05 - 5. Thought & language

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There are several different theories that consider how language can affect thoughts and behaviour.

Sapir-Whorf Hypothesis Grammatical structure of mother tongue influences how we perceive the world e.g. a language that does not have a word for a specific colour makes that colour less likely to be remembered - this has largely been disputed as very little experimental data has been produced in support. Behavioural economics People are more likely to believe events that are verbally described more vividly (e.g. availability heuristics) Prospect theory People make different economic choices based on how something is framed Cognitive distortions Challenging our 'internal dialogue' can change our cognitive distortions (as in CBT) Counting Some cultures do not have numbers above 10, or even 2 - instead using the word 'many' to describe any number above the highest. This indicates a conceptual difference in how some people would interpret 100 vs. 1000 vs. 1 million. Neuro-linguistic programming A theory that language patterns can affect behaviour, such as influences a consumer in a sale setting.

Concepts, prototypes and cores Constituents of thoughts are defined as concepts and are important to psychological processes such as learning, memory and decision-making. There are several theories of concepts – one of which is the prototype theory.

Let us consider a lexical concept termed X. This concept may not yet have a defined structure but many constituent features of X are well defined. In this case we can conceptualize that something will fall under the concept X, if sufficient number of constituent features are satisfied. In other word, we obtain a prototype of a concept using the linguistic components, thus acquire further knowledge of the world around us. Consider the concept of FRUITS – most fruits are rounded. Now consider the properties of apple and banana. Apple Banana Edible Edible Red Yellow Sweet Sweet Crunchy Soft Rounded Elongated

 Using this model, apples would be judged to be more typical of fruits than bananas as the idea of an APPLE shares more of its constituents with the idea of a FRUIT. Deductive and Inductive reasoning: Reasoning is broadly divided into deductive and inductive reasoning. Deductive reasoning starts with a theory with which we form a hypothesis and collect observations to confirm or dispute our hypothesis. This is often known as top-down reasoning. THEORY HYPOTHESIS OBSERVATION CONFIRMATION Inductive reasoning starts with observations and formulate tentative hypotheses that are then explored and a theory is formed. This is known as

bottom-up reasoning. OBSERVATIONS PATTERN HYPOTHESIS THEORY Inductive reasoning is open-ended and exploratory in comparison to the narrow nature of deductive reasoning. Problem-solving: Two methods of information processing have been described in problem-solving. Algorithmic method involves step-by-step search which guarantees solution but it is timeconsuming and more useful in simpler and smaller magnitude problems. Heuristic method uses rules of thumb; more likely solutions are tried before others – hence solution is not guaranteed but it is more quick and ‘dirty’! Means-end analysis is a type of heuristics in which the solution is sought from working backwards and may include reduction and breaking down of a complex problem into easily solvable steps. Heuristics in decision-making:

1. Availability heuristics: the decision is based on readily available information without systematic search.
2. Representativeness bias: fitting a problem into one of the well-known categories and solve it in a similar fashion.
3. Gambler’s fallacy: an outcome is due as it has not happened for some time. A gambler thinks that more he loses, the more chances that he wins later.
4. Base rate fallacy: tend to ignore the relative frequency of occurrence of events but stick to stereotypes. Consider that a very good student fails an exam, the probability of which is not negligible. Someone has earlier said that this student could fail only if the examiner gets annoyed by his handwriting and does not read his answer fully. One believes this has happened even though the probability of such an event is ridiculously small, as the primary event of that student failing has now occurred.
5. Sunk cost bias or entrapment: no choice than to continue to a decision, as one believes withdrawal would not justify the cost incurred.

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