

22/12/18

Moral listening and ethical reasoning

Thursday

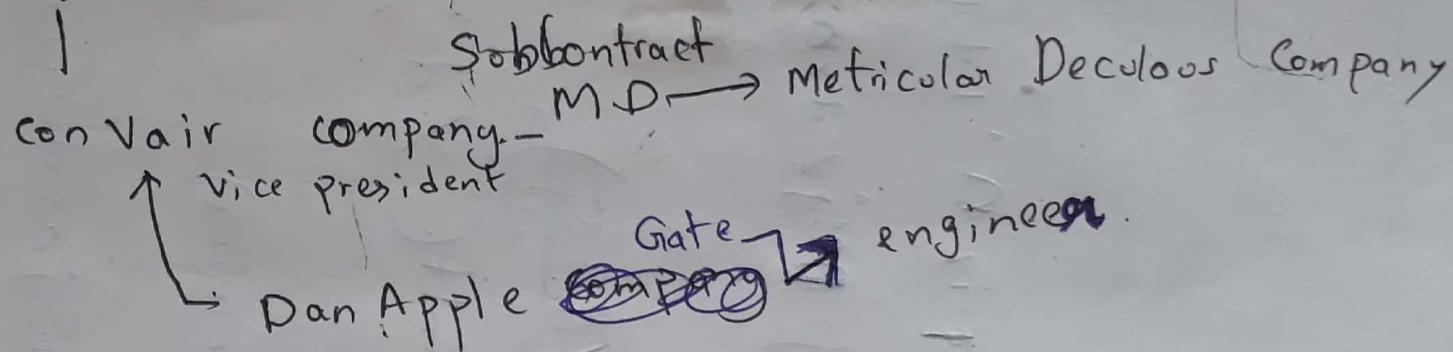
1973
11 - Paris

DC-10 Case

DL 10 Jetboject flight

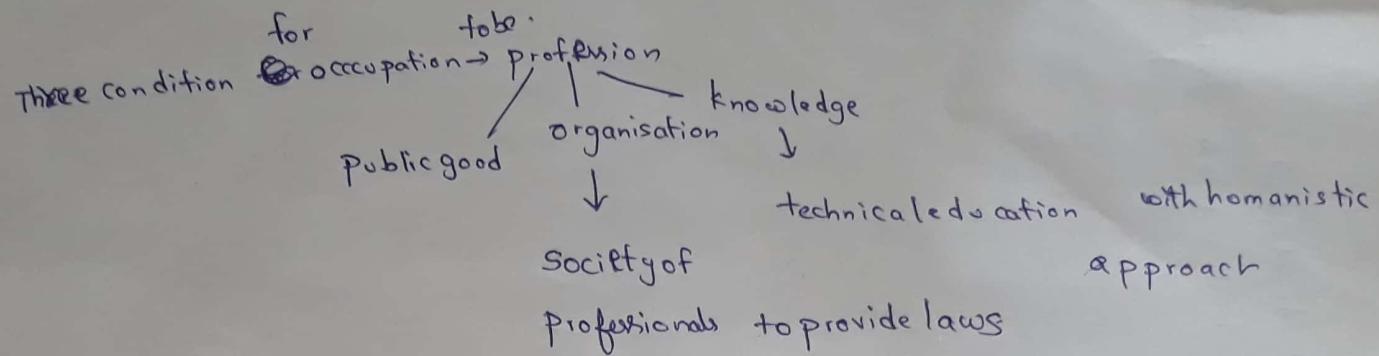
→
Doors are opened

|
347 kill
|



Saturday

24/1/13



Multiple motives:

1. why students are attracted to engineering?
1. Because of challenges offer to intelligent people.
2. more skilled in math.
3. desire ~~not~~ for interest and challenging work.

~~scribble~~

Samuel Florman book → The ~~existential~~ ^{deep rooted} pleasure of engineering

In his book he wrote 5 joys

1. The act of personally changing the world
2. joy of creative effort. this includes planning, deciding, testing, constructing, producing, selling and maintaining

In his book he wrote 5 joys

1. The act of personally changing the world
2. Joy of creative effort. This includes planning, deciding, testing, constructing, producing, selling and maintaining
3. Joy of understanding ~~bosses~~ and riddle of universe.
4. relates to specifically to size in the world - oceans, river, mountains and those intiamates (inspiration) to inspire
5. regularly being in presence of machines - orderly word - which we can manage, engineering
6. The main existential pleasure of ~~understanding~~ - will always be to contribute to the well being of his fellow men.

Today

27/2/18

drudgery \rightarrow 25% \rightarrow 20%

Models of professional roles played by an engineer

1. Saviour \rightarrow
2. Guardian \rightarrow
3. Bureaucratic servant \rightarrow How obedient you are \rightarrow Within the directions/
constraints stipulated by manager
4. Social Servant
5. Social enabler and catalyst
6. Game player

The change in the reactions of the society

Engineers are involving in developing country. So they play economic
game rules of the country

Saviour \rightarrow Save the society from caste and drudgery of manual labor, inefficiently poverty

Guardian. The direction in which place at which technology should develop,

↳ The society will express their demands indirectly, by purchasing

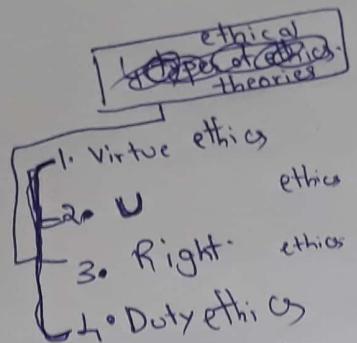
Savior → Save the Society from waste and drudgery of manual labour, inefficiently, poverty

Guardian - The direction in which, place at which technology should develop,

their demands

↳ The society will express ~~not~~ indirectly, by purchasing it.

Moral dilemma



Mother of Sciences
↳ psychology

After 2nd world war
↳ ethics for engineers

800

NEH → National endowment for humanities

NEH → National endowment for humanities

Engineering ethics and philosophy

hi
it is a part of applied philosophical ethics
the concept of engineering ethics as an
interdisciplinary discipline involving
engineering, law, management

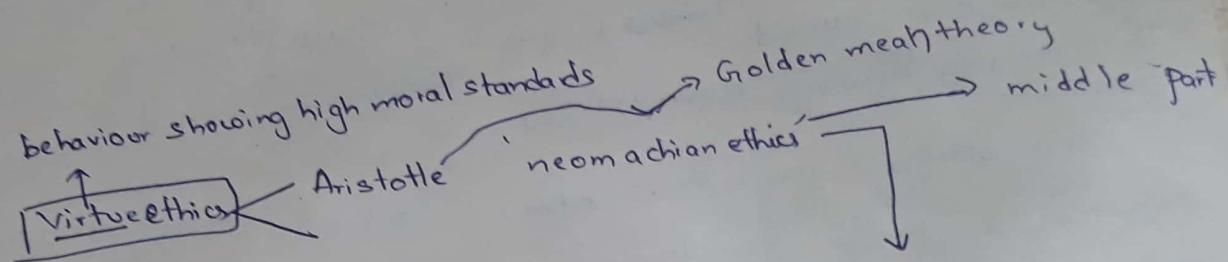
The first interdisciplinary conference took place at Ranss elan polytechnic institute

The first interdisciplinary general to emphasize articles on engineering ethics. The business and professional ethics general was created in 1981.

became more clearly defined with Baums national project
Robert ~~ocean~~
on philosophy and engineering ethics.
Concept of 1978 to 1980 by NSF and NEH.
Sponsored ↑
Science foundation ↓

28/2/18

Wednesday



Virtues are the acquired habits
which enabled us to engage in rational activities
which enabled to defined as
human beings

↓
overaction (बाब्क).

Aristotle → nico machean ethics → it tells virtues or acquired habits that enabled us to

Aristotle → nico machean ethics →

it tells virtues or acquired habits that enabled us to

engage effectively in rational activities that define our

human being

Excess	Middle Ground	Deficiency	Aspect Governing our lives
too Hardiness - excess of rashness - too bold	Courage - deficiency of self-control	Cowardice - deficiency of daring and risk	Confrontation with danger and risk
revealing all information in violation of tact and confidentiality	Truthfulness - infallible	Feaithought - infallible	Truth Telling
Secretive			

Excess

Wanting of
generosity
one's resources

Middle ground

generosity

Deficiency

miserly - ~~generous~~
(myself)

Aspect governed

Annoying effusive

- expressing pleasure
in an unrestrained
way

Friendliness

~~Solky~~ and sulky
→ bad tempered and
unfriendly

Personal relationships

Wisdom - best

Virtue ethics → Mac Intyre modern theory

Virtue ethics

Social practices
↓
Cooperative activities

Public Goods

internal

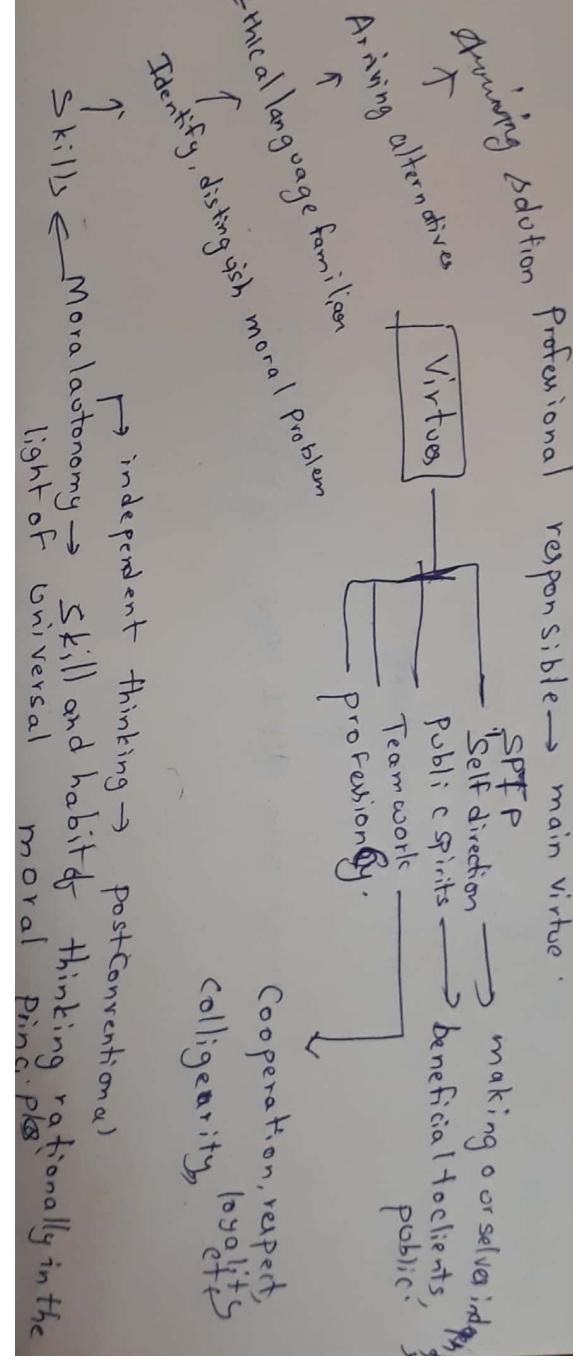
external → Name, fame,

According to this theory, virtues are related to Social practices which are aimed at obtaining cooperative activities towards attaining public good.

Public goods are not externally related to money, Name, fame

internal Good of medicine → Promote health
law → Promote justice -
teaching → learning knowledge.

internal Good of engineering → It is the creation of useful and safe technological products while respecting the autonomy of ~~clients~~^{clients} and public, especially in matters of ~~specifications~~ risk taking.



Self direction → these virtues are essential in exercising moral autonomy and responsibility.

→ based on benefits clients and general public → justice, generosity etc.

4 → intellectual virtue → confidence

1313118

The virtues provide ~~are~~ enough guidance about how to act are 'the ~~only~~ additional principles ~~are~~ about moral responsibility that can help to clarify what is required by professional responsibility.

