agree with an expert (sometimes based on visual cues such as lab coat, religious dressing etc.)

- Obedience to authority figures

Top review from Canada

Product description

Top reviews from other countries

Review

"Robert Cialdini has done the impossible: he has improved a masterpiece. The new version of *Influence* is a marvelously rich and engaging account of the subtle power that people exert on each other." -- **Daniel Kahneman, Nobel Prize laureate and author of *Thinking, Fast and Slow* and *Noise***

"If there is only one book you'll ever read, if there is only one expert whose advice you'll trust, it should be this book and this author, Robert Cialdini." -- **Angela Duckworth, author of *Grit* and founder and CEO of Character Lab**

"This is the most important book ever written about the science of persuasion, and it just keeps getting better. I can't imagine a more fascinating, more practical read." -- **Adam Grant, *New York Times* bestselling author of *Think Again* and *Originals* and host of the TED podcast *WorkLife***

"Anyone who wants their abilities in communication or negotiation to be at their highest level *has* to read Robert Cialdini's book *Influence*. Your knowledge base is simply incomplete without it." -- **Chris Voss, author of the *Wall Street Journal* bestseller *Never Split the Difference***

Scarcity

- Desire to get something that is difficult to get or limited
- Opportunities seem more valuable to us when they are less available
- People are motivated to make choices designed to avoid losing something of value to them
- In business, managers weigh potential losses more heavily than potential gains in their decisions
- About potential loss
  - "Less is best and Loss is worst"
- Rare items are seen as more valuable
- When an item is rare or unavailable, consumers' base its fair price on the item's scarcity
- Words used to show scarcity: limited, rare, scarce, almost sold out

Unity

- Shared identity that the influencer shares with the person being influenced
- People tend to divide others into those with whom the pronoun "we" does and does not apply to
- Those within the "we" boundary get more agreement, trust, help, liking, support etc.
- What is the best way to characterize such "we" relationships?
  - How do you identify "one of us?" – people tend to say yes to people they consider one of them?
  - Can be social, physical, cultural
  - Doesn't make it ethical and fair

Scarcity

Persuasive technologies (PT) – Behaviour change systems

- *"Any interactive computing system designed to change people's attitudes and behaviors" –BJ Fogg*

- Use persuasive principles

Computers

Persuasion

Websites
Mobile phones
Video games
Desktop applications
Smart environments
Virtual reality
Exercise apps
E-commerce sites

