11-Mar-2019

Recent Trends

→ Sleep — 20
→ Dreams — 10
→ Hypnosis — 15
→ Meditation — 15
→ Drug Induced Changes — 10

} States of Altered ~~states~~ consciousness & its characteristics — 10

→ Stimulus Deprivation — 10
or
Sensory

→ Extra Sensory Perception — 10

→ Inter Sensory Perception — 5

* Sensory Deprivation

↳ Plasticity of perception — Von Senden (cataract exp.)
↳ Disadvantaged group
↳ Vigilance (Arousal Theory) → RAS (Reticular Activation System)

⇒ Threshold

⇒ Stimulus Input → (i) Inadequate
→ (ii) Monotonous
[Ganz field]
(same field

⇒ leads to sensory deprivation

* Disadvantaged group → sameness of the Env.
* Reverse of Sensory Dep → Sensory overload
* Sensory Dep → Prisoners of war (Brain Washing)
→ Astronauts
→ Soldiers in submarines

- High Altitude flight → Space myopia
- Hill Stations → People go there as living in a metro, they are overstimulated.

Bexton, Heron & Scott (McGill University) ⇒ ~~Experimental~~ subjects have to lie on a bed in a room

↳ cardboard cuff on neck, hands, legs

↳ ears plugged & pillow to avoid any stimulation

↳ translucent screen on eyes

⇓

subjects were paid for this (only food & washroom breaks allowed)

⇒ After 2 days → condition of subjects were like that of a mental patient eg. visual hallucinations, etc.

→ Subjects quit (even when they said that payment can be increased)

* Zubeck → Person was made to stand in a tank with water

→ hand movement not allowed

→ eyes & ears covered

⇓

same condition as that of mental patients

* Spitz → Analytical Depression

He did a study in orphanage.

In the orphanage, the used to put a bedsheet on top of the crib (to save the babies from disturbance, mosquitoes, etc)

During last 4 months of I^st year ⇒ significance diff in mental and psychomotor dev. from ~~non~~ kids who were reared by their mothers.

* Altered state of Consciousness

* Mental states induced by → Pharmacological agents or manoeuvre eg. drug
→ physiological agents or manoeuvre eg. Yoga asanas
→ Psychological agents or manoeuvres. eg. hypnosis

* Mental states should represent → sufficient deviation from his normal functioning.

*How can altered states of consciousness come

(i) Reduction in exteroceptive stimulus or motor activity
eg. going in a cave
(ii) Increase " " " " " "
eg. rock concert
(iii) Relaxation of mental & other critical faculties & decrease in alertness.
(iv) Increase in mental & other critical faculties & increase in alertness.
(v) Presence of somato psychological factors → drug induced changes

* Characteristics of altered state

(i) Disturbed temporal & spatial orientation.
(ii) Variation in control
enhanced control → meditation
reduced " → alcohol
(iii) changes in emotions
↳ in both +ve & -ve emotions
(iv) changes in bodily images
(v) Hypersuggestibility
↳ seen in Hypnosis

(vi) Ineffability
↳ will not be able to describe the experience in the altered state → subject experiences, no appropriate words to explain

(vii) To get meaningful experiences, people enter into altered states.

(viii) Changes in thinking → thought process may slow down or may increase.

(ix) Perceptual distortion

* Meditation

→ It is the process of reaching altered state of consciousness without the use of drugs.

→ Set of diverse exercises that alter our state of consciousness

* Characteristics of Meditation Techniques

(i) It is not formula based → They will emphasise on training.

(ii) They emphasise on harmony of mind & body.

(iii) All techniques have definite impact on body physiology.

(Meditation → reduces pressure on visceral organs)

2 types of Meditation → (i) Active or concentrative meditation
(ii) Passive or opening up meditation
↳ relax & allow every thought to pass with no attempt to hold any thought.

- Active or concentrative meditation → focusing on a point
→ requires strenous effort to hold focus

* Outcomes of meditation

Study I.

Anand, Chinna & Singh (in AIIMS)

↓

2 yogis were taken

* Yogis were stimulated by throwing light on them

• Before Meditation

↳ Alpha Block (β waves came) {no α waves}

(alpha waves → relaxed state)

• During Meditation

↳ only α waves for any stimulation

• After Meditation

↳ α waves continued (for few hours)

⇒ During meditation, they took the hand of Yogi & kept it in ice cold water → no pain felt by the Yogi
→ Yogi has increased his pain threshold
→ EEG pattern showed no disturbance

⇒ The concluded that the yogis through meditation have acquired the capability to control their involuntary organs.

