HS 303 : Psychology

16.7.18

Instructor : Mrinmayi Kulkarni

Text : —

Grading : M.S 40 m
E.S 40 m

20 m H.W : 2 × H.W

H.W - 2 is a Book Report

Psychology : Unit = Individual
→ Sociologist : Divorces at Comm. level
Psychologist : → Collect Data from people, why ?
→ Sampling needed

→ Ebbinghaus : Recent Memory ....

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Lecture 2

- Structuralism : Lab exp.
  - → ↓ Scientific
  - → Trying to quantify the unquantifiable
- ~
- ~
- Behaviourism
  - → Measure units of behaviour
  - → Kind of from Pablo
- Psychoanalysis : Freud.
- ↳ Crossroads b/w Philosophy & Medicine
  - ↳ Psychology.
- APA : American psychological Association
  - → 1st Psy. body
  - →

Fields of Psychology

: Biopsychology : Measure what happens in the Brain
→ like Neuroscience.

→ Clinical Psychology
- Pathology : problems in behaviours
- Person is dysfunctional
- Diagnosis
- Mental Problems

→ Social Psychology
- Behaviour of Individual in a Social Group

ex. Lynching Behaviours

→ Industrial / Organizational
- Hiring & Firing
- Disputes at Workplace
- ~~Game~~ Wars?

→ Cognitive Psychology
→ University

→ Health Psychology
→ Narrow view : Hospital Setting
→ Broad : Health Behaviour
→ Entire body,
Diabetes, Asthma
↳ Psychologist can help

Practitioner

- Clinical Psychologist
  - → Counselling
  - →
  - → Psychiatry on the other hand: Hormones & Chemicals
- Counselling
  - → Degree = Counselling Psychologists
  - → Not Education counselling (Agent for sending students abroad)
- Education Psychologist
  - → Behaviour in schools and uni
- Social Work
  - → NGOs, Human Intervention at Police Stations
  - → In hospitals, courts.
  - → Places where Law is being enforced

→ Sports

- → How to play better
- → Phd in football Psychology

→ Industrial Organization

Future

~~How~~ Environmental Psychology:
ex Hows Architechture can be made people friendly

Methods in Psychology

- Formulating Hyp. (A priori. : Before work)
  - → Inspired from prev. research
  - → Based on personal observation

↓

Testing hyp. How?

→ The observational Method

ex Agression in pre-school Children

→ Video Record, use Multiple Raters
⇒ Inter Rater rel. ↑

Archival Analysis : Use Newspapers

ex How Women were portrayed in Advertisements over last 100 years.

Correlational Method

→ Not causational.
→ Just Measure env.

ex CPI & Personality traits

Surveys

Sample & (Sampling error) → can't ask whole population

→ Is the sub-set representative

→ 1936 US presidential poles

Literary Digest

→ Sent out 20m Questionairy
→ Got back 2.5m
→ Over sampled Elite predicted Franklin Roosevelt loss

Gallop → Small sample but Right prediction

Experimental Method → Test the effect of this.

IV → Independent Variable.

- Sometimes Intervention not possible

DV → Measure this

Lec 3

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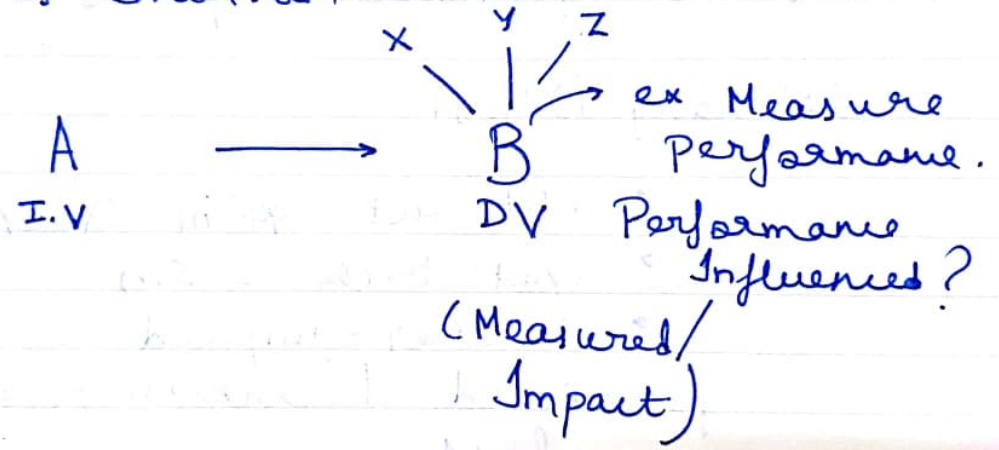
→ More on experimental method

- Trying to Establish Causality
- Lab : Control over var., Manipulating I.V

- Emotion prime used : Sit./Card that evokes emotion



- IV : Something that can be Naturally or Artificially changed

→ Internal validity : Control for extraneous factors that can also affect DV

→ External Validity
- Lab setting introduces Artifacts
- How Applicable are these exp. to

the real world.

- Before phen. added to books, must be verified numerous times.

- Cognitive Psychology more universal than Social Psych.
  → Cultural Aspect Important at Many places

Ethics in Exp. Method

- Consent : Consent form

- Debriefing : Post Study : Tell them what study was really about
  ex Study on Agression : Don't tell them.

- Submit ~~Submit~~ Methodology to Review ~~Com~~ Board : They Approve for Ethics etc.

The Brain

→ Neuroimaging

1) PET
   → ↑ Blood to a part ⇒ ↑ Activity
   → Blood using radio-Active Glucose

2) MRI
   → proton Mag. field Alignment
   → Subsequent Radio Wave emission

3) f-MRI, (4) C-T

Imaging

→ MRI is good at localizing Activity in the Brain

· Issue: There is time lag, phenomenon gone by the time we observe.

· EEG: Electro Encephalograph is better for time.

- Brains evolved Spinal Chord upwards, 1st there was the hind brain, then the mid brain and the Cortex was the last to develop.
  - Cortex → primates only

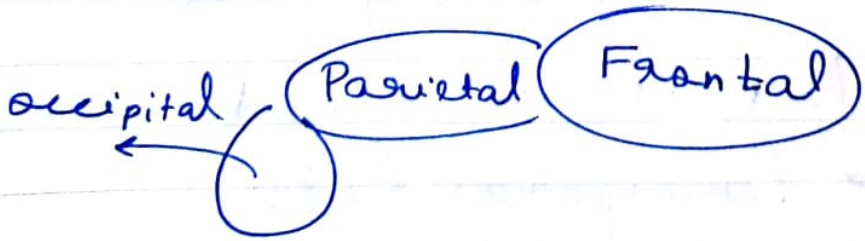
~~Hind~~

→ Cerebral Cortex: Forebrain

→ Glial ~~cells~~ form association Cortex, earlier thought to be unimportant now imp.

