HEXWAR

PROFESSIONAL MILITARY EDUCATION

Best Practice in PME
A different approach?

9th September 2025

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- 1968 – First time playing published wargame rules, WRG Ancients
- 1976 – First time playing at the National Wargames Convention
- 1978 – First PME game at Manchester University, and joined the TAVR
- 1981 – Published first digital wargame, SPQR on a Sharp MZ80K
- 1982 – First time as National Wargames Champion (Over 70 game tournament wins over the years)
- 1984 – Head of IT for Hillingdon Health Authority
- 1988 – Dell Computer Corporation, Key Account Manager, Research Manager, European Direct Marketing Manager, Head of Product Marketing, European Business Operations Manager
- 1996 – PC Services Director, board member with Mastercare, part of DSGi
- 2002 – Formed HexWar Ltd
- 2004 – Published first of over 60 games as HexWar, Napoleon at Waterloo by SPI
- 2012 – Published first mobile game, Tank Battle 1944
- 2017 – Game Development Director at the Football Pools and first formal discussions USMC

Has PME gaming changed over the years?

- What do board games deliver that they could not do in the 1980’s?
- Are there any differences to how we use boardgames since then?
- Are we too focused on what players do, rather than why?
- Are your players learning the lessons you think they are?

What do we do differently with the USMC?

- Digital
- Remote
- Solo
- Competitions
- Duplicate
- Replay
- Analytics
- Audience and volume

Digital

- Less lost valuable time
- Less rules rules to read
- Less time setting up
- Significantly faster play
- Less misunderstandings and misinterpretation
- Not need for a white player
- Dice are not front and centre.

Remote

- Anytime, anywhere
- An Internet connection is not essential
- Synchronous and asynchronous
- Able to play over multiple sessions

Solo

- Play against the A.I.
- Able to teach a generative AI model

Competition

- Players bring their ‘A’ game
- Regular events
- All results are published
- Tables
  - Rankings
  - Best in groups
  - Best at a particular scenario

Duplicate

- The focus is on always playing a scenario as Red and Blue
- Their combined scores determines the winner
- Encourages more rational play
- Risk taking is more realistic
- Scenario outcomes more realistic

Replay

- Players can review any past game at any point
- Controlled browsing of game events

Analytics

- Loss heat maps
- Who killed who tables and were units mounted?
- Event timelines
- Individual and group data
- >100k data points per game to review
    - Every detail of every action. Movement, targets, attacks, ammo usage, damage etc.
    - Thousands of declined target options

Audience and volume

- The potential reach is every single soldier
- The quantity of games played is vast
  - Solo games, person to person
  - At home amd as part of training
  - For work and for fun
- The opportunities to learn and improve are limitless