Three additional ethical theories attempt to formulate the fundamental principles of obligation applicable to both professional and personal conduct in everyday life. These theories differ according to what they treat as the most fundamental moral concept. (that is) i.e. Good consequences for all others Human rights

and theory → utilitarianism ethics → goodness

def: utilitarianism → it is seen that we have to produce most good for most people giving equal consideration to everyone affected.

the standard of right conduct is maximization of goodness.

Consideration:

At first glance this seems simple enough, but what is the goodness that's to be maximized. and How is the production of goodness to be measured

With respect to each action with respect to general rules about actions.

How is the production of goodness to be measured
depending upon how these questions are answered, utilitarianism was developed depending upon different directions.

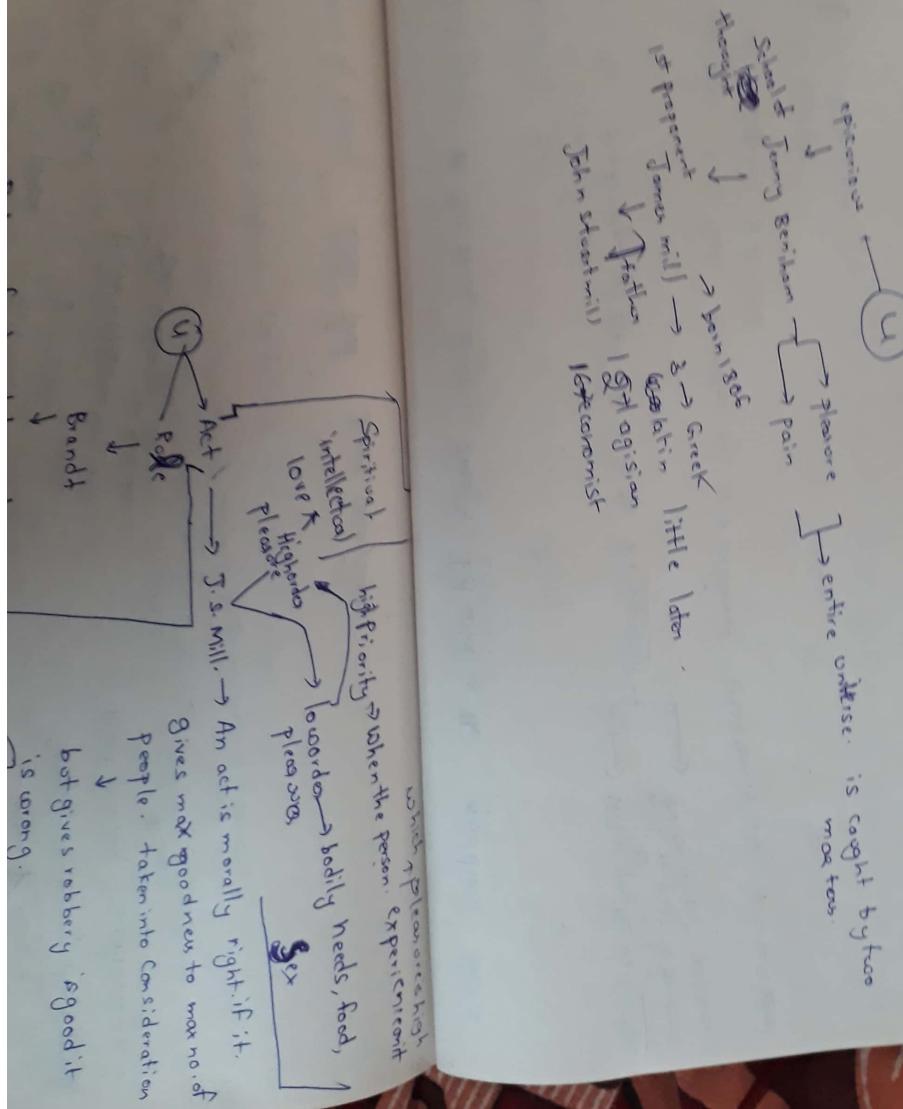
At first glance this seems simple enough, but what is the goodness that is to be maximized. And

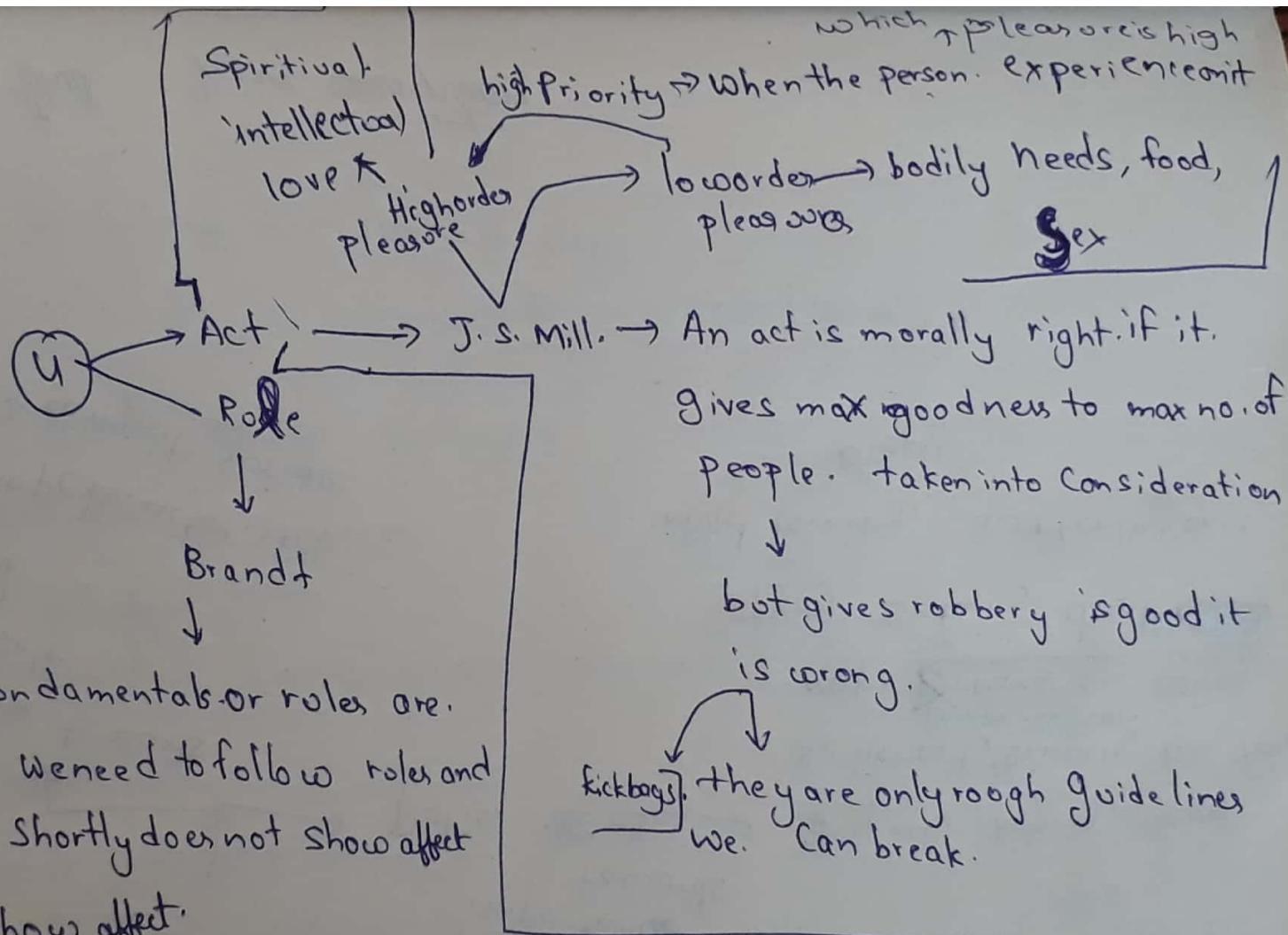
How is the production of goodness is to be answered -

With respect to each action
With respect to general
outcomes about actions.

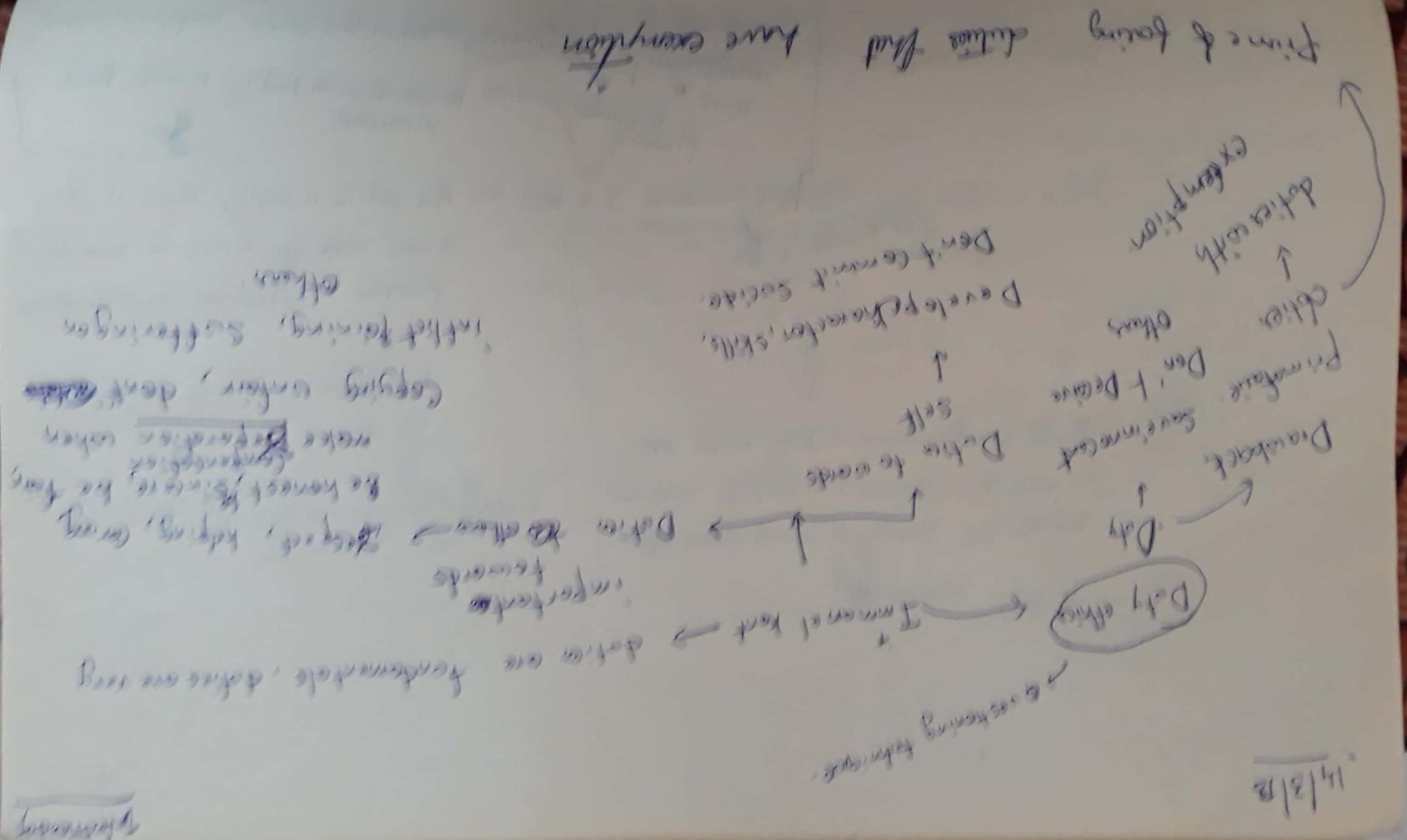
depending upon how these questions are answered, utilitarianism was developed into two different directions

1. Act utilitarianism
2. ~~Yoke~~ utilitarianism.





Roles are fundamentals or rules are important. We need to follow roles and regulations. Shortly does not show affect longly show affect.



Why are these our duties?

To, Kant, it fulfill 3: ~~interven~~ even conditions → respect for others

Universal Principles and morals.

It is because they mean 3 intervention conditions

← each expresses un qualified. (unconditional) command for autonomy moral

← each is universal principle.

← each expresses respect for persons,

~~universal principle~~

People deserve respect because they have inherent worth as rational beings ~~they~~ have what

a capacity for autonomy and for exercising good will ← economic → good name.

