Psychology, Logic, and Ethics

R. G. Menzies 1913

University Lectures
(Prof. Royce Gibson)

Pursuance of Intellectual reason
Pursuaded
Nonal action
Deutsch's Logic

A complete course would include Aesthetics.

Psychology.

Mellon and Drummond

The study of behaviour, or more precisely, the study of the behaviour of men and of animals.

Plants are not included, as their consciousness, on which behaviour depends, has not been definitely ascertained.

Behaviour is the purposeful action of living creatures. All behaviour is purposeful. We must beware of confusing purposeful behaviour with purposeless behaviour. All purposeful behaviour is purposeful, but not vice versa. E.g. an end may be achieved after blindly and unreasoned willed. Instinct and reason are purposeful, but only rational action is deliberately purposeful. Purposeful action is impossible, unless there is a clear idea of the end to be arrived at. We must distinguish between the purposeful behaviour of a living
V. Agent + instrument
thinking or organism, and the purposeful behaviour of a machine. The latter reflects the part of the mechanism, but has none of its own. It is thus extrinsically purposeful. In other words, a machine is a purposeful instrument and not a purposeful agent. It is with the latter that Psychology is concerned - conscious behaviour.

It may be asked, "is our behaviour necessarily purposeful?" e.g. Is play of children and animals necessarily purposeful? Some say yes, that it is a preparation for later life. But from the players' (the real Psychological) view, the play is really more light-hearted abandonment than purposeful. There is nothing intrinsically definite, and no purposeful object.

Another objection, reverse of 0. "Can all our purposeful attitudes and tendencies be suitably referred to as behaviour?" Consider the state of dreaming. Is this a form of behaviour? Is it a form of behaviour? Are animals and mental life those that manifest themselves out, and have no
McDougall's definition summed up!
obvious relation to environment, constitute mental processes rather than mental behaviour.

3. The word behaviour emphasises the active side of our mental life, but it fails to do justice to the passive, or receptive side. All behaviour is active, but mind is as distinctively active as passive. We not only respond to stimuli from outside; we are also passively sensitive to them. We must make room for sensation and sensibility in our definition. The subject matter of Psychology is not only behaviour, but sensibility. Our impressions are distinct from things. There is an element of permanency about a thing that is lacking in sensation.

Summing up then on McDougall's definition, we note that it is excellent from two main points of view.

1. It emphasised the central fact of purpose activity.

2. The definition of Psychology as the study of behaviour emphasises the intimate relations between purpose and action.
To behave is to act and to react on environment; so that our behaviour to be understood must take into consideration our body as corporeal beings.

Lecture II

Is there a term which will include reactivity and behavior? Life is perhaps the best, and the most comprehensive definition of psychology is "the study of mental life." Life is the process that reconciles behavior and reactivity, reaction and the passive, the recreative and the purposeful.

Mental activity plays upon environment.

W. D. Drummond: "Psychology is a reasoned scientific account of the processes of which our mental life consists." This process is thought-direction because it is the study of mental activity in the foreground.
Mental processes are more fundamental than sensation, which is adopted by some writers. Our lectures will run thus:

1. Mental process
2. Sensibility, with interrelation on method
3. Study of Psychological process from view of development.

I.e., Stages

1. Analytic
   a. Mental process
   b. Sensibility
2. Methodological
3. Genetic

Study of Psych unit

In this we should start from the experience of felt need, and the experience to satisfy it. To understand this experience as a whole, we must study it in its parts. Let us concentrate on the mental energy or activity through which the gap between the two above is satisfied, and a satisfactory bridge constructed.
Interest Process

The Psych. unit

Whatis

Its conative aspect
This called Interest process, and this will be our Psych. root.
This is any section of mental flow taken at random. It's a process having an activity beginning in a felt need, a natural middle stage in the attempt to satisfy that need, a natural conclusion with success or failure.

In Biology we have the cell. In Psych we have an analogy in this process.

INTEREST. PROC.

There are four main characteristics of this Interest Process:

1. Its characteristic quality as conative
2. Its continuance
3. Its unity
4. Its objective reference

CONATIVE

An Interest process is essentially a striving towards an end or term inis. Such striving is always purposeful in character, though not always purposeful. Only in advanced mental life can the striving keep its own course before it in idea. In animals the interest may be more than a vague impulse.
Its continuity
Here the end towards which the striving is reaching forward is not an aim but an end, and thus (terminus).

