



01

(a)

Probability allows us to allocate a step to a given event of happening.

For an example when we say there is 30% probability of snow, we mean there is 30% chance of snowing today.

There are 3 theories about probability statements.

(i)

Frequency theory:

A given event is compared with past occurrences, and then depending on that probability of future occurrence is predicted.

For an example probability of person being killed during crossing the road will be calculated.

$$P = \frac{\text{Total number people killed during crossing.}}{\text{Total number of people who cross roads}}$$

But there are limitations to this strategy:

1) You need to have large number of observations, for an example a person tosses a coin for 10 times gets "heads" 7 times and might conclude probability of getting a head is $7/10$, which we know is wrong.

2) The probability would be different depending on how you define the scenario,
eg:- "people who cross the road ~~during~~ using pedestrian crossing"
or "people who cross the road during rush hours"



3) (i) a) Using this theory you cannot predict things which are not repeated during past.
eg: Nuclear explosions.

(ii) The logical theory:
Here you identify all possible states, or outcomes of a given event. and then using them you predict the probability.
eg: If you toss a coin twice, possible outcomes are
H, H
H, T
T, H
T, T

This take away the need for repeated exposures. but logical theory is a move of a normative model.

(iii) The personal theory:
This includes subjective judgement about a particular event happening.
for an example a doctor looking at a patient, after diagnosing the evidence, says that a patient ~~has~~ might have cancer with 40% probability.

The Doctor in this case might have use both frequency and logical theory as well as his experience,



Emnekode : ORG 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 3 av 26

01

3

a) Knowledge and beliefs.

When you make probability judgments using personal theory two individuals might come up with two possible probabilities, but generally there won't be very big differences provided that both are very knowledgeable in the field.

This is a move of a ~~very~~ descriptive model, and used heuristics in decision making.



01

~~Congruence heuristic~~ :-

b) Representativeness heuristic :-

we try to match the current event or the Incident with a pre existing category. Higher the descriptions higher will be the representativeness, but what we forget is higher the description lower will be the probability.

Conjunction Fallacy and gambler's Fallacy don't explain typical mistakes we make in probability judgments.

In gambler's fallacy, ~~when~~ if in a situation where there is 6 consecutive "heads" coming, a gambler thinks that there is a greater probability that the 7th one will be a "Tale".

But this a mistake and deviation from the normative model,
Coin does not have a memory and chance is not self correcting.

Another mistake will be availability heuristics.

This says people will allocate higher probabilities to events which are readily available to them. This may due to various reasons.

eg: Event might have happen Recently.

Event might have received higher media attention.

Event might have had a personal importance.

A person who fears and allocate to higher probability of shark attacks, don't swim in the sea, but -



Org 419

2905

5 av 26

01

b

drives to the beach and watch other people enjoy.
But actually probability of getting killed during driving is much higher than shark attacks.

~~High~~ Hindsight bias:

after seeing the result people assume that they knew it all along. But simply forget that the time of decision making actual outcome was not known.

Thaler explain this using the case of the war between Nepali fighters and Britains, by manipulating the outcome.

Certainty effect:

people over estimate low probabilities and under estimate medium to high probabilities.

most people would prefer a "sure thing" with a lower value to ~~a high~~ one with greater expected value.



O1

C

People when making these judgments try to fit events to known categories.

More illustrated, the scenario higher, ^{the} tendency for people to categorize it and allocate into a given segment.

But one of the most important thing people forget here, is although with the increasing description likelihood of a event being similar to a pre existing category increases.

with the increasing description, probability of that event ^{decreases} because every time a new characteristic is introduced probability decreases.

In Linda problems Linda was explained during her education period as a women activists, and a very out going student.

and then later respondents were asked of likely job of Linda.

by providing different options and ask them to give their views. lets only ~~talk~~ about two important ~~jobs~~ options for this experiment. One said

- Linda was a bank teller
- Linda was a bank teller and a women activists.

Interesting thing here is that more people thought Linda was "bank teller and a women activists", than Linda was a "bank teller".

first one is a sub category of the second one, because Linda has to be a bank teller first, before becoming a bank teller and a women activity.



Emnekode : 0v9 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 7 av 26

01

C

But the problem is as a result of the increased descriptions
Respondents tend to categorize Linda as a woman
activist ~~or~~ rather than a bank teller, But in the
process violates a very basic rule of probability.



04 a

Utilitarianism is basically talks about providing greater good to greater many people.

