The Cognitive Roots of Disinformation Acceptance:

Brain Function and Online Influence

What is harmful online content and its prevalence?

The EU/EC defines harmful online content as any material that could jeopardise, whether with or without intent, an individual's well-being or the integrity of society.

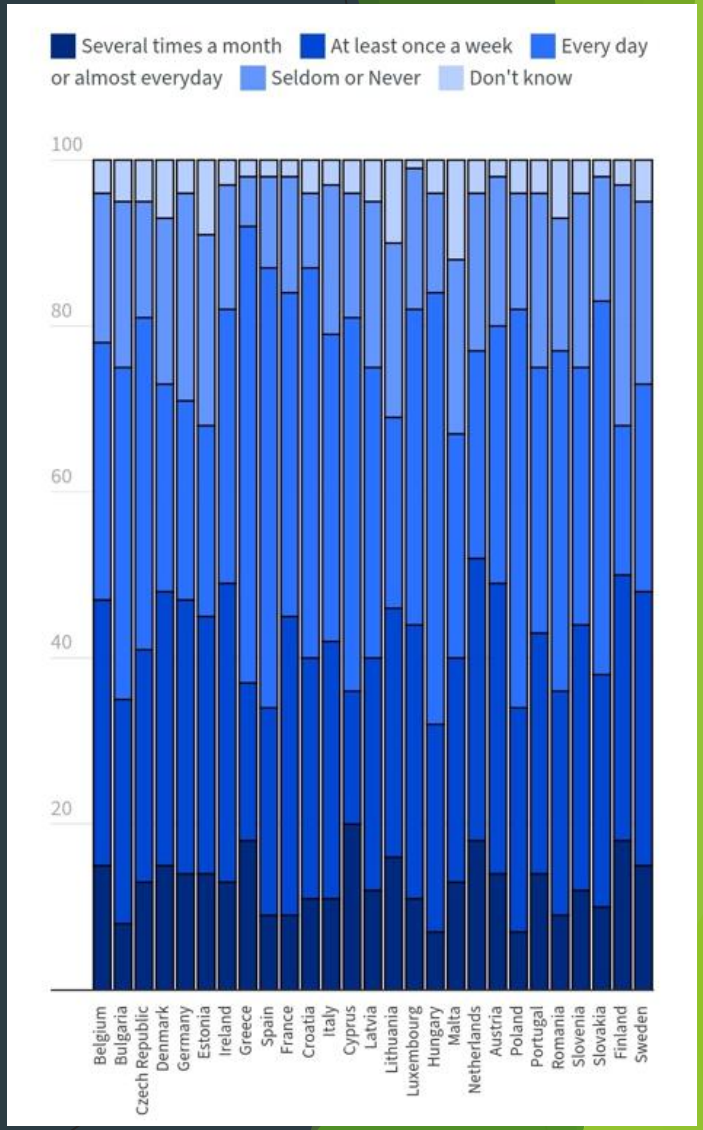
Harmful online content can be categorised into three main types:

1. **Propaganda** – information that presents false or manipulated facts to influence someone's opinion.

2. **Misinformation – inaccurate information shared without malicious intent.**

3. **Fake news** – false information shared with the intent to deceive.

