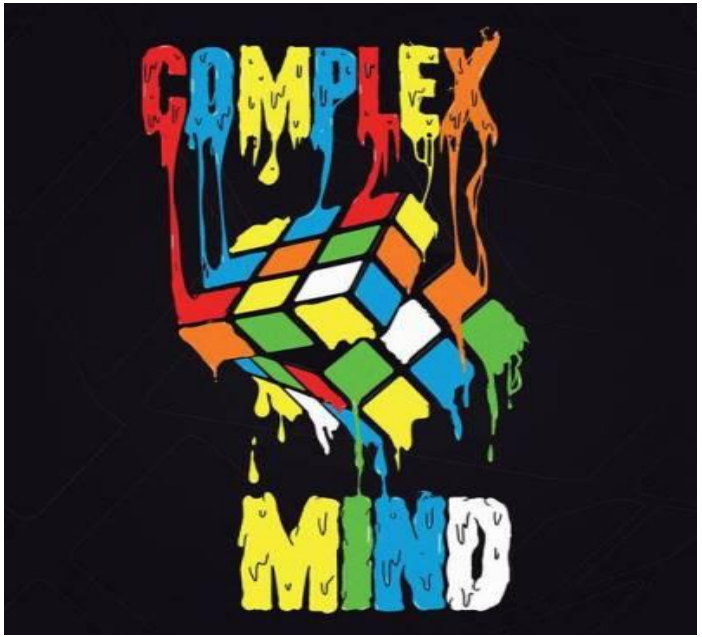
Thinking and Decision Making

Thinking is a hidden and abstract process

What is thinking?

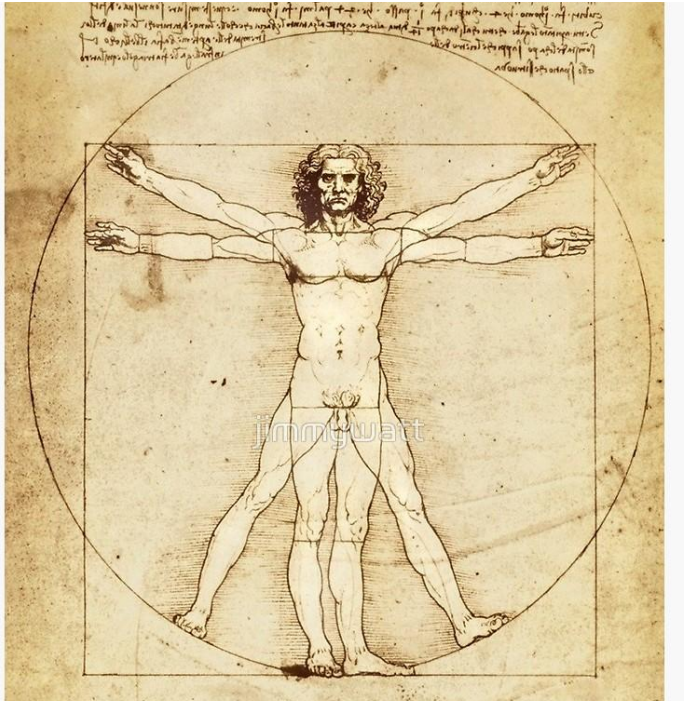
- Break down information (analysis)
- Bring together pieces of information (synthesis)
- Relate pieces of information (categorization)
- Make inferences and conclusions

How do we study such a complex higher-order mental process?



- Interdisciplinary research
- Psychologists
- Philosophers
- Economists
- Neuroscientists
- Linguistics
- Anthropologists