Study II

• Schwartz & Goleman → They found that meditators are:
(i) less anxious
(ii) less agressive
(iii) less neurotic

Study III

* Wallace & Benson → Meditation makes people to feel
(i) healthier
(ii) It can help remove problem of drug dependence.
(iii) Lower high blood pressure

Study IV

* Dr. Glaser → Maharishi Ayurveda Center, Lancaster, Massachusetts USA.

⇒ Transcendental Meditation → Acc. to him, meditation helped people to stay young.
↳ slowing down their ageing process

• As meditators approach their life events with greater calmness

* Study V

Dr. Vahia

Patients were in age group 18-45 yrs → They all had excessive anxiety.
↳ belonged to diff. SES, gender, religion, region & caste

[I st group → Chemotherapy]

[II nd group → Meditation (20 % people failed to meditate)]

[III rd group → placebo]

* The 80 % of people who could meditate showed improvement at par with drug treatment

Drugs → (i) Side effect
(ii) Tolerance
} These -ve effect are absent in meditation

* This study did not tell the duration for which the effect of meditation will last.

* Also, having orientation for meditation in a person with excessive anxiety is very tough.

Study VI

* Schwartz

Meditation improves creativity in tasks where performance improves from low arousal → you can think in diff. ways (benefits)

high arousal eg. boxing

* Study VII

Morris & Benson → Meditation has +ve impact on the body:

(i) It lowers respiratory rate & heart beat rate

(ii) " high BP & metabolic rate

(iii) concentration of ∝ waves

* Study VIII

Maupin → To some extent effects of meditation depends upon individual perception

→ Those who thought that meditation has +ve influence felt the +ve influence of meditation.

* IX

OTIS → results of meditation studies are inflated

→ biased sampling → only people who found it useful were studied

Hypnosis

'Hypnos' – Greek 'God of Sleep'

⇒ Term was used by Braid for first time

⇒ The Person who discovered the technique → Franz Mesmer

⇒ Also known as Mesmerism

* A sleep like altered state of consciousness which occurs through the non-physical influence of one individual being over another and in which there is an increased

responsiveness to suggestions & commands and a failure to discriminate bet. subjective & objective reality.

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* Characteristics of Hypnosis

(i) Subsidence of planning function → subject does not initiate any activity.

(ii) Redistribution of attention → you will only hear the hypnotist's voice & ignore all other sounds.

(iii) Reduction in reality testing

(iv) Tolerance for reality distortion

(v) Subject readily enacts unusual role

(vi) Increased suggestibility

(vii) Amnesia for what transpired during hypnosis & post hypnotic suggestion

(viii) Availability of visual memories from past & heightened ability for fantasy production.

* T E A M (Trust, Expectation, Affection, Motivation)
(for better relation bet. therapist and patients)

* Hypnotizability → Individual Differences

10 % subjects will show lot of resistance to hypnosis

15 % → highly susceptible

Rest are in between
(A person cannot be hypnotised against his will)

• Wallace → vivid imagery & fantast production
(some people have this more by nature)
↳ They are more susceptible to hypnosis.

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Person with trait of absorption will be easily hypnotised.

→ Dependency orientation
→ Very dependent on reinforcement from others
→ Seek direction from others
→ Low self esteem

People will be easily hypnotised if they have these traits

* Process of Hypnosis / Steps in Hypnotic Trance

(i) Preparation of the subject

↳ Removal of fears and apprehension that the subject has about hypnotism.

(ii) Induction Phase

The hypnotist actually hypnotises the subject. There are many induction techniques but the best ones are associated with imagery, production, relaxation & attentional focus. Induction procedures are composed of series of suggestions aimed at eliciting subject's co-operation & directing his attention to thought & feelings about being relaxed & peaceful.

(iii) Hypnotic Phase

Once the hypnotic state has been induced, the subject is in a state of neutral hypnosis wherein physiological responses are identical to those of a relaxation response. They are then taken into waking hypnosis wherein they are suggested or requested

to carry out instructions given to them by the hypnotist. Subjects are also provided with a suggestion that needs to be carried out once they come out of the hypnotic state. This is called as post hypnotic suggestion.

(iv) Waking up

The process of coming out from the hypnotic trance.