The essential minimum in condition is that there shall be a felt tendency to act in a certain purposeful way.

Thus X may feel angrily with Y, and the desire to harm this may culminate in an attempt. It may succeed, fail, or not be made; the angry impulse may only exist as a felt tendency, but even as such it possesses the characteristic concomitants.

Tendency - what is it? In the absence of outside reasons it will have a result, so it will maintain its nature in the result.

Decontinuity of the Interest Process. This continuity is not a mere finite continuity, but a continuity of interest. Hence the cont. of an Interest Process is independent of time-interruption. An interruption is something which breaks in between the start of some purposeful activity and its fulfillment. It is not something which breaks up the original interest. The interruption over, the Interest
Its unity.

Its Objective Reference

Teleology — the treating of things as design for other things were created

Teleological object
reconstruction. This is profound and not destructive.

UNITY

III. The unity of the Intercessor Process. This consists in the singleness of its direction. By such singleness I do not mean mere external self-sameness; I mean that kind of oneness that can see its way through difference.

Genuine unity is always more than mere uniformity. This is the unity of a system, more or less differentiated and organised. If our effort is baffled in one quarter, effort must be renewed in another. There must be "perspicacity with varying effort" and not that kind of uniformity which cannot allow for any mobility, however purposeful.

The objective reference of the I.P. Purposeful mental activity always implies an object towards which it is directed. What do we mean by the term "object"? One most intimate meaning: "the aim or end which gives direction to our purposeful efforts." (Theological meaning of the term)

Purposeful activity both subjective and objective. Another meaning - the object is the subject matter - it would be less...
Studying for exam. Exam: teleological.
Studying = object = subject.

? Is mental activity an "Object"?
confusing to call it the object-matter. This quite distinct from objective aim.

When we say that every purpose or activity has an objective reference, we have missed both references of the word object — first, there is the object aimed at, but also a reference to what from which the activity is engaged. In this reference to object matter, our pure activities come into direct contact with environment; for the subject matter is something relatively independent of the subject — something which activity can modify, something which controls and limits the activity.

Two queries: Are there any activities which are objectless, in the sense of having no objective aim? — the activities of recreation, aesthetic activities, etc.

2. Are there any activities which are objectless, in the sense of having no object matter to work upon? At first sight this looks impossible, but e.g. "thinking about one's own mental activity" is mental activity an object?
Three factors — cognition, feeling, condition
We might have added as a fifth characteristic of an Interest Process, that it is never merely cognitive.

In every I. P. there are three factors:
- a strong attitude or tendency
- a tone of feeling
- a cognitive appreciation

In all normal behaviour, these three factors are intrinsically bound up together. Thus to achieve is to feel pleasure at attainment, pain at failure, and also to know when one has not got what one wants. And so, to feel pleasure at any thing is to be aware of the change in one's conscious state, and also to know the cause of the pleasure. Also, to be aware of a change is to feel whether one is indifferent to it or not, and to make a striving movement accordingly.

This an interest Process is a strong association with a feeling tone, and a cognitive attitude.

Out of these three factors the cognitive is the fundamental. We cannot have
condition without some sort of awareness and feeling tone, but there are limiting cases, such as normal life, in which we can both know and feel without any conscious accompaniment. Thus we may be aware of certain situations, and we may entertain the thought of a change in them, without any desire to effect a change, or to know the situation more thoroughly. This is the typical attitude of many conservative, attitude towards things as they are — also of a logically minded fatalist.

The characteristic mark of condition is the lack of tendency to bring about change.

2. Another limiting case — we may be pleased or pained, but if there is no felt tendency to return on itself the object that pleases a given pair, there is nothing that we can call condition. To this we conclude that the factor in the I. P. which is always bound up with it, and gives its characteristic tone, is the
E.g. A man counting a heap of stones, yelling one by one.
full tendency of broader:

Attention.

its general nature.

Every intense process includes, as we have seen, the apprehension of an actual situation, and the impulse to effect a change with it. I mean anxious for no other change than that of understanding a situation better, then our interest takes the form of attention — mental activity directed towards some object with a view to making that object better known.

(Object means — object matter a topic.)