→ Inside the Cortex → M.B & H.B

Lobes in Cortex (Replicated in Left & Right Hemispheres)



→ In Motor area.

Broca's Area: Speech & Language (production)

ex Understand Language but can't speak it (Half Sided) → Not Symm.

→ Prefrontal Cortex: Thinking, planning, executive dec., rational thinking conc. in 1 hemisphere (~~In Motor~~

→ Parietal Lobe: Somato Sensory area: Sensory Area

Wernicke's Area: Language Comprehension (In Sensory Area)

→ Occipital Lobe: Visual Cortex

→ Cochlea → ~~Auditory Lobe~~

→ Aud. Nerve → Aud. Cortex in Temporal Lobe.

→ Frontal Lobe (Motor functions)
- ↑ Representation to fingers and Mouth (↑ spac)
- Thumbs ↑

→ Neural prosthetics: Exist as of today

→ Crossover phen. in Brain, Left organs → Right Hemisphere.

→ In Schizophrenia: There is Activity in temporal lobe → Voices heard are real to them.

→ M.B

Limbic System, Emotion
- Pituatary
- Hypothalamus
- Hippocampus
- Amyg.

} b/w Cortex & hind brain

→ Cerebellum, ~~etc~~ pons, etc....
.... hind brain

→ Hypothalamus: Hunger, ... to hyp.
- Rats keep coming back
- New exp. SPY Mouse: Controlled using stim.

→ Sense of smell (olfactory bulb) is located in the mid-brain
· Logical since the sense developed early on (Animals : crucial)

Midbrain ≡ Limbic System

Amygdala : Emotional Center.
→ exp: Monkey Amydala damaged

case 1) Damage in this area : fearful, docile

case 2) Damage here : Angry

Hippocampus : Explicit Memory
→ Memories that are being taken into storage

~~Pitui~~ Pituitary Gland : Controls whole endocrine system

Hind Brain

→ Brain stem : Begins where Spinal Chord ends : Central core

→ Cerebellum : ??

→ Medulla : Damaged in whiplash (Ex Sudden Car breaking) injuries, fatal strike on neck

→ Pons : Controls movement, processes many variables, Grad, friction etc. Large in Rats. (Balance while walking)

• Crossover Point

→ Nerves from left & Right hemispheres cross over.

Thalamus (part of hind brain, but also M.B)

→ Relays messages

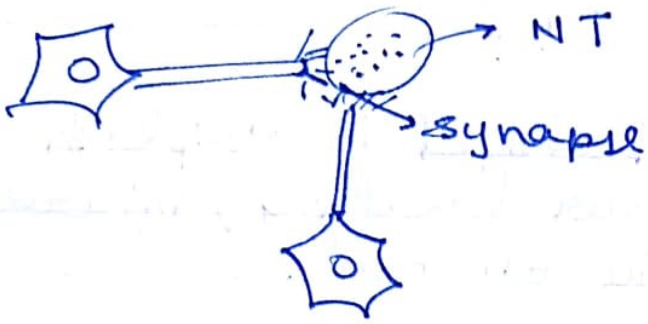
Spinal ↔ Brain
Thal.

Sense / Motor

Cerebellum

ex Animals Maze Running, keeping track of movements

Neurotransmitters



- Dopamine: Lack of it causes Parkinson's Disease. Symptoms: Hand tremors, shuffling walk, face stiff
  - shuffling gate

Excess Dopamine: Schizophrenia ⇒ Hallucinations, psychoses
Psychosis Patients given Dopamine suppressant: Show Parkinson's symptoms

Brain Plasticity

→ Brain Neuron pathways / patterns / arrangements get modified everytime we learn something.

Corpus Calosum : Hemisphere connecting tissue.

→ Hemispherectomies : One side Damaged

Left hemisphere damage → Right hand compromised

Treatment : Tie up good hand, Stimulate affected hand → Learn
→ other half (Undamaged parts) of brain may take over.

Deaf & Blind
→ For Blind people occipital lobe takes over touch (partly)

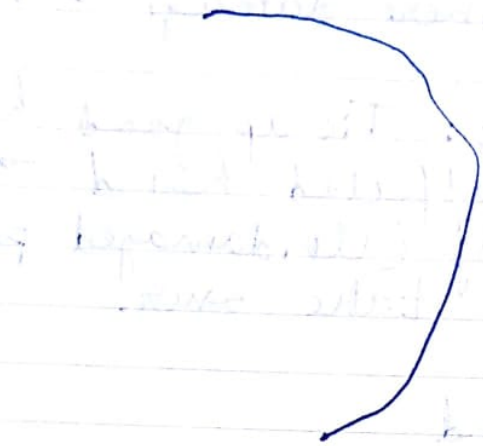
→ Bats : Use SONAR, have to conc.

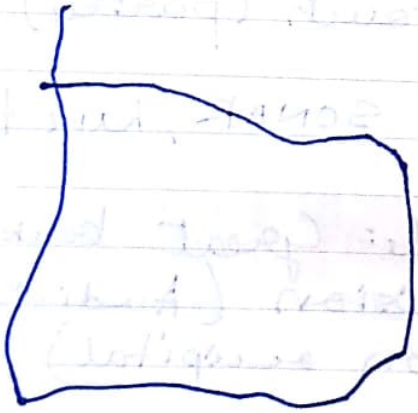
→ Deaf people : Great ~~background~~ peripheral vision (Auditory taking ~~into~~ on occipital)

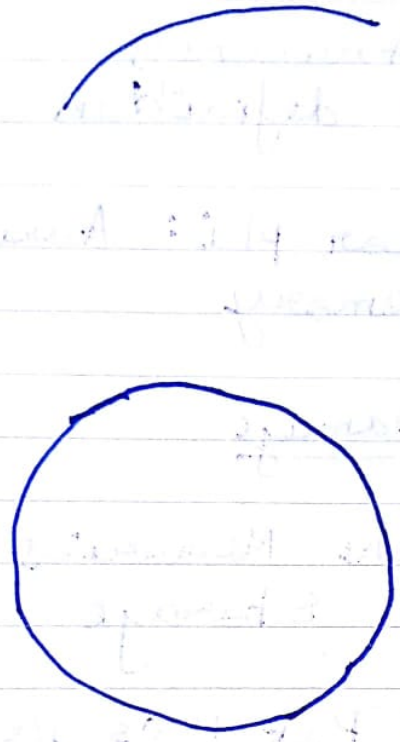
Corpus Callosum severing

→ Olden days (Ineffective) was used
→ Children (↑ Plasticity), grow normally
→ Adults Affected Permanently : hemisph can't talk. eres

→ Exercise: Draw Circle with Right hand & Square with left hand simultaneously







→ Doesn't work out; Theory: Right and Left hemispheres Interact.