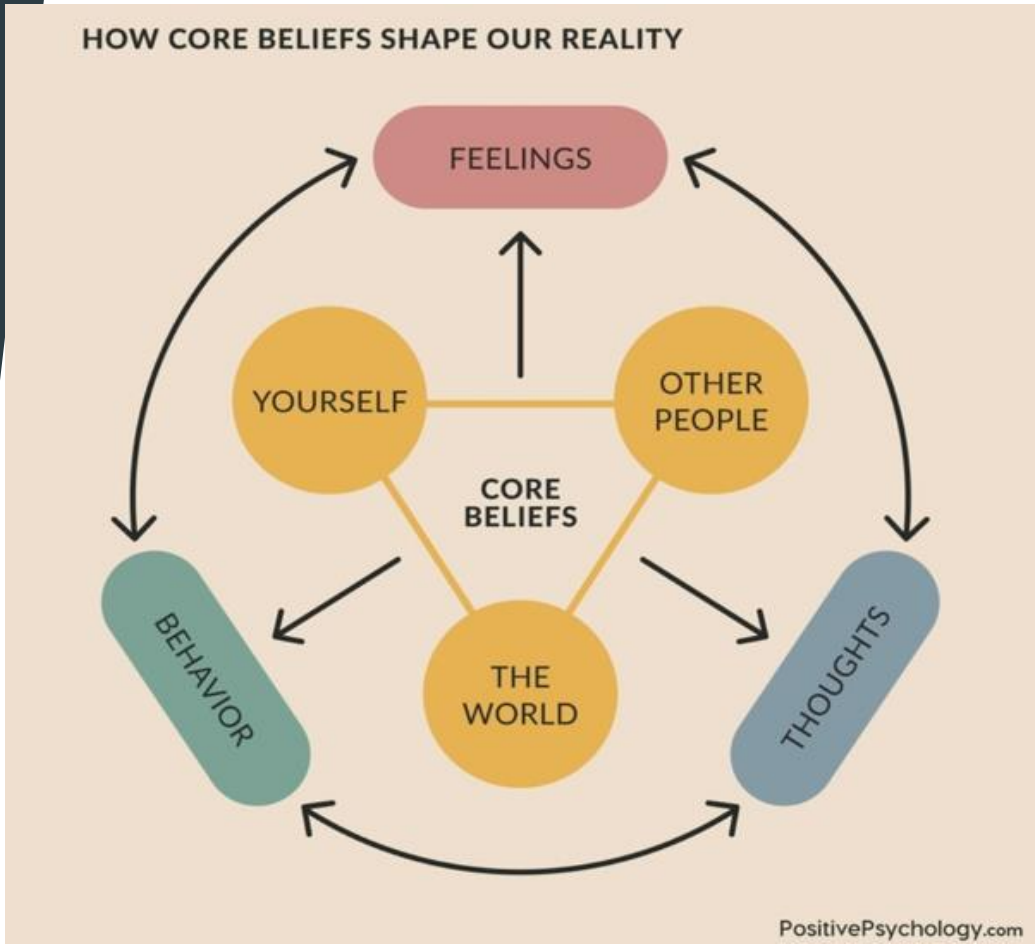
65% of individuals in the EU encounter disinformation several times a month, and about 70% can recognise such information (McCarthy, 2019; Gabriel, 2019; European Commission, N.D).



Graphic 1 - Rates of exposure to disinformation across Europe

Influence of Core Beliefs on Disinformation Acceptance

- Online disinformation poses a significant challenge when considering the effects of our core beliefs, assumptions, and rules for living when filtering content.
- Cognitive biases like confirmation bias encourage favouring information that validates existing beliefs.
- Selective exposure worsens this. Individuals seek information that aligns with their beliefs, while social media algorithms prioritise familiar content. This results in echo chambers, limiting exposure to diverse perspectives and promoting polarisation.
- Research indicates that false news spreads quickly online, often reflecting these biases.



Graphic 2 - The Cognitive Cycle – PositivePsychology.com

Social Media Algorithms

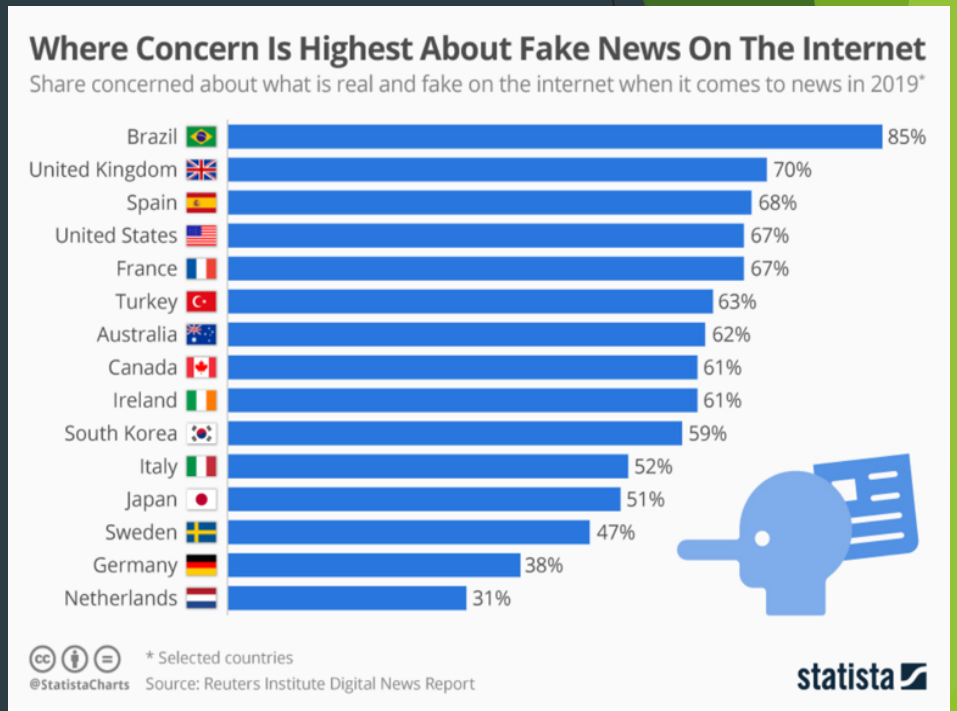
Social media algorithms personalise user feeds by analysing data on behaviour. Key factors include:

- **Content Interactions**
- **Profile Information**
- **Viewing Time**
- **Search History**

Algorithms use machine learning and AI to profile user preferences. When new content is posted, the algorithm predicts user engagement and prioritises it in the feed.