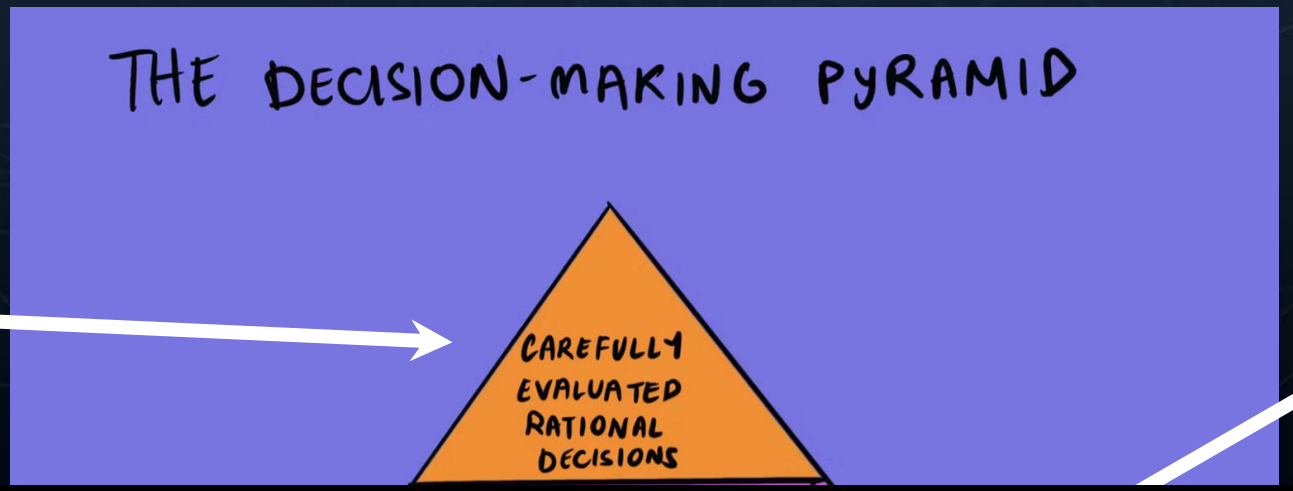
Some common flaws in PME

- Digital games are a partial solution

A great web site a must go-to for all game designers and players is ‘The Decision Lab’