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Lecture 5

Consciousness

→ May mean Awareness
→ Anaesthesia definition

→ Dennet's Color phi: Awareness is like trace memory

→ Hippocampus Damage

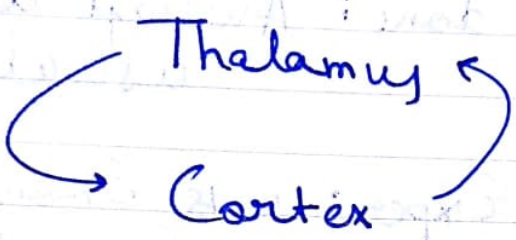
→ Hipp. Take Memories and Integrate into Storage

Take Present ⟶ Put this Recent pass in Memory

→ Hippo. Damage

• Can't add events to long term memory ⇒ No Consciousness life
• Integration of ^ Events is is consciousness

Visual Perception

- We are capable of recognising new patterns w/o a prior template
- 

- We need a time based short term memory trace to make sense of objects & patterns.
- Case of DF: Can See → Yes
  Can't make sense of objects using sight

ex Couldn't estimate size of Guitar pick, but could pick it up.
→ Reaching/Grasping
Dorsal Ok ✓ ↓ consc.
Ventral Damage ∝
→ Identifying ↑ conc.

Libet

- Consciousness associated with moving wrists

- EEG study done: Average used as usual

- Series of Experiments Show that Actions may precede Consciousness (Or Atleast the Measure of Consciousness)

→ (Instinctive) way of Acting: Motor Cortex
↳ / Unconsc./ Spon.

→ Conscious way: Another pathway.

Sleep: An alternate Conscience

→ U.S Navy Sleep experiment

14 hrs in bed
Day 1 : Slept 12 hrs (deficit)
Day 2 onwards
7.5 - 9 hrs

→ Working women : ↑ Sleep ⇒ better mood

↳ [Kahneman]

- Circadian Rythmn : Related to light
  → 24 hr cycle of Sun

Wakeup in the Morning : light.

Suprachiasmatic Nucleus : Mid Brain

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- Melanin : Sleep hormone : ↑ around 9 pm

- Jet Lag : Circadian Rythmn Disrupted
  Sleepy, Hungry at odd times
  Exposure to Sunlight : Resets Clock

→ Sleep Deprivation

- Dement : Microsleep, loosing consc. with eyes open

- REM sleep: Dream Stage with Brain waves similar to awake stage

Stages of sleep

Stage 4: Deep Sleep

→ Cycle through stages every 90min

Stage 1: Hypnagoic → Jerky movements/ falling

2: Spikes

3: transition

4: Δ waves Deep sleep

Lucid dreaming : Brainwaves don't leave brain stem, we experience sleep paralysis

~~→ Brain~~

~~Deep Sleep~~

→ Night Terrors : Waking up in deep sleep

→ Dreams : Stimuli around us become part of the dream (Inception)

Function of Dreams → Slides

Freed

→ Sto Dream (Symbols) → Cultural dep.

→ Allows pressure to escape in a controlled Manner, Pressure Cooker Safety Valve.

Manifest content & latent content

→ Dreams express are an expression of Anxiety (exams)

→ Sleep talking : Common

→ Sleep walking

- Electrical lighting : Reason to Stay Up!
  - → Villages : Nothing to do sleep
  - → With devices & ~~light~~ their emitted light Sleep ↓ and getting disrupted
  - → Trilees in Tahiti tribe, sleep only 6hrs
  - → Hot places : Cultural Afternoon napping
  - → Insomnia : fixed schedule is key
    - → Use Yellow light to Relax
  - → Narcolepsy :→ Neurological Disorder
    - → Not Related to Deprevation

Sleep Apnea: frequent in premature born babies.

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Lecture 7

Recap: Sleep

→ Monozygotic twins have correlation in sleep patterns but not siblings/dizygotic

Drugs :

- **Depressant**
  → Suppress Symp. Nervous
- **Stimulants**
- **Hallucinogen**

Alcohol: Reduces self awareness/consciousness

→ Cerebellum: Drunken Gait
: Can't coordinate to touch Nose

• Affects Hippocampus: No Recollection

Barbituates
→ Not with Alcohol, killed Presley?

Opiates
→ Overdose along with bodies natural
→ Body stops producing Endorphins (Endorphins on Exercise)

Stimulants

- Caffeine: Strong Coffee Vs Milky Cofee
  ↳ Alertness ↑ then later ↓
- Nicotine: → Highly Addictive
  → fast high → Moreso then many drugs
  ⇒ Reinforcement
- Party Drugs → Meth Based

Hallucinogens

→ Slides
→ Habituation / Drug tolerance
- Must Increase dosage for same effect → Addiction

Addiction

→ Biological predesposition present

- Genes affect

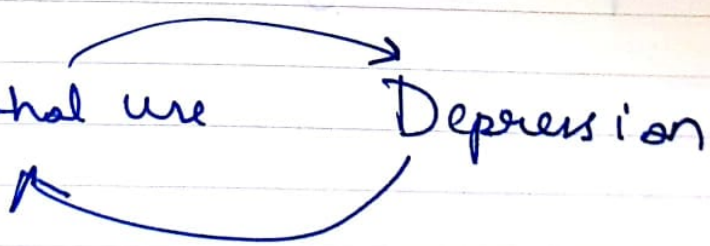
DZ : Like siblings 2 sperm & 2 eggs
MZ : Identical Genome

→ Genes identified that affect addiction

→ Psych. Influence : Stress

- Baby monkeys seperated from Mothers. More likely to become Addicted to Alcohol

→



- Teens vulnerable to do what is considered Normative

ex Teens overestimate % of people doing Marijuana or other drugs.

- Lower Self Esteem → More likely to be influenced by peers.

Near Death Experience (NDE)

→ Common: Tunnel & Bright light at in center of vision field
- Out of body experience
- Brain Alive, HB stopped ⇒ Oxygen deprivation → May explain light in Visual Cortex

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Lecture 8

- Purpose of learning : Organisms need survival / sustenance.
- Shakespeare : Woman starved to submission
- Study learning → Measure outcomes

How?