As users interact, the algorithm refines its understanding of their preferences, establishing a feedback loop.

Trends suggest that concerns about fake news are on the rise. However, vulnerable individuals, such as those with mental health issues, may be more susceptible to persuasive messaging, including disinformation,



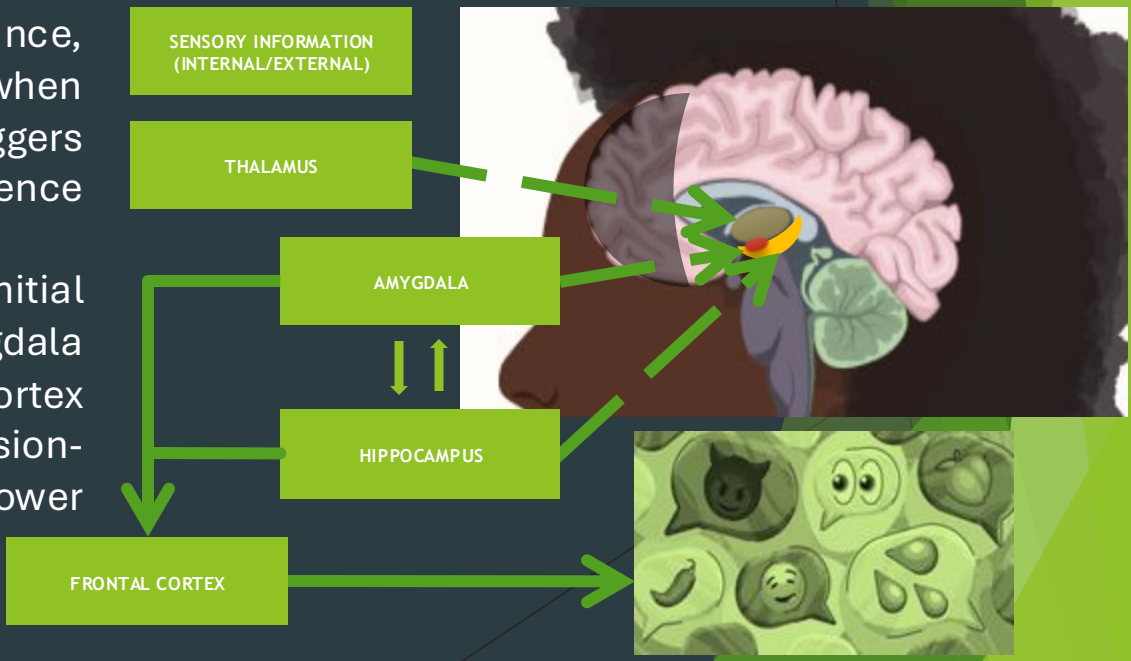
Graphic 3 - Where Concern Is Highest

Brain and cognitive functions when processing disinformation

Disinformation processing involves brain areas interacting with cognitive functions.

- ➔ The thalamus relays sensory data to different regions.
- ➔ Information reaches the amygdala first, essential for emotional processing and threat detection.
- ➔ The amygdala evaluates relevance, perceiving matches as significant when they align with core beliefs. This triggers emotional responses that influence cognition.
- ➔ Sensory information and the initial processing conducted in the amygdala then reaches the prefrontal cortex (PFC) for reasoning and decision-making, which is a significantly slower process.

Ideally, the PFC evaluates incoming information for credibility; however, significant matches with preexisting beliefs may decrease PFC activity, hinder analysis, and increase reliance on the amygdala's emotional response. Consequently, it becomes easier to accept disinformation despite contrary evidence.



How to mitigate the impact of disinformation on mental health

- **Holistic Strategy:** Combine critical thinking, media literacy, and psychological resilience.

- **External Evaluation (Information Focused):**
  - Assess source credibility.
  - Seek diverse perspectives.
  - Use fact-checking resources.

- **Internal Reflection (Self Focused):**
  - Examine the origins of your beliefs and conclusions.
  - Challenge cognitive distortions and biases.
  - Develop metacognitive awareness (reflect on your own thinking).

- **Enhancing Motivation & Ability:**
  - Emphasise the personal importance of accurate information.
  - Provide accessible fact-checking tools.

- **Strengthening Cognitive Skills:**
  - Recognise emotional influences on judgment.
  - Be aware of cognitive shortcuts (heuristics).

- **Promoting Mental Well-being:**
  - Practice mindfulness and stress management.
  - Improve digital media literacy.

If you are seeking support

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