https://thedecisionlab.com

What we want players to do



What players actually do

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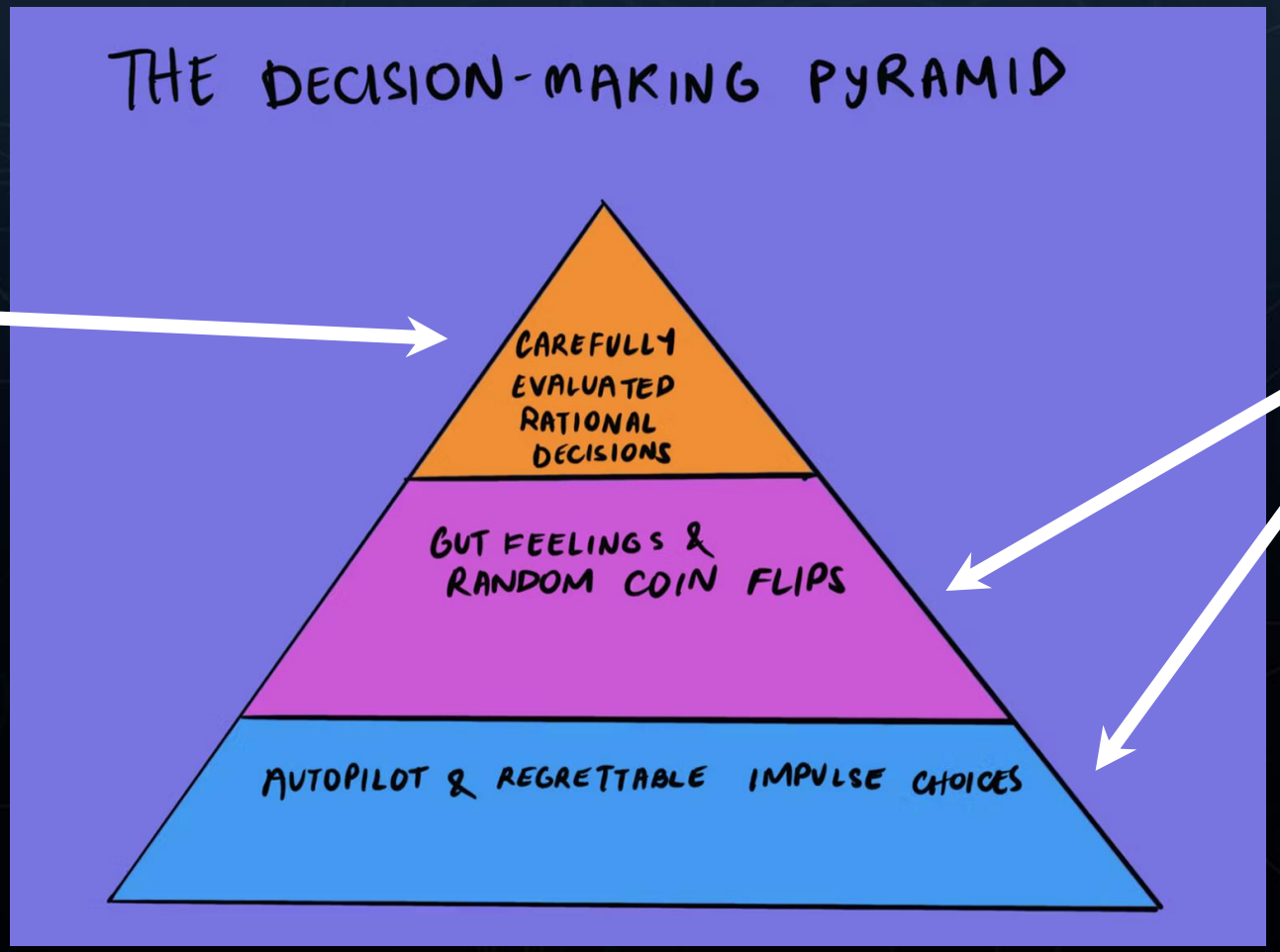
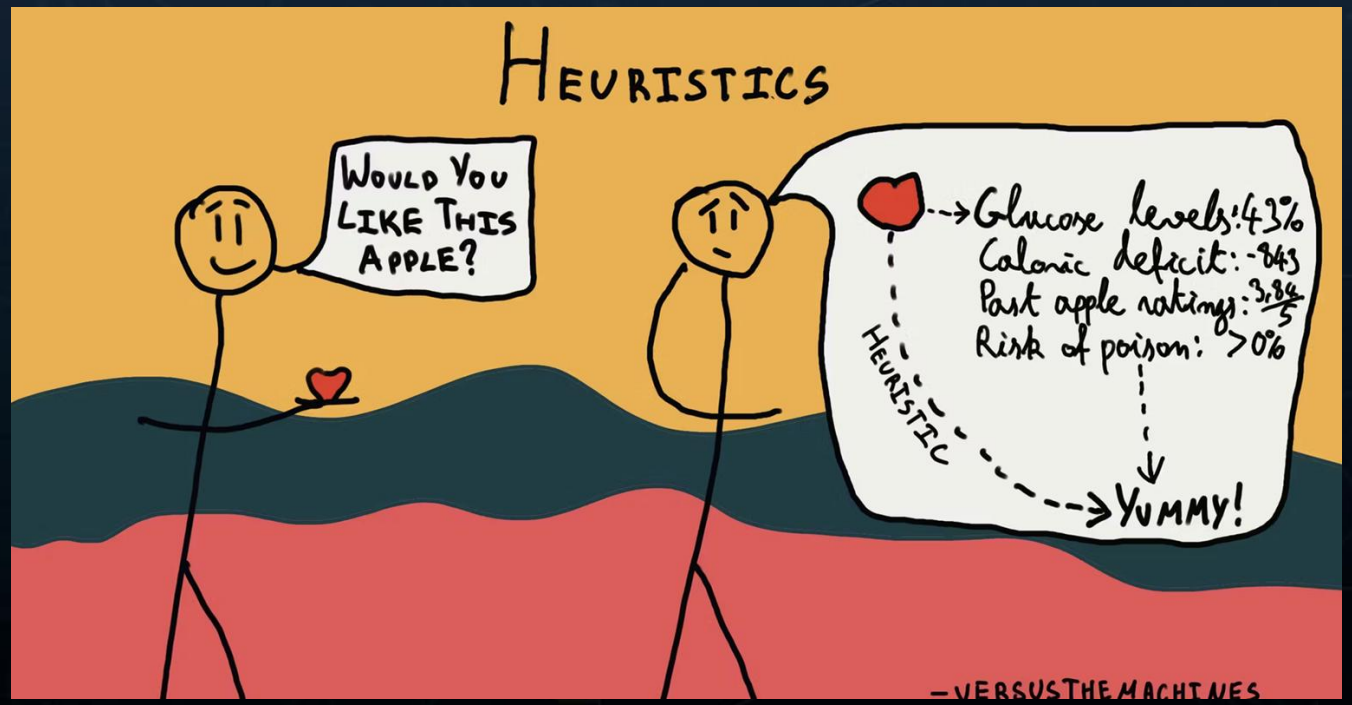