By Association (Classical Conditioning)

→ Pabla's work at St. Petersberg
- 1904 Nobel for Medicine for Gastric system

- Measured amount of Saliva in Dogs

- Dogs have learnt to expect food when they hear the Tuning fork
  ↳ Salivates (expect food) on hearing

(US → ~~Con~~ Unconditioned Stimulus)

UR: Unconditioned Response

Neutral S (Tone) →
↳ Stim.

C → Conditioned

→ Light + Tone (2nd order conditioning) weaker, fades away as level ↑

→ Cartoon Characters with Ice-cream and Bruised Sprouts

→ Pokemon Cards associated with +ve/-ve words
→ prefer Pokemon char. that were Associated with +ve Words.

→ Similar ~~dif~~ Stim. works but difference can be taught

→ Universal Learning? All Animals

Kimbal ~~Kabel~~ : "I can teach Any Animal using any Stimulus"
→ False

→ Imp: There are Biological Const. to learning & Animals preferentially learn what helps them Adapt/Survive

Garcia

→ Mice Radiated
→ Noticed that they avoided water. Rats Associated sickness with water in water bowl.

→ Radiation Sickness Introduced after Delay
→ Will avoid Food
→ But will did not Associate with Sight/Sound

Taste Aversion

• ~~Rats~~

→ Taste Aversion Key to Survival

- Early Man learned to avoid what makes us sick
- May or may not be related
- Conscious Mind may have forgotten reason for connection

Gustavson

→ ....

Applications

- Drug users associate Drugs with certain friends/places & Contexts
- Antabuse: Vomit drug with Alcohol
- Immune System: Out of Control but Response still there.

Subjective Placebo
→ You just feel better

Objective Placebo
→ Immune system actually gets stalled, you feel better.

Soup + Kichdi → Feel better
Specific Dr → " "

Little Albert (an infant)

(Watson / ~~Reyner~~ Rayner @ Hopkins.

→ Put a white rat into a Pen (Enclosure) with ~~little~~ Rat & played loud noise

→ Maxwell House Coffee Break (again by Watson)

• There ads created the idea of a Coffee Break

Advertising

→ How Magii entered Indian Consciance

→ Associate with Emotion : Show happy families, Good looking people

Beers

→ De beer's Diamond Company from SA

- Diamond Ring advertising camp.
- Made people believe
  - → Diamond Engagement Rings in the US
  - → Behaviour controlled by Conglomerates

→ Mayi associated with Smart Moms, Young people.....

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Lecture 9

Operant Conditioning

- Organisms performs Action.
  - → Consequence is either the or -ve reinforcement

$\delta(-f)$ • $-f_2+f_1$

$\delta(at) = \frac{1}{|a|}\delta(t)$

→ -ve Reinforcement :

ex Study well before exam to reduce Anxiety

↳ Reduced Anxeity is -ve reinforement

• Different from punishment

ex Snooze on Alarm

• ~~Reducing~~

→ Doing an action to end something unpleasant

• Punishment

• Omission of Reinforcement

→ ex No ipad (Not punishment)

But no iPad → No Real harm

Real unpleasant consequence → Getting wacked

↳ Difference Related to Perception

~~Positive Re~~

Reinforcement

- Positive → -ve reinf.
- Punishment → omission

Cats in a Puzzle box (Law of Effect)

→ Cat got better and better

→ Satisfying Consequences ⇒ ∅ increases likelihood of repeating

→ Came before Skinner's operant conditioning.

Skinner Box : Rats, Wall proximity

→ Successive Approximations:

- Baby steps towards more complex Actions

- Skinner's box

Initially coming near lever → Food

Later only if we press lever → Food

→ 2 step process in learning to press a bar

ex Dogs shaking hands, Pigeons playing, Guide dogs for the Blind TT

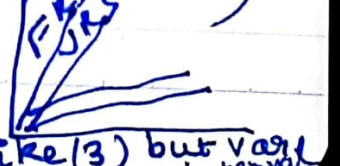
Schedules of Reinforcement

1) FRS: ex Servants coming on time near pay day → Rapid (have to perform actions)

2) VRS: ex Gambling (have to perform actions)

3) Fixed Interval → perform actions after certain time only then Rew.

4) Variable Interval



Latent Learning

ex learning in college but ↓ marks but Great work because #

Expectancy: Skinner's Baby Box

- All behaviour is contingent on reinforcement

No Cognition? → Not true there is cognition

We expect Rewards : Allows learning

- Conclusion: We learn in the absence of Reward but behaviour becomes apparent in presence of reward.

This cannot happen According to Skinner

Questions ② vs ②

→ Instinct

Applications

"More effectively contingent"

- Animals taught through Reward & Punishment
  - → Killer whale show / Dolphins
- School
  - Khan Academy → Immediate reward (feedback)
- Work
  - → Weekly / Daily tests better than 1 Endsem.

Gym

Sports → Baby steps towards complex Movement.

- Use in Real life → Schedule.

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Observational Learning

→ Follow someone : Model them.

→ Mirror Neurons fire both when we perform an Action or see someone doing that action.

→ ex People watching Tennis Match

→ Inferior frontal, Inferior parietal ⇒ Motor, Sensory

→ Corner of the eye observation : Prediction of others actions
(Lifting up/down cup)

→ Learning through imitation

→ Non-Verbal cues (70% of Message is Non-Verbal)

- Body language
- Gestures
- Tone (Brain damage where we can't gauge tone)

- Tell us a lot

- Early Man? → Like in Small Bands/Grps
  → Be a part of a group.
  → Read Social Cues

→ ~~Guess in~~ HSS Dept talk, person with Brain Damage can't gauge Sarcasm

→ Biological foundation for Culture
  By School : Learn what your parents/Father do
  (Weaver → Weaver)

Bobo Doll Exp

→ Bandura

- Cylinder / Blow up

Child observing, Adult play aggressively (Kick, throw etc.)
→ ~~Child becomes aggressive~~

→ Frustrate the child by taking away other toys. Child Behaves Aggressively with doll
(Same Actions repeated by experimental grp but not the Control grp)

→ Kids would repeat phrases
"Sock him in the nose"
"Kick him"

Viewing Violence / Games

- Viewing violence determines child's behaviour
  → Yes?

What other factors
- Continuum in School Children violence.

- Situations
- ↑ Violent ⇒ Parents are violent
  - Whack Children

Studies on T.V. → Violence

- Studies : Yes correlation
  but others NO.
- Learning taking place → Not being measured
  But expression may be.
- US School Shootings
  - Access to Guns real reason
- Games → Participation
- Most movies → Violence
- Desensitization : played video games 9/11 is a joke (kids)
- Encouragement ≡ Normalisation/Acceptance.