Utilitarianism calculated expected utility of a consequences of each act, individually for all individuals, as long as the act provides greater utility (more pleasure) compared to disutility (pain), utilitarianism accepts that.

utilitarianism has some specific characteristics

- deals with pleasure, happiness, gain
- gives equal value to all individuals
- concerns consequences rather than intentions
- gives importance to majority.

Moral decision are mainly about what is right and wrong, and usually involves protecting minority or individual rights, so in that case utilitarianism is a not good approach for moral decision making.

generally accepted idea is that in moral decision making "Justice" and "human rights" perspectives over ride utilitarianism.

Justice is about being fair to all the individuals, and human rights is all about protecting the individual liberties and rights of people.

utilitarianism normally considers cost benefit analysis, as long as benefits exceeds costs, utilitarianism accepts and approves a given action.



Emnekode : Org 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 9 av 26

04

a

But the problem is in moral decisions it is very difficult to comprehend cost and benefits.

eg: A study done in Quebec Republic concludes that smoking, which creates premature deaths, actually saves the country about \$ 1100 every time a person dies as a result of smoking. (A net public finance gain of \$1100). But they the value they ~~assess~~ ~~for~~ ~~a loss~~ forget to allocate a value for the loss of human being (to his family, friends etc.)

So Utilitarianism should never be used for moral decision making alone if utilitarianism is used it should be done with "justice" and "human rights" together.



04

b

Act Utilitarianism :

Utility of a act is calculated every time the act is committed, and by summing up the utilities decisions are made. Individual

Rule Utilitarianism :

Once a act is committed, utility is calculated assuming what if all individuals commit the same acts. Again utilities are summed up and decisions are made.

eg - 01

There five individuals who are in critical need of 5 separate Organs, and they will die if they don't get them, and there aren't any Organs available. Then there is this person who came for a medical check up.

doctor knows that this healthy person has all 5 Organs in a healthy conditions.

Therefore doctor can take 5 Organs from this healthy person and cure those 5 people.

1 will be killed, 5 will be saved. Thus utility is greater by saving 5. so under Act Utilitarianism this is accepted.

But Rule Utilitarianism asks what if all the doctors start to do this. This will create a huge panic and chaos. healthy people will stop going to hospitals. consequences will be disastrous. disutility will be greater. Therefore Rule Utilitarianism rejects this.



Emnekode : 0rg 419
Kandidatnr. : 2905
Dato :
Ark nr. : 11 av 26

04

11

b

eg (2) ÷

you see a vehicle coming without breaks and there are 5 people on the road, if vehicle continues it will hit those 5 people and kill them. and then suddenly you realize that next to you is this innocent fat bystander, leaning towards the road, you can push him to road, vehicle will hit him and kill him but 5 people will be saved.

again utility of saving 5 people is greater than killing one person. so "act utilitarianism" will want or recommend you to push.

but Rule Utilitarianism will ask what if everybody start to push innocent people to the vehicles. The total civil system will collapse. and there will be lot of disutility. so Rule Utilitarianism will not allow or recommend pushing.



03

In compensatory strategies One aspect will compensate the other.

a

For an example high price will compensate high quality or vice versa.

But In non compensatory strategies One aspect is not compensating the other.

For an example you need a convenience location for the bank, lower interest rate doesn't mean that you will sacrifice convenience.

I will explain "Elimination by aspect" and "Asymmetric dominance" as ~~the~~ non compensatory strategies.

Elimination by aspect:

You take one criterion and examine it across all possibilities (options) and eliminate those with lower values.

Kahneman and Tversky explains that normally most important attributes (criteria) will be used first, and then the 2nd most important, like wise

	Bank A	Bank B	Bank C	Bank D
Convenience	8	8	8	6
Friendliness	9	6	9	5
Trust	8	7	8	6
Facilities	8	6	5	4



