Erma M. Brown Composition Book
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Folder
Modern psychology is an attempt to take up the question of mental life and its phenomena. Psychology in a scientific investigation of the mind and emotions. Problems that arise from psychological phenomena lead to development of new methods of investigation. The object of scientific psychology is to understand and explain human thought, emotion, and behavior.
people taken as a whole - while psychology studies the activities of the individuals.

2. **Biology**, the science of living things, includes psychology which studies the creatures of the mental side.

3. **Genetics** is the study of mental heredity and development.

4. **Physiology** studies functions; as psychology studies mental functions, it is a part of physiology.

**Subjective method** of observation is the observing by an individual of his own actions. This is also called introspection.

**Objective method** of observation is the observing of the behavior of other individuals.

**Several lines of Psychological Investigation**

1. **Experimental attack** consists in controlling the conditions under which a mental performance occurs.

2. **Comparative method** compares the actions of individuals, classes, or special rating likenesses and differences.

3. **The Genetic Method** traces the mental development of the individual or of the race.

4. **The Pathological Method** traces the decay of mental life instead of its growth.

Psychology is the science of the conscious and unconscious activities of living individuals. Psychologists have no concern with praise and blame, but in a seeker after facts.

Chapter 17 - Reaction

A reaction is a response to a stimulus.

A response is a muscular movement.

A stimulus is any force or agent that acts upon the individual, arouses a response.

Simple reaction - Person knows in advance exactly what he has to do.

Choice reaction - Two stimuli and person may be required to act in one of two ways.

Associative reaction - Person doesn't know what the stimulus is going to be.

Nerve Center

The sensory nerve runs from the sense organ to the nerve center.

The motor nerve runs from the center to the muscle.

The Nerve Centers are located in the brain and spinal cord.

Brain is composed of:

1. Brain stem is a continuation of spinal cord up along back of skull cavity.

2. Cerebrum

3. Cerebellum

The spinal cord and brain stem contain lower or reflex centers.

Cerebellum and especially cerebrum contain higher centers.

The Nervous System is composed of neurons.

A neuron is a nerve cell with its branches.

The branches are axons and dendrites.
The white matter of the brain and cord are composed of axons.
The gray matter comprises the nerve centers, lower and higher.
Axons afford means of communication between the nerve centers and
the muscles and sense organs, and between one nerve center and
another.
Synapse is a junction between two neurons.
Communication is always from end branch to dendrites.
The nerve cell contains, besides the nucleus, certain peculiar
granules and very fine fibrils.
The Reflex Arc:
1. Begins in sense organ, extends along sensory axon to its end
branch in a lower center, cross synapse and enters dendrites of
motor neuron and extends along motor axon to muscle or gland.
2. The Central Neuron is between
the Sensory and motor neurons.
1. Coordination is brought about by the branching of a sensory axon.
2. And by the branching of the axon of a central neuron.
Chapter III
Reactions of Different Levels

Mental processes of all kinds are reactions.

1. Hearing a noise is a sensory reaction to a stimulus.
2. Recognizing the noise is a perceptual act.
3. Noise reminding you of something is a memory response.
4. Memory arousing a feeling is an affective response.
5. This leads to imagination and reasoning.

All mental action leads to awareness and terminates in muscular and glandular activity.

The stimulus that directly excites a mental process is often central.

A central stimulus is one that acts directly on the nerve center in the brain.

A peripheral stimulus is one that acts on any sense organ, external or internal.

1. External force or motion, as light or sound striking a sense organ.
2. Internal, as hunger or thirst.

The central stimulus may be aroused by preceding thought. The thought of my enemy, makes me angry.

Brain activities of all sorts influence the muscles by way of the motor area and the lower motor centers.

Lower motor centers are located in the cord or brain stem.

Higher Motor Center is the Motor Area of the Brain, lying just in front of Central fissure or fissure of Rolando.

Inhibition is the making of a reflex hand in spite of the sensory stimulus for the reflex being present.
Facilitation is the making of a reflex easy by the sensory stimulus as to assist in production of the reflex. Motor area and lower centers combine to produce skilled movements. Superior motor centers are located in the cortex.

Aphasia is injury to upper motor centers which causes loss of skilled movements.

Aphasia is loss of ability to speak. Speech centers combine with motor area to skilled movements of speaking a word.

In auditory aphasia there is no inability to pronounce words or even to speak fluently but at first an inability to hear words.

Visual-sensory area is in occipital lobes.

Somesthetic area is connected with body sense generally skin and muscle senses.

The thalamus is an intermediate center for all senses except smell.

The cerebellum has much to do with the maintaining of the equilibrium of the body.

Relations of reactions of different levels:
1. On the sensory and intellectual side, the higher reactions follow the lower.
   a. Sensation precedes perception and perception thought.
   b. On the motor side the lower reactions are avowed by the higher.
   c. Speech centers above the motor centers for the speech organ.
Chapter 17
Tendencies to Reaction

A. Stimulus Response Psychology
1. It keeps close to the facts.
2. It has room for introspection as well as behavior study.
3. It can be applied practically.

B. Purposive Behavior
1. A stimulus is typically external and purposeful.
2. A stimulus acts for a moment, and purpose for some time.
3. A stimulus is not directed towards a result; a purpose is as directed.