A conscious effort to do what is right.

According to Kant all moral principles in man's mind are duty. These are three principles of duty which would be verifiably contrasting with characterised by features.

↳ three principles
 ↳ universal
 ↳ particular
 ↳ without conditions

Universal principles

Applicable universally
 ↳ applicable to every one in universe

Hypothetical imperative
 ↳ universal condition

Moral imperative
 ↳ particular condition

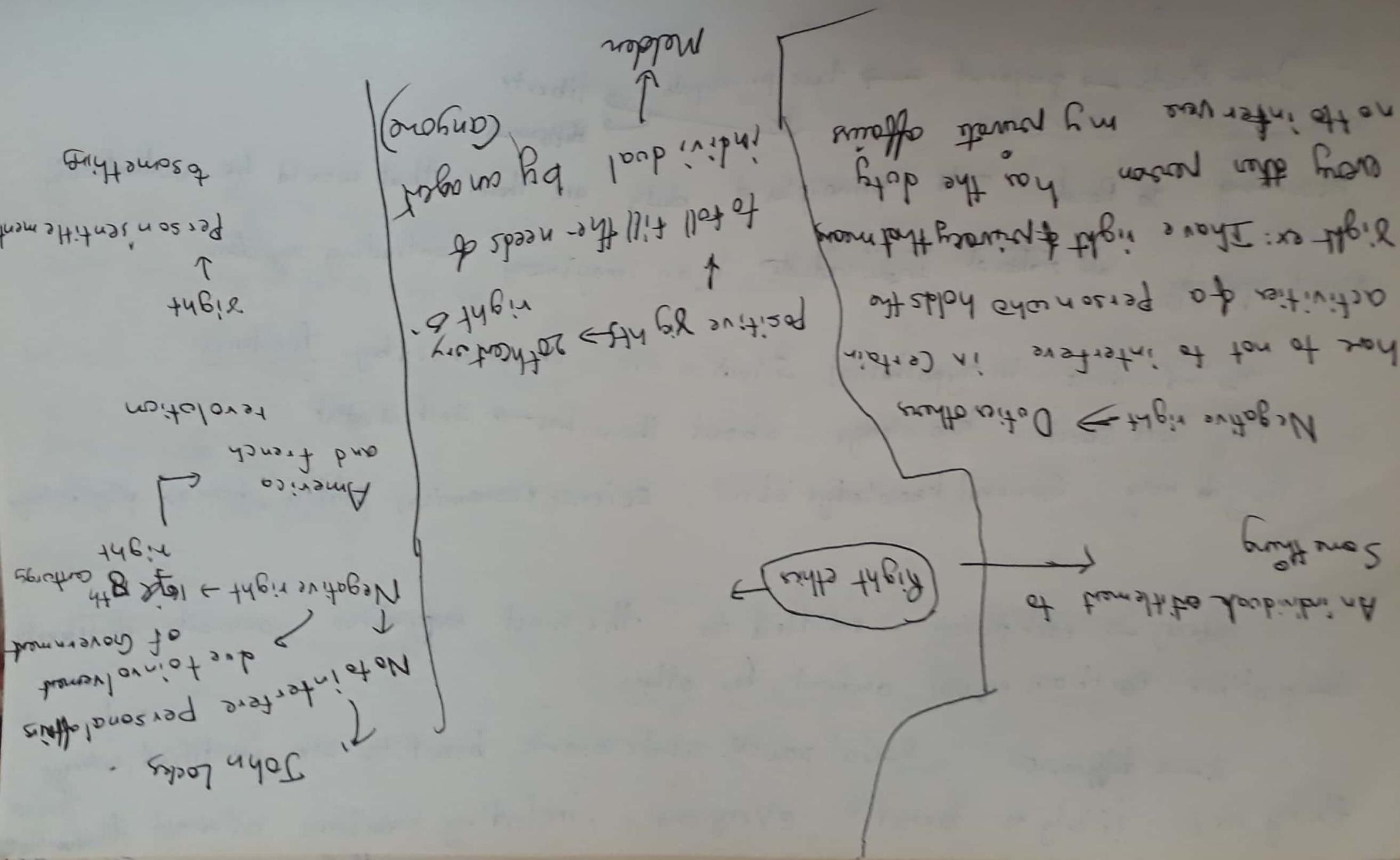
↳ by doing something

Expect in return

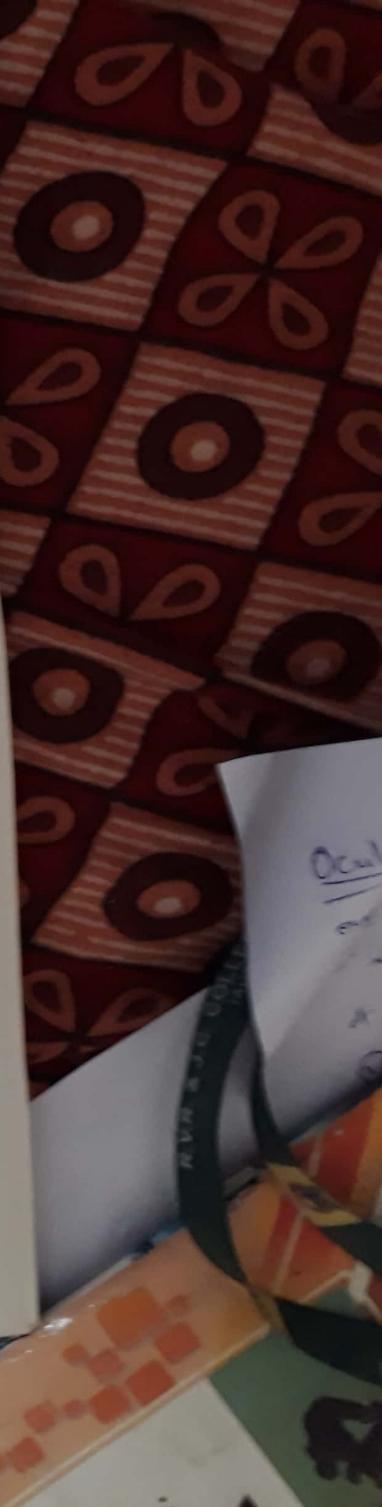
When action is due
 ↳ when expectation of duty
 ↳ action of duty
 ↳ particular condition

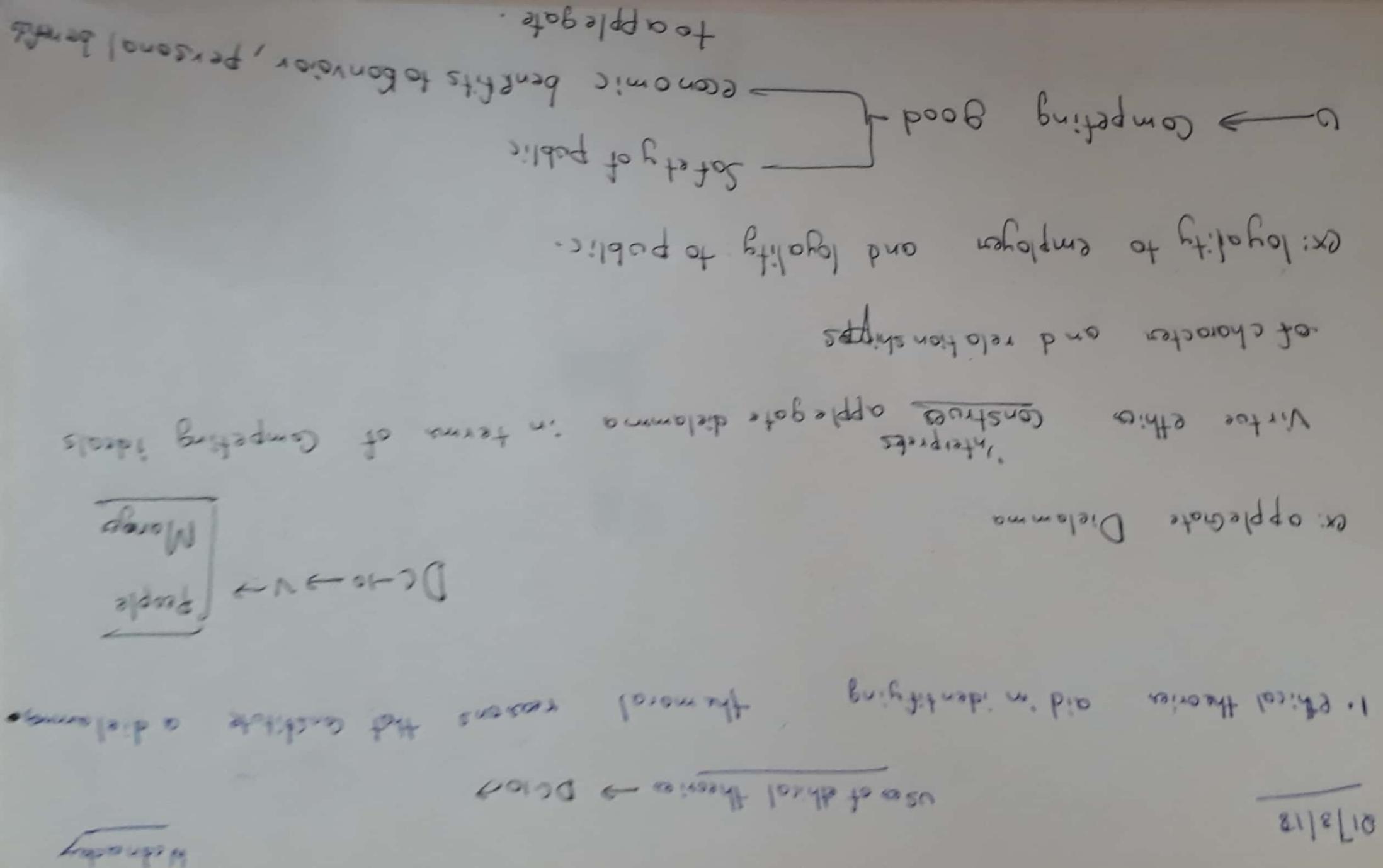
When the will becomes good!

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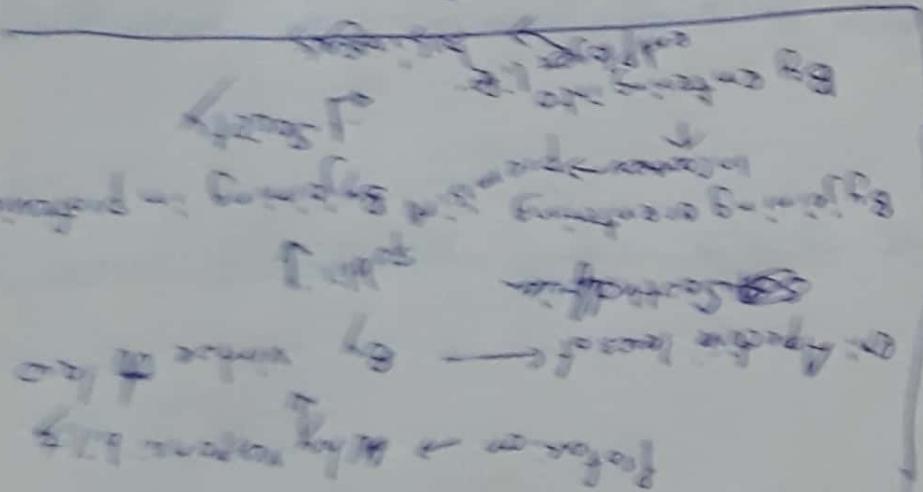
- increasing migration between countries
1. Most culture and good government provides
2. Good salaries, job security, high standard living
3. People decision making
4. Provides disaffected employees
5. Based on security
6. Appointed decision making
7. Then cooperation decision making
- C. destination been many
2. Dissatisfied tensioned relation ships
3. Present management from rewarding individuals.
- individual acc. adding to the personal





1. Out of All the methods, Model terms, frame work →
Key words ←

and Professional
Model:



2. Effect of engineering activities on society
Special selling point by society

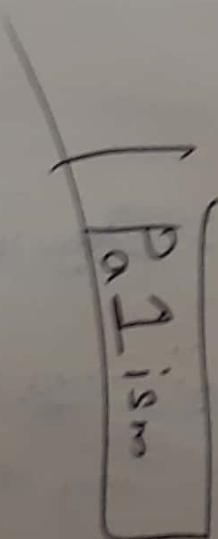
Ex: Appropriate laws of soft life
Concerning safety by safety to laws
Engineering activities make a selling point

Key

or ~~theirs~~ Ch. 20 (e) Conclusion

3. Three of the central organizational

4. An engineer upon entering their career tacitly promise public to Protect and Safe guard it; in return public has largely underwritten engineers education through financial Support for engineering colleges.