Q3

9

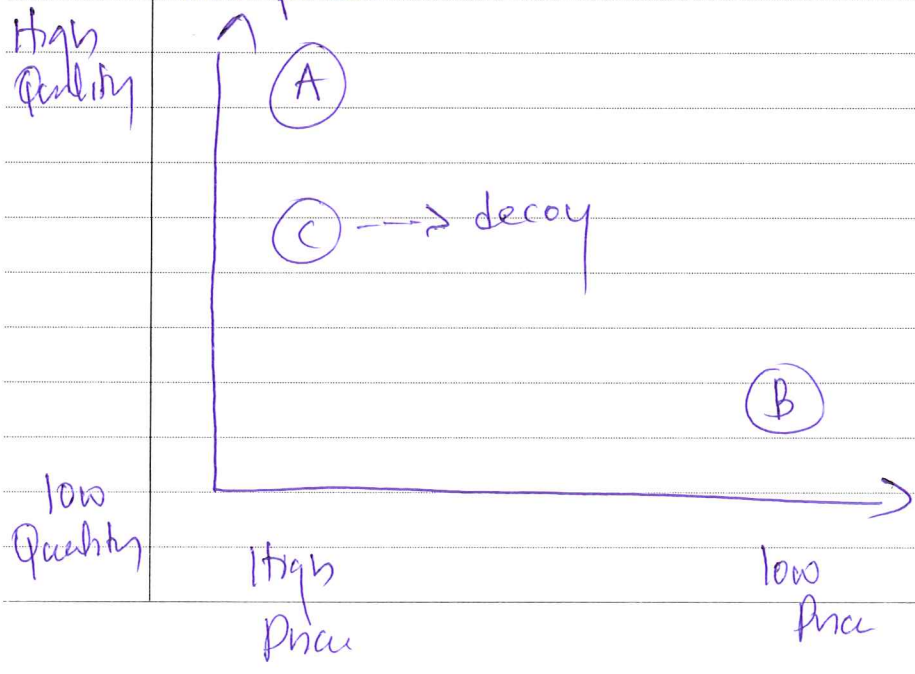
If the most important attribute is convenience, Bank D is eliminated.
Next most important is friendliness, bank B is eliminated.
Next most important is facilities provided, Bank C will be eliminated.
Bank "A" is selected.

Asymmetric dominance (decoy effect)

When two alternatives options are having two opposite qualities. Decision makers will find it difficult to select one.

But by introducing a decoy, you can make decision makers favorable to one option by allowing them the ability to compare.

Imagine there are two competitive products. One is high quality and high priced, other ~~low~~ low quality and low priced.





Emnekode : Org 3 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 14 av 26

Q3
1

people find difficult to select in between A and B, ¹⁴
but once the option C is introduced people will
compare A and C and will prefer A.

marketers often do this by introducing several
~~two~~ brands for the same segment at different
prices and quality levels.



03

b

accept the new scenario.

But I imagine if we had the Electricity line over the property when we buy it, then how much we will be paying to remove it is much less than how much we ask as compensation.

prediction, If we look at most utility measurement strategies, like standard gamble, difference method, person trade off, time trade off, all these involved subjective judgment of people, about different scenarios.

So we can assume that people will exaggerate their feelings, specially when it comes to hypothetical scenarios, if they are regarding giving up something they already have.

at the same time it is important to note that people will distort utilities depending on whether the new scenario needs changing from their natural or used life style.

Therefore it is important to understand these dynamics when measuring utility, so that we can account for discrepancies



03

C

Liberalization Paternalism is accepts that public policy can be implemented without coercion, (force)

This basically deals with Nudging, but you have to make sure nudges are cheap and easy to follow.

Nudging is choice architecture which allows reasonable prediction of human behaviour with out significant economic compensation or force.

Nudges have few important characteristics

N - Incentives - make incentives more visible (hidden costs charges, opportunity cost, fees)

U - understanding mapping

understand and help people to make better decisions
eg: RECAP

D - Default

make default the most effective ~~off~~ options, exploit the bias towards default.

G - generalize information, help people understand more.

E - Expect Error

make mechanisms to minimise errors from happening.
eg: you have first try out free and before cash.

S

- Structure the complex choices,

help people by providing filters, etc which help makes complex choices simple.



03

when we look at RECAP as a nudge we can see how it helps to change or modify the people's choice architecture.

When people record, evaluate, and compare alternative prices, they become more informative towards the environment.

This will reduce most of the biases of the people.

- Increase their available information, they ~~also~~ improve availability heuristics.
- with more information Evaluability Bias will be reduced.
- comparing alternatives will reduce Simplicity or Prominence effect.
- more information people have more invariable they will be, so that will help.
- more information they will have they will have better understanding how they can achieve their goals.

~~efficient inputs~~ informed buyers and rational decision making are two very important requirements for efficient inputs.