(v) Post hypnotic phase

In this phase the subjects follow the suggestions that they were provided in the hypnotic phase

Theories of Hypnosis

4 theories

(i) & (ii) → State Theories of Hypnosis

(iii) & (iv) → Non-State " " "

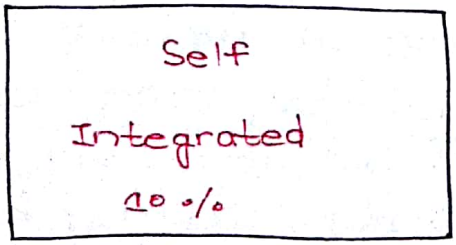
(i) Dissociation Theory

(ii) Neo-Dissociation "

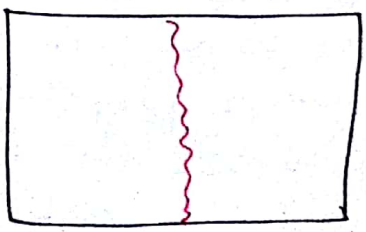
(State Theories → Person enters into a trance)

(iii) Role Taking
(iv) Cognitive-behavior Theory
} ⇒ No trance

(i) Dissociation Theory



(will be very tough to hypnotise)



fissures in self (not integrated)

In people with non-integrated self (fractured self) → A part of self is given to the control of the hypnotist

*Dissociation ⇒ giving a part of your self to the control of the hypnotist.

wish to become something else → division of personality
↓
division of self
(It can be a self induced hypnosis)

* Env. can also induce disintegration

* The suggestion of hypnosis do not last long → it should be followed with therapy to make it long lasting.

(iii) Role taking

↳ The effect of hypnosis is due to the expectations.

↳ A social role / expectation

↳ No need to go into trance or change a state, you take a role.

eg. behaviour changes on going into a new env.

(i) Dissociation Theory

↳ given by Janet

↳ He developed the idea of dissociation of consciousness in his work with hysterical patients. He believed that hypnosis was an example of dissociation of consciousness whereby areas of individual's behavioral control separate from ordinary awareness. Hypnosis will remove some control from conscious mind and the individual

will respond with autonomic reflexive beh.

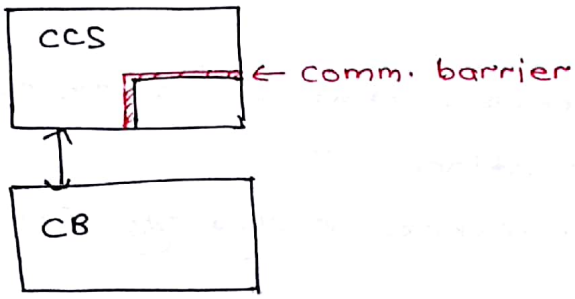
(ii) Neo-Dissociation Theory
~~Hilgard~~ (Hilgard & Hilgard)

2 assumptions

(i) There is a central control system that performs planning & monitoring function in the brain.

(ii) Beneath the control systems are the relatively autonomous subordinate cog. behavioral systems. In a normal state, the 2 control systems work in harmony with each other. In hypnotic trance, the 2 systems are dissociated from each other.

Hypnotic suggestions are believed to act upon central control structures causing to create a communication barrier that separates a segment of the structure or the system from conscious awareness.



(iii) Role Taking

↳ Sarbin

↳ He argued that hypnotic responses were motivated attempts to fulfill socially construct-ed roles of hypnotic subjects. He is of the opinion that in hypnosis, subject tends to comply with socially constructed roles & therefore the beh. of the subject is similar to an artist perforing in a theatre. Subjects strongly identify with their expected roles

& they start feeling that they are hypnotized. Thus, acc to this theory individuals are enacting a role and there is no such thing as hypnotic trance. A socially constructed relationship is built depending upon how much rapport has been established bet the subject & the hypnotist.

(iv) Cognitive-Behavior Theory

↳ Barber

It is similar to Sarbin's social role taking Theory. Hypnosis is explained as an extension of ordinary psychological processes like imagination, relaxation, expectation, social compliance, etc. Responses to hypnotic suggestions are mediated by tve cog. sets consisting of tve expectations, attitude & motivation.