Normative Models

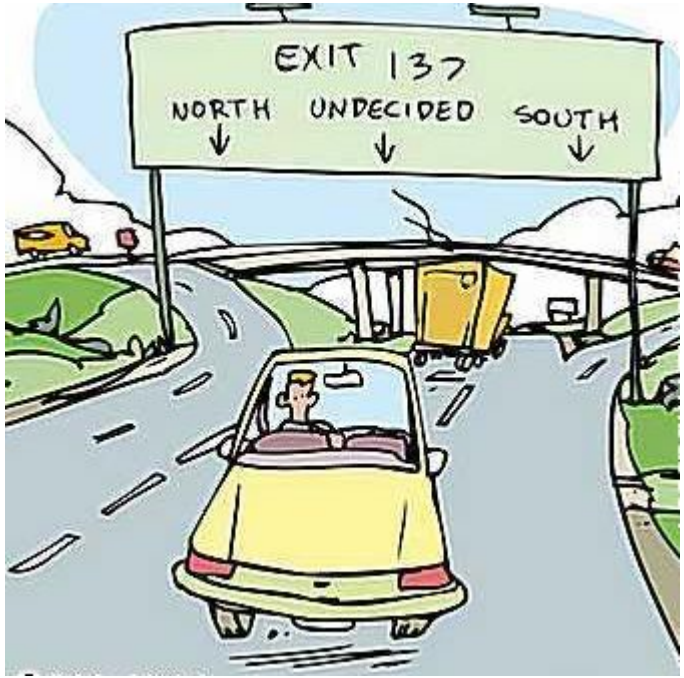


Describe the way thinking should be, assuming unlimited time and resources

For example **logic**:

- Men are mortal
- Greeks are men
- Greeks are mortal

Normative Models



Utility theory- model for decisions involving uncertainty and trade-offs between alternatives.

We maximize the utility (usefulness) of our choices before making a decision.

Problems with normative models

In an ideal world normative models would explain our thought processes. However they are unrealistic. Why?

Descriptive Models

Describe thinking as it actually occurs in real life explaining how/why we differ from normative models.

3 models:

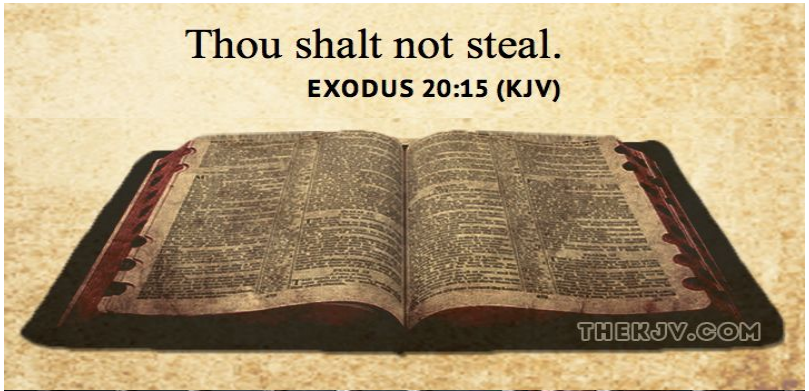
- Theory of Reasoned Action
  - Theory of Planned Behavior
- Adaptive Decision-maker Framework

Martin Fishbein (1967)
Theory of Reasoned Action (TRA)

Aims to explain relationship between attitudes and behaviors when making choices

Behavioral Intention- exhibiting behavior we believe will lead to particular outcome

Martin Fishbein (1967)
Theory of Reasoned Action (TRA)