Possible source of confusion: When we refer to the object matter attended to, we may mean the topic of the situation as a whole, or we may have in mind some element of the whole. This ambiguity affects the questions concerning the scope of attention. In particular the question: 

"Can we attend to more than one object at once?" If by object we mean topic, then we must answer in the negative. This true that we can divide our attention
Two topics never attended to at once!

The clarity of the attention process is secure!
but a closer scrutiny shows that this division of attention does not mean attending to two topics alone. What really takes place is a series of swift transfers from one topic to another. Take against, playing and talking — but here the playing is automated and requires no attention.

Again, I may attend to two different topics at the same time, provided my thought of either includes a thought of its relation to the other. In that case the topics are only parts of a larger topic, and this more inclusive topic is what I am attending to. Thus the unity of the attention process seems secure. We can concentrate only on one topic alone. But we hasten to add that this unity of topics can be maintained only by the constant shifting of the focus of attention. To attend to a topic is to hang on all its features in succession and in relation to one another. With the term object, applied to the mind, the question now stands to be answered so great
Attention is selective.

[Sketch of a square]

[Sketch of a square]

[Sketch of a square]

That James. The aspect is what you prefer or...
Lecture 4

Perhaps a more exact definition of attention would be: "mental activity directed to an objective, and tending to make clearer the meaning or intention of that object."

Selective and Preferential attention being a purposeful process is necessary.

A boy counting leaves of stones - to the boy the leaves are an aggregate of units, to geologists they are fragments of the earth's crust; but in each case the object is the heap of stones as far as it is relevant to the mind of the observer.

But attention is selective not only in the fixing of the topic but also in its development. When field, in the direction in which we make a topic more significant is determining largely by our prejudices, habits, and habits of thinking, so that we perceive largely what we are prepared to receive as a preference.

Meaning made clear by experiment. The thermoscope. You see longer those images which you have perceived.
Humboldt made an interesting experiment with a stereoscope. We made a small hole in the centre of each picture. An electric spark behind the card created a very brief faint light through the holes. The eye had nowhere to move. He found that he could as well fix upon any one part of the field of vision, and make that part stand out in strong relief. Humboldt pictured to himself the part that he wished to see, his vision growing clearer after each spark.

Exactly the same in music hearing overtones. In picking out the different movements war Acheson one must have a mental image of the tone he wants to distinguish.

Humboldt presupposes movements.

1. The general mood of the moment. Home enters a man's room with an enthusiasm for maths, any maths. Suggestion in the next lecture will be noted by him. The environment predisposed the mind for certain set of impressions. Thus a
Savage’s sense not so keen as white’s training so everything
business man has business are in his office, notices things he would not notice at home.

The influence of practice and past experience. Much of what passes for acuteness in a special sense is simply the result of the training of the mind to greater efficiency along one particular line. E.g. is the eye of the savage keener than the civilized man's. It has been shown that savage senses are keenener than the other, but training has sharpened his observation of things that have a practical meaning.

There is an interesting type of expectant attention that is known as auto-suggestion. Suppose that we are shown successively and rapidly several lines, each a little longer than the one before it, that we are asked to notice these attentively, and then to reproduce each of them from memory. After having examined it in the space of a few seconds, if the successive lengthening of the lines is very apparent and clearly marked, the fall will strike, and exact m

un
N.B. Prof. Bird shows to school children certain
lines 1. 12
2. 24
3. 36
4. 48
5. 60
6. 60
7. 72
8. 84
9. 96
10. 96
Out of 45 pupils, seven avoided
the fourfold hike once, three twice,
A hap
another

one three times
second six times,
third four times, fourth never.
...mind as a directing idea; and this result, that from losing any succeeding line, we well expect to see the a little longer than the one before it, and therein lies the suggestion.

Different kinds of attention. Attention may be of two main kinds, spontaneous and voluntary.

Spontaneous attention is natural or instinctive. Harassed out of the natural trend of ourinterest.