* Applications of Hypnosis

(i) Recall of buried memories

e.g. War → Death & Blood → cognitive exhaustion / War Neurosis / Post Traumatic Stress Disorder

- In Hypnosis, relive the war experiences and the suppressed emotions will be released

or bringing the memories out of the minds of witnesses of heinous crimes (who are not able to recall due to the trauma) → This is due to heightened arousal

[weapon focus effect → rather than the face of the murderer, the weapon is focused upon & remembered]

(ii) Anasthetic & Analgesic

(iii) For producing Relaxation

(iv) In Behavioral Therapy like Implosion Therapy & Sys. Desensitization where subjects are to be relaxed, hypnosis is used.

(v) Hypnotherapy (Freud used it)

-ves

- Sometimes false memories are recalled
- For people with unsound mind Hypnosis can bring them in contact with the unconscious part of their brain (This is which with meditation also.] ⇒

Sleep

Sleep is an Alternate State of Consciousness that is characterised by:

(i) Reclined posture

(ii) changes in the patterning of EEG and other indicators of physiological mechanisms

(iii) Loss of muscle tension

(iv) Earlier it was thought that brain is not active during sleep but now this notion has been dispelled as there is a concrete evidence to support the activity of brain when we are asleep. This evidence has come through the study of EEG patterns as well as the psychological evidence that suggests the exercise of dreaming during sleep which involves cog. activity.

Biologically sleep can be defined as a restorative state which enables vital body organs to have some rest.

Poppenheimer after his research concluded that there occurs a biochemical change in the brain when we are asleep. In brain raphae nuclei plays an imp. role in sleep. When we are sleep deprived there is reduction in caffeine like substance in raphae

nuclei below the normal limit or threshold & this induces us to sleep & this probably explains why drinking tea & coffee enables us to be awake.

* Reasons for sleep

(i) Sleep Deprivation

It determines, when do we go to sleep & also the length of the time we will sleep. If people are sleep deprived, they go to sleep sooner & they tend to stay asleep longer regardless of environmentally induced arousals.

(ii) Individual Differences

Personality variables also influence our sleep beh. The trait of extraversion & introversion as well as ~~fluctuations~~ fluctuation in body temp. influence our sleep beh.

Generally, extravert → Evening person
introvert → Morning "

(iii) Environmental Arousal

When a person is under stress or in a state of high arousal then he will have problem in sleeping. Sleep ~~disturbance~~ disturbances are likely to be over when arousal level comes down.

(iv) Circadian Rhythm

One essential factor that determines when we fall asleep is circadian rhythms. People who have been left to establish their own routines tend to adopt 25 hour cycle rather than 24 hour circadian rhythm. This tendency to follow 24 hour cycle

appears largely to be the result of synchronising effects of the events in our env. When we free ourselves from the normal syn. effects of the env., we experience great difficulty in getting back to our normal routine. The time we fall asleep, the soundness of our sleep & length of the time we sleep are linked to the output of epinephrine by the adrenal glands. when epi. levels decline, we tend to fall asleep and when it rises, we tend to wake up.

* Nishihara etal have suggested that the rhythm of adrenal glands is controlled by hypothalamus.

* Effects of sleep deprivation

(i) Difficulty in focusing our eyes on the object of attention.
(ii) Increased sensitivity to aches & pains
(iii) Mild hand tremors
(iv) Reduction in α rhythms / waves
(v) Mild biochemical alteration
(vi) Difficulty in decision making
(vii) Sluggishness in heartbeat & respiratory rate
(viii) Increased chances of aggressive behavior
(ix) Increased irritability and the tendency to disply -ve emotions.
(x) Cognitive slowing
↳ There occurs reduction in the no. of responses made in a self paced task. This is due to microsleeps are very short sleep episodes interjected into otherwise wakeful state.
Microsleeps increase as the sleep deprivation increases & consequently cog. slowing also occurs.

(xi) Memory Problems

↳ Difficulty in encoding of info.
↳ Slowing down of working memory operations.
↳ Reduction in the recall of info from STM

* Imp. Brain Waves Implicated in sleep

(i) Alpha

↳ issue at 10 cycles per second
↳ indicate relaxed wakefulness

(ii) Beta

↳ 18 to 30 cps
↳ indicate a state of arousal

(iii) Gamma

↳ 30 - 50 cps
↳ state of very high arousal

(iv) Delta

↳ 2-3 cps
↳ large amplitude waves that occur in deep sleep.
↳ when they occur in waking state, the indicate brain abnormality

(v) Theta

↳ 5-7 cps
↳ They occur when 'α' waves are blocked and in addescents & children primarily.