What players actually do

Heuristics/Cognitive Bias

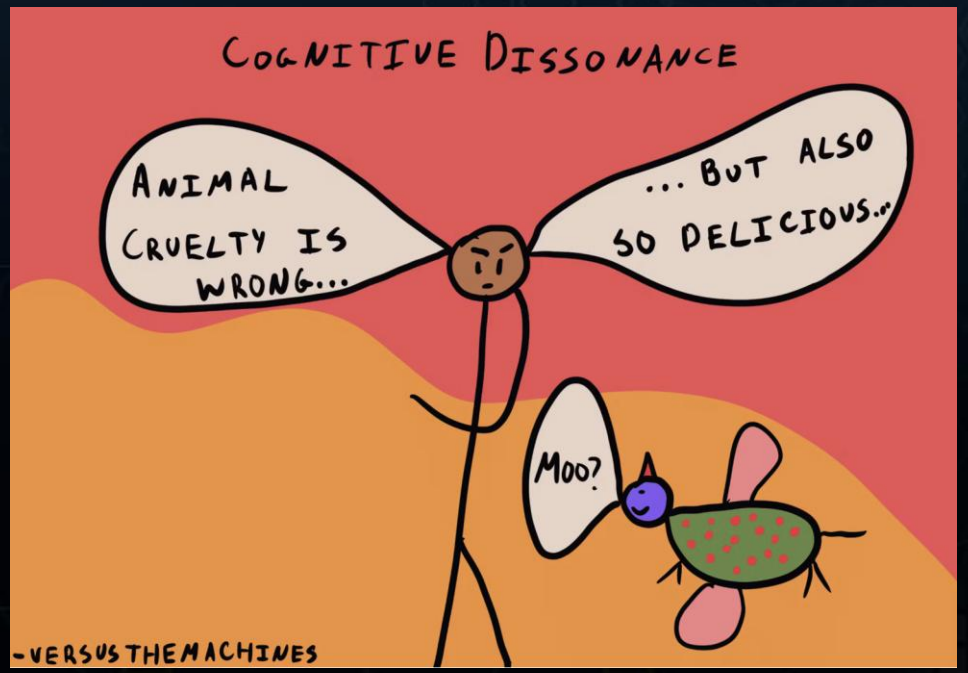
The process by which humans use mental shortcuts to arrive at decisions.

Many psychologists believe that the older we get, the more we rely on heuristics in our decision-making processes.



Cognitive dissonance

The psychological discomfort we experience when we hold two or more conflicting beliefs, attitudes, or values simultaneously. To resolve this tension, we often change, justify, or ignore the conflicting information.



Heuristics play a key role to ‘support’ a player’s dissonance and their inappropriate actions.

How to avoid?

- You can’t, we are all subject to it as it is normal human behaviour.
- You can reduce the impact by taking heuristics into account in how you design and play your games.

The mis-use of dice

- Give a player a choice based on dice and they will often make a selection based upon an invalid heuristic e.g.

  - A player has to shoot down a missile with his own limited missile supply. He can use 1, 2 or 3 missiles to shoot down the attacker requiring 4+ from a D6 dice, on one of more of them.
  - The odds of success for 1 dice is 50%, 2 75% and 3 83%.
  - The problem is players play like 2 dice is doubling their chance and 3 trebling.

  - A common feature in games is a 2D6 combat results tables
    - Few players consider the change in the odds from targeting a +1 or -1 modifier to the chance to success.

- The only good dice is a single decimal dice.

Dopamine

- Playing games triggers a dopamine release in the brain's reward system, which creates a sense of pleasure and motivation, encouraging players to repeat the activity.