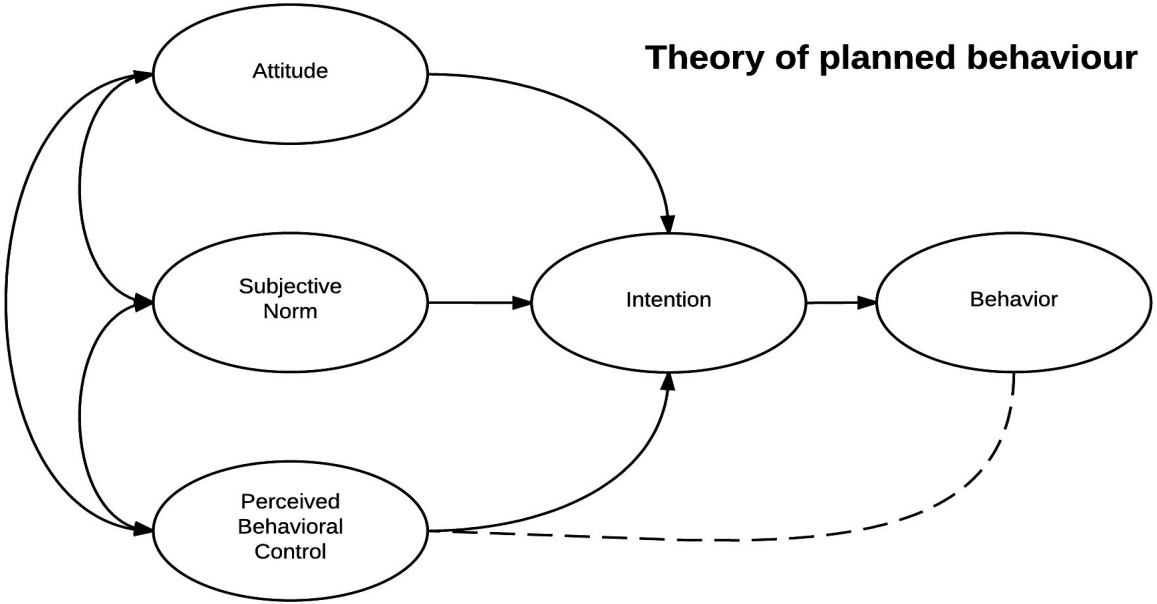


Attitudes- individual perception of the behavior (positive or negative)

Subjective Norms- perceived social pressure regarding behavior

Theory of Reasoned Action (TRA) becomes Theory of Planned Behavior (TPB)

Perceived behavioral control- to what extent are you able to carry out behavior



Research supporting TPB

Ajzen and Fishbein (1973) analysis of published research on predictive validity of TPB found 0.63 correlation
Albaracin et al (2001) use TPB to understand predictors for condom use found correlation of 0.51

	Coefficient *r*	
	Positive	**Negative**
Strong	1 to 0.8	-0.8 to -1
Moderate	0.8 to 0.5	-0.5 to -0.8
Weak	0.5 to 0.3	-0.3 to -0.5
No Correlation	0.3 to 0	0 to -0.3

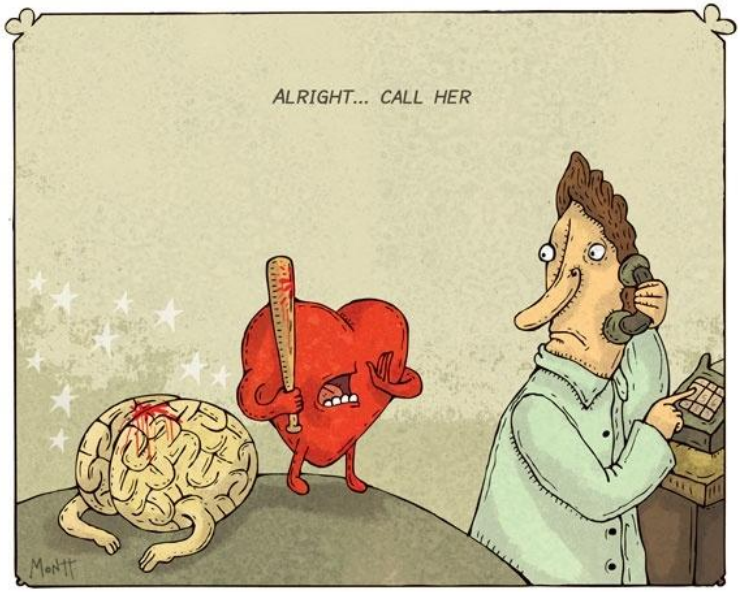
Limitations of research

Albarracin et al (2001)

- Self-reported behavior as accurate of reality
  - Would people lie about condom use?
- Correlational studies do not show direction of causality
  - Could behavior influence intention?

Adaptive Decision-maker Framework

Recognition that emotions influence our thinking and decision-making



Adaptive Decision-maker Framework

Humans exhibit bounded rationality:

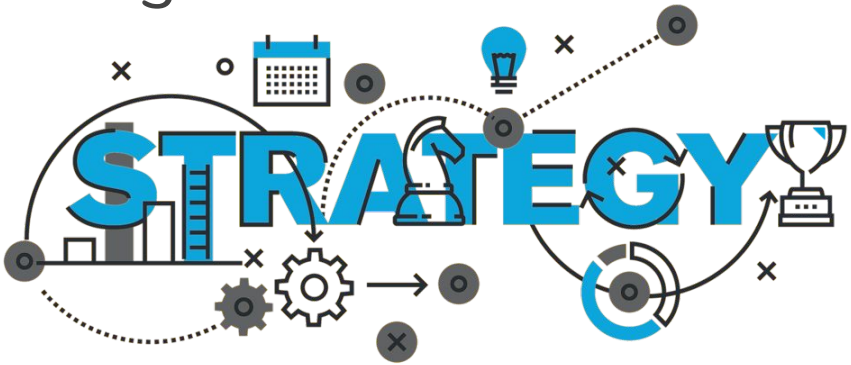
- We do not have mental capacity to consider all aspects/nuances of complex problem
- Evaluate all attributes of possible options
- Accurately calculate risks and expected outcomes
- Especially in a decision limited by time