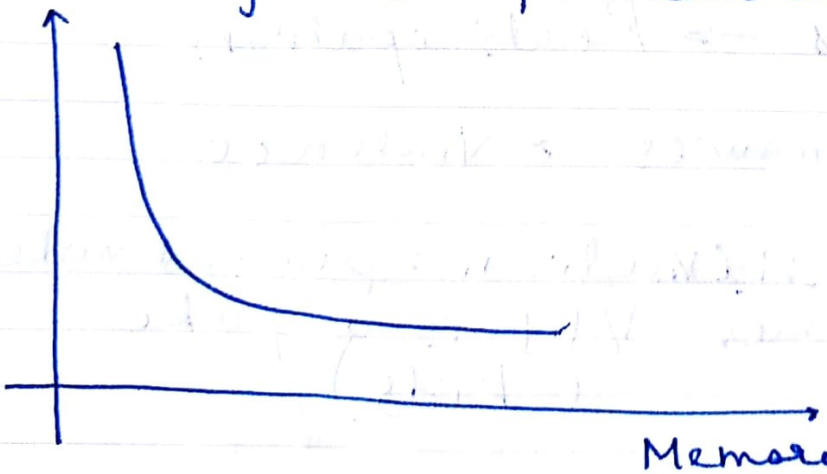
- Children have ritual games where they imitate adults/parents

Forgetting Curve : Memory

- Experiment with 3 letter meaningless words
- Measured Recall over time of these words

Memory perspectives

- Ebbinghaus took experimental approach to memory
  → Performed experiments on himself



Memory Curve

→ Foreign Language Recall : flat Recall curve after certain point

of time.

→ Serial Position Effect

Primacy effect	Recency effect
ex. Topic studied first	ex. Just before exam study

Exact Recall depends on Extent of Rehearsel

3 Views on Memory followed by Biological pers.

- Structalist

Encoding → Storage → Retreival

↓

May be displaced out by some other task

- ~~Studies~~ Sperling's exp: flashed slide for $\frac{1}{20}^{th}$ sec.

George Sperling

- Slide flashed and cue tone to write down rows one row at a time : Could write corr. ⇒ more Remembering

→ Working Memory similar to S.T memory but more aspects to it.

→ Semantic : Has to do with ~~many~~ meaning, vocabulary (Different from Rhyming words ↳ Acoustic)

→ Episodic Memory : Memory for events (Chunked events)

→ Flash-Bulb Memory : An event that stands out makes us remember everything around it.

→ Perceptual Rep : Structure of information / objects / words

ex Wrong spellings 'look' wrong

Procedural memory (Muscle Memory)

- People with Alzeihmers can ride a Bicycle

Proceduralist Perspective

- About levels of encoding: shallow / deep.
- Phonemic: "If the glove doesn't fit, you must acquit"
  → Alitterahion
- Affi
- → Levels of Processing

Dynamic Perspative

→ Active / Dynamic

→ Recalling is also active

→ Memories modified over time

LOFTUS

- ~~Lofter~~ / Palmer
  - How fast were the cars going? When they, Smashed, collided, Bumped, Hit, Contacted each other.

- People saw the same film but diff verbs were used

→ Any speed ↓ with emphasis ↓

Broken Glass? (1 week)

Smashed > Hit
(There was no glass)

Hit ≈ No biased verb
Control Group.

→ Imp. Idea if trying to Influence Eye-witness testimonies

→ Interogation leading / Suggestive

→ Later events influence prior memories
(Perception & what follows are tangled)

- "Power of Visualization" : Same as seeing
- Eyewitness testimony : Some people more suggestible / inf prone to influence
- Eyewitness line ups now should contain
  - duds
  - Unaccused should not know who accused is
- False Memories / Recovered memories → Different from Freud.
  Memory did not exist but created during therapy
  → False Child Abuse

Loftus ~~Kahneman~~: Tell false story 1 m/o later they have added to memory

→ Lot of Memories are memories of mem.

- Study

→ 9th Grade interview
↓ 35 years later
Same Questions

Yes
↓ Physical punishment
NO

Retrieval

Recall

- "Plz recall in as much detail as possible"
  Don't Ask leading questions
  ex "Which hand was the weapon in"

Recognition

- MCQ : Recognition easier than recall.

- Context Effect : Learn in exam venue before exam → Recall better

- Good mood : Past good mem.
  Bad mood : Past bad mem.

Bio of Memory

- Cerebellum
  → Implicit memory
  ex Remember where the Bathrooms are

Aging: Hippocampus Shrinks, protect with Exercise

Dementia → Alzeihemers
→ Vascular

Amnesia

Ret → New ✓ old ✗ (Injury / Stroke)
Anter → New ✗ Old? (Injury / pills / C_2H_5OH)

Psychogenic Amnesia → No injury, Can't Recall anything
- So unpleasant: Better/Convenient to forget.
- People don't like to talk about partition.

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→ Psychogenic Amnesia: forget every thing near traumatic event

Memory & Studying

- Spacing Effect
  - → Multiple Study sessions better than 1 shot cramming
- Testing
  - → Find out what you forget

→ Study tips .....

Intelligence

- Ability to Adapt
- Deal with envir. effectively
- Alfred Binet
  - → Children failing school in Paris
  - → What should age ↔ School level be

- Idea of Mental Age

- Terman
  - Stern : IQ defined

$$\frac{MA}{CA} \times 100$$

→ Was meant only for Children

- Terman : @ Stanford extended test to 18+

- Standardisation Sample: (47,000 people)
  Mean, Mode, median

→ Test use for Job positions

- Terman believed Eugenics (Genes fix Intell)

  → post WWI Mexicans → U.S
  → Use Intelligence to discriminate
  → Issues with testing method
    - Language Barrier prevents understanding questions
    - Children don't feel they need to prove themself on this test
    - Culture : Parents & Children not into Western schooling.

Theories of Intelligence

- Spearman - g factor
  s factor

- People who score high, do well on all types of test
  → underlying General Intelligence
  g - factor

- Specific : s - factor

- Thurston : opposite to Spearman
  → 7 clusters : No correlation

- Satoshi Kanazawa
  → General Intelligence : Novel problems
  ex Early man : No School/JEE
  ~~Bacteria~~ 2. Survival problem
  ~~→ Mary Lee~~ Solving

Gardner's : Multiple Intelligences

- Bodily - Kinesthetic ≡ Dance
- Conclusion: There is some kind of General Aptitude / Intelligence.

Sternberg (Triarchic)

- Creative vs. extending / deriving
- Practical : Related to Success
- Most parsimonious : Min. Elements Explains Most

"Good Model"

→ Info pro. theory

→ Executive function : Meta Comp.