22/3/18

Moral values differ from other categories of values, because it has nothing to do with the righting and contrasting them to other values.

Ethical ~~log~~ relativism: An act ~~and~~ ^{is morally} right if it is accepted by law, custom, society.

Grand father's leave and left

peculiar laws of
SA

d

Ethical relativism → It says that actions are morally right when they ^{are} approved by

law, customs

ex. 1. A particular laws of SA

2. Hitler and his followers murdered 6 million Jews for their law
Customs and beliefs.

It is confused with descriptive relativism → values, beliefs, attitudes & actions
culture to culture.

Moral relationalism → The view is that moral judgement should be made in relation
from factors that may vary case to case

any relation btw morals and religion.

R → Morals ← religion

related historically, psychologically

Religion and divine command ethics: Moral commitment and religious beliefs are related historically, psychologically and in several positive ways. Related historically, psychologically and it is commanded by God.

Divine Commandation An act is right if it is commanded by God
An act is wrong if it is forbidden by God

(Son of son) Model Seven (p-1)
Meditation
Don't speak existence of God (Buddhism)
Simplifications
J
Mind path
J
Birth, speech, concentration
afford understanding

22

Wester - Park
N.Y. Standard

卷之三

Bill

↓
inspection ← unoffical

↓
unsafe — toxic

Not serious

ethical egoism

Self interest

Nightshift

benefit of

Urinals ← Plant manager → Sanitary
Sodium Cyanide
Solution

No effect

29/3/19

knowledge training

~~exp~~ informed consent

exp

epp

engineering are conducted

new and

not again more knowledge.

standard exp

Wednesday

Valid consent is required as

it is not required on exp.

exp. is conducted on homologs -

is conducted on objects

Northern state power corporation at minsk.

Informed consent

exp. is conducted

Northern State power Corporation at Minidoka.

Consent must be given voluntarily, ^{by} _{not beating them}

It should not be from minor and mentally charged people.

from all information, valid informed consent is given

Consciousness → Mind

open eyes, ears, mind.

Respects

Engineers are responsible experimentals.

1. Not breaking confidentiality

2. Not ~~altering~~ altering data

3. Not violating

Patent rights

Conscientiousness

Engineers should have open eyes, open ears, open mind, As.
most of engineers are salary employees working under
employers. It is restricted for some aspects.

1. not altering data

2. Not breaking Confidentiality

3. not violating patent rights

Consciousness → ~~engineering~~
Open eyes, ears, Mind.

Engineers as responsible experiments.

Conscientiousness

Engineers should have open eyes, open ears, open mind. As most of engineers are salary employees working under employers. It is restricted to some aspects.

- 1. not altering data
- 2. not breaking confidentiality
- 3. not violating patent rights

discretes

- 1. Not breaking confidentiality
- 2. Not ~~not~~ altering data
- 3. Not violating
patent rights

Relevant information: We can be done loyalty, and conscientiousness by knowing relevant
information

M.A.: Moral autonomy → We should be able to judge true/false on our own

Accountable:

Milgram ~~Take~~ → psychologist
yale university → students and teachers.
↓
Some give 450 V.
→ Means willingness to consider once' actions to moral examination

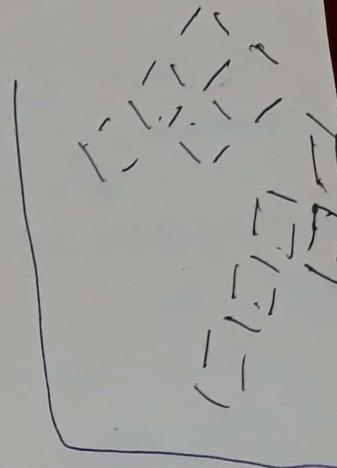
Accountability:

for every work we done, that is accountable to our self

not on others.

Students are known and acted. electrodes

are not giving current.



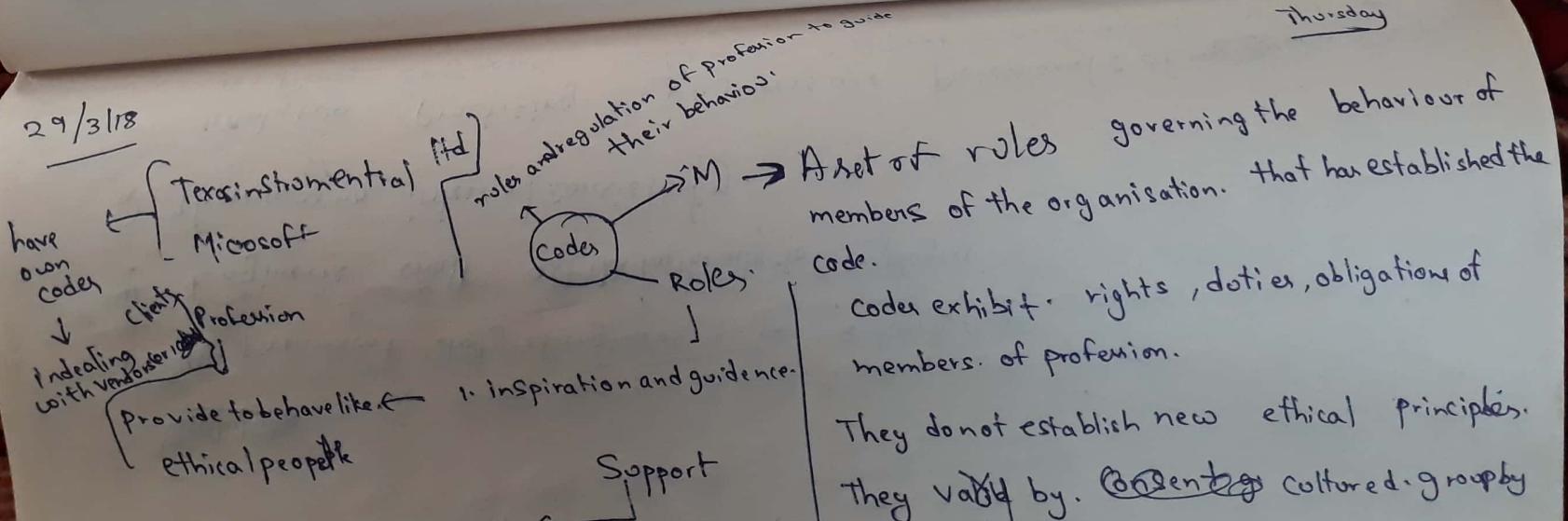
AICTE → All India council for technical education

NSPE -

AAES → American association

IEEE

29/3/18



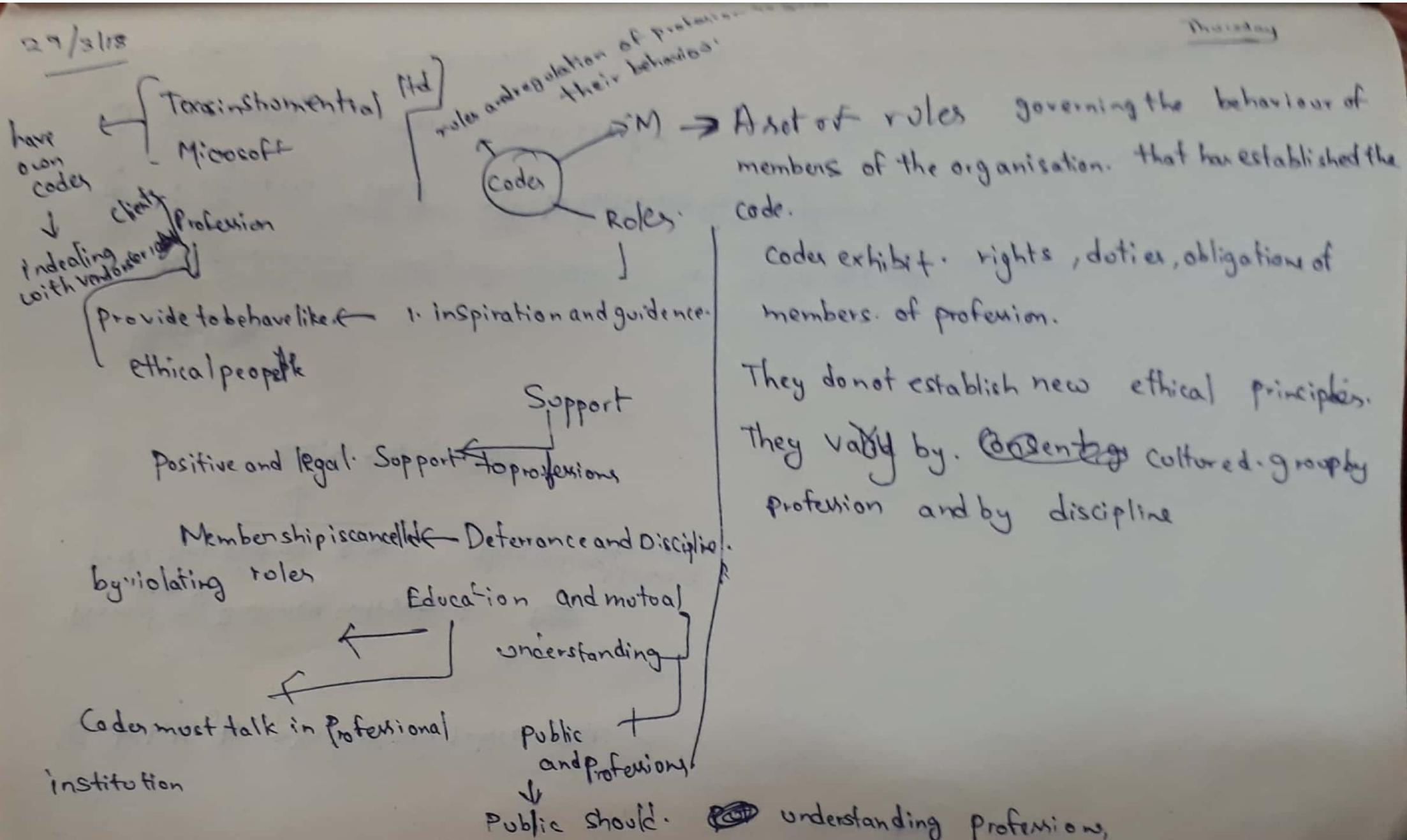
A set of rules governing the behaviour of members of the organisation. that has established the code.

Codes exhibit rights, duties, obligations of members of profession.

They do not establish new ethical principles. They valid by. ~~Content~~ cultural group

29/3/18

Monday



Contributing to profession's public image:

Promoting Business interests : ~~Business~~

Protecting status quo : They will not tell news.

కున్నా కున్నా కున్నా కున్నా

Violation

1. The paramount duty of engineer is safety of public.

of Engineers shall act as faithfuls to employers.

2. There was no internal consistency

i. Only few practising engineers are professionals of ~~members~~ Society
ii. Many engineers who are in Professionals society are not ~~concerned~~ aware

of existence of their code and they never go through it

3.

4. They can't be treated as final moral authority

5. ~~Codes~~ Codes are said to be cohesive, implemented by threat and codes.

Balance cut back on law

Schelling

The Balance cut back on law ~~law~~ signifies the ~~most of~~ ~~international regulations~~ in directing engineering practice and their limitation.

1969



Case Study

Santubong off shore spill



Tanker

2350000 ton (Crude Oil) - Crined off shore

30 million Barrels are damaged → a massive ~~loss~~ destruction



Hickel's law → important recommendation to Government

Babylon a.c. building code → Hammurabi → king. → 1758 BC.