RECAP of course improve the amount of ~~the~~ information buyers have and also structure that



03

15

b

Status Quo effect,
is where people like things as it is, they don't want things to change
eg: they take the same Route to office
they eat in the same restaurant.
Buy the same brand (eg: vehicles)

Status Quo effect, can also be linked to other biases as well, Omission bias will be influenced by Status Quo effect.
Status Quo effect influences endowment bias.

Sumner discusses that we regret actions more, compared to omission in repeating losses.

later talks about we value things more we own, thus we are actually willing to pay to buy them.
in the text book this is nicely explained using the experiments of "mugs" and how much they are willing to sell them and how much they are willing to pay to buy them.
The experiment found significant difference among selling price and purchasing prices.

Another example to explain willingness to pay and accept is the example of the electricity line.

if people realize that there is a new electricity line which is going to be laid above their properties. they will request larger compensation in order



Emnekode : Org 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 19 av 26

02 in such a manner that it becomes easier for the decision maker to retrieve information for decision making. 19

C Rational decision making as far as the course is concerned is about achieving goals in the best possible way.

RECAP will help set better goals, as well as provide better information about alternative options (evidence to evaluate possibilities).

Thus RECAP helps judgement as well.



Narrative 20

02

a

Expected utility theory is a ~~Narrative~~ model, which summarizes the utility of each options at the same time considering probabilities