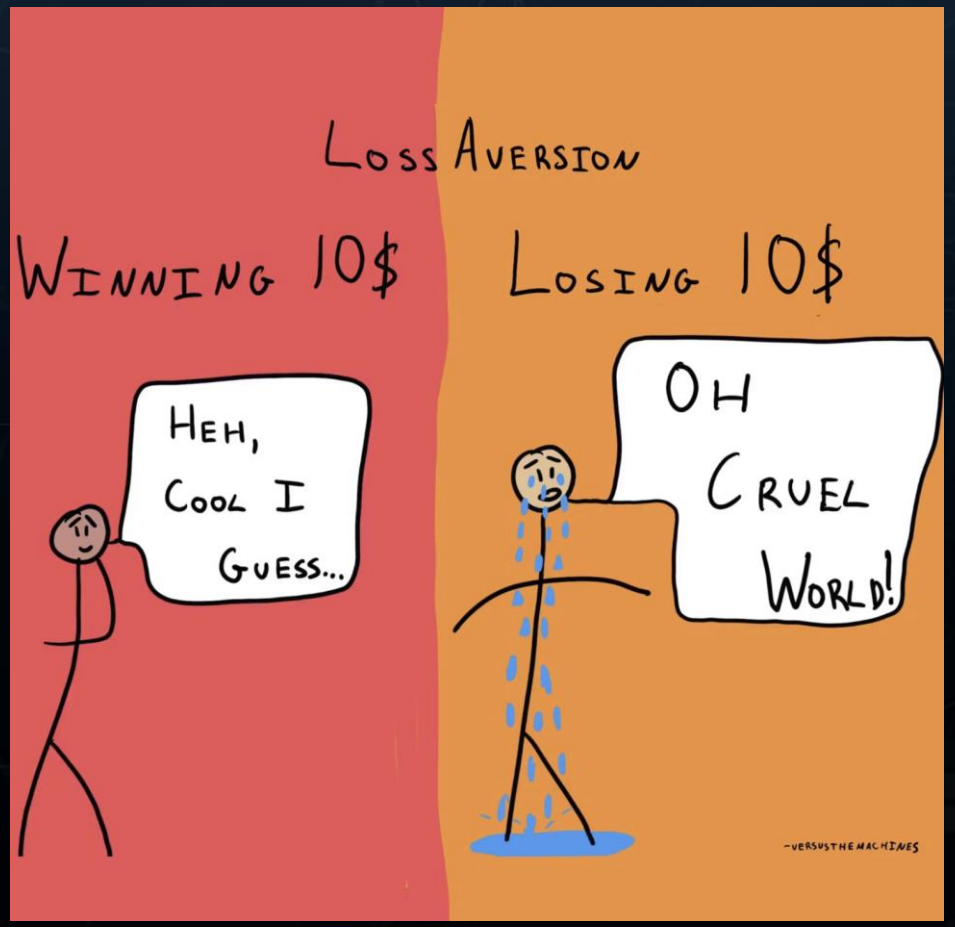
All these things generate dopamine

- Playing games
- Taking risks, the bigger the risk, the more dopamine
- Rolling dice
- Picking cards
- Succeeding in a game event
- Almost succeeding in a game event, known as a ‘near miss’ event.
- Your team members encouraging you

Your players choices ARE irrationally influenced by all the above

Loss Aversion

This disproportionate reaction can be explained by loss aversion, a cognitive bias where the pain we experience from losing far outweighs the perceived benefits of acquiring the same amount.



- Almost a contradiction is that ‘When faced with a prospect of a sure loss, people tend to take risks meaning that they prefer a larger uncertain loss to a smaller, but certain loss’ (Tversky & Kahneman, 1992)