C. Three Levels
1. Organic or physiological states that predispose towards certain forms of behavior.
2. Inner adjustments towards certain results, without foresight of the result.

D. Organic States
1. They are aroused by stimuli.
2. They persist for a time.
3. They influence the response to other stimuli.

E. Internal States
1. They are neural rather than chemical.
2. They amount to a preparation or readiness for a certain response.
3. They proceed sometimes for only a few seconds, sometimes for many minutes at least.

F. Reactions in Highest Levels
1. A whole series of acts may be set going by a single stimulus.
2. The series comes to an end when a certain result is finally reached.
3. Each act in the series is a response to some particular stimulus, and yet would not be aroused by that stimulus except for the adaptive adjustment towards the end-result.

4. The end-result cannot be reached until a particular stimulus helps the adjustment to assure the end-result.

5. The preliminary acts in this series bring the required stimulus that can give the end-result.

4. Tendency.

1. It may be kept active by a continuing peripheral stimulus.

2. It may be unable to discharge fully because its main path of discharge is blocked.

H. Higher Centers.

1. The main center has minor connections with other centers.
Chapter V

'Native and acquired traits'.

A. The distinction between native and acquired is clearest in the field of anatomy.

1. Movements—Native Character
   - Reflexes and skill in handling tools is acquired.

2. Source of native traits
   - Native means a little more than congenital.
   - Native traits date back to the original constitution of child.

3. Reactions appearing at birth must be native.
   - Breathing, crying, stretching, grasping, and other movements made from birth on are native reactions.
   - Reactions that cannot be learned must be native.

Native traits continue to make their appearance as the child’s development proceeds after birth.

B. Experimental detection of native reaction
   - An experiment with birds showed that flying was native and not learned.

   - An experiment with oridins showed that the elements of the song are native, and the combination of these elements is learned.

4. Do walking native or acquired?
   - An experiment showed that it is native. A weak child was put in long dresses because she could not stand. About four months later she was left without her dress and immediately set up and walked.

5. The criterion of fundamental sign
   - If a native trait is that it shall make its appearance when there has been no chance to acquire it through experience.
The criterion of universality: When all individuals having the same descent show a trait in common, that trait belongs to their native Constitution; unless evidence can be brought forward to the contrary.

1. Some native traits are not inheritable.
   - Color of eyes and genius are two examples.

2. Acquired traits differ from one individual to another.
   - Acquired traits are much less universal and much more individual than native traits.
   - They are the readjustment of the individual to environmental conditions.
   - Acquired traits are not native of native traits, but are developed on the basis of the native trait.

3. What mental traits are native?
   - On the motor side, the reflexes are native, while skilled movement are acquired.
Chapter VI
Instinct.

A. Conduct as determined by Nature Reaction Tendencies

Instinct is native behavior.
An instinct is a unit of such behavior.
Calculated action is based on an individual's experience.
Instinct is based on the native constitution.

The dependence of instinct on sensory equipment.
Ex. Instinct of dog to follow scent - the dependence of instinct on motor equipment.
Ex. Instinct of a bird to fly.
The cause of an instinct is in the Nervous Center, since it is there the coordination of Muscles is accomplished.
In terms of neuronal netting, an instinct is the activity of a team of neurons so organized and so

B. The difference between an instinct and a reflex.
A reflex is a prompt reaction on instinct proceeds.
C. An instinct is a native reaction tendency.
An instinct is an inner adjustment or tendency to reaction.

D. Fully and partially organized instincts.
Dogs afford the best examples of fully organized instincts. Their progress is sure and straight to an end result.
Man has the most partially organized instincts.
E. Instincts are not acquired habits.
Acquired traits are not transmitted.
No instinct ever came from something that was acquired.
Because a child's parents speak a certain language is no reason that he will not have to learn it.

7. Instincts not necessarily useful in the struggle for existence.

4. The so-called Instincts of Self-Preservation and Reproduction is not true.

Take Instinct of Self-Preservation.

It must include feeding and escaping from danger and they are in different sense of acts.

Chapter VII

Emotion

A. Various organic states and the constant states that go with them.

1. An emotion is a stirred up state of the organism.

Illustration: joy, sorrow, fear, anger, amusement, disgust, and curiosity.

B. Organic states that are not called emotions.

Though fatigue is as much like an emotion that it fits under our definition, it is not called an emotion, but a sensation or complex of sensations.

Example: which means feeling bad is like an emotion.

Disoriented is another of the emotion-like states.

Example: and these are typical examples.

C. How organic states differ from regular emotion.
1. Hunger is a sensation because it is localized, and the location functions in much less definite.
2. Organic state of the hunger comes result directly from mental physiological process. The organic state in an emotion is aroused by the brain, the brain being aroused by an external stimulus.
3. The organic state in anger:
   1. Expression, hail during anger.
   2. The heart beats more forcibly than usual.
   3. The diaphragm does make extra strong breathing movements.
4. Visceral response during emotion affect during emotion as seduction. 
   1. Tears in fruit.
   2. Intestinal secretions are discharged in blood and carried to all parts of body and have great effect on the activity of various organs.