In it we may note two complementary features — that of scheme absorption on the one hand, and that of scheme mobility on the other. This ease to give an explanation of this combination, the attention develops in the service of our mental needs, and the struggle for existence requires not only that the animal should heed all his powers to object of securing his prey or avoiding the hunter, but also he should notice the slightest indication telling of their presence. Hence the scheme...
Voluntary att
1. Checks
2. Creates
3. Supports

Dependence: spontaneous attention on another direct
mobility of attention

Voluntary attention, which depends on the express purpose to attend, is voluntary. It takes three main forms. It may arise out of the effort to silence a process of spontaneous attention which is interfering with the concentration of attention in some other direction; and the problem here is whether we can inhibit through inhibition a suppression of previous, a resolve concentration on the new. We compass this ended by an absolute act of inhibition, forcing ourselves to become interested in the new situation. This will not exclude the necessity for some inhibition; for at times when the energy of inhibition flags, you may find it necessary to turn back upon the old industry, and shun not resolutely. The disadvantage of doing this is that the act of inhibition compels us to attend once again to the very interest we wish to exclude; potential inhibition does not labor under this possibility.
2. Create spontaneous alternate when necessary

3. Enhance spontaneous action

Involuntary Attention
(2) As a second form we may notice the deliberate attempt to create spontaneous attention when it is non-existent. Here voluntary attention exists in a sense of attempts to give our mind to a topic which itself does not interest us. Here what is needed is initiation uncomplicated by inhibition.

(3) Third form of voluntary attention, the form it takes when instead of checking spontaneous attention, it seeks to support it. Thus we may be interested in a topic, but after a time may have to wrestle with fatigue. Attention must then become voluntary or forced.

Lecture 5

Involuntary Attention - more ambiguous. While the stimulus which arouses attention compels it actively by the shock it gives to our sensibility, the attention is said to be involuntary. - A loud noise, a brilliant flight, not only the intensity of the stimulus,
Does 'forced awareness' indicate attention?

No idea of "making object better known".
but its suddenness is provocative. The
lighting of a candle in a dark room
attracts no more than the glare of the
sun. Suddenness in clothing as well
as starting.

Then the murmur, quite unmoni-
tored of the voice it itself makes, is al-
since arrested by its cessation.

Involuntary attention presents some
difficulties. I don't really know that when
a loud noise makes one aware of the cause
of disturbance, as I have that we attend
to the object of attention. Does compulsion
indicate attention? Is there any
effort to grasp more clearly the meaning
of the intending stimulus? This
more forced awareness, not compatible
with definition of attention.

Thus this best to restrict attention
As the two main kinds dealt with:

- C. Spontaneous.
- Voluntary.
Inattention

Total Inattention rare!
Inattention

1) Total
2) Relative

We consider total inattention to be rare. Attention is generally focused upon something or other. This is doubtful of course, in an inattentive child.

There is a normal inattention which accompanied our very acts of attention; for even when we are keenly attentive to an object, we are inattentively subconscious of much besides — our clothes, organic discomfort, sensations of light, warmth etc. — a ring of marginal consciousness, which lies outside the field in which the attention is locally active. We are not wholly unconscious of these marginal facts. They are states of consciousness, but do not satisfy any interests, and so the existing subconscious undeveloped, we pass judgments upon them, not even the judgment of recognition.
What purpose do these marginal elements serve?

Distinguish marginal confusion from absence of mind.
Now these marginal elements do not the less influence the flow of mental life. They contribute collectively to our general awareness of the total situation at the time, and they form a sort of background to the object we are attending to, and they may exist within the very field of attention itself. Thus, in reading a book which interests me, I am attending mainly to the meaning, and hardly noticing the words. Often one is unable to repeat a spoken sentence, the reason being that we have noticed the meaning, but not the language. We must distinguish marginal consciousness, which is an essential adjunct from focal consciousness, from those lapses of consciousness which take place within the focal activity itself, and not simply within the focal field. Our very attention is liable to become disintegrated, and we have lapses of attention, or absence of mind.
Lapses of attention

mind of absence of motor type

An tonic response is carried out unconsciously during a lapse of awareness.

ABSENCE OF MIND

Two main kinds

1. Lapses of the sensory type
2. Lapses of the motor type.

Sensory

1. First kind — an article may be dealt with, sought, and yet the sensation by which its presence would be normally recognized is ignored.

Motor

2. Second is more important: motor.
   a. The absent-minded motor response.

Here the nature of the situation is consciously perceived. Then the conscious lapses for a moment, and the motor response is carried out unconsciously. Thus a person returning for the night, leaves his bed to lock the door, and finds it locked. (by himself in an absent-minded way.) N.B. often think you have forgotten to turn off a light.

b. An action more or less waffled on a situation interpreted under the impression that is a different one both intending and hoping.
Hanging place
Two closely related operations may change places with incongruous results. Sugar on egg, salt in coffee. Student throws purse out of Newman to. Association of an old habit with an appropriate occasion.