α-wave (alpha)

β-wave (Beta)

γ-wave (Gamma)

θ-wave (Theta)

Δ-wave (Delta)

13-Mar-2019

Sleep & its Stages
Types of Sleep

→ Harvey, Hobart & Loomis

→ Kleitman & Dement ⟶ (i) sleep is all or none
(ii) It is cyclical
(iii) REM & NREM sleep
(Rapid Eye Movement.

NREM ⟶ 4 stages ⟶ REM
(60-90 min) (5 min)

⇒ Last REM sleep ⇒ 20 – 50 min { It increases as sleep progresses }
[% age of time]

- 22 % ⟶ REM
- III & IV ⟶ 22 %
- II ⟶ 50 %
- Rest is stage I

* Pre sleep stage ⇒ Relaxing the body

↓

I II III IV

60 - 90 min

NREM

↓

REM (5 min)

↓

II III IV (60 min)

↓

REM (10 min)

↓

II III IV (60 min)

↓

REM (15 min)

↓

II

↓

REM

↓

II

↓

REM

.....

(it continues)

[Final REM ⇒ 20 - 50 min]

Total Sleep Time = 7½ hrs

22 % REM

22 % III IV

over 50 % II

Remaining I

* For 6 month old baby → 16 - 13 hrs of sleep

50 % of time → REM sleep

* NREM

stage 0 → Pre sleep stage

stage I → Light sleep stage

Stage II → Intermediate sleep stage

stage III → Deep sleep state

Stage IV → Deepest sleep stage

* Stage 0 (Pre sleep) → physically relaxed → awake

* Stage I → Light sleep stage

↳ easily aroused

→ Delta waves absent

→ Spindles absent

→ Brain waves pattern becomes irregular (presence of ∝ waves also)

* Stage II → Intermediate Sleep Stage

↳ presence of spindle for the first time

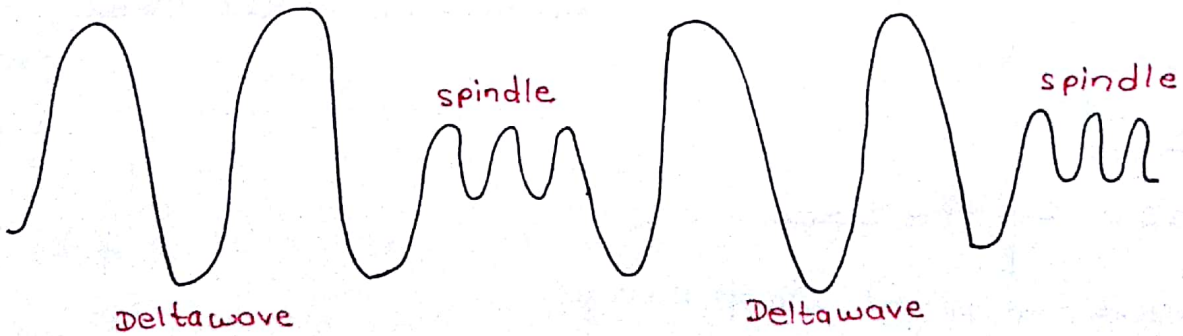
- Spindle :- low voltage rhythmical sequences which issue for 1-2 sec at the rate 12-14 cps.

- Spindles help in the consolidation of LTM (integration of new info. into existing info)

↳ synaptic plasticity (changes in the neuron structure)

↳ spindles will prevent the disturbances from waking up the person.

⇒ Intermediat as low ~~time~~ duration of spindle



Deltawaves ~~Spindles~~ interspersed with spindles

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⇒ In stage II, both Δ waves & spindles are present but not interspersed.

In stage III ⇒ 50 %
IV ⇒ more than 50 % } Delta waves interspersed with spindles

Personal stimulus → will awake
Impersonal " → will not awake } Stage IV

Night Terror → unclear picture ⇒ NREM
NightMare → Clear " ⇒ REM

*Stage IV → least bodily movement
→ Bed wetting occurs
→ Night Terror

* REM

After 90 minutes of sleep, EEG pattern resembles light Sleep stage but person is deep asleep.

This EEG pattern → Paradoxical sleep
(pattern resembles light sleep but a person is deep asleep)

⇒ Vivid imagery → dreams
⇒ If a person is woken up in REM sleep → They report dreams.

* Changes during REM & NREM sleep

• NREM → Muscle tension & spinal reflexes reduced.
→ Heart Rate, Respiratory Rate slows down
→ Vital body organs receive some rest

→ Body replenishes chemical substances used during metabolic activities.