The thyroid gland is necessary for normal brain activity.
5. Nervous system, concerned in internal emotional response.
   1. The autonomic system consists of outgaging axons from center in the cord and medulla.
   2. Three divisions:
      - Upper division from medulla, fanfare digestion by promoting flow of gastric juice.
      - Middle division checks digestion. 
      - Lower division helps to rapid secretion.

Any emotion represents internal preparation for some type of overt action. Expressive movements are another kind of preparatory reaction. 

If not useful now, they were survival of acts that had been useful in the life of the individual or race.
The James Lange Theory

The emotion is the way the body feels while executing the various internal and expressive movements that occur on such occasions.

We do not tremble because we are afraid, but we are afraid because we tremble.

1. In terms of consciousness:
   (a) Emotion is "feeling somehow"
   (b) Impulse is "wanting to do something"

1. In behavior terms
   (a) Emotion is an organic state
   (b) Impulse is an adjustment of the nerve centers towards a certain reaction

Typically, impulse generates emotion, but emotion sometimes generates impulse.

Distinction between emotion and instinct

1. Emotion consists of internal response
2. Instinct is directed outward or toward itself.

Instinct is directed towards a result.

The higher emotion

1. By modifications of the motor response
2. By new attachments on the side of the stimulus
3. Combination of one emotion with another.
Chapter XIII

Inventory of Instincts and Emotions

I. Complete account of an instinct would cover following points:
   1. Stimulus that arouses it.
   2. End result at which it is aimed.
   3. Preparatory reactions which occur.

II. Classification of Instincts.
   1. Responses to organic needs - Hunger or thirst.
   2. Responses to other persons - Maternal or paternal.
   3. Play Responses - Include all that are not in other two.

III. In Hunger, sucking and swallowing appear at birth. And also in air getting
   1. Shivering from heat or cold is instinctive while seeking shelter from heat or cold
   2. Stimuli that elicit movements of escape are
   3. Those that cause irritating

Sensations:
   1. Those that are signs of danger.
   2. The emotional state in crying is the feeling of helplessness -
      The generous instinct arouses people together and gives them a chance
      for social design.
      Play instincts are of play value, while the others are of survival value.
      Inertia is the counter tendency toward general activity. It is the
      tendency toward inactivity. During child life playful activities
      take shape in several ways:
      1. Certain movements are picked out and fused.
      2. Certain specific movements develop with the child's life.
      3. This play comes to consist more and more of external objects.
      Along with manipulation goes the
Tendencies running Counter to exploration and Manipulation
1. Curiosity - an animal sniffing an object goes closer each time until he reaches it.
2. Contentment - satisfied with what you have

The stimulus to fighting is resistance or interference
It may be
1. Aggressive - fighting just for the fun of it
2. Defensive - Survival Value - Instinct that holds it in check

Defensive reaction to things that threaten
1. Defensive reaction to things obstructing
2. Defensive reaction to things domination by them
3. Aggressive reaction to things seeking for power
4. Aggressive reaction to persons seeking to dominate

Curiosity of self-assertive behavior
1. Defensive reaction to things - overbearing
2. Defensive reaction to person - resisting domination by them
3. Aggressive reaction to things seeking for power
4. Aggressive reaction to persons - seeking to dominate

Balancing love one place in its assertion
Cannibalism as mate need to just simply to do better
Chapter IX - Feelings

Feeling is Conceiving, But Not Cognitive.

We know we have it, but when we try to analyze it, it disappears.

Feeling is an undercurrent of consciousness.

Elementary feelings differ from sensations:
1. Sensations can be picked out and observed, while feelings grow vague and lose their character when analyzed.
2. Sensations are localized.
3. Feelings have no known sense organ, while sensations do.

The pleasantness or unpleasantness characteristic of many sensations is called the "feeling tone".

Feelings of feeling:
1. Pleasantness might represent an organic state.

Stand for unpleasantness is also an organic state.

1. Pleasantness might represent smooth and easy brain action.

Unpleasantness slows and impedes action. Objectives are that of procreation and defensive reaction.

While pleasant are quick.

3. Feeling is impulsive.

To pleasantness the feelings to let the pleasant state continue.

In unpleasantness, the impulse is to end the state.

Kind of stimuli for pleasantness and unpleasantness.

1. Tasty and bitter and sweet.

2. "Success and failure.

Natural likes and dislikes.

Any sensation with a pronounced feeling-tone is a primary pleasure or displeasure.

Dining for sweets is active but
Chapter X

Sensation.

A sensation is a response which is aroused in us by the stimulus. A sense organ is a portion of the body that has very high sensitivity to some particular kind of stimulus.

A sense organ always contains the termination of a sensory nerve.

Besides sensory sense two other things are often found in sense organs.

1. There are special sense cells in a few sense organs.

2. For most sense organs there is accessory apparatus which helps to bring the stimulus to the sense cells or sensory nerve endings.

Sense cells are present only in the eye, ear, nose and mouth.
The olfactory area cells are located in a little recess in the upper and back part of nose.

In the eye, the sense cells are the rods and cones of the retina. Every sense except the pain sense has more or less accessory sense apparatus.

All of the eye except the retina and all of the ear except the sense cells and the sensory axons are accessory.

Prominent among the psychological problems regarding sensation is that of analysis. Rough and smooth, hot and cold, wet, dry, hot and cold, etc., are skin sensations, and some of these are compounds.