$$EU = \sum u_i p_i$$

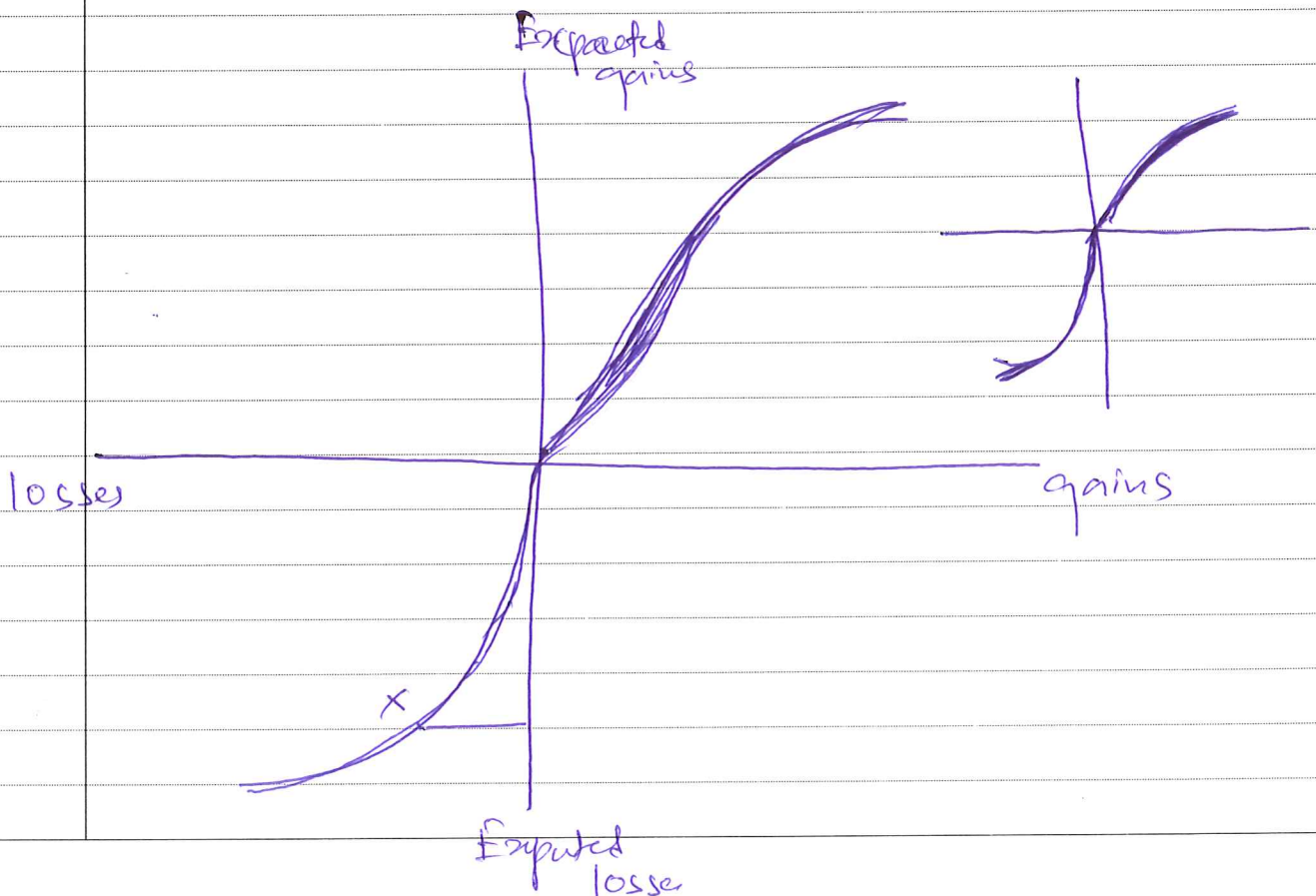
EU \Rightarrow expected utility

u_i \Rightarrow utility of option i

p_i \Rightarrow probability of option i happening.

Expected utility theory deals with wealth ~~while~~ prospect theory deals with both gains and losses, or in other words various from the reference points.

prospect theory is a descriptive model.





02

a

If we look at the above figure we can see, ~~expected~~ ~~gains~~ losses are treated as comparatively greater disappointment compared to the elation created by equally similar gains.

for an simple example we feel more disappointed when we lost \$100 compared to the happiness we get when we won \$100.

Another important thing is beyond particular point for an example point "X" ~~we don't consider losses as great~~ we become less sensitive to the loss; as the diagram depicts.

we keep holding onto stocks when prices are going down, thinking that we have already lost a lot. same thing applies for sunk cost effect.

Another important dimension is framing effect, our decisions can be influenced by ~~fr~~ arranging the same things as gains or losses.

for an example

Rather than charging 3% from credit card users super markets can give arrange it saying that they will give a 3% discount.

we also study integration and segregation.

marketers use to integrate the losses for the customer by bundling them together, then they don't need to take the customer through the steeper part of the loss curve.

And this will make customer less sensitive to the overall number.



Emnekode : 019 419
Kandidatnr. : 2905
Dato :
Ark nr. : 22 av 26

22

02

at the same time they segregate gains, so that customer feels the gains every time they buy the individual product.

a

Another main difference between EU and prospect theory is that. prospect theory deals with value while EU theory deals with utility.



02

23

in voluntary risk you choose to be part of the risk, In, involuntary risks individual has no control over risk.

Generally people are more worried about involuntary risks. This may be partly due to control illusion.

When we eat too much fat or unhealthy food we take a voluntary risk and we do very little to avoid it.

But we spend lot of amount on securing us from involuntary risk like accident which are less likely to influence us if we look at real probabilities.

more people die from food related illness, compared to accidents.

2) ~~again we are more worried about unknown risks.~~ As a result of availability heuristics we will be more worried about known risks.

3) we tend cushion ourselves more towards catastrophic risk than we spend money on managing individual risk.

For an example people take flood insurance, more in Sri Lanka than personal insurance.

But statistically speaking floods are not that common compared to ~~person~~ individual ~~dis~~ disabilities.



02
b
f People spend money on travel insurance even they know the probability of Airplane crashing is very low (statistically speaking Air travel is the safest mode of travelling)

~~4~~

on managing
5 we spend more money ~~of~~ natural risks although the probability is high for Artificial risk to the place.

6 People generally tend to avoid the risk rather than trying the risk.
For an example we take vaccines because we don't avoid the risk first place. we have a heuristic saying "prevention is better than cure" that is influenced by this.
generally regret is more powerful than rejoice so people prefer omission.



02

People are generally risk averse, or they prefer certainty more.

b

For an ample certainty effect explains that people will settle with a sure thing with less value rather than going for an option which has higher expected value but carries some risk with it.

Even if you look at public spending ~~is~~ one of its main aims is to reduce the risk to the public.

- Expenditure on public safety (.
- Educating the public
- Bring up Regulation
- Managing the tort system (court systems)

Regret - when you know thing would have being better if you have chooses differently.

Rejoice - when you know things would have being worst if you have chooses differently.

disappointment - you win 0 and you know you had the ability to win \$100

elation - you win \$100, but you knew that you were in a risk to loose that.

generally for most of the people feelings of Regret and ~~Rejoice is greater~~ disappointment is greater than the feelings of Rejoice and elation.



Emnekode : Org 419
Kandidatnr. : 2905
Dato : _____
Ark nr. : 26 av 26

02

b

Thus there is a general tendency for people to be risk averse and follow commissions rather than commissions.