Affective aspect of Mental Life

Conditions of pleasure and pain in an interest process. Pro. clearness - two types of pleasure. 1. Pleasure of possession, attachment, success. 2. Pleasure of pursuit. All interest processes are in pleasure if they are successful, and in pain if they are unsuccessful. In this way pleasure is associated with success, and pain with failure. Pleasure of possession may take two forms. It may come only at the end of the process, and only on
Pleasure of possession may be felt on attainment before and is actually reached.
condition. The end is reached. (Reading last chapter of a novel.)

On this view all showing is a sham, and there is joy only in consummation.

2. Pleasure, though still a pleasure of possession, may be felt long before the end is reached, and the movement of our interest, far from being ashamed, sways us from the outset. We start with an interest invigorated by certain emotions. So that success, though in an interval sense, is already an attainment. The sense of success tones the whole process, and gives to the present a characteristic exhilaration.

What is common is the connection of pleasure with attainment, and of pain with that which threatens it. Differences that attainment is conceived as wholly in the future, and the consequent and pleasure is postponed. In the other sense, a sense of attainment renders our effort pleasurable from the outset.
Lecture 6

The efficiency of mental activity is a special source of pleasure. One result is more efficient than another, as it involves a lesser outlay of mental effort, and is equally effective as more effective, and yet obtained by the same degree of mental exertion. To be supremely pleasurable, a mental exercise must not only be vigorous and effective, it must also be harmonious. It will be harmonious precisely as far as our need for unity in variety is satisfied. If a varied filling in of a single interest is qualified while there is lacking either the unity or the variety,
The activity ceases to be pleasurable; for when you have unity without variety, you have panic of monotonous, and when you have variety without variety, you have panic of distraction.

Bunin, to yield a pleasure aesthetic in character, mental activity must be not only harmonious, but easy. It will be easy, and therefore aesthetically pleasurable, provided that attention can acc. itself readily to all changes in process and provided our movements whether of sense organs or of body as a whole are preadjusted to their task. As a good example of motor preadjustment take rhythm. In rhythm movements, says Lvoz, "the same adjustments repeated at regular intervals," as that is so does to prepare for beforehand. Hence the agreeableness, largely due to ease of responding to a call which as fully fulfills our expectations. This preadjustment, whether of body or mind is necessary for easy activity. Instance, presence of something adverse, such as leaning tower, crooked picture, etc.
as a fundamental condition of pleasurable aesthetic activity, its appreciation should move within the limits of some artistic type. Whatever content enters into a work of art, must be so connected with the whole work as as not to divert attention from the whole. From this point of view the frame of the picture is highly symbolic, implying that the picture must be apprehended as a world within itself. If we are thinking of real landscape while looking at picture, enjoyment ceases to be aesthetic.

Sensibility

In theory of feeling in relation to purpose, activity we have already passed over into the region of sensibility, for feeling is a form of sensibility, and as the form in which we have so far considered it, it might be defined as an immediate sensibility to the values of things. But even if we give to feeling a much wider scope, so that it includes all emotional susceptibilities, all the
Learn

Conscious Life (Synthesis of Behavior and Sensory Awareness)

- Behavior
  - Active factors
  - Conscious life
- Sensory awareness
  - Reactive factors
  - Subjective feeling
  - Objective information
feeling of restlessness and quiescence, all
the feelings that not mental activity, and
the more cognitive feelings of doubt, belief,
feeling still remains a form of sensibility
might refer to as subjective sensibility,
leaving objective sens. as the equivalent
for sensation

Objective sensibility is sensation.

To far, mis-speaking sensations &
attention, we have treated them as purely
mental factors, and this seems undoubtedly
true so far as their nature and mode of activity
are concerned, but we must not forget that
these mental activities are very definitely
conditioned by what is non mental. Even
if we grant that conscious understanding
its fulfillment can be described only in
purely psychological terms. Still this
mental activity cannot be fully explained
in these terms alone.

To frame the science of mind we
must take some account of conditions
mental activity is conditioned at every
turn. This conditioned by services,
by people and objects of environment. This conditioned by dispositions inherent, facilitating its action in one direction or another. Last, but not least, it is conditioned by the body with which it is associated. Thus fatigue may bring a strong interest to a stopping point, but it cannot be fully accounted for from psychological terms. In short, the disorganization of consciousness in dreams cannot be wholly accounted for from the psychological side.