→ Protein synthesis takes place

* REM ⟶ (i) REM Rebound (REM follows Quota System)
(ii) REM Paralysis

Quota system
→ Subjects were made to wake up when they entered REM
→ When they slept the next time, the REM %age was compensated
→ This shows that REM follows Quota system
→ People with vivid imagery, compensated for lost REM through vivid imagery during the day (awake time) → for them REM compensation was not that much required
→ People who did not have vivid imagery ⇒ compensation required.

⇒ This shows that REM

(ii) REM Paralysis
↳ Muscle tone
↳ Spinal Reflex
} ⇒ very diminished (just like paralysis)

If muscle tone of any kind is removed → you are prevented from enacting the dream

(iii) Emotional Responsiveness increased

(iv) Dissipation of emotions

Greenberg ⟶ subjects were made to see a very violent movie ⟶ high level of stress.

Groups
I → full sleep
II → REM sleep disturbed
III → NREM " "

- When the movie was shown again
  I → no stress

  II → max. stress

Dissipation of -ve emotions happened during REM sleep.

* Watson & ~~Crick~~ Crick ⇒ Double Helical structure of DNA
* Kekule ⇒ Benzene ring

} → Discovered in Dreams

REM promotes ⇒ (Autistic, divergent & creative Thinking

* Steven Ellmann → ICSSS
  ↳ Intra Cranial Self Stimulating System

→ It needs to be periodically fired (neuronal firing) if the individual has to stay motivated.

→ If the motivation is present, brain faculties will develop

→ During awake time (eating, drinking, etc), motivation is already present → ICSSS is not activated

→ Role of REM sleep in development of mental faculties in babies.
  ↓
  REM with its vivid imagery will keep ICSSS periodic firing on

→ REM provides situation like external env. through vivid imagery.
  (REM sleep is regenerative because of this reason.)

→ Babies have no muscle tone → they will sleep
  ↓
  REM sleep helps in der. compensating for lack of motivation.

Dreams

- Train of thoughts that run across our mind when we are asleep. (chain)
- Series of thoughts that that pass through our mind when we are asleep.
- Products of imagination in which memory is temporarily confused with reality.

* Characteristics of dreams

(i) Dreams are thinking during sleep

Brain wave pattern during dreams is diff. from BWP during waking state

(ii) Dreams involve vivid imagery → olfactory, tactual, auditory also.

(iii) Dreams are bizarre

↳ A form of hallucinatory & illusory experience

* Types of dreams

Foulkes → (i) NREM dreams
(ii) REM dreams

(i) NREM dreams → less emotional
→ less vivid
→ more thought like

(ii) REM dreams → more emotional
→ " bizarre
→ " vivid

*Material for dreams comes from

(i) Day Residue
↳ recent experience of waking life which are relevant.

(ii) Bodily states of the individual
eg. pregnant lady will see dreams related to child birth

(iii) Socio-cultural background
eg dreams will come acc. to the env. in which a person lives

(iv) Childhood Memories

(v) External Stimuli

* Studies on Dreams

* Calvin Hall → studied 10,000 dreams
→ He found that most of the dreams are predisposed towards -ve side
↓
They will create anxiety in us

⇒ -ve dreams are of 2 types:

(i) Bad dreams → sadness & unhappiness

(ii) Nightmares → cause intense physiological arousal that may wake us up.

* Van de Castle
↳ socio-cultural env. in which a particular gender operates, influences the kinds of dreams that one sees.
eg. 1960 study
American Men :- achievement related dreams
" women :- Kitchen related dreams

* Foulkes

During initial years → impersonal (not involving self)

From 5-6 years → interpersonal themes appear (oneself with others)

* Dement & Wolpert

2 people were sleeping

→ water droplets were sprinkled on one person

→ Other was made to hear music

Next morning when they woke up, some subjected reported dreams related to the external stimuli

⇒ Dreams prevented the sleep from breaking.

* Bokert etal

3 group of subjects

I :- Thirsty but not hungry

II :- Hungry but not thirsty

III :- They were made to overeat

When they ~~were~~ woke up → they reported dreams that had correspondence to preceding physical state.