~~If the building was cracked, the contractor~~

Wall bulges → expenses are taken by contractor

~~Building owner~~
~~Building son dies~~ → death sentence to the contractor or son.

~~Building owner dies~~ → Builder dies.

if slave dies → he should give Slave.

↓
Building owner

United States Streamboat Act → 1852 AD



Alfred Goethiro → engineer's study ↑
boiler explosion
on ~~over~~ hundred stream boats.
↓
and is given to government

Sultana → Riverboat → he gives.

ASME →

American Society of Mechanical Engineers

Limitations:

- 1. It is difficult to update laws in order to match with the rapidly changing technology
- 2. Many laws remain unclear in form of non laws → laws without enforceability
- 3. Minimal compliance: compiled with law ex: lack of sufficient no of life boats.

Proper role of law in engineering:

Maximum Complains

upgradation of laws

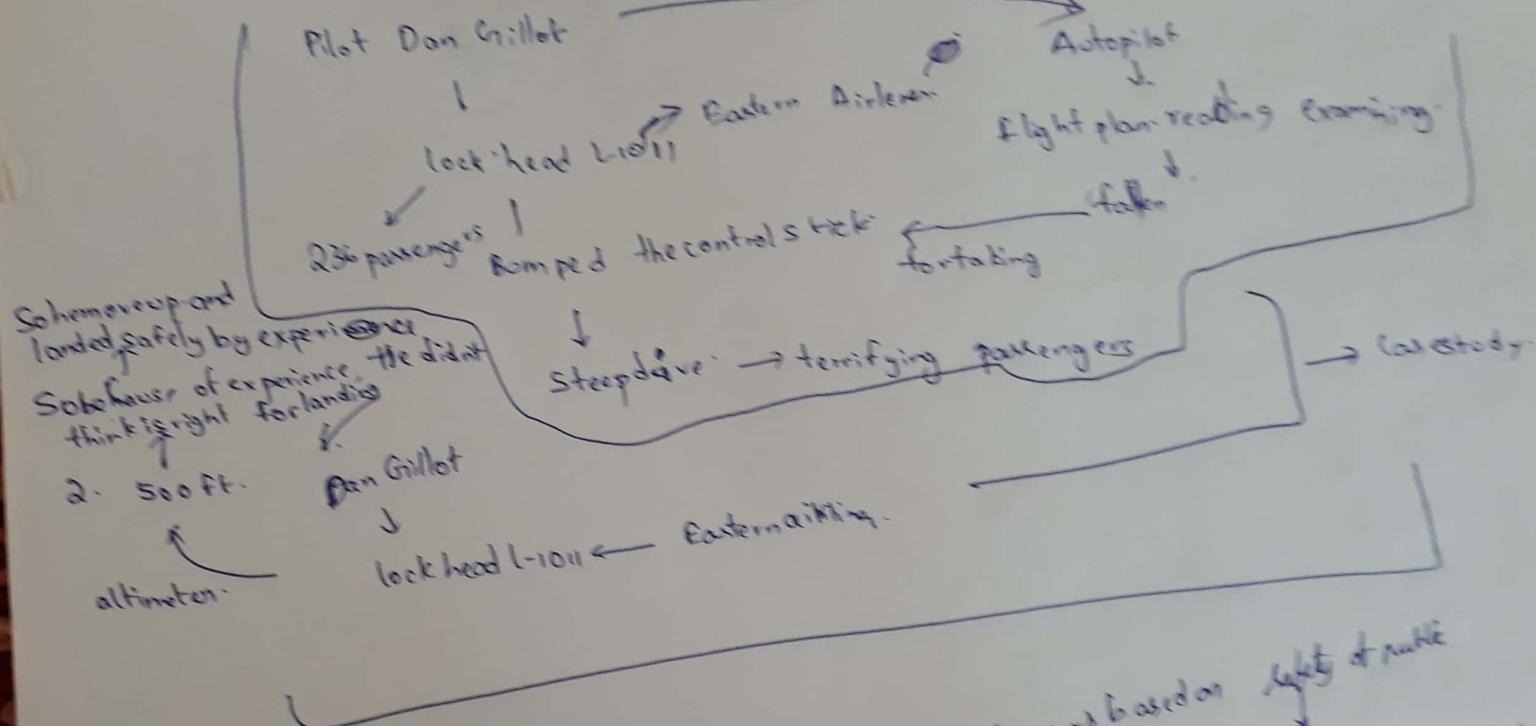
enforcement of laws

1150
1150
lab of de G program

31418

Engineer's responsibility for safety

Tuesday



All was based on safety of public
from indiscriminate

3- A.P Mode ^{? Auto pilot}

Crew → Examining the defect

↓ ... people died

Safety → Condition of being safe; freedom
risk, injury, danger; absolute safety is for all
; neither attainable nor affordable

? hospital

3. Approache

Credit → Examining the intent

↓
marked and people did

↳ persons → Children will eat hand
pollution environment → other person's effort

Social, → can have a very big, freedom from
risk, injury, danger, absolute safety (hand people)
inhibition attainable or not attainable.

acceptability

drawbacks

Ex. Underestimation

Ex. Brad Tosteson.

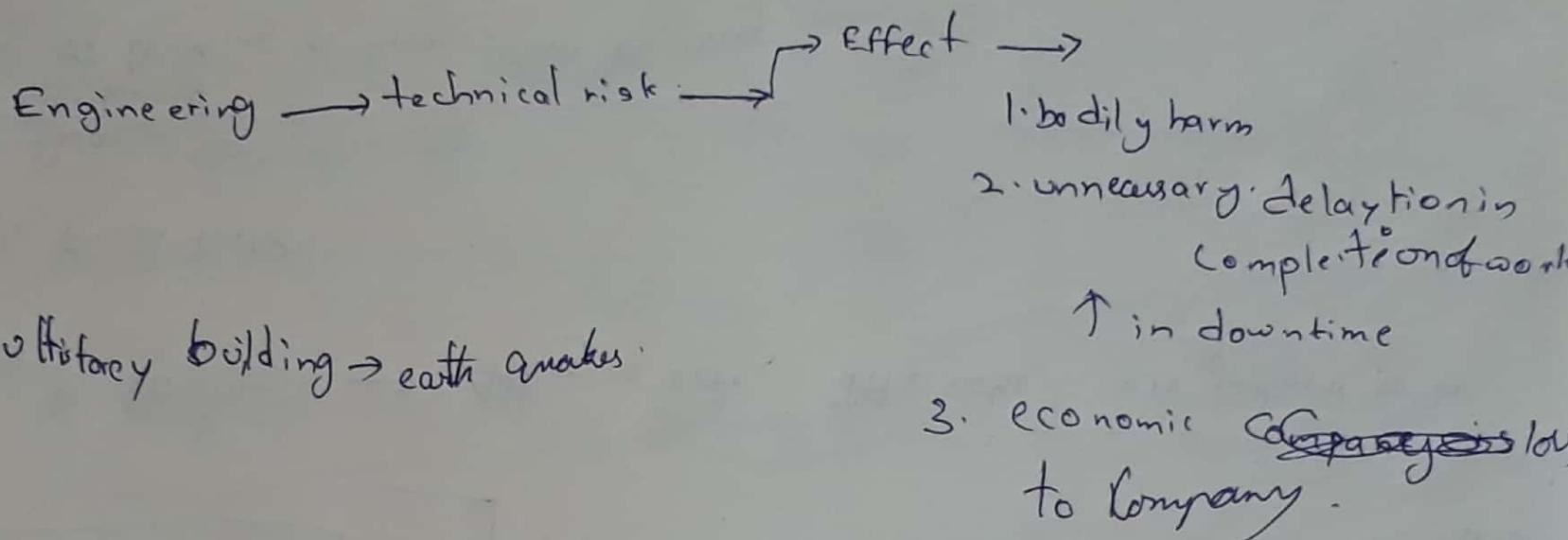
Over estimation ex. fluorine content in water.

Thinking to
No estimation, e.g. breaking of tyres while driving

William W. Lawrence → Attitudes in society
"right" risks are judged to be.

risk → potential that something unwanted ~~harmful~~⁸¹ harmful may occur.

↳ probability × consequences.



hazard →

technology has influence on safety on such influence is ~~reduces~~ hazards

hazard → measurable → effect of danger is measurable
 hazard → Natural → earthquakes, Tsunami
 | lesser order. (or) new → awareness is found → Education, Media

disaster →hopalgaon tragedy
 ↓ → Chernobyl nuclear disaster.
 → Three mile island

Seriously disrupted ~~event~~: event, lack of preparedness.

Acceptability of risk: In the words of William Drewe, a risk is acceptable when those affected are no longer apprehensive worry about it. factors that influence the acceptability of risk:
 → Voluntarism and Control.

Ex: bike race, Bungee jump etc.

→ Effect of information on risk assessment: Way in which risk is perceived
 → on the manner in which

realised greatly, information upon decision making perceived-

A	B	C	D
72	28	22	78%

$$A = C, B = D$$

firms gains are preferred over risky gains. firm losses are avoided probable losses are preferred.

Job related risks

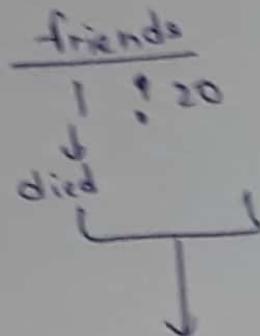
Employees in high risk jobs do not have any option but to accept them, because of compulsion. Ex: chemical plant

Lawrence modified definition of safety

A thing is safest, were its risks fully known, those risks would be judged acceptable in light of settled value principles. More fully, a thing is safe with respect to a given person or group at a given time if, were they fully aware of its risks and expressing their most settled values they would judge whose risks to be accepted.

Magnitude, proximinity

weberiany



50 : 1000

↓
people
died

out of side & out of time

affect more.

Lessons for engineers:

for preparing product

1. optimistic activity of public →

if public likes one good, second good is not like also
they will buy all

2. number than frequency →

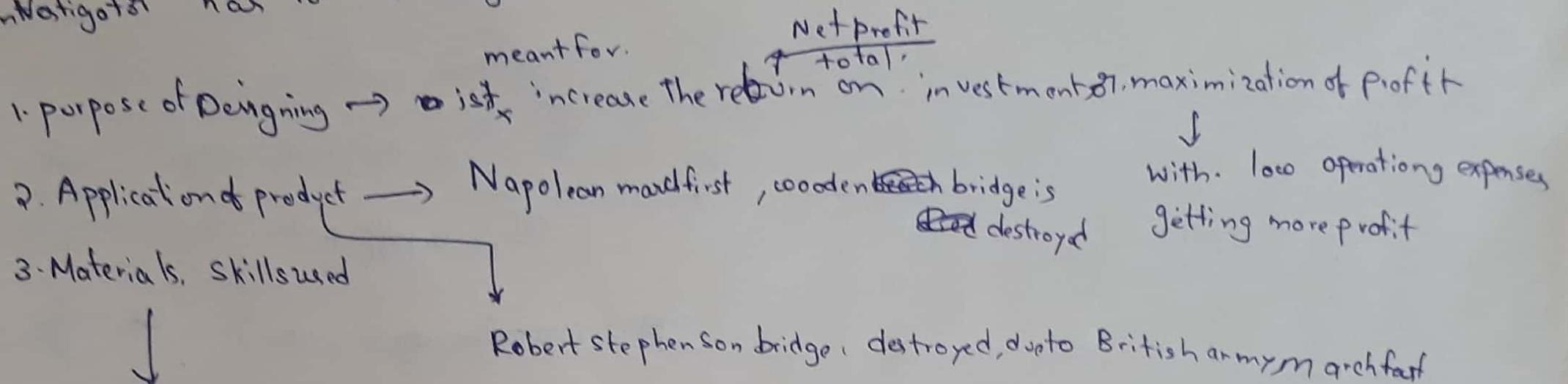
A → 50 → one at time

B → 5, 5, ..., = 50
↓
one month

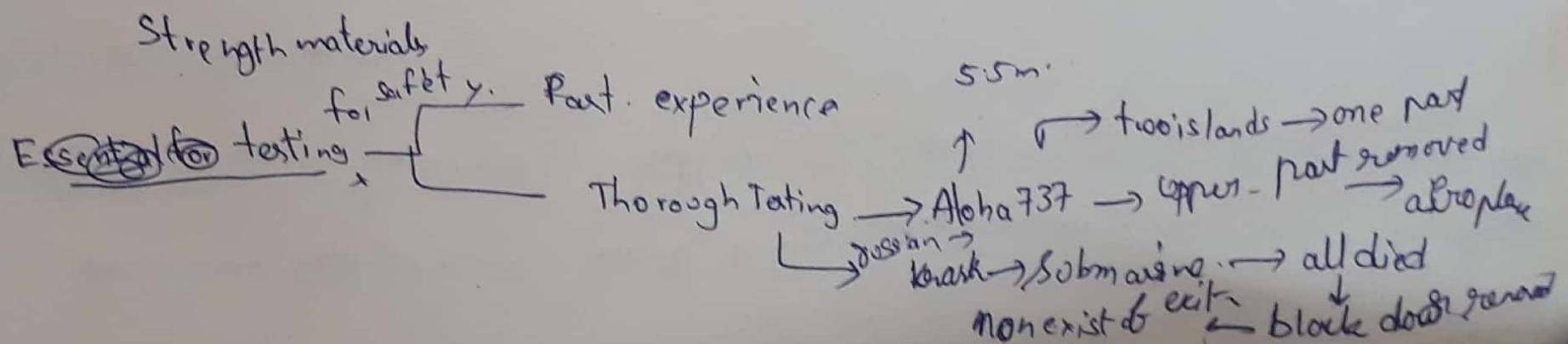
3. political influence →

Uncertainties in designs:

