The Need for Psychological Science
09/15/21

Humans can't rely ~~of~~ on intuition and common sense to access knowledge
↳ Neuromyths: theories/ideas ~~that~~ that have been invalidate by research.
- Left and right brains
↳ both hemispheres work together for ALL cognitive tasks.
↳ there are some functional ~~asso~~ asymmetries: one hemisphere can be dominant for some very specific tasks.
- Difference between men and women brains
↳ "men and women are so different so their brains must be too." → no.
↳ physiologically men's brains are on average heavier and more porous, women's brain's are lighter and more dense.
- this doesn't change anything though.
- Learning styles
↳ usually applied to children: "they should be taught with their preffered learning style". → no.
* we learn through different sensory channels (sight, hearing, movement etc) which are all processed in different parts of the brain. Alternating ways of learning ~~is~~ enriches the learning process, so combine different approaches.
- Study strategy: rereading notes
* NOT a good way to study
↳ illusion of learning: rereading results in greater fluency (meaning the reading becomes easier and easier). But fluency doesn't mean a better memory or understanding of the material.
* active recall methodes are better for studying.

↳ active recall methodes
- teach someone
- make knowledge practical, try applying it to your own life.
- test yourself

- 10% use of the brain
↳ never has a part of the brain been found inactive
- brain imaging and neurosurgery show that the brain is 100% active.
↳ the brain is a filter that selects ~~information~~ information, which doesn't limit us; it allows us to make sense of the world and helps us develop our own personality.
↳ coma = using around 10% of the brain
↳ myth comes from people with crazy abilities
- the boy who plays piano by listening once
- the guy who can recite the encyclopedia from memory alone.

Cognitive Biases
- automatic (means mostly unconcious, so we're all susceptible/prone to them) errors in reasoning, causing impairment of rational judgment.
- they're the basis of your understanding of reality
- the more we can detect them, the broader we can approach everything (have a larger perspective).

*heuristics: mental shortcuts to make decisions
↳ your brain uses heuristics to evaluate a situation and make a decision quickly rather than a full thought-out deliberation process.

*Uniqueness Bias
- we consider ourselves to be unique
↳ we have more information about ourselves than anyone else so we see ourself as unique. This also works for others as well; the more info we have on someone, the more unique they seem.

- Hindsight Bias
  - ↳ Lazarfield 1949
    - better educated soldiers suffered more adjustment issues.
    - soldiers from southern climates (vs. northern) cope better with hot ~~ist~~ and humid weather.
    - soldiers with rural living backgrounds (vs. city) were in higher spirits.
    - * all above statements are opposite to what was found
    - the reader would have labelled the false or true ~~comments~~ statement as "obvious" before hearing the opposite statement.
      - ↳ after the fact, something seems obvious
      - ↳ I-knew-it-all-along phenomena
  - ↳ def: tendency to believe/exagerate after learning
  - ↳ once you realize it you can decrease it
    - consider the opposite
    - think about the fact that other options are possible.
- Overconfidence Illustration
  - ↳ the tendency to think we know more than we actually do.
    - ex. 84% French men believe that they're above average lovers.
    - ex. 93% U.S. students think they'r above average drivers.
    - ex. 63% faculty at the university of Nebraska believe they're top 23% for teaching ability.
    - * if we didn't have over-confidence, these figures would be 50%
    - * we tend to be more confident than correct.
  - ↳ confidence is good, but over-confidence is bad.

- Perceiving order in random events
  - ↳ Laura Buxton's Story
    - 10 yr old let go of a balloon to find a penpal
    - went to a girl with the same name and age
    - they were the same height + build + eye colour
    - swimmers, same pets, parents married same yr.
  - ↳ we tend to select specific information to make something more interesting
    - natural need to make sense of the world by looking for patterns
  - ↳ random sequences often don't look random
  - ↳ with a large enough sample, any outrageous thing is likely to happen.
    - conspiracy theories: the brain is wired to see patterns for survival, it got so good at it that it started to see patterns that aren't there.
      - ↳ works because of confirmation bias, only seeing information that confirms your belief.
- Confirmation Bias
  - ↳ the tendency to listen only to the information that confirms our preconceptions
  - ↳ without it we'd be lost; couldn't piece everything together.
- Observer-expectancy effect
  - ↳ the tendency for our expectations to influence how an outcome is perceived

  ex. Clever horse
    - ↳ they asked someone else (someone who didn't know the answer) to ask the horse the questions
    - ↳ the horse was only clever because it picked up unconscious cues from it's trainer.

  ex. Dull vs. Clever rats (Rosenthal + Fode, 1963)
    - ↳ gave students rats, told them that some were dumb and some were smart

the rats (might be) [illegible]

↳ rats were put in mazes
↳ the "smart" rats got out faster
- the students caused the difference
↳ to avoid this effect: avoid expectations by using a double-blind procedure.

- The Anchoring Bias
↳ people are over-reliant on the first piece of information they hear
ex. blue whale
- is the blue whale taller than 49m?
* the more precise the number is, the better it anchors you.
* the more unlikely the number is, the better the anchoring as well.
* the 49 anchored you which has an impact on your answer to the question.

- Sunk Cost Fallacy
↳ the tendency to continue with a project if one has already invested (money, time, effort etc.) even when continuing isn't the rational thing to do.
↳ the more time/money/effort were spent, the stronger the bias will be.
ex. the ski trip example

- Cognitive Dissonance
↳ the psychological discomfort that we feel when our mind entertains two concepts, that contradict eachother, at the same time.
ex. "I should smoke because I enjoy it" and "I shouldn't smoke because it causes cancer".