- Measure Intelligence
  - → Connection b/w frontal/Parietal lobe and Intelligence.
  - → Synaptic Dev. : When we Read/learn Pathways .. More Pathways ⇒ ↑ Intelligence

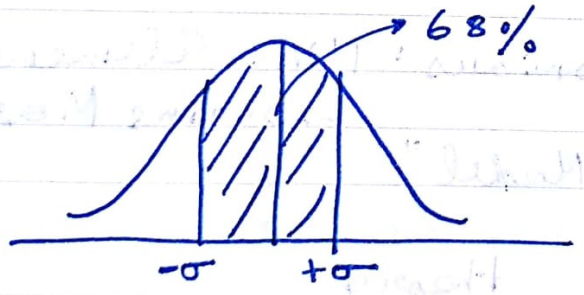
→ ↑ Education : 15% ↑ Synapses

→ Education is means : learning things

- Perceptual Speed
  - Sig. Relationship
  - Quick Res ⇒ ↑ Intel.

0.5 Good for Social Sciences

→ Very complex ⇒ Good



- Below <70 just Indicating
  Actual condition: Can perform everyday tasks
- Down's Syn. : Dynamic 21
  ↳ Down's Syndrome

Down's Syndrome

→ Reach Peak Mental Ability at 10-11
→ Window must be exploited to teach life skills.

Rubella During Pregnancy : Brain Damage

→ Anoxia while coming out : " "
Blue baby : ox deprived

→ ~~To~~ Teach them Life Skills instead of ~~Common~~ Conventional Edu.

→ Gifted / Talented

• Terman's Termites → start at 11

→ Does encouragement/special program make it better for all?

Deary Scotland

→ Find people : Easy Rural Scotland.
→ Compare Intelligence test results at, Men died in war, Women with ↑ Score → No dementia, healthy

Stability of Intelligence

Predictability

- Very young age : Not predicting
- 7, 8, 10 years : Better Predicting
- 11 : Decay Study

→ SAT / GRE scores → Very high correlation

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Recap

- Binet's test to help not discriminate
  - ↳ Intelligence test
- Verbal (knowledge based)
  Performance (No Pre-req)
- Intelligence
  - → Crystallised (Developed)
  - → Fluid (learn as you go)
- Intelligence test has value in its predicting Ability (Jobs etc)

- Adopted Children : More (slight.) corrl. of Intelligence
- Some contribution from Genes, not sure how much.
  ($\approx$ 0.5 Gen. + 0.5 Env.)

Group Differences in the US

→ A lie repeated often becomes truth

Genetic
Biological
Culture

→ Effects of factors Multiplicative rather than Additive

→ Study of IQ & Nations:
flawed Devpt → IQ
Not IQ → Devpt

Culture & Intelligence

- Brazillian Street Children:
  - Similar to system in India
  - Do Quick Math easily
  - Can't do with Abstraction
- Berkely HW
  - ~~Simit~~ Good at price comparing not Abstract

→ Ways of Measuring Success
ex Job Matching

Children practical knowledge. ex

2) Eskimo (Eupic Children)

1) Kenyan Children → Crystallized and Fluid
- Intelligence tests (Crystallized Intel)
- Indigenous Medicines → -ve correlation

Raven's Progressive Matrices (Fluid)
→ Give Instructions (RPM)
→ Ask to predict Next

→ Both O correlation, with RPM suggests fixed B/w

Eskimo (Urban better at on Crystal:)
→ Cult: Tracking/Hunting
→ (Rural Much better for hunting)

Static testing: One point in time
Test → Result (FB) → Test Again
↳ Learning/Grasping

Taiwan Study

Self Assertion (Put oneself up)
" Effacement (Not Showing skills)

Creativity Vs. Intelligence

- Muthane Body of knowledge
  → Kekule's Dream
- "Chance favors the Prepared mind"

Q: Intrinsic Motivation

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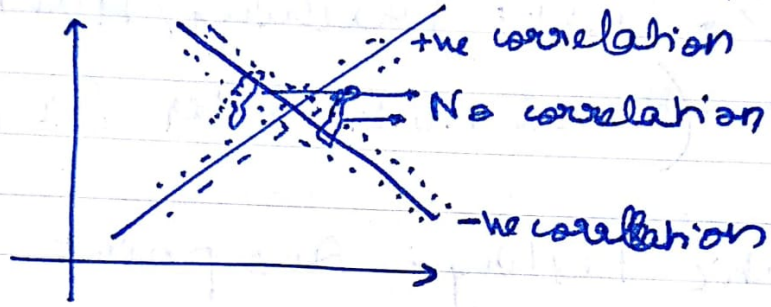


→ Eugenics : No Advantage
Disadvantage
→ Inbreeding
→↓ Gene Diversity

→ Intelligence is Random, only averages can be different.

Cognitive Devpt

- Piaget's Children Study
  → Children Think Differently

0-2 years

→ Mastering / Experiencing envt through sense of touch / taste
→ Learning to be Mobile

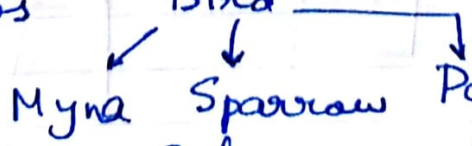
Object Permanence : devpt at 8 months - Piaget

→ Before 8 months : (or earlier) surprised by Sudden Appearance / Disappearance of Objects
• Idea that Objects can't disappear suddenly
• Temp. out of sight (screen) ⇏ Disapp.
2/6/17 • But small Infant → Once disappeared ex screen
⇒ Disappeared forever (Not surprised)

• • 6 months : Stranger Anxeity

2 years - 6 years

→ Mental Maps

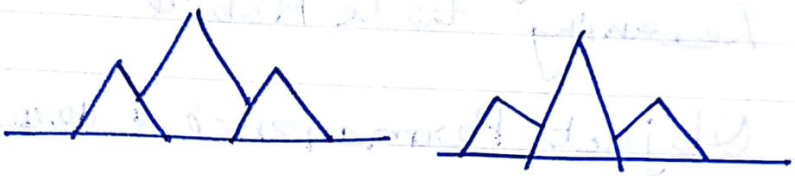


• Children who learn 2 languages from young age : Slower but Deeper devpt.