Risk in a product occurs due to so many uncertainties, in order to minimize, the investigator has to investigate the following criteria.



river Mississippi → a bridge is constructed and closed due to pillars are made of ~~too~~ weak.



following points are kept in mind while testing → Adequate time must be allocated, test must be conducted at regular intervals, all aspects of test must comply with the legislative, technical standards.

Analytic methods of ~~techniques~~ testing

1. ~~scenario~~ (event to consequences) analysis.

2. failure mode and effect analysis

fault

3. ~~fault~~ tree analysis → tree

4. event tree analysis → mathematical

Safe exist ↗ three Conditions ↗

Responsibilities to employers

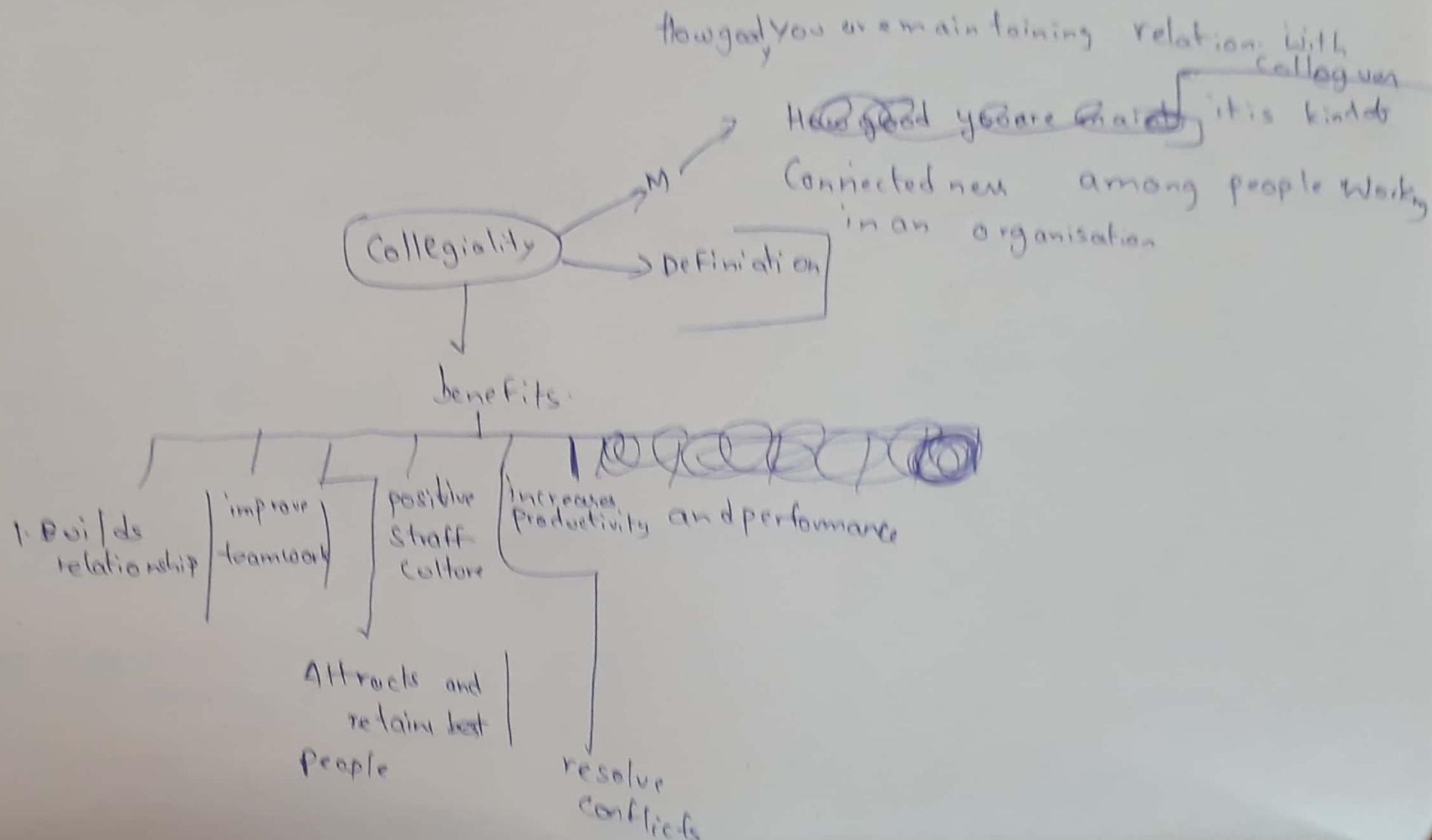
Data General corporation → flourish very properly → 1968-1988
↓
approached Management → down fall → 1978. forrise by. new product.

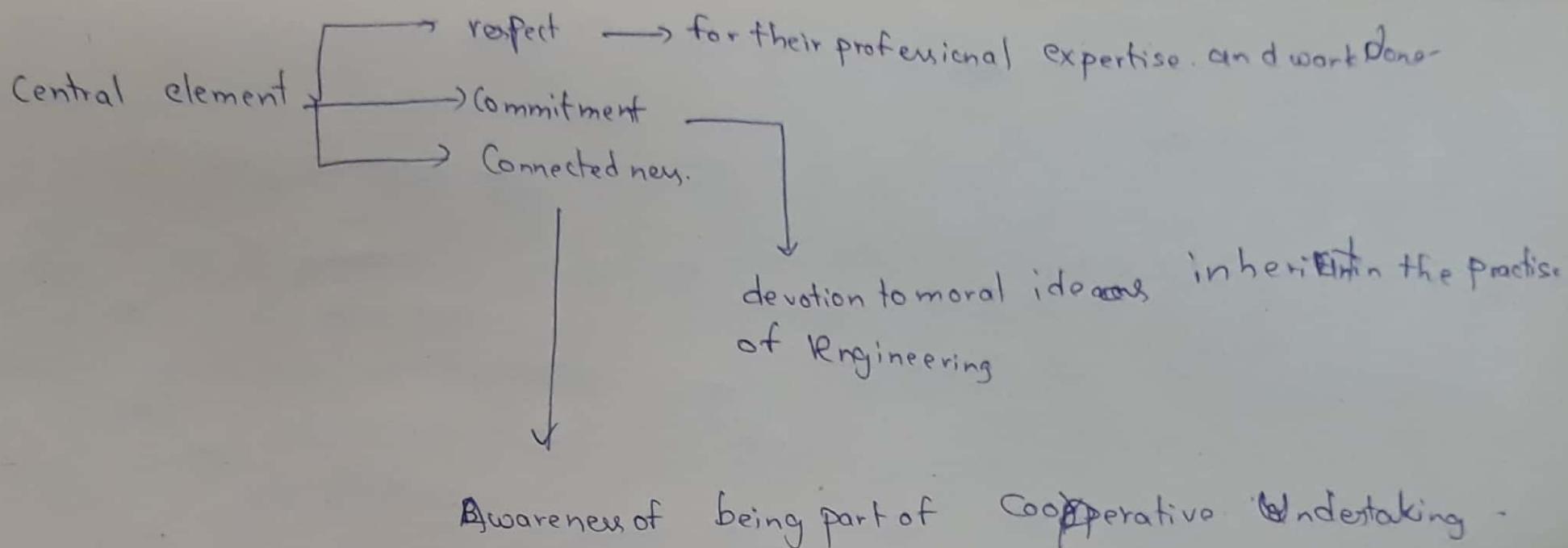
↓
+ open west → 14 years Micro Computer. forrise
↓
Manufactured.

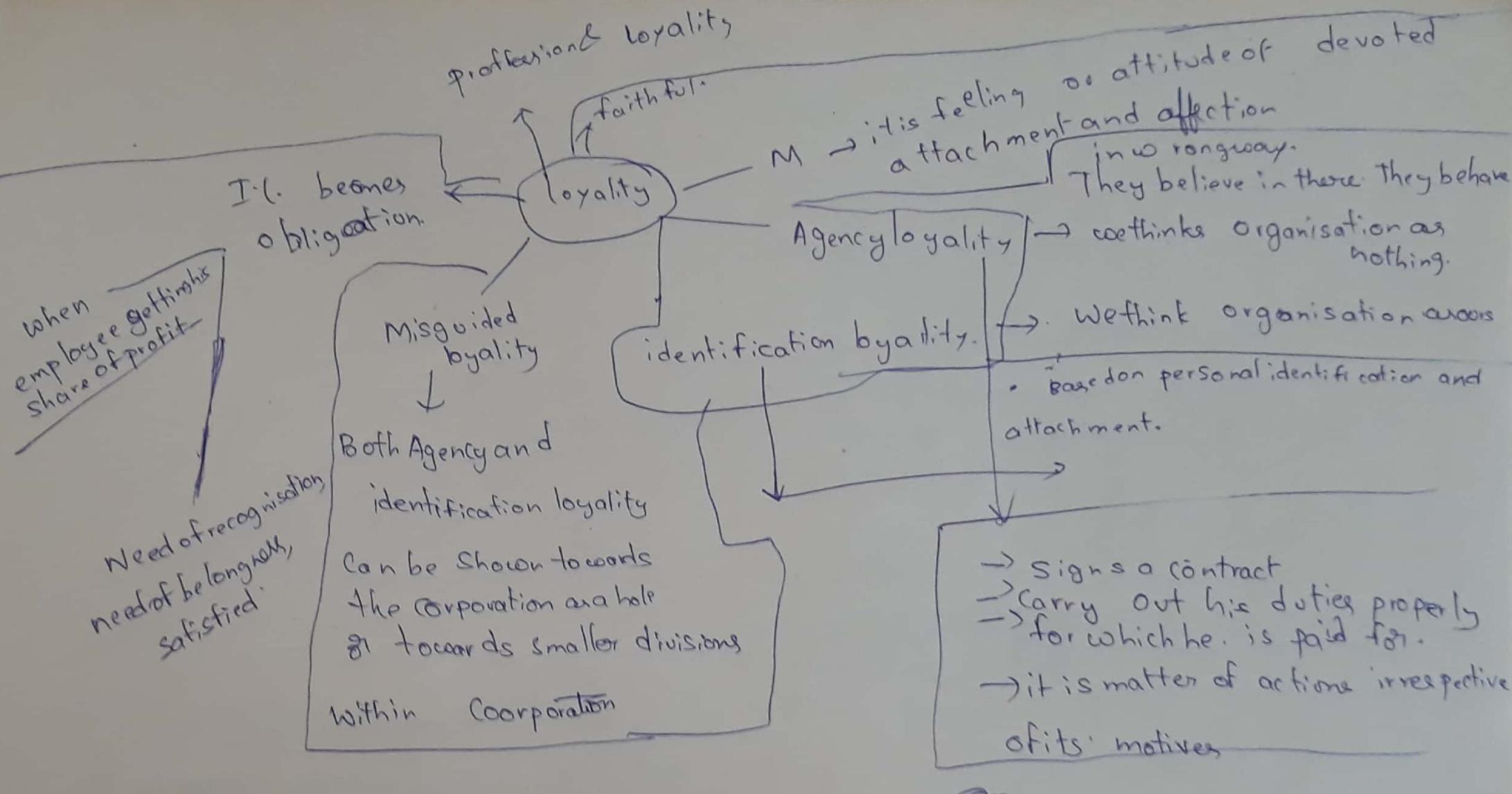
15 freshly graduated engineers.