There are such spots sensitive to particular tones, cold spots, warm spots, touch spots, and pain spots. Elementary sensations are warmth and coolness rather than hot and cold.

The stimulus that causes the touch sensation is a bending of the skin.

That which causes warmth or cold is a temperature stimulus. The stimulus that causes a pain sensation must be strong enough to injure or nearly injure the skin.
Chapter II

Attention

I. Attention is:
   1. Preparatory - it prepares us for what is to come.
   2. Selective - there are some things we attend in preference to others.
   3. Mobile - we change from one thing to another.
   4. Highly conscious - it attracts us to a thing to be conscious of.
   5. Explotatory - primitive attention amounts to the same thing as the initial of exploration.

Factors of advantage:
   1. Change - a steady voice after a while ceases to be noticed, but let it change in any respect and the attention is immediately arrested.
   2. Strength - more prominent will attract attention quicker.

II. Repetition - repeat a motive in decoration of building and it is more likely to be noticed.
III. Striking quality - bright red is more noticeable than dull red.
IV. Definite form - a small, sharply defined object attracts the eye quicker than one that is indefinite in its appearance.

Habits of attention are those that are in our mind. What is worth noticing:

Habits of inattention are those that are not in our mind. That is the present interest.

- Anything you have to work with requires your attention.
- Anything you have nothing to do with loses your attention.
- Temporary adjustments are momentary interests or desires.
VI. Motor reactions that are in attention are of two kinds:
1. The general attentive attitude
   - The audience absorbed in speech
2. Special adjustments of sense organs - more or less exploratory

VII. Two types of exploratory eye movements:
1. Jumping - in passing from one object to another.
2. Parent movement - examining a moving object.

VIII. Shifting because the eye is fatigued.

In looking at a figure, it will appear to shift back and forth. This is shifting carelessly.

1. Binocular rivalry - when colors or figures that are crowded together seem to combine into a single picture.
2. Fluctuations of attention - one object appears and disappears again.

IRISERY and fluctuation differ from typical shifting. The attention:
1. Typical is quicker.
2. Changes shifts are not influenced by momentary thing.
3. In rivalry, the color disappears altogether.

IX. Laws of Reaction
1. Law of selection
2. Law of advantage
3. Law of shifting

Sustained attention is not glued to one point but is simply confined to a group of objects or themes, within which the motion may be as lively as ever. Attention may be sustained by having an interest in the matter presented.

Curiosity, fear of punishment, disapproval and hope of praise may keep us going until the subject becomes interesting.
A distraction is a stimulus that attracts attention away from the thing to which we mean to attend.

In the excited manic condition, known as manic, the patient is excessively distractible. In contrary, manic condition patient is absorbed in his own troubles that it is almost impossible to distract him from his proceedings.

Ways of over coming distraction
1. By greater energy
2. By coupling distraction to main task.

We can do two things at once provided one is automatic or beating.

Two acts that require careful attention may be done at same time by combining them into a single coordinated act and giving attention to this compound act.

The span of attention is discovering how many things can be seen or heard at one instant.

The laws of attention are:
1. Law of Selection
2. Law of Advantage
3. Law of Shifting
4. Law of Sustained Attention
5. Law of Combination
6. Law of Degree of Consciousness

The law of combination is that a single response may be made to two or more stimuli; or, two or more stimuli may arouse a single joint response.

Higher motor units are movements that are thought of as a unit, attended as a unit, and executed as a unit.

The "field of attention is the high light of consciousness".

The field of consciousness is that and more. It includes objects of which we are vaguely aware.
The law of degree of consciousness is that an attentive response is conscious to a higher degree than any inattentive response. At the same time:

Difference between attentive and inattentive observation:
1. Attentive is more trustworthy and gives more facts.
2. Attentive is more accurate and quicker.
3. Attentive study gives quicker learning and gives facts more durably.

We cannot do everything attentively because we sense too many stimuli. The best reader gets the author's question and presses on to find the answer. The dawdling reader never remembers the facts because he never gets them. facts in attempting to learn

A conception of the brain action in attention:
1. Mobility
2. Persistence in spite of mobility
3. Switching

While several activities go on at once only one occupies the focus of attention.
Chapter XIII - Intelligence.

Man is the most intelligent animal due to his native constitution. Different individuals of the same species are not all equal in intelligence. The brain stems were intelligence tests consisting of many brief tests to give the child plenty of chances to demonstrate what he had learned and what he could do.

Intelligence is measured by brief tests on a scale of mental age. The chronological age is how long a person has lived, the mental age is how far the person has progressed.

If his chronological age is much above mental age he is bright, if much below, dull.

Brightness or dullness can be measured by intelligence quotient (IQ) which is mental age divided by

Chronological age. For day children and foreign children the performance tests are used.

The first extensive use of group intelligence tests was made in the American Army during the First War.

It was the Alpha test. It was the first of its kind.

It often happens that a child who is medullaneous and malleable in school tests high in intelligence, the trouble with him being that the work set for him to do is below his mental level and unstimulating. He should be

Intelligence tests do not test the ability in practical work, leadership and heat movements such as Persuasion.