Persuasive Technology

Behaviour change
Attitude change
Motivation
Change in worldview
Compliance
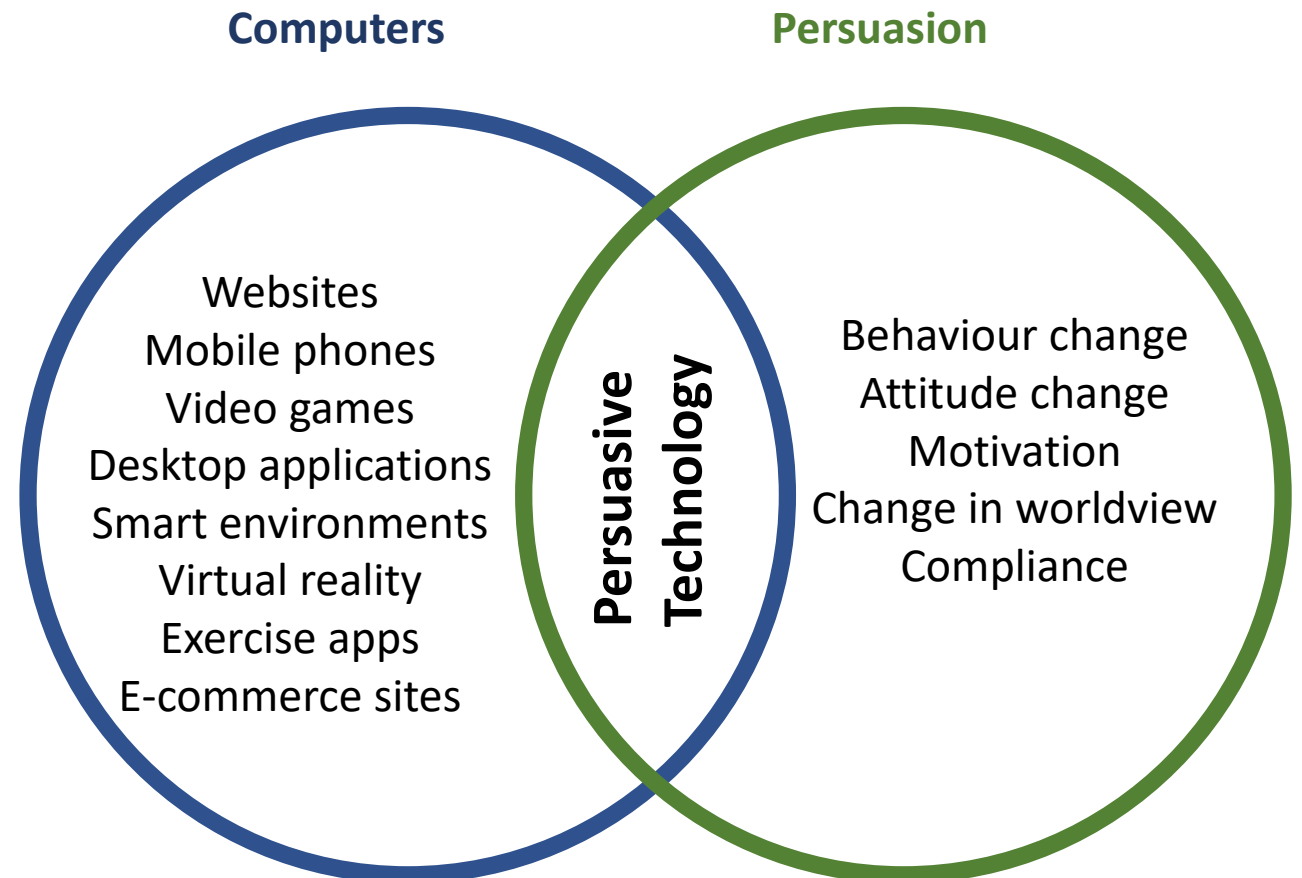
Why use persuasive technologies

- Scalable
- Ubiquitous
- More persistent
- Greater anonymity

Several frameworks for PT

- Describe how the persuasive strategies should be implemented
- BJ Fogg behaviour model
- Persuasive systems design framework

BJ Fogg behaviour model (FBM)