↓
within 6 months → computer → eclipse MV 8000. → grand success.

The cause is team work. Virtue → collegiality







I.L becomes obligation

→ Employee is treated fairly and regetting his share of profit
Some of their important goals are met. Also, ~~no~~ pleasure of effluating to group, integration to group

profession & loyalty → loyalty to Company Can't be evaluated to merely obliging
One's immediate Supervisor

Respect for
Authority

Need for

line of authority

→ decision making for
identifying areas of
personal responsibility
and accountability

7/4/18

Saturday

Respect for authority

A vs P

Authority vs power

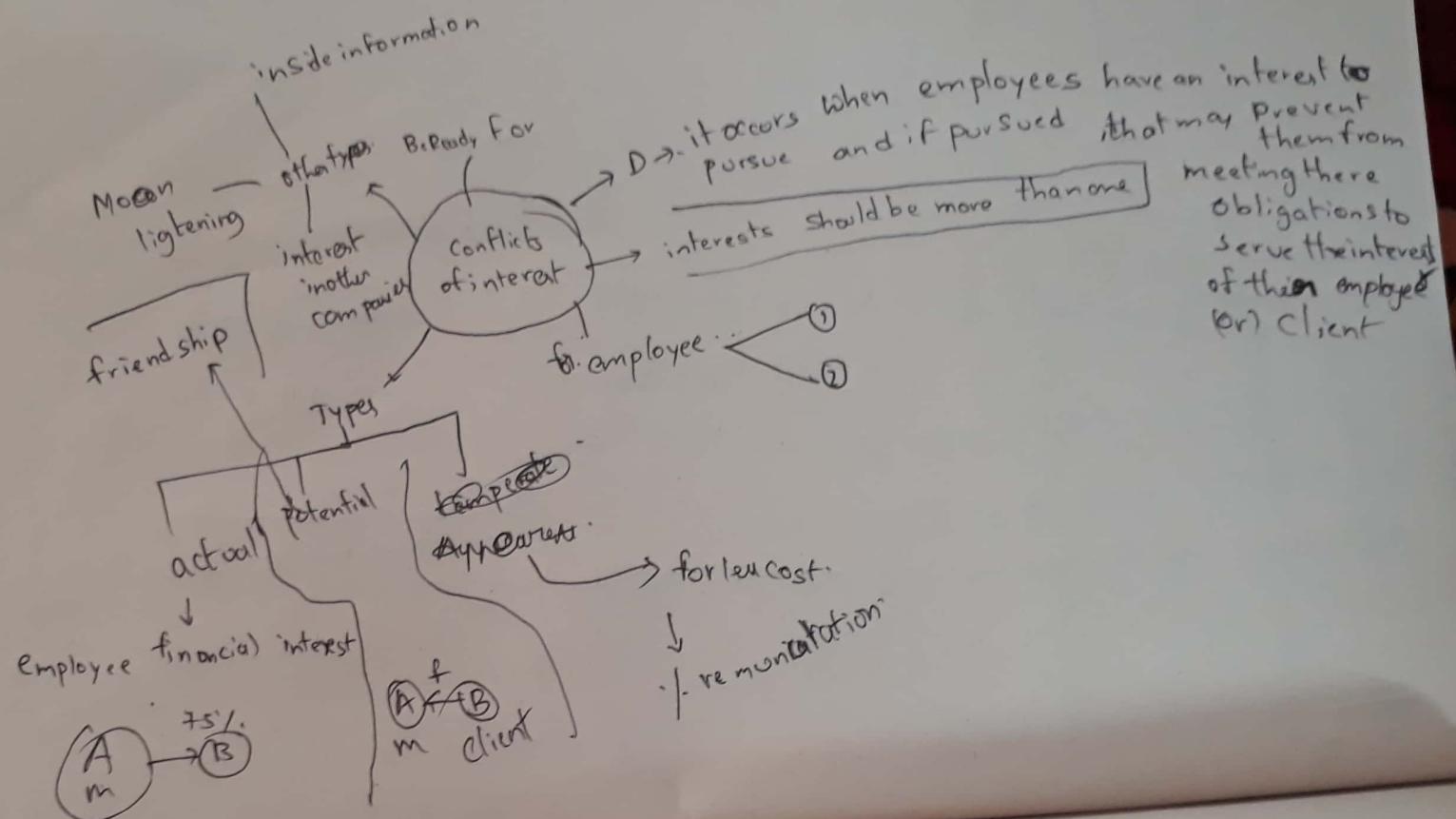
Need for authority → Decision making for identify the area of personal responsibility & accountability