Theories of Dreams

(i) Psychoanalytical Theory

(ii) Information Processing Approach

(iii) Physiological Theory

(i) For Freud, Dreams → Royal Road to the Unconscious Mind

→ Repressed impulses find expression as individual's defences are lowered

Psychoanalytical Approach believes Dreams have 2 functions:

(i) Guardian of sleep

(ii) Wish fulfillment

2 contents → a) Latent content
b) Manifest "

Process of converting Latent into Manifest is Dreamwork

- Latent content → hidden impulse seeking expression
- Manifest " → dream as it appears to dreamer

Freud gave 'Universal Theory of Symbolism' → symbols are universal

- 2 types of symbols → a) Denotative
b) Metaphorical

a) Denotative → reference to specific object

b) Metaphorical → stand for something other than what appears to be

⇒ Ideas have to be converted into symbols so that we can see them in dreams.

Criticism

⇒ If dreams are wish fulfillment → -ve dreams
" " " Guardian of sleep → nightmares

⇒ Symbols are universal → this is highly criticised

(ii) Information Processing Theory

→ Dreams are the glimpses of complex activities taking place in our brain when we are asleep.

→ Crick & Mitchison ⟶ Dreams enable us to erase unwanted memories from our LTM.

⇒ New info. that arrives during day time → you do not have time to process
↓
during night it is divided into useful & non-useful
← useful is assimilated & non-useful is released through dreams

Criticisms

⇒ Dreams perform housekeeping function.

If this was the function then → Watson & Crick (DNA structure)
→ Kekule (Benzene)

∴ Dreams have relevance

(iii) Physiological Theory

Subjective experience of what is in essence random neural activity.

When 2 neurons collide → spark → dreams

Reasons for random neural activity → min. amount of stimulation is required by brain to develop & function
→ Info. processing task

But if this was true, systematic & well connected dreams could not be explained (dreams should be erratic)

14-Mar-2019

* Drug Induced Changes

WHO → Any Substance that when consumed by the living organism modifies one or more of its functions.

- Chemical substances that bring about structural & functional biological & behavioral changes in organism when consumed.

(i) Stimulants → activate CNS eg. tea, coffee

(ii) Depressants → slowdown CNS eg. alcohol

(iii) Psychoactive

↳ also known as Psychedelics → ~~Hallucinogens~~ Hallucinogens

↳ mood alteration functions

↳ eg. marijuana

* Drug impact on body → 2 methods → (i) Experimental method

(ii) Questionnaire "

- Problem with Questionnaire method → subject's version is the last word.

* Marijuana

↳ from Hemp plant → Cannabis Sativus

↳ studied by Tart through Questionnaire method

↳ a) He found there are individual difference in the effects of marijuana

b) Progressive effect

c) Small doses → Increase creativity

d) Higher " → " ineffectiveness

→ It can produce hallucinations and absurd fantasies.

• Baumrind

*Drugs → induce passivity in individual's personality
→ lack of motivation

Miller
• ~~Miller~~ etal

Marijuana interferes with memory

• Mendelson

Effect of marijuana depends upon → a) Social context
b) Personality of an individual
c) Prevailing mood of the individual

• Collins & Fairbrother

↳ marijuana reduces sexual inhibitions
↳ increases sexual pleasure
↳ " feeling of relaxation

• Weil etal

2 studies

→ In 1 they found that marijuana slows down the time perception

Second study, using experimental method:

3 subjects groups → a) High concentration marijuana
b) Low " "
c) No marijuana

Novices → All had no history of marijuana use

⇒ None of the groups reported any hallucinations or pleasurable feeling

⇒ Effects of marijuana depends on expectations.

*Role of Expectation

⇒ When given to 3 groups with people experienced in marijuana use → they reported plesurable feeling, even placebo group

* LSD

↳ Lysergic Acid diethyl amide

↳ Phanke & Richards → Questionnaire method

Subjects reported → a) Mystical & non-mystical experiences
b) Made their perception objective
c) Impact of LSD was +ve & healthy.
d) They were beyond time & space
e) Developed an extreme sense of sacredness & reverence for some peculiar object.

* Jarvik

↳ Sustained use of LSD → a) mental deterioration
b) intellectual decline

* Cohen etal

LSD → (i) nausea
(ii) headache
(iii) restlessness
(iv) general ineffectiveness

Extra sensory Perception

(i) Telepathy
(ii) Clairvoyance
(iii) Psychokinesis

→ Near Death Experience
→ Out of body "
→ Levitation

} Phenomena of Psi (studied under parasychology)

- Psi → Energy exchange not explicable in the terms of known science.

- Para-Psychology → Discipline that studies phenomena of Psi.