- Model that help designers and developer understand the drivers of human behaviour
- 3 elements/factors must converge at the same time for a person to carry out a target behaviour
  - Motivation
  - Ability
  - Triggers or prompts
- These factors must occur at the same time
- FBM is useful in the analysis and design of persuasive technologies
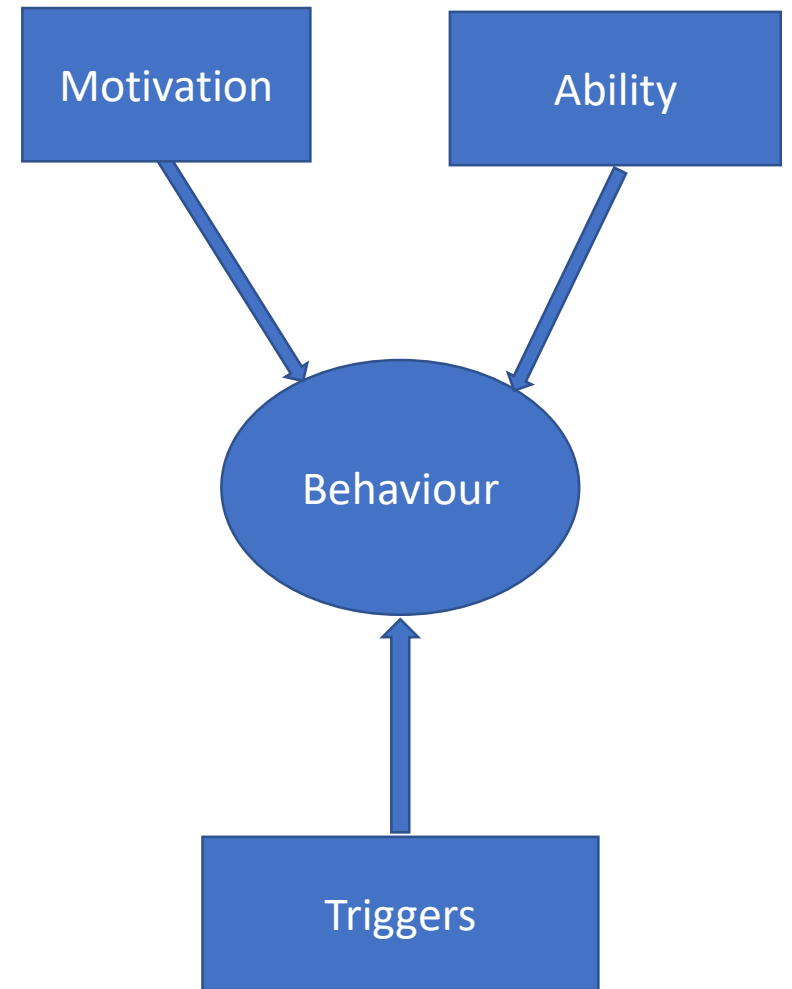
FBM – Motivation and Ability
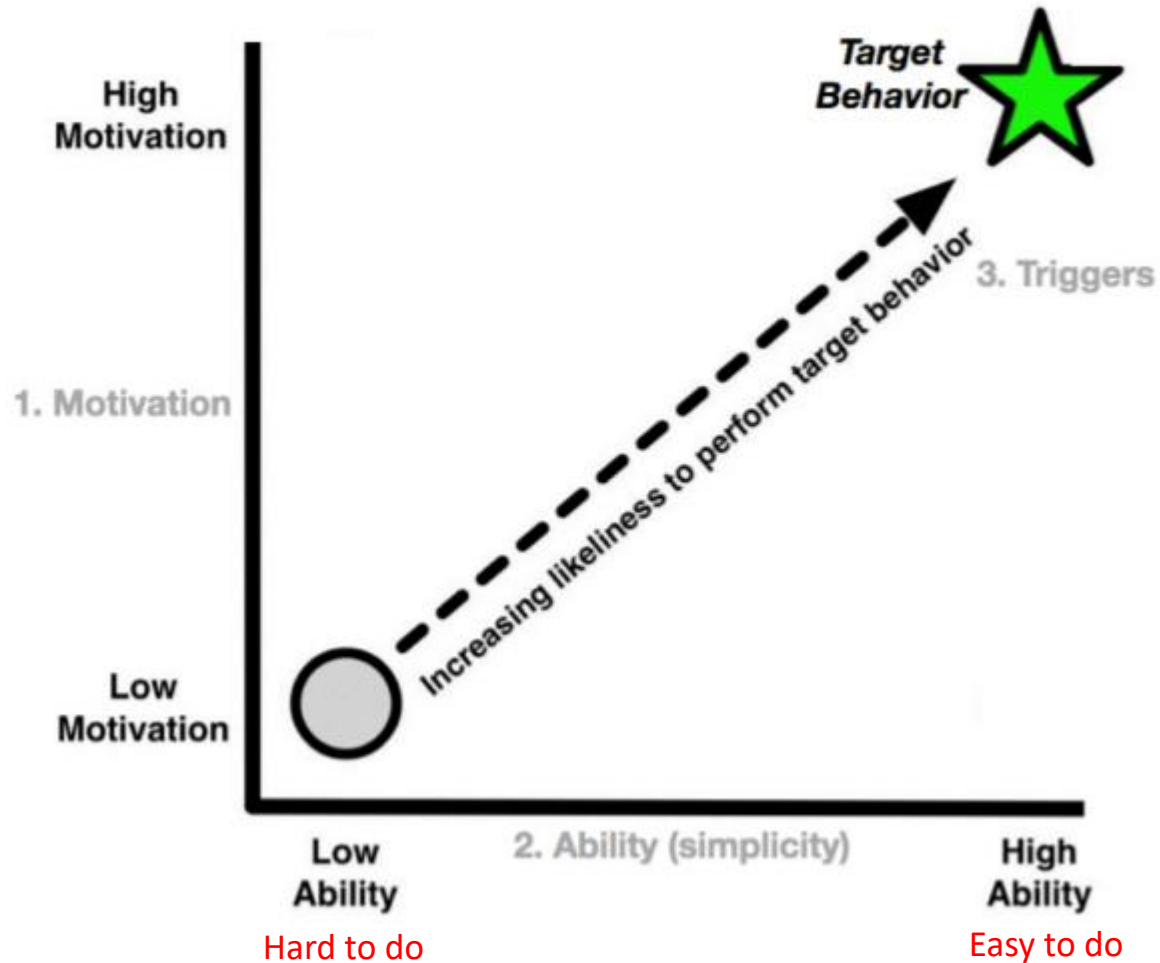
- In most cases of persuasion, people are not on the extremes.
- People have at least a modest level of motivation and ability
- These levels can be manipulated.
- Effective persuasive technologies will boost either motivation or ability (making something simpler, like 1-click purchasing, easy to share a post) or both