institution authority

/
expertised authority

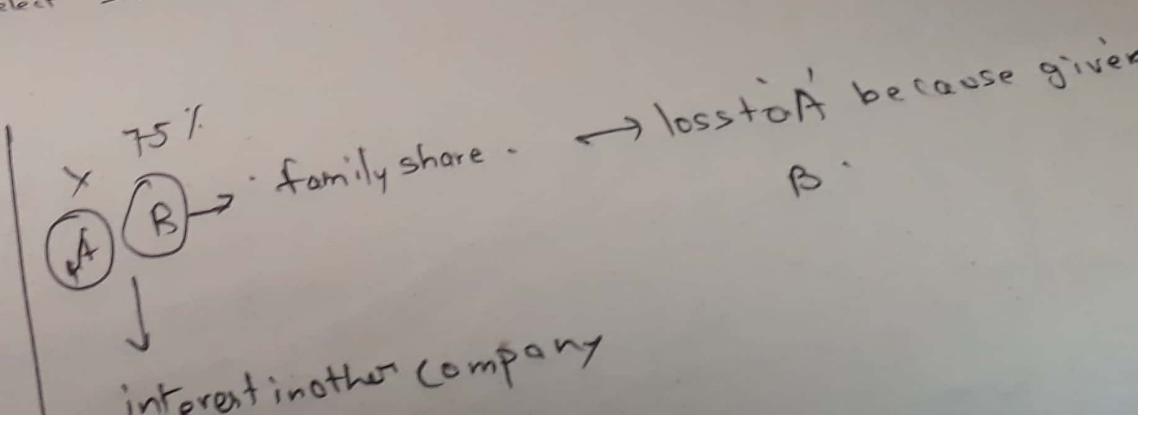
P → Doctor hospital
L → Legislature

10/11/17

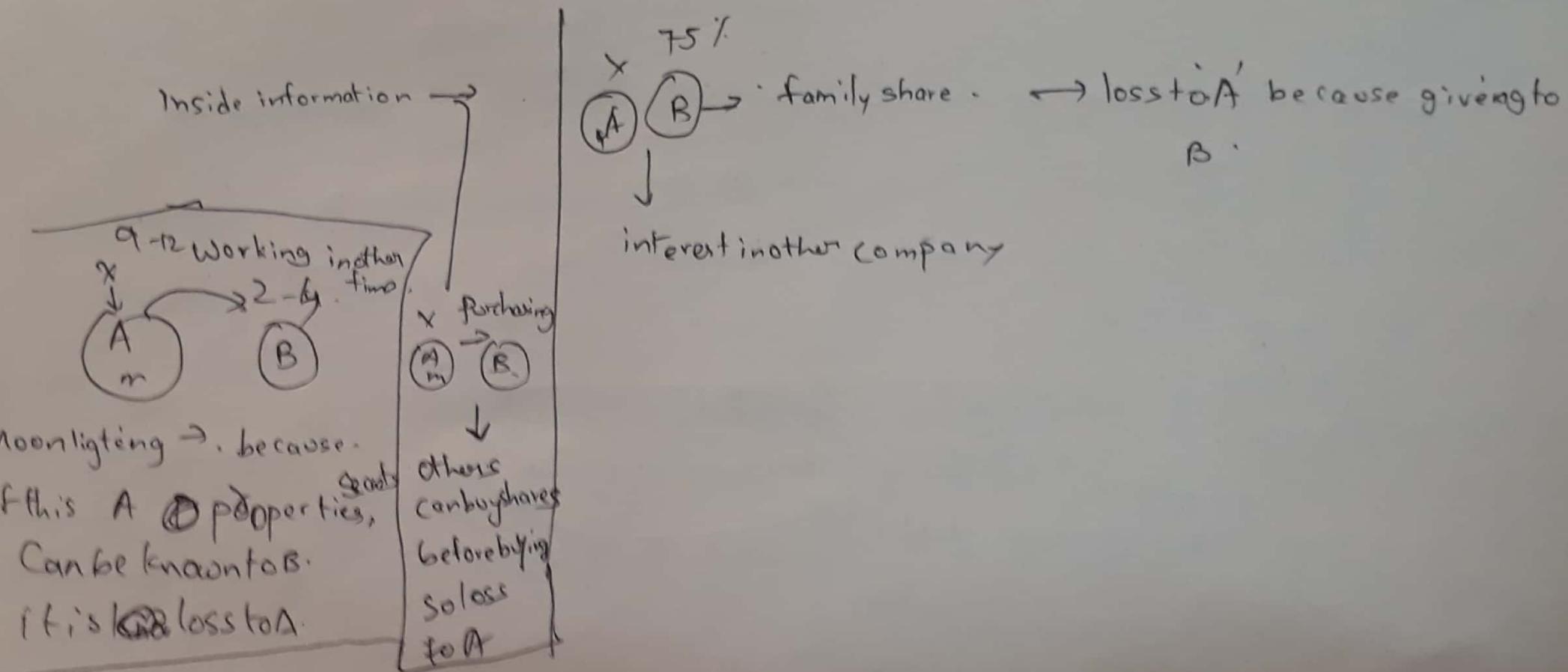


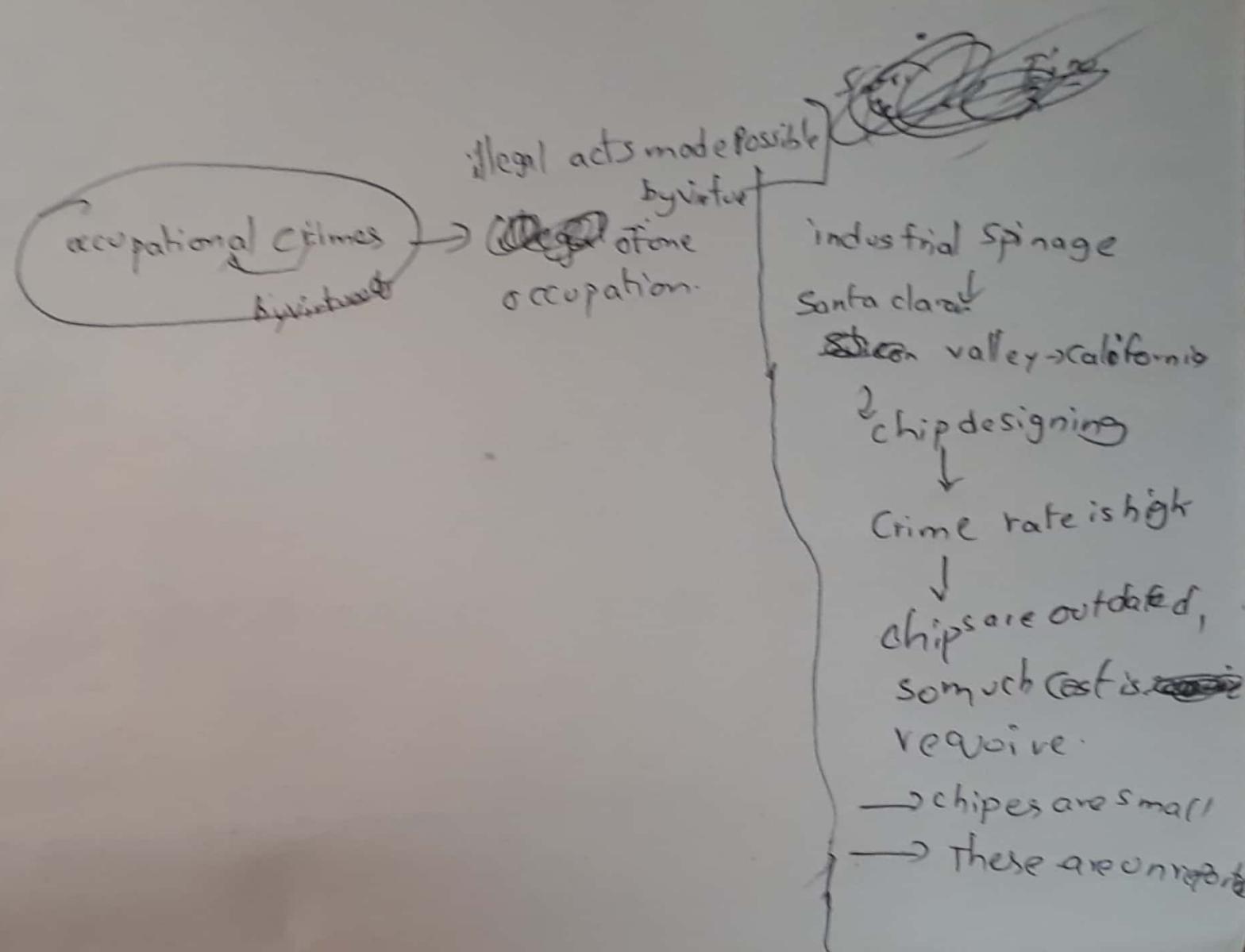
Actual → In company we have to select Suitability of material

Inside information



Actual → In company we have to select suitability of material →

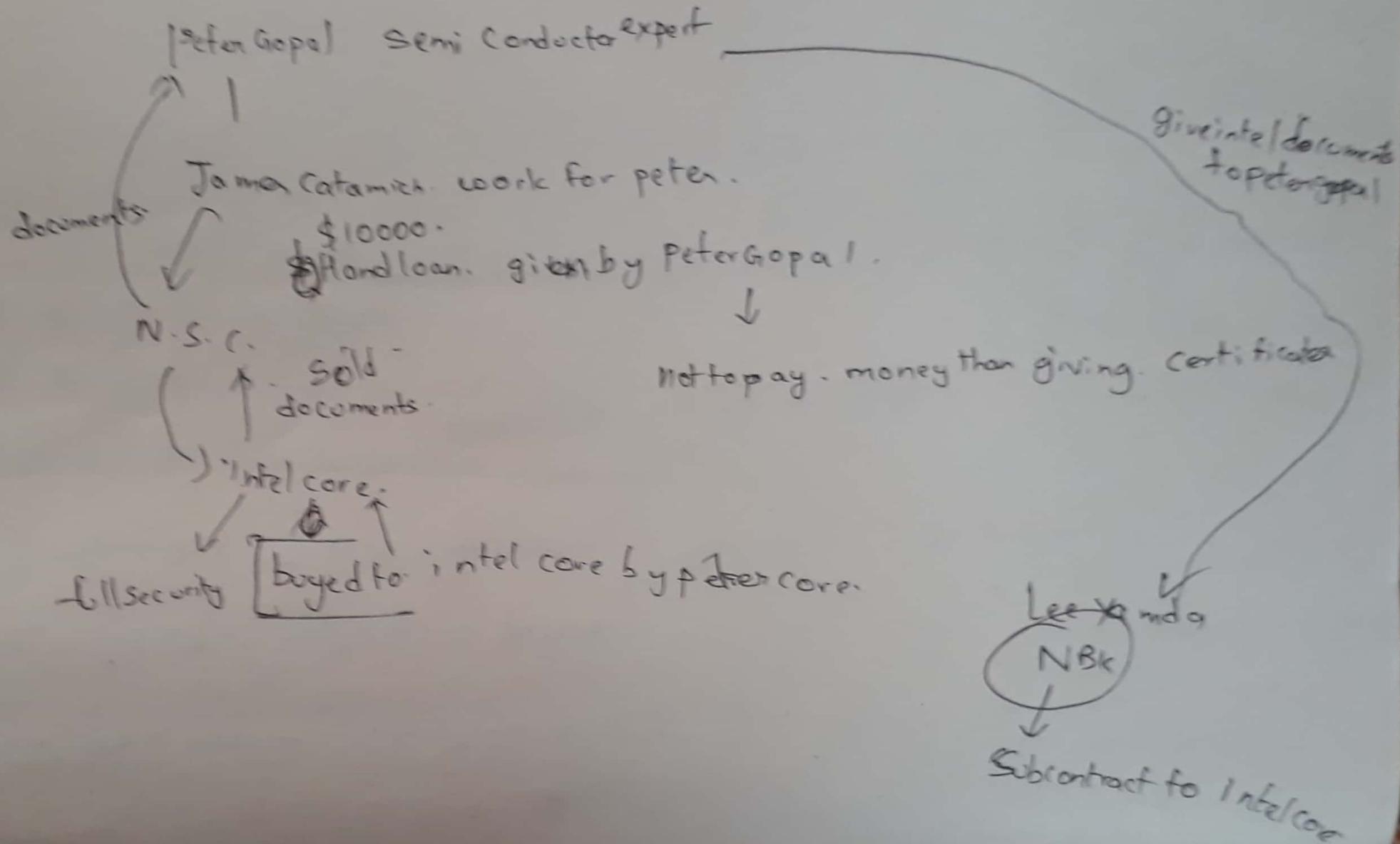




industrial espionage → Santa Clara Valley is a marvel. for Computer industry.

Reasons for industrial espionage are as follows

1. The development of Computer chips is extremely fast moving, competitive.
2. Computer chips are highly expensive to develop.
3. Chips are very small in size. So easy to take them out of office.
4. Most of the times go unreported.
5. Employees who are revealing the secrets will not carry out such activities directly.

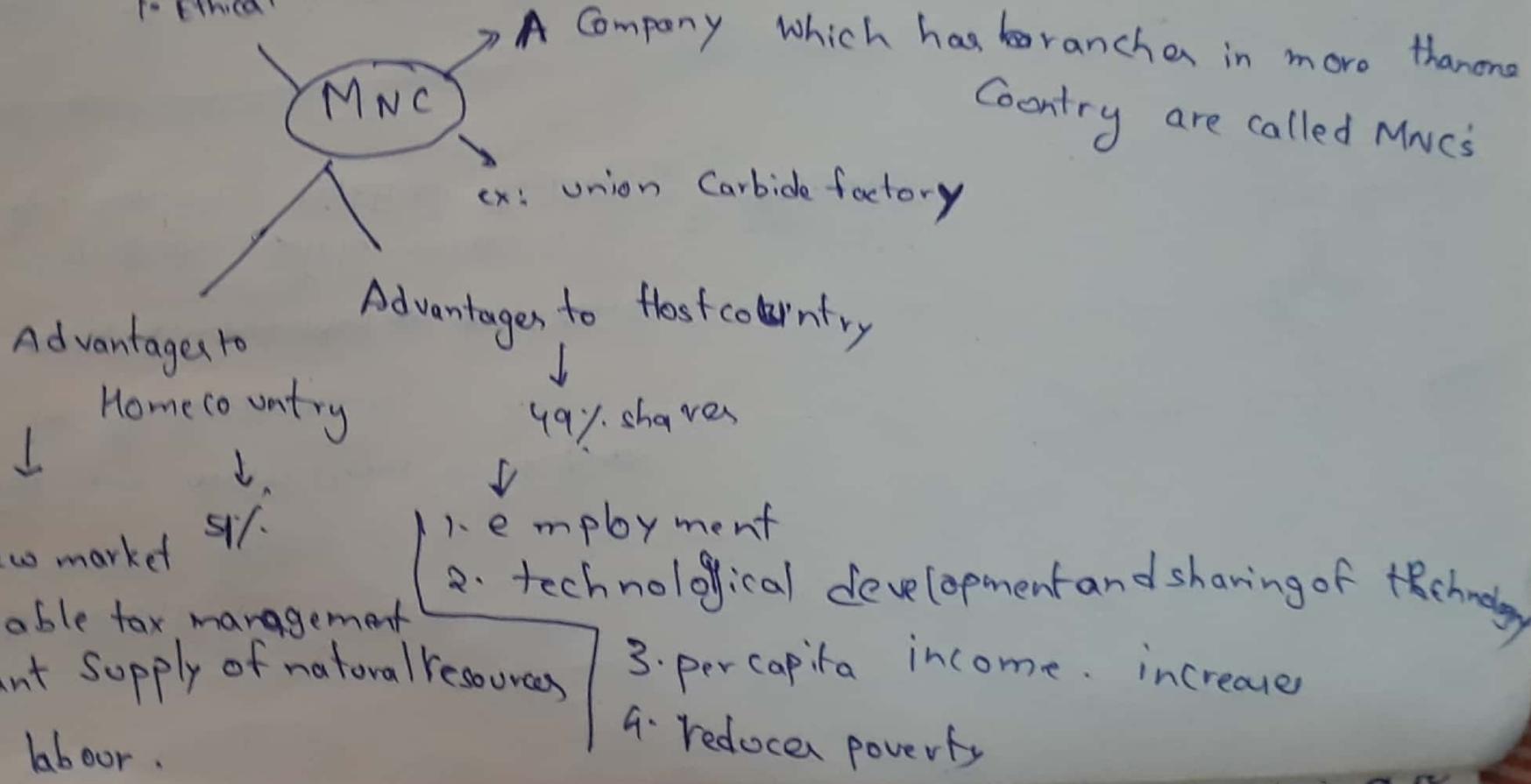


12/31/18

3. descriptive relativism

2. moral relativism

1. Ethical relativism



ways to promote moral

1. respect → for laws and customs of the place.
2. Beneficial → to the host country.
3. fair wages → wages are provided as per work.
4. Safety → adequate safety measures to be followed for human rights of host country
5. respect → for human rights of host country

union carbide factory

ups

loss to india.

Appropriate Technology: The technology that suits the host country.

who do engineers refer →
salary
status,
recognition
fast career growth

Engineers as
Manager
Milton Fried
man skills

selected as Managers
→ easy solve problems
Qualitative aptitude

Skills:

1. decision making
2. negotiation
3. Persuasion → art of changing attitude of behavior.
4. Time management
5. motivation
6. financial knowledge

Criteria required for a profession

1. knowledge
2. Organisation
3. public good

important task of manager

engineers
Manager

responsibilities of engineers as managers

- 1. Benefits → to the host country
 - a. Fewer wages are provided as per work.
 - b. Safety measures to be followed.
 - c. Adequate safety right of host country
 - d. So, human respect →

Appropriate technology: the technology that suits the host country.

Engineer as manager
Skills

- 1. Who do engineers represent
- 2. Salary
- 3. States, recognition growth
- 4. Financial knowledge

Skills:

- 1. Vision making
- 2. Negotiation
- 3. Persuasion → art of changing attitude & behavior.
- 4. Time management
- 5. Motivation

Criteria required for a project
Criteria required for a project

- 1. Knowledge of organization
- 2. Public good

Engineer as manager

Important task of manager
Important task of manager

- 1. Responsibility of engineers as managers
- 2. Responsibility of organization

- 1. Revolving contracts.
- 2. Promoting ethical climate → most important.

How to promote ethical climate → by conducting Seminars, workshops

Resolving conflicts → 10 important forms of conflicts.

Conflicts based on schedules.

Conflicts based on technical material

Conflicts based on availability of personal over cost

(conflict)

Principles of conflicts resolution techniques

1. Criteria → How conflicts are caused

2. Generate alternatives

3. focus must be only on interest not position
↑
stated view,

4. separate people from problem → no conflict