Correlation is a statistical......
Measures of the degree of correspondence
General factors in intelligence:
1. Attentiveness - Use of past experience or memory.
2. Responsiveness to relationships - Sex hormones quicker than others.
3. Persistence and submissiveness - Curiosity or explanation.
   a special aptitude in a specific responsiveness to a certain kind of stimulus.
Evidence that degree of intelligence is innate:
1. It remains from childhood to old age.
2. Mental resemblance among members of the same family.
   Special aptitudes run in families.
   There is some connection between brain and intelligent behavior.
The size of the cerebral region with intelligence of species.
Not all idiots have small
Chapter XIII
Learning and Habit Formation

Acquired reactions are nature reactions.
Modified by use.
Acquired motor acts are based on reflexes.
The simplest kind of modification is the mere strengthening of an act by exercise.

A reflex may be attached to a new stimulus that it does not answer to.
Substitute stimulus refers to the case where the natural response is not itself modified but becomes attached to another stimulus.

Substitute response refers to the case where a new reaction is attached to remaining stimulus.

One type of coordination consists in combination of reflex movements into larger coordinations.

Emotions also may be attached to substitute stimulus, as they may be.

Combined.
Animals learn more slowly than men.

1. They learn by negative adaptation. Letting go of something you already have.
2. The conditional reflex experiment.
3. The signal experiment. Learn to pay attention to signal.
4. The maze experiment. Drop out things that are useless. Learn path by elimination of false reactions and by combination of single steps.
5. The puzzle box experiment. This is an instance of trial and error.

Intuit and error is learning by doing and not by reasoning or observing.

Elimination occurs most quickly when it brings pain, more gradually when it brings failure, and slowly
through negative adaptation.

All forms of learning displayed by the animal are present in human beings.

Human compared with animal learning:

1. The human knows where he is
2. Adults are more circumstantial and dignified.
3. They make less speed.
4. They cover less distance.
5. They make fewer false movements.
6. They finish in less time.

Their better start is due to:

1. Better understanding of the situation at outset
3. Less tendency to respond to every opening.

Dright into general principle: 2 people leads to a better plan of attack.

We may learn by observation, learning by thinking depends

on observation.

Sometimes, mental performance of a performance assists in learning it.

Summary of human superiority over animal learning:

1. Man is a quicker learner.
2. Man is a better observer.
3. We have more control over his impulses.
4. He can work mentally with things that are not present.
5. The physiological limit is the limit of what the nerves and muscles of the individual can perform.

A period of little improvement followed by a rapid improvement may be called a plateau.

Overlapping means doing two connected things at once.

Moderate skill acquired in ordinary day's work.
Chapter IV
Memory.

For "Practice to make perfect"
1. It must be strongly motivated.
2. It must be sharply checked up
by some measure of success or failure.

We need strong incentive, a clear
measure of success and failure, and
a practice curve before we indicate
where we stand now with respect
to our past and possible future.

Essentials in forming habits
1. See and study attention to it
2. Repetition (attentive)
3. No exceptions.

To break a habit we must form
a counter habit and stick closely
to this new habit.

Chapter XV
Association and Mental Imagery.

Recall furnishes raw material for thought.
What we recall:
1. Motor reactions can be recalled.
2. Tendencies to action can be recalled.
3. Observe facts can be recalled.

We say that a fact is recalled
when we think of it without it
being present to the senses.

A sensation or complex of sensation
recalled by a substitute stimulus
is called a "mental image" or
"Memory image:"

Individuals differ in the vividness
of realism of their memory images.

They differ in kind of sensation
they can vividly recall.

The "mixed type" are individuals
who can easily call up images of...
two or more different senses.
Recall sensations may be inferior to their originals in several respects:
1. An image usually has less color or tone than a sensation
   aroused by its appropriate peripheral stimulus.
2. Images are apt to be sketchy and
   lacking in detail.
3. They are apt to be unstable as
   compared with actual sensations.
4. On practical side, they are inferior to actual presence of objects.
The image does not give you the facts that you did not observe
in presence of object.
We cannot observe recollect
observed about a tree unless we see the tree in "the mind's eye".
An hallucination is an image
taken for a sensation, a re-called
fact taken for a present objective fact.
You smell the flowers and smell
then until you notice the shop door
closed, you conclude that the smell
must have been an image. Such a
false sensation is an hallucination.
Synesthesia is hearing colored sounds.
Mental processes that depend on recall are called "associative" processes.
When some definite interest or purpose steers the associative process, it is called "controlled association."
"Free association" occurs in an
idle mood.
Relate the best example in
free association. In reverie the
stimulus usually does not come.
The factors of advantage in
recall are the factors that
determine the strength of linkage
between two facts.
They are:
1. The frequency with which the stimulus has occurred.
2. The recency with which it has occurred.
3. The intensity with which it has occurred.
4. Present state of subject's mind.

In the free association test, the subject is given a series of words as stimuli, he is asked to respond to each word by speaking some other word, the first recalled by stimuli.

In controlled association test, the subject is required to respond to each stimulus word by a word standing in a specified relation to it.

Mental set is a selective factor, a factor of advantage. Only one of the facts previously linked with the stimulus is recalled at a time.

The mental set is a response to a stimulus.

Examples of controlled association:
1. In arithmetic, the mental set is an minor's response to the task.
2. In reading, there is a mental set which is an minor response to the context.