* Para normal → Very less empirical evidence Events

- Responses to external stimuli without any known sensory contact.

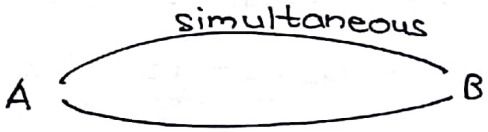
- 'ESP' term was coined by JB Rhine (Duke Univ., USA)

(i) Telepathy

↳ ability to communicate without the use of senses

'Tele' → distance

'pathy' → occurence



→ particularly during crisis

→ Dreams, visions

- Both freud & Jung gave accounts of their telepathic occurences.

- Telepathy is found more in women as they are more intuitive.

(ii) Clairvoyance

↳ clear vision

↳ seeing the events that are far away from the subject through his mind & without the use of any physical means.

↳ in the form of hallucinations, dreams

↳ Jeanne Dixon → who had the vision of the assassination of JFKennedy.

2 types of clairvoyance → a) Precognitive clairvoyance
b) Retrocognitive "

→ Pre cog. → Into the future

→ Retro cog. → Event of ~~Incident~~ the past about which we are not aware

• Clairaudience → eg. inner voice (a voice is heard)

(iii) Psychokinesis

↳ also known as telekinesis

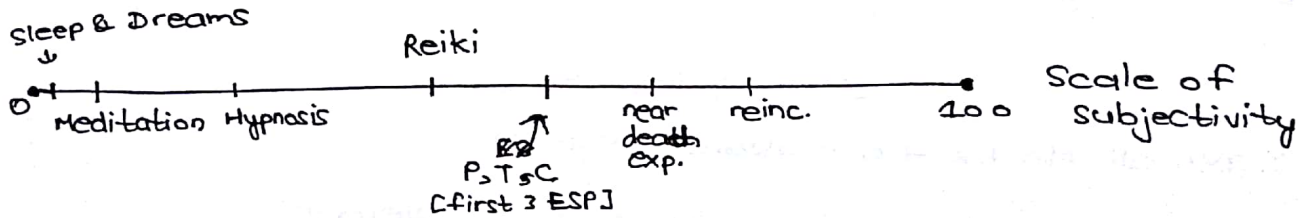
↳ exercising mental influence over the physical objects

⇒ One is able to move the objects using concentration power

⇒ John Bender → he could bend the spoons using telekinesis

* Criticism of ESP

Deja vu in Psychology ⇒ considered to be memory issues
Jamais vu → coming to a familiar place & feeling that it is new place.
Crypto amnesia → unintended plagiarism



Reiki → removing blood clots using touch

(i) File Drawer Problem

↳ No focus on the visions that proved to be false

↳ selective inference drawing

(ii) Issue of replicability

(iii) Inadequate controls

Intersensory Perception

When perceptions from different organs will be integrated.

It is the transfer of info. from one sensory source to an association area where it is integrated with the info. from another sensory source. Intersensory perception is the perception of ~~*~~ an object or event that makes info. available to 2 senses simultaneously. ISP is required in the tasks that co-ordinate 2 or more sensory activities such as playing the musical instruments acc. to the pattern of notes on the music sheet. The neurological phenomenon of cross modal or intersensory perception from a single stimulus is known as Synesthesia (union of sensations).

Rather than replace one perception with another, a single sensory input ~~stimulates~~ simultaneous responses in 2 or more senses. It is more frequently experienced in a unidirectional condition where one stimulus such as sound induces sensation within another sensory realm such as sight & the converse usually does not occur.

eg. feeling cold when inside a room with blue tiles.

Psychocybernetics

→ Maxwell Maltz → a plastic surgeon

→ 'Cybernetics' :- coined by Nobert Weiner
↳ from Greek word Kybernetics which means Steersman (of ship)

→ It is the science of comm. & control

→ most. imp. aspect is feedback

⇒ Cybernetics ~~~~ principles applied to human brain
⇓
Psychocybernetics

⇒ Self image from feedback

+ve feedback → +ve self image

-ve " → -ve self image

⇒ +ve self image ⇒ optimise the use of talents

⇒ Psychocybernetics helps in changing -ve self image to +ve, using feedback

⇒ Servo mechanism

5 step process

C R A F T

1) Cancel the false -ve self image

2) Replace the -ve self image with the success oriented +ve self image

3) Affirm to yourself your +ve self image repeatedly

4) Focus on the image of your success.

5) Train yourself for a successful performance.