Animistic thinking: ~~Animal~~ Human ppt to Non living

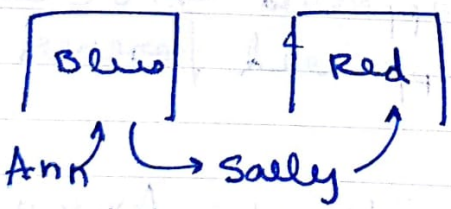
Associate words ↔ Concepts

Egocentrism: Can't think from someone else's perspective



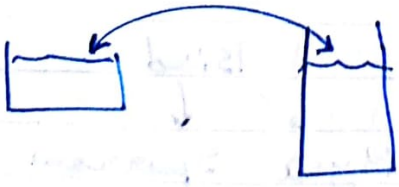
3 Mountain bare: Can't understand another POV.

→ Ann, Sally, Blue/Red Cupboard and Child observes.
- Child Asks



Children: Doll in Red
Adult: Doll in Blue

→ A



(Conservation Law

Criticism of Piaget's Model

→ Too stage wise
→ Reality: Continous, some benchmarks before others

- Main Takeaway: ~~Erro~~ Sequential Devpt of Cognition.

27.8.18

Lecture

- Recap: Commonality in erros of Children
- Montessori: Objects, trace letters in Rice (Tactile sensation)
- Nowadays: Maximize Child Devpt In India Mothers ↑ Involved in Child devpt.
- Piaget Criticism: Underestimated Children's Ability

Vygotsky

1917: focus was on Experiments not Developmental Psychology

→ Tool use: Example Agricultural Supplements.

- Talked About psychological tools
  → Manipulating our own behaviours using psych. tools.

→ ~~Quote~~ Quote

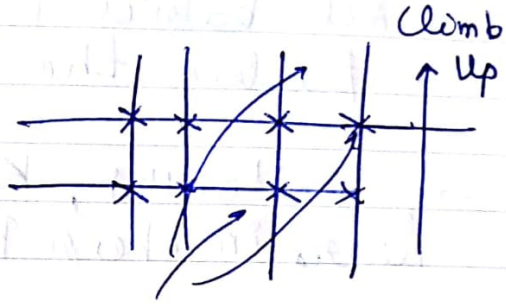
→ Function of Language: free working Memory

→ Abstract Sign System: ex Algebra

→ Soviet Adult ~~to~~ Education
  → Check if Abstract thinking
  → Abstract thinking Absent in Uneducated adults

→ Zone of Proximal devpt (ZPD)

- Capacity of Capable w/ w/o Adult Guidance
- Scafold objects



- Thought & Language – Vygotsky
- Speech ≡ Language
- Play Games

"Tools of the Mind"

→ program for Nursery teachers by Vygotsky

→ Similar to Montessori

→ Let kids plan their day (Exec. function)

→ Gives ↑ conc. and Executive function

→ tools change ⇒ Mind Changes

ex Role play with Superheroes Vs. Doctor – Doctor

Language devpt

→ All babies (irres. of Language) Babble the same way.

→ 10 Months, Keep what Language they hears in their Babbling

→ Telegraphic Speech: ex Mum-mee = Food + Water.

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Language Dev.

→ Language comprehension precedes language production

→ Telegraphic Speech: Like Telegrams, 1/2 Words represent speech
SS
Over Generalization

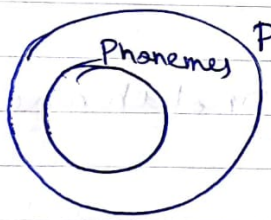
→ Babbling is retained in certain language (What we hear)

→ ~~Do~~ learnt through operant cond.?

→ Not ~~so~~ Completely

→ Chompsky: "We just "get it" at a certain age / maturity (Inate)

Language Elements



Phones

$\bigcup_{i=1}$ Phoneme = Syllable

Syntax / Grammar

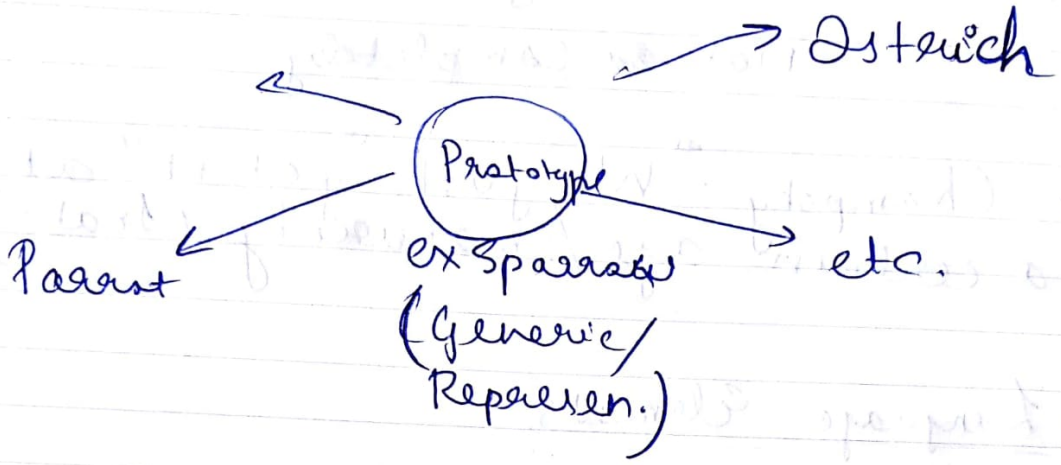
ex Goose crossed the Road

The Road was crossed by the Goose

→ Same Deep Structure

Different Surface / Superficial structure

Semantics



Denotational / Connotational

- ex Connotative: Definition
  → sticking to old ideals
- ex Associative +ve / -ve
  ex→ Use in Derogatory way.

Drag.

- Context and Situation
  → Talk at Hostel Vs. Room
  → Sunder Pichai Example.

→ Identifying Sarcasm

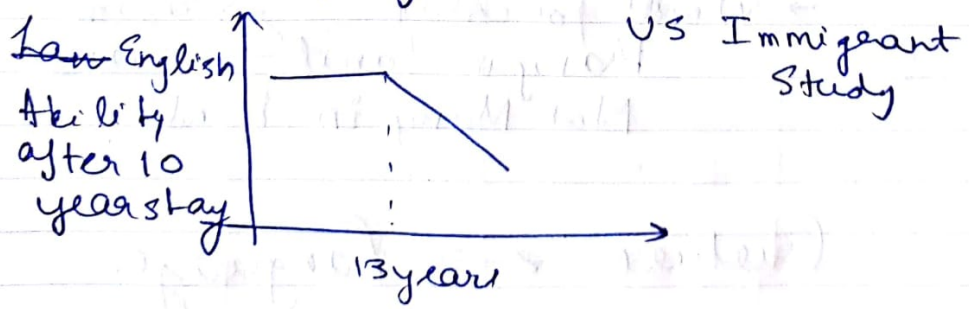
- Status
  - → तुम, तू, आप
- Rules — While (conversation = True) {
  - → Talk - Stop - Listen - Talk
  - → Not Interrupting

};

- ~~After 7, if not exposed~~
- Till 7, if not exposed to language, then will never be able to Master language.