The objective situation arouses a mental set that controls both thought and action. A problem arouses a mental set directed towards solution of the problem.
Chapter XV

The Laws of Association

The exercise of a reaction strengthens it, no doubt.

The Law of exercise is when a given stimulus arouses a certain response, the linkage between that stimulus and that response is improved by exercise as obtained.

Sub-laws under Law of Exercise

1. Law of Frequency
   - Refers to cumulative effect of repeated exercise.

2. Law of Recovery
   a. Duration - Same as atrophy through disuse.
   b. Momentary warming up through exercise.

3. Law of Intensity
   a. Vigorous exercise strengthens the reaction more than weak exercise.

Law of Effort

The linkage of a response to a stimulus is strengthened when the response is a success, weakened when the response is a failure.

Success means reaching the goal of an awkward desire - failure means being hindered from reaching goal.

The successful reaction always occurs at end of trial, and is the most recent reaction at beginning of next trial. Therefore, recency does not explain Law of Effort.

Limitations of Law of Exercise

1. It does not cover formation of new linkages.
2. It does not explain the attachment of a response to some other than its natural stimulus.
3. It does not explain combination of responses into higher units.
4. The association of two facts a
Laws of Association from Aristotle:
1. Facts Contiguous in Space.
3. Facts when they resemble each other.
4. When Facts Contract with each other.

Contiguity in Space and in Time were combined into a Law of Association by Contiguity in Experience.

Facts resembling each other and facts contracted with each other were combined in law of similarity since each had to have something in common.

The Law of Contiguity is unsatisfactory from modern standpoint because it treats only of the stimulus, and not response.

Four laws of Aristotle combined into Law of Combination.

The Law of Combination reads that two or more stimuli may arouse a single joint response.

Exercise may strengthen it so that a single one of the stimuli may arouse the response which was originally aroused by the whole collection of stimuli.

The Law of Combination is applied to learning:
1. A collection of stimuli may work together and arouse a single response.
2. This is possible of pre-existing loose linkage between the separate stimuli and the response.
3. The linkage of a stimulus with the response is strengthened by exercise.
4. It may be strengthened enough for a single stimulus to arouse the response.
I Substitute Stimulus Explained by
Law of Combination.
1. Substitute stimulus originally unnecessary
   a) Conditional reflex.
      The dog and the bell.
   b) Learning the Names of Things.
      Object seen and name heard.
   c) Substitute stimulus or name.
   d) Necessary.
      a) Observed grouping or relationship.
          The formation of an association between two objects by observing
          their grouping or relationship.
   e) Response by analogy and association by similarity.
      Object reminds me of a similar object in similarity.
      Actually taking object for another in analogy.
2 Substitute Response Explained by Law of Combination.
   a) Substitute Response, but not a new one.
      a) Local and error.
      b) Cat in the cage.
   b) Learning to balance on a bicycle.
      a) Substitution Response, which is a higher motor unit.
      b) The brake and clutch.
          Combination in driving an automobile.
   c) The word-list in typewriting.
      The law of combination in recall.
      The law of learning in terms of the neuron.
      Brain is concerned in learning and recall.
      Exercise has the same general effect on neurons that it has on muscles.
      The more a synapse is used, the better it becomes. Since lots
Chapter XVII
Perception

Sensation is the first response caused by a stimulus. Perception is the second response and is a direct response to sensation and indirect response to physical stimulus.

When an unusual fact is presented, perception may lag, though sensation occurs promptly. We make a rapid series of trial and error perception.

Sometimes images are aroused during the perception of a fact. Colors tacked on to a memory object are sometimes called "memory colors."

Perception may be a motor reaction. Responses that occur in process of making a skilled movement dealing with perceived object.

1. Sensation - Like receiving signal or code messages.
2. Perception of Object - Decipher this message and knows state of affairs.
3. Coordinating preparation for the act
   - Plan action.

4. Execution of act - Send out orders to agent that perform the action.
   Perception of an object precedes the motor adjustment, and is one factor in determining that adjustment.
   Perception is an adjustment to the facts as they are, while motor adjustment is a preparation for changing the facts.
   Perception does not alter facts, movement does or produces new ones.
   Perception comes in between sensation and motor preparation.
   It takes a collection of stimuli to arouse a perception, therefore, it is a combining response and an isolating response.

The laws and sub-laws of learning apply to practiced perception.

The more frequently, the more recently, and the more intensely a given fact has been perceived, the more readily it is perceived again.

The principles of substitute stimuli apply to practiced perception.

1. The first time you perceive an object you observe it attentively.
2. The next time not as attentively for you make the same perceptive response to a part of original stimuli.

Substitutes. Response is a big factor in connected perception.

Stimuli for perception of location are provided by all the senses. Esthetics is the science of the beautiful.

Some people are blind and deaf to beauty that other people clearly perceive.

Beauty, humor, pathos, and sublimity can be perceived by sense. Esthetics, perception is perceiving.
4. Illusions due to superficial
   relation of the fact to be
   perceived.

Chapter XVIII
Reasoning

The reasons is an explorer, a
search for facts. Reasoning is
mental exploration.

1. The behavior of animals does not
   look like reasoning because it is too
   impulsive and motor.

2. The animal's learning curve fails
to show sudden improvements such
as in human learning curves follow
"seeing into" the problem.