Source: Fogg, Brian J. "A behavior model for persuasive design." *Proceedings of the 4th international Conference on Persuasive Technology.* 2009

FBM – Motivation and Ability
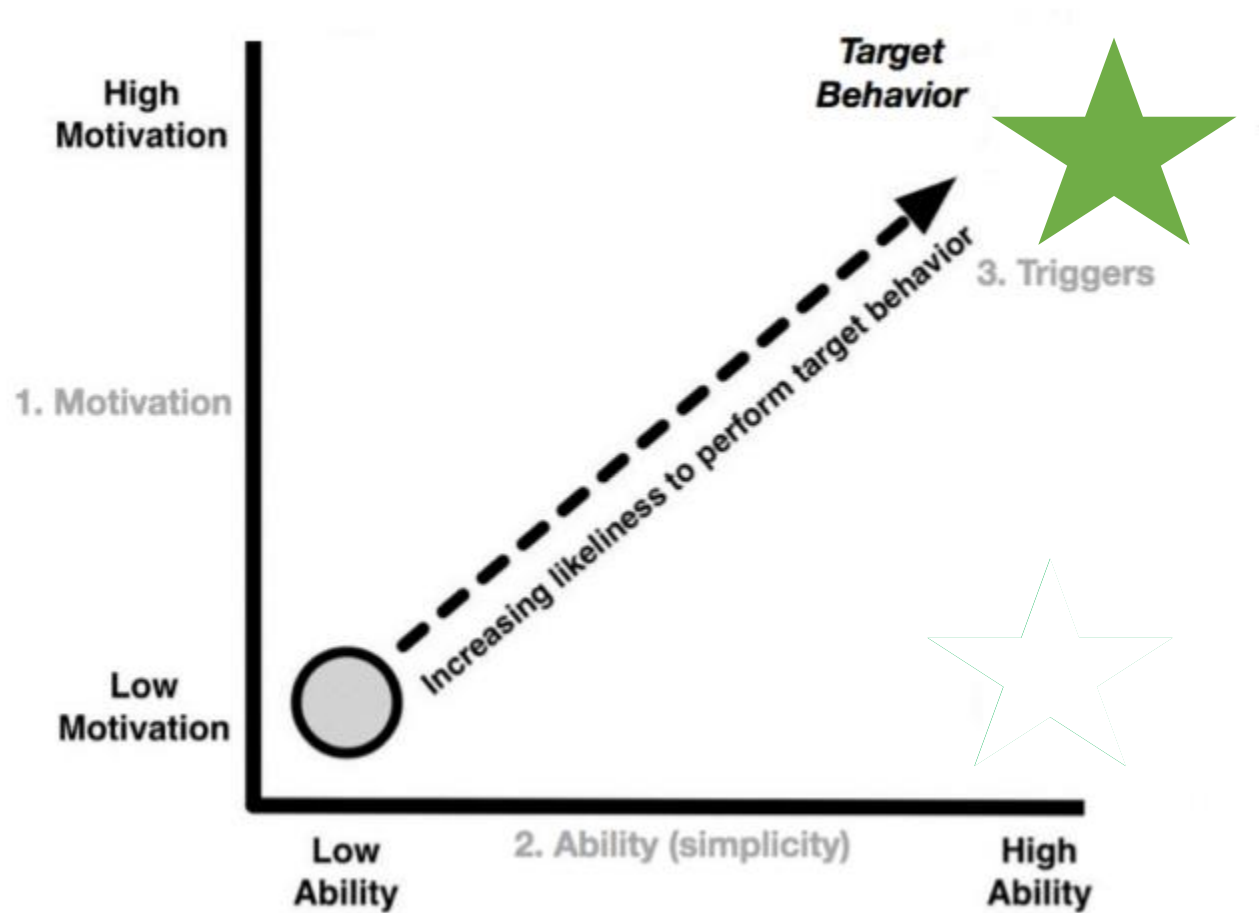
Things that can influence Motivation and Ability