→ Vocabularies develop in Non Symmetry

→ Sign Language Example:



→ for 3th/4th language, OK but 1st must be before 7 years.

Brain

→ Broca's & Wernicke's Interact with nerves

→ Angular Gyrus : Something.... ?

Culture

→ Culture Influences Language

Tribes near Arctic Circle
- ↙ Non PC : Eskimos
- ↘ Many words for snow

→ Indian Worldview → Pronouns unique to Indian languages

→ Words for color
- Many in tamil → & English Saris
- Not Many in Hindi

Culture ⟷ Language.

- Images
  → Memory quite visual at times
    - Seeing & Remembering } etc.
    - Hearing & Rem.
    - Example: Pianist practised in his Mind for 7 years

Gestures

→ Sign Language (Informal) dev. nat.

→ Blind, Infants use gestures

Animal Language learning

- Apes have Cortex → Success
- Early exposure to language: correlary

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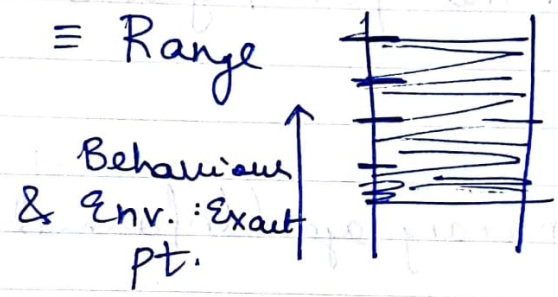
Some New Topic

Effect of Genes

→ X linked Recessive traits in Men.
- Baldness
- Color blindness

→ Heredity ≡ Range



→ Susceptibility to Env.

Increases ←→

Fetus	Infant	Toddler	Child
• Nutrition • Stress	• Born in hospital • Warmth • Suckling Instinct • Feed & Excrete. • Care for them	• Exposure to Language • Children pay Attention to high pitched voice • Quiet Mothers → Later Speech • Encourage to explore	• School experience

Rat Pup Pups

→ Enriched Env.: Running Wheels etc.

→ Environment Changes Brain

Niche Picking : Temperament

- Some Babies easy, some difficult

ex Shy : ~~dot~~ won't be a teacher / Interaction job.

Role of Heredity & Environment

- Gene Study : Genes Influence behaviour
- Birth order and Behaviour / Temperament

Parenting Efforts

→ Some things hard wired (Dudleys)

Harlow's Monkeys : Contact Comfort

→ Infant Mother Seperation : traumatic

→ Touch, hold : sense of security

→ Develop Social skills

Bowlby

→ Parental relationship: Beginning of social interactions

→ Cry ⇒ Something happens
Realises individuality, Ability to Influence Environment

→ Ainsworth (Infant - Mother Attatchment)

• Believed Behaviour extends to Adulthood

3.9.18

Nature & Nuture

• Genes
• Parenting
• Culture

Ainsworth: Weaning in Uganda

→ Experiment in US: Expose to stressful situation,
↳ W & W/O Mother.

3 personalities recognised

↳ Relation to future Rel.

Bronfenbrenner: Extended psych. to Macro level factors

Parenting Style: Baumrind

→ Relation b/w Child behaviour & Par. Style.

Parental

Responsiveness (~~Demon~~ Emotionality)		Demandingness (Control)
1	Authoratative	1
0	Authoritarian	1
1	Permissive	0

↳ Giving in to coercion

→ Infant Neglected / Malnourished

0 ↳ Uninvolved ↳ Macoby & Martin

→ Post partum (Birth) Depression, unresponsive to Infant.

~~Q - Single parenting effects.~~

Culture

- Asian culture: Closeness with parents
  - Jap, Chin; India: Child Centric culture
  - Relationship Charged by Gov.
    - Loyal to state
    - Spy on parents!

Orphans

- No orphanages in the US, Foster homes (Foster parents get financial aid)
- No Stability / Permanance → Per.
- Relationship with each other but not Adults.
- No parents: Problems in language, development.

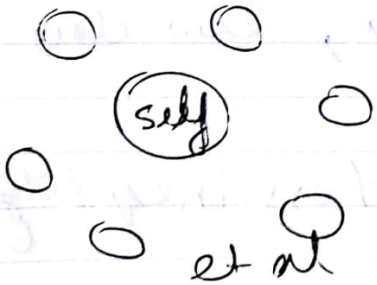
Parents ≡ Stable / Consistent Adult presence

Culture

→ India : Traditional / rural / agricultural
↳ Asia - { JP, S. Kor. }

Traditional : Child Centric (Collectivism)
Modern : Role of Child rearing : outsourced
↑ Individualism / ext

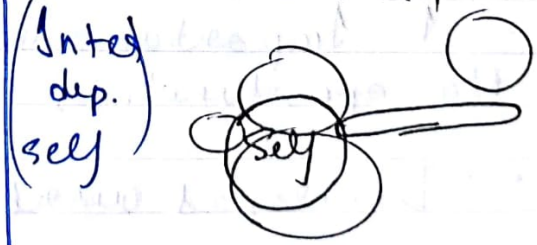
Individualism



(Ind. self)

→ Achieve personal goals
→ Stand out / Get Not.

Collectivism



Purpose: Main tain Harmony

○ · Blend in

4.9.18

Culture & Psych.

- Individualistic / Collectivistic
  - Individualistic society
    - People are different
    - Uniqueness
  - Collectivistic
    - ↑ Norms (Customs / Un-written rules)
    - ex Engg. In India
    - 'Normative' behaviours
    - More Similar than different

Social Classes

- ↑ Importance in India, low class No opportunities
- Developed world → Less inequality

→ Interact
→ Outcome expressed a comb.
- Genes ✓
- Parenting ✓
- Culture ✓

Genes: Health, Energy, productivity,
↳ ability (Intelligence)
Full of Energy, Do more stuff → Energy
Emotionality

Parenting: Expression of Emotionality, ~~Heat~~ Career Choices, Motivation, Determination, Up-bringing
Resilience (Mental Strength),

Culture: Freedom, opportunities

Time we live in is the most imp. factor
→ outermost circle Chronosphere/time

Other factors

→ Peers: ↑ affect, close frends
→ School: Large Influence
→ Teachers: "One teacher can change the direction our life takes"
→ TV: Early days, just 1 channel DD National

→ ~~DD net~~

→ Internet : Knowledge went from Exclusive → Democratic