What the human does that animals
do not is:

1. Attentive studying over problems.
2. Thinking in effort to find
   something to bear on problem.
3. Sudden "insights" when the

the beauty in things, the very
simplest objects can produce an
esthetic effect.

Social perception is perceiving
social things.

By the senses we perceive
the motives and intelligences of
other people, their personality, goals,
intelligence, and many other traits.
In the same sort of perception
equal relative differences are equally
perceptible.

An error of perception is an
illusion.

Classification of illusions according
to factors that are operative in
causing deception.

1. Illusions due to peculiarity
   of the sense organs.
2. Illusions due to preoccupation
   or mental set.
3. Illusions of the response by analog
   type. Witness illusions.
present problem is seen in the light of past experience.

After mental exploration a person sees the solution clearly or it that something must be so. This kind of perception is called inference.

Inference is a response to two facts and the response conceives in perceiving a third fact.

You do not infer what you can perceive directly by senses.

Just as an illusion is a false sense perception, so a false inference is a fallacy.

Varieties of Reasoning

I. Reasoning out the solution of a practical problem
   A. A problem or a situation for which we have no ready succesful response.
   B. Typical facts of a problem solution
      1. Data is acquired.
      2. It facilitates the observation

II. Rationalization or self-justification

A. Finding a good reason for doing it thing.

III. Explanation

The form raises the question "Why?" - The search for due to explain.

IV. Application

This form raises question "How?" You search for cases where the general law should apply.

I. Doubt.

A general proposition stimulating reasoning because you doubt it. You want to find cases where it breaks down.
VI Verification.
Starts with general proposition and explores instances to see if they give results in accordance with facts.

Deductive + Inductive reasoning
1. Your reasoning is deductive when you start with general law and apply it to special cases.
2. It is Inductive when you take particular facts and form a general law.

The world's natural scientist may fail at one of the following points:
1. He may see no question that calls for investigation.
2. Seeing something that needs explanation he may be a poor guesser or lack fertility in guessing.
3. He may lack the clear, steady vision to see the consequences of his hypothesis.
4. He may lack enterprise to go out and look for facts.

Psychology and Logic
Psychology studies process of reasoning. Logic checks up the result and shows whether it is valid or not.

Logic limits itself to inference alone and cares nothing about explanatory process.
Inference consists in drawing conclusion from two given premises.

A syllogism includes three terms - Major premise, Minor premise, and Conclusion.

Qualifications of a good reasoner
1. He must have a lot of information.
2. The detective instinct for finding right clue.
3. The reasoner needs a clear and steady mental eye to see conclusion that is implicated in premises.
Chapter XIX.
Imagination

I. Exploration seeks what is there; Manipulation changes it to something else.

Manipulation and exploration go hand in hand in little child's behavior.

II. Beginnings of Imagination in Child
Child's manipulation develops in several directions such as:
2. Constructiveness
3. Make believe
4. Story telling.

III. Preliminary Definitions of Imagination
1. In story telling, object manipulation are simply thought of.
2. In make believe there is actual manipulation of present objects with attached meanings.
3. In construction there is a plan in mind before motive.

Imagination may be free or constrained.

1. Controlled imagination is directed toward some end. It is seen in planning and designing.
2. Free imagination has no fixed aim. It occurs in moments of relaxation.

a. Response breaks up into three subordinate questions.
1. Regarding tendency that is awakened.
2. Regarding end result obtained.
3. Regarding the often complex process that leads to end result.

b. The stimulus consists of facts perceived at the moment or recalled from past experiences, that are now freely related or combined.

II. Play.

Free Imagination in play.
Play is something we want to do; work is something we have to do.
Classes of play stimuli (Toys)
1. Noise Makers - Rattle
2. Things that increase speed - locomotive, bicycle, skate etc.
3. Things that increase radius of action - bow and arrow
4. Things that resist force of gravity - balloons, kite, boats etc.
5. Things that move in surprising ways or are automatic - toy windmills
6. Things that can be opened or shut - 
7. Elastic materials - mud, snow
8. Playmates, since they are the strongest stimulus to arouse play

The response to the above concepts in managing the playthings as to produce some interesting result

Play Motives

In games that imitate pursuit some of the gods of hunting are awakened.

Joy in motor activity is one of the most general sources of play satisfaction.

In games of fear the joy of escape more than pay for unpleasantness of fear.

The fascination of gambling and taking various risks comes from the satisfaction of fear and escape motives.

The self-assertive or masterful tendency comes often in play.

Ways of gratifying self-assertiveness
1. Always there is the toy to manage
2. Self-importance is gratified by doing something big
3. There is a competitor to beat.

Empathy means feeling oneself into a situation, contrasted with sympathy which means feeling with.

Daydreaming is a sort of play more imaginative than most other play.

Daydreams usually have a hero. They are looking to the future but not seriously.

The hero may be a conquering hero or a suffering hero.
The conquering hero dream is the
commoner type.
The suffering hero dream is a
substitute reaction taking place if
fight or some other self assertion
Worry has no advantages. It
is the result of substitute reaction taking
the place of real action when no real
action is possible.