Motivation

- Pleasure/pain – result is immediate
- Hope/fear – anticipation of an outcome (good or bad)
- Social acceptance/rejection – controls social behaviour
  - Strong motivation for people who use social media

Ability

- Time
- Money
- Physical effort
- High intellect
- Social deviance – going against norms

FBM – Triggers/Prompts and Timing

- Something that prompts/causes us to carry out a target behaviour
- Without an appropriate trigger, target behaviour will not be carried out
- Trigger can take many forms; alarm, text message, email, pain etc.
- Successful triggers have 3 characteristics:
  - We notice it
  - We can associate the trigger with a target behaviour
  - Trigger occurs when we are motivated and able to achieve the behaviour
- Timing is very important in making a trigger successful

FBM – Triggers/Prompts and Timing
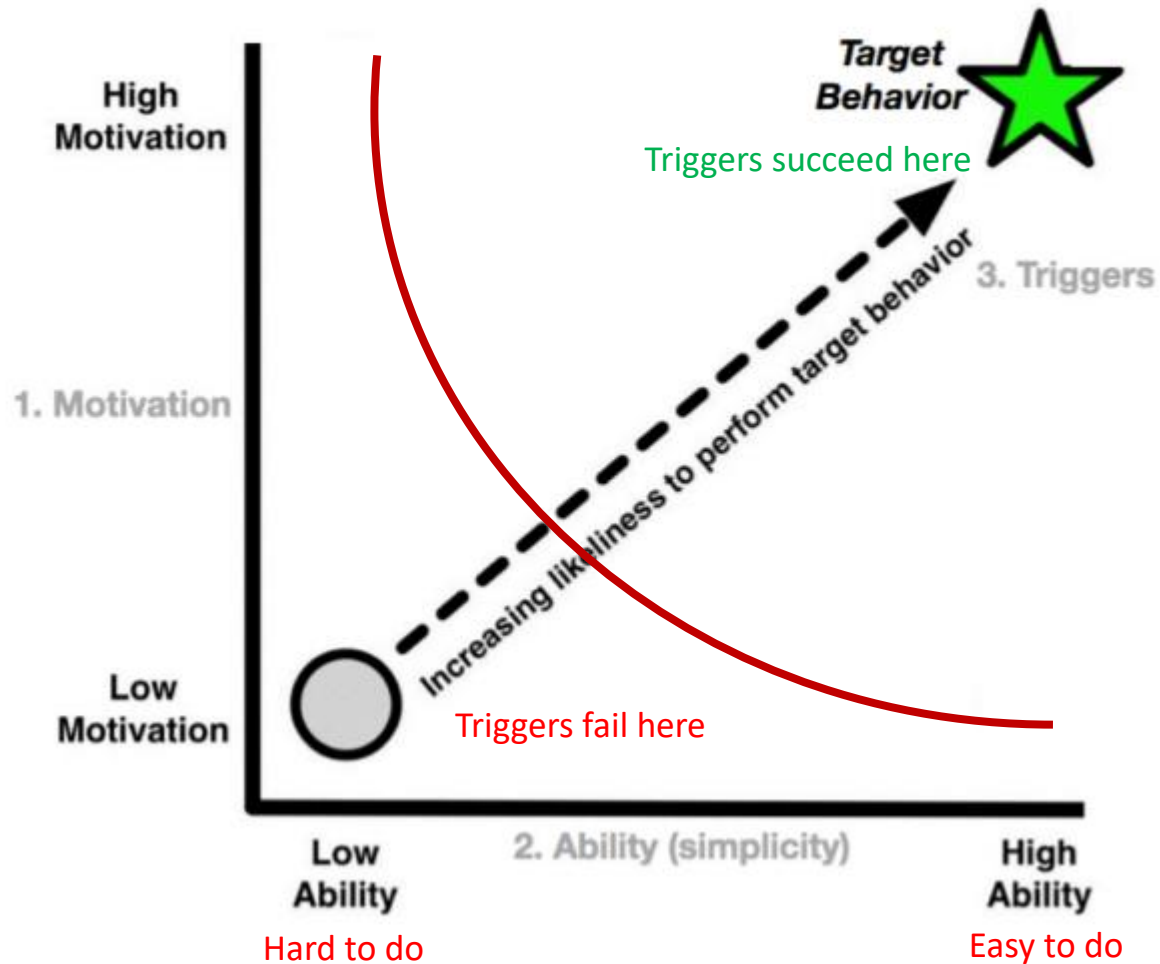
- Red curve is activation threshold
- Below the line, triggers won't lead to target behaviour
- Applications don't always do a great job of triggering behaviour
  - Spam mails, pop-ups, ads not always effective