How to spot

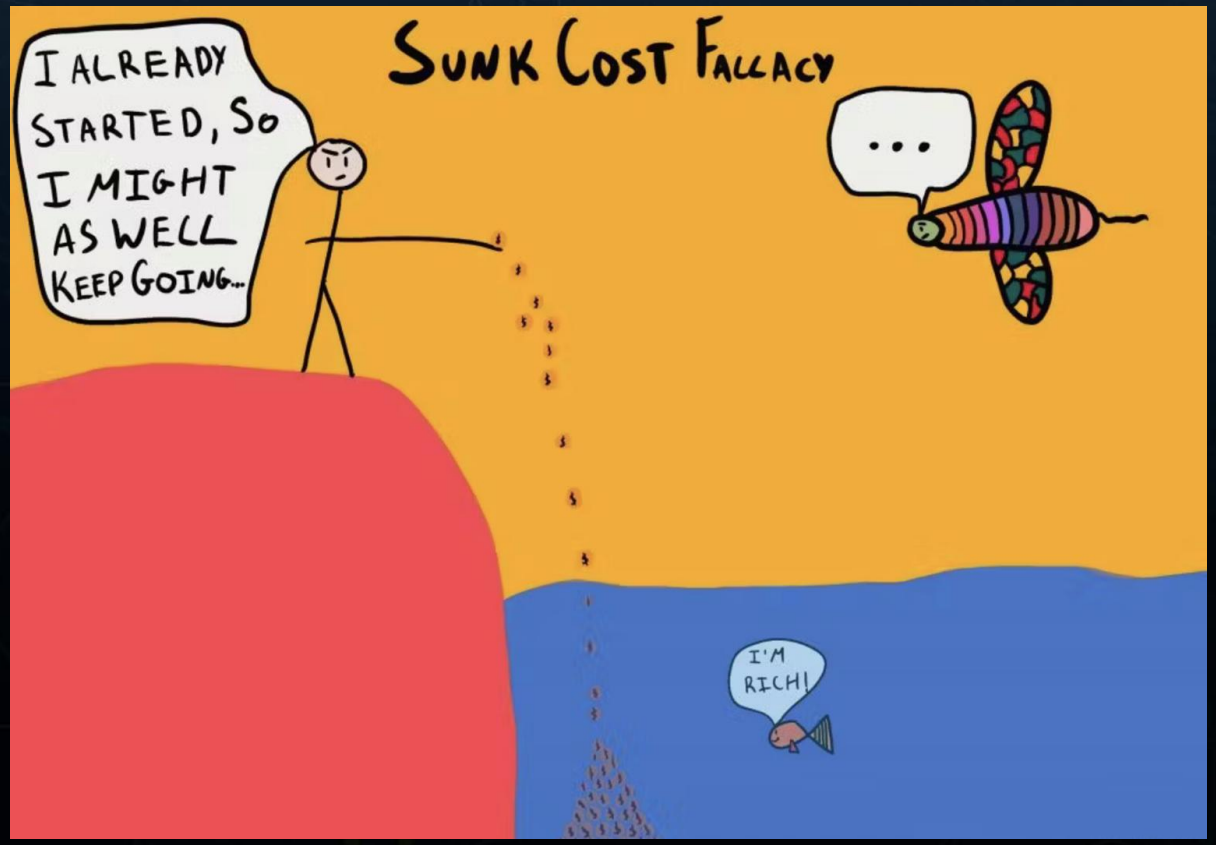
- Analytics, replay

How to avoid

- Duplicate play, decimal dice

Sunk Cost Fallacy

A sunk cost is an expense that has already been incurred and cannot be recovered, making it irrelevant to future decision-making.



Recognising

- Player risk analysis

Avoiding

- Using decimal dice
- Setting clear goals when planning - What is an acceptable investment in time and resources?
- Data driven decisions - Recognise that there is a sunk cost

Monte-Carlo Fallacy

The false belief that past events in statistically independent scenarios influence future outcomes.

Recognising

- Player risk analysis

Avoiding

- Use decimal dice
- Setting clear goals
- Setting an acceptable risk level
- Data driven decisions

Unnecessary Risk

- A player who is losing will increase their risk levels in order to achieve their mission objective

- A player who is winning has some margin to play with so increases their risk levels

- Duplicate/paired play adds the results of two games together
  - A losing player cuts his losses to win in the pair
  - The winning player avoids unnecessary combat

Some more ‘gaming’ heuristics …

- Association
- Hot hand fallacy
- It could be me
- Near miss
- Suggestion
- The illusion of control
- The influence of dis-engaged players