Dreams

1. Most dreams occur
   (a) just after we have gone to sleep
   (b) just before we wake up
   (c) when sleep is light.

2. A striking characteristic of dreams
   is their seeming reality while they last.

3. The wish satisfied in dream
   is one that has been left unsatisfied
   in the daytime.

Sonder Theory of Dreams

1. The unconscious consists of forbidden
   wishes.

2. When a wish is suppressed, it
   sinks into unconscious state, in
   which it is still active again.

   Objections of All Theory
   1. He fails to see how easy running
      the association or recall Mechnism.
   2. He overdoes the unconscious.
   3. He overdoes the sex motive.

   Autistic Thinking
   It is anything for its own sake.
   It satisfies its own self but is
   not open for criticism - daydreaming
   contracted with
   1. Realistic thinking which seeks to
      check up with real facts.
   2. Sociized thinking which submits
to criticism of other people.
   3. Self-critized thinking in which
      the individual scrutinizes what
      he has imagined.

Self Criticism is the balancing off of
one impulse by another. It is
obsessive to most men who want health.
to reach goal.

By such rules as "think twice" and "sleep on it before deciding."

It requires imagination to enjoy art as well as produce it.

Art from consumer's side is play;
from artist's side is work.

1. The appeal of art is partly emotional.
   It may arouse tears.
2. Art also makes an intellectual appeal.
3. Empathy in art enjoyment. Project
   oneself into object and get satisfaction
   from his mantle.

What is true of producer of art
is true of inventor.

1. Good physical condition
2. Freshness
3. Mastery of the subject
4. Striving for some result
5. Hopefulness
6. Youth.
"He can who thinks he can."
"He who thinks he will fail has failed already."

"To live is not merely to breathe but to act."

Poussen.

Disraeli (Lord Beaconsfield) said:
"The great secret of success in life is to be ready when the opportunity comes."
"There is no education like adversity."

Disraeli

"Only low merits can be enumerated."

Emerson
Chapter XXI - Memory

The four problems of memory are:

1. Memorizing or learning
2. Retention
3. Recall
4. Recognition

If a list of nonsense material is to be studied, the learner may get it by reading it over and over, or he may learn it by observing.

The rhythmical and other groups that are found are "higher units."

The learner imparts meaning to the nonsense list by observing it.

In memorizing connected passages of prose or poetry, the facts observed are the general sense of passage, of parts, grammatical structure, and...
<table>
<thead>
<tr>
<th>Author's choice of words.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In short, creating a familiar act that fades out and tends to become automatic and mechanical.</td>
</tr>
<tr>
<td>In memorizing observed study is much more efficient than mere dull repetition.</td>
</tr>
<tr>
<td>Recitation always has an advantage.</td>
</tr>
<tr>
<td>Recitation forces the matter more durably than we know it after a longer space of time.</td>
</tr>
<tr>
<td>Recitation is less marked in meaningful material than in nonsense syllables.</td>
</tr>
<tr>
<td>Recitation has a twofold advantage. It is more stimulating and it is more satisfying.</td>
</tr>
<tr>
<td>On the side of satisfaction it shows you what part of the lesson you have mastered and gives you the glow of success.</td>
</tr>
</tbody>
</table>
Recitation makes you do the very act that you have later to perform in the test.

Spaced repetitions are more effective than massed.

Spaced study fixes the matter more durably.

Repetition of same material fixes it better in memory when an interval occurs between the repetitions.

Experimental results have usually been in favor of study of whole. When trials are spaced the whole method is better. When trials were bunched the spaced method was better.

Thus result stands in contradiction of two accepted laws that if advantage of spaced learning and whole learning.
Factors involved in Condensation are:

1. Factor of Interest - on side of past learning
2. Factor of Recovery - striking a blank area in habit.
   on side of unexpected past learning
3. Factor of Meaning - on side of white learning
4. Factor of Significance

It is very important to have the will to learn.

The will to learn is the case in which we observe facts to commit them to memory.

Where the will is unnecessary, we observe facts without any such intention.

What is essential is not the will to learn but the doing and observing.

Retention is a stable state in which a learned reaction remains until the stimulus arrives that can arouse it again.
Retention of a once learned reaction may be lost by prolongation of the condition of rest.

There are degrees of retention ranging from 100% to zero, and with invention of Methods of Measuring Retention,

Rate of forgetting depends on:
1. The thoroughness of the learning,
2. The kind of material learned.

Forgetting is slower when Connections have been formed than when learning has been by rote.

Forgetting is slower after spaced than massed and whole than part.

A lesson that is learned quickly because it is understood is better retained than one which is imperfectly understood but learned slowly.

The wiser awakes the learner, the quicker will be his learning.
Recognition is a form of learned response depending on previous contact to object recognized.

The question whether memory can be improved breaks up into:

1. Whether memorizing can be improved.
2. Whether power of retention can be improved.
3. Whether recall can be improved.
4. Whether recognition can be improved.

Practice in recognizing responses only standards of judgment.

Practice in recalling certain events would lead to improvement.

Since retention is a resting state, it cannot be altered by practice.

Process of memory is exclusively susceptible to training.

What skill is trained consists in habit of looking for groupings.
and in the confidence of one's ability as a memorizer.

If a person with poor memory gives special attention to particular matters and keeps tab on himself to see if he improves, he is likely to find better ways of joining facts.

The best rule in training memory for facts is to systematize and interrelate the facts into a coherent whole.