Persuasive Systems Design Framework - PSD

- Developed by Harri Oinas-Kukkonen and Marja Harjumaa, 2009 (University of Olulu, Finland)
- A system's persuasiveness is mostly about system qualities.
- 3 categories of system design principles when developing persuasive technologies
  - Primary task: Reduction, tunneling, tailoring, personalization, personalization, self-monitoring, simulation, rehearsal
  - Dialogue support: Praise, rewards, reminders, suggestion, similarity, liking, social role
  - System credibility: Trustworthiness, expertise, surface credibility, real-world feel, authority, 3rd party endorsements, verifiability
  - Social support: Social learning, social comparison, normative influence, social facilitation, cooperation, competition, recognition

Primary task support

- Design principles in this category support carrying out the user's primary task

Principle	Explanation	Example implementation
Reduction	A system should reduce a complex task into smaller ones	"Buy now with 1-click" option in Amazon. Adding multiple friends from the same window on IG, FB.
Self monitoring	A system should provide ways in which users can track performance, status, progress	Profile showing number of friends, number of followers, number of posts. Mobile app showing step counts.
Personalization	A System should offer content specific to users	Recommendations from FB differ from person to person.
Rehearsal	A System should provide ways of "practicing" a target behaviour	Amazon's "Look inside" feature. Being able to use a site/application before registering, for example, searching for people on Facebook/LinkedIn without having an account.
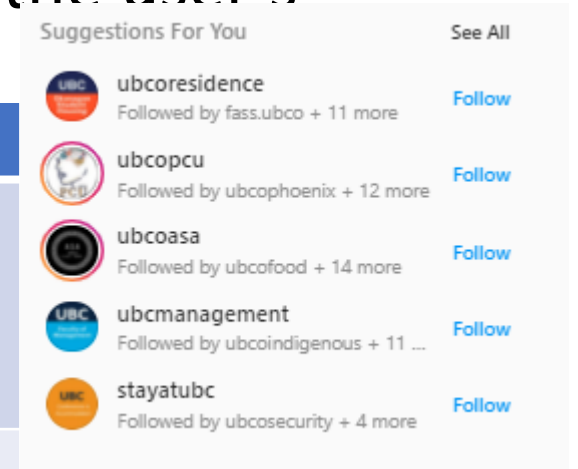
Dialogue support

- Interactive systems provide some feedback to users
- The design principles in this category support computer-human dialogue to keep users moving towards their goal or target behaviour

Principle	Explanation	Example implementation
Praise	System should praise users in form of words, images, symbols, audio etc.	Upvotes, likes, "best answer" vote on Stack Overflow
Rewards	System should provide virtual rewards for performing target behaviour	Verification badge/check in social media
Reminders	System should remind users to carry out a target behaviour	Email reminders to rate a product on Amazon
Suggestions	System should suggest how users can carry out a target behaviour	Suggestions for people to follow on Instagram, Facebook and LinkedIn. Suggestions of products to purchase on Amazon

System Credibility Support

- Show how to design a system that is perceived as credible by users

Principle	Explanation	Example implementation
Trustworthiness	System should provide truthful, fair and unbiased information	"Sponsored" and "verified purchase" on Amazon
Verifiability	System should provide means of verifying claims on site	Links to other websites such as Goodreads and IMDB on Amazon
Surface credibility	System should look credible	Too many ads on a site, not using https

Sponsored ⓘ
SAN LIKE Kids Fishing Net -
Reviewed in the United States on January 20, 2021
Verified Purchase