Payne, Bettman and Johnson (1993)

Developed the adaptive decision-maker framework

People possess a toolkit of strategies

Different strategies for different situations



Time to Eat!

You are meeting up with another family to go out to eat. This simple decision requires you to consider a number of different things.

Options: Restaurant #1, 2, 3, 4, 5, etc.

Attributes: Quality of food, price, atmosphere, etc.

		Attributes				
		Quality of food	Price	Distance from home	Catering to a variety of dietary needs	Playroom for children
Alternatives	"Southern Sun"	Good	Average	Good	Bad	Bad
	"Northern Wind"	Bad	Good	Average	Average	Bad
	"Western Traditional"	Average	Bad	Bad	Bad	Good
	"Eastern Delicacy"	Average	Good	Average	Good	Bad
	"Global Junction"	Good	Average	Bad	Bad	Average

▲ Table 3.4 Hypothetical example for decision strategies

You could create a chart like the one above outlining your choices and their attributes. Would you?

Still, how would you interpret the data?

Weighted Additive Strategy (WADD)

Assign numerical values to attributes and calculate weighted sum for each option. Then decide.

Bad = 1, Average = 2, Good = 3

Southern Sun 3+2+3+1+1= 10

Eastern Delicacy wins with coefficient of 11

		Attributes				
		Quality of food	Price	Distance from home	Catering to a variety of dietary needs	Playroom for children
es	"Southern Sun"	Good	Average	Good	Bad	Bad

Lexicographic Strategy (LEX)

Decide which attribute is the most important and then select the option with the highest score for that attribute.

Attributes				
Quality of food	Price	Distance from home	Catering to a variety of dietary needs	Playroom for children

Satisficing Strategy (SAT)

Decide on a cut-off score. For instance, all attributes should be at least average. Find the choice that satisfies the condition.

Alternatives	Attributes				
	Quality of food	Price	Distance from home	Catering to a variety of dietary needs	Playroom for children
"Southern Sun"	Good	Average	Good	Bad	Bad
"Northern Wind"	Bad	Good	Average	Average	Bad
"Western Traditional"	Average	Bad	Bad	Bad	Good
"Eastern Delicacy"	Average	Good	Average	Good	Bad
"Global Junction"	Good	Average	Bad	Bad	Average

Elimination by Aspects (EBA)

Choose most important attribute and eliminate all options that do not meet your requirements.

For instance, if food is most important and you want it to be at least “good”. Eliminate any that do not fit. Continue to second attribute and repeat the process.

		Attributes				
		Quality of food	Price	Distance from home	Catering to a variety of dietary needs	Playroom for children
Alternatives	“Southern Sun”	Good	Average	Good	Bad	Bad
	“Northern Wind”	Bad	Good	Average	Average	Bad
	“Western Traditional”	Average	Bad	Bad	Bad	Good
	“Eastern Delicacy”	Average	Good	Average	Good	Bad
	“Global Junction”	Good	Average	Bad	Bad	Average

Alternative vs. Attribute based

Alternative Based- WADD and SAT
Considering different attributes for the same alternative

Attribute Based- LEX and EBA
Select an important attribute and compare alternatives.

Important when considering emotion. Alternative based strategies involve potential emotional trade-offs.

Real Life Problem Solving

We do not consistently use one of these clear-cut strategies. We may use some combination based on emotions, goals and irrational factors.

- Maximizing decision accuracy
- Minimizing cognitive effort
- Minimizing experience of negative emotion
- Maximizing the ease of justification

Macro-level vs. Micro-level

Macro-level decision making model

- Focuses on choice outcomes and stable characteristics (big picture)

Micro-level decision making model

- Focuses on process of making decision (smaller scale)