Social support

- Describes how to design the system so that it motivates users by leveraging social influence

Principle	Explanation	Example implementation
Social comparison	System should provide ways in which users can compare themselves to others	View profile of others, see number of comments/upvotes/likes a post has
Recognition	System should provide ways of recognizing users	Verification badge/check in social media

Personalization

- Friends on social media say you should drink it – social proof
- Health authority says you should drink it - authority
- Limited in edition/scarce - scarcity
- I drank something you offered me in the past without questions - reciprocity
- You promised to do what I asked you to do – commitment
- You like exploring new drinks - liking

Personalization

Posts

Likes and Views

Hide Like and View Counts

You won't see the total number of likes and views on posts from other accounts. You can hide like counts on your own posts when you create them by going to Advanced Settings and turning on "Hide Like and View Counts on This Post".

- Persuasion is more effective when tailored to individuals or groups of similar people
- Personalization. Designing persuasive technologies or using persuasion in a way that appeals to individuals or groups of similar individuals
- Health applications - Age, gender, weight, height
- Social media – control over features in app
  - Private account
  - Hide comments with certain words
- Gaming – using gamer type (BrainHex gamer types) and gaming elements (rewards, status, loyalty, social connections) - *Orji, Rita, et al.*
- E-commerce –using users' shopping motivation and behaviour - *Adaji, Ifeoma et al.*

Ethics of persuasion; Persuasion vs Coercion

- Persuasion is not coercion, ethically there are differences

- Coercion uses force or threats

- For example threatening to fire someone if they do not comply to your directives

- Coercion doesn't give people control of the situation

- There is no option to opt out.
  - Persuasion steer people in particular directions but also allow them to go their own way

- There are consequences if one does not comply

Ethics of persuasion;
Persuasion vs Coercion

- Coercion is unacceptable unless it is designed to prevent harm to others and prevent breaking the law.
  - For example, large fines, jail, if people don't comply with a government directive such as paying taxes
- Generally people are of the opinion that persuasion is okay if
  - Should be transparent and not misleading
  - Control is given to the user
  - They have the option to opt out, say "no", stop communication etc.
  - Does not cause harm
  - Is for social good

Ethics of persuasion;
Persuasion vs Coercion

- Coercion:
  - *"If you don't like and share my post on social media, we will stop being friends"*

- Persuasion*:*
  - *"All your friends have shared my last post on social media, why don't you share it too"* – Social proof
  - *"My last post on social media is about a new technology that WHO says can save lives, why don't you share it too"* - Authority
  - *"I shared your last post, shy don't you share mine"* - Reciprocity
  - *"You said you would share my last post, you still haven't"* - Commitment

Discussion articles

- https://medium.com/swlh/amazon-is-changing-how-it-nudges-in-response-to-coronavirus-c4b47cfba45d

- https://www.thestar.com/business/tech_news/2018/02/23/amazon-wristbands-could-track-workers-hand-movements.html

- https://www.cbsnews.com/news/facebook-new-measures-teens-kids-harmful-content/

Summary

- Persuasion is influencing people to carry out a target behaviour

- Several strategies exist to achieve this

- Persuasive technology is the use of persuasion in systems design to build applications that can influence people's attitude or behaviours

- Persuasion can be ethical

- Persuasion is different from coercion

References

- Influence, New and Expanded: The Psychology of Persuasion by Robert Cialdini, 2021
- Fogg, B. J. (2009, April). A behavior model for persuasive design. In *Proceedings of the 4th international Conference on Persuasive Technology*(p. 40). ACM.
- Oinas-Kukkonen, Harri, and Marja Harjumaa. "Persuasive systems design: Key issues, process model, and system features." *Communications of the Association for Information Systems* 24.1 (2009): 28.
- https://www.nytimes.com/2015/11/01/upshot/the-power-of-nudges-for-good-and-bad.html
- Orji, Rita, et al. "Tailoring persuasive health games to gamer type." *Proceedings of the sigchi conference on human factors in computing systems*. 2013
- Adaji, Ifeoma, Kiemute Oyibo, and Julita Vassileva. "E-Commerce Shopping Motivation and the Influence of Persuasive Strategies." *Frontiers in Artificial Intelligence* 3 (2020): 67.