Similarly, the action of drugs on the mental conditions can be satisfactorily discussed only if we take into account the actions of the nervous system.
Neural system in relation to mental life

Nerve cell = neuron

Axon and dendrons in the plot of contact between two cell systems. A shock, by contracting the dendrons, causes a break in continuity. Hence the action of drugs.

There are a mass of nerve cells touching as in diagram.

- Different nerves: lead from sense organs to the spinal cord and brain.
- Different nerves: pass from spinal cord and brain to glands and muscles (motor nerves).

1. Short: Long circuits

Short, in which a stimulus is carried to the spinal cord and transmitted directly to a muscle.
This is accompanied by consciousness and known as reflex. Long, in which neuron goes to harm and goes through processes thus before being transmitted. This is consciousness.

N.B. McDougall's "Physiology of the Nervous System and Consciousness"
Synapses—where neurons clasp and embrace
Lecture 7

Relating Nerves to Psychology

The nervous process depends upon the way in which the nervous intercellular, or nerve, the functional continuity, become the nerves may become relaxed. A advent of degree, and may at times become abolished altogether. This explains partly many mental facts e.g. drowsiness, mental inefficiency, which are fatigue. There is time obstruction at the synapse, nervous circulation blocked. The action of drugs is analogous. They increase the resistance to the passage of the nervous impulse at the junction between nerves at the synapses. The action of anaesthetics may be explained in this way. For bodily pain is propagated in a peculiarly diffuse manner, exercise, slight anaesthetics strengthen the physiological barriers, and so prevent this intense emotion from sufficiently itself. These influences affect mental processes in a certain order, proceeding from higher
To lower. 99. In an early stage of intoxication: the crude and more primitive impulses are apt to make themselves effective, because they are no longer controlled by the mass of partially organized mental systems which represent the social having a few points of character of the individual. At this stage there is no apparent blocking of the flow of ideas—conversation may even flow more freely, but logical continuity lost. At the later stage, the man can't think things which though harmless seeming, he would not have said under ordinary circumstances. He may later commit social or other marasmatism, a later still consciousness is so much reduced, he may shake hands again, again, or ask some question, forgetting that he has gone through it before. At this stage almost all actions performed automatically. Later on it becomes almost impossible to walk, but the purely reflex movement of the legs, if possible, for if supported on either side he can get along.
Finally becomes coma in which little goes on except essential functions of breathing to.

In general, the most complex parts of nervous system are the most easily destroyed, rather than the more descending order of complexity. The nervous activities which show the most of activity are those concomitantly determined. But as far as the cooperation of nervous are not so determined by congenital conditions, it depends on use, habit. Groups of nervous acquire closer functional unity by repeatedly working together, and those groups which show the least stability, are those not so defined.

Sensation may be studied from 2 points of view:

1. Sensation as an affrent impulse
2. In relation to knowledge

We will take 2:

1. Sensation as the immediate psychical effect of an affrent impulse.
Sensations classified
(a) Acc. to quality. (b) Harshness, yellowness, etc.
(b) Acc. to Nature of Sense Organ.
(c) Acc. to nature of the stimulus
The classification of sensations

... have been classified in many ways
(a) According to the quality of the sensation. Thus various shades of red are grouped together because they have a felt quality in common, which distinguishes them from all blues and yellows, around smells.

(b) According to the nature of the sense organ. Roughly, this classification coincides with the first, but not altogether. Thus, in the case of vision, two quite distinct organs are involved—called rods and cones, but both are forms of visual sensation. On the other hand, it has not yet been proved that there are separate sense organs for all the main distinctions in felt quality. Thus, wheels, doors, and hinges deserve separate classes or their felt similarities, but no proof of different nerve endings for each class has yet been offered.

(c) According to nature of the stimulus. Here we have classifications arising from stimulus
(d) acc. to Order of new formula issue
within the body itself—organic sensations, and 

sensations arising from outside
stimulus: (c) vibrations of air—sound
ether—light
5) mechanical: press—pressure
(c) thermal forces—i) gaseous
ii) liquid—taste

4) A fourth system of classification, see

the order of the development or the corre
ponding sense (nervous)

Modern researches show that the
nervous basis for organic feelings and skin
sensations are the first to mature. Then
the nerves of smell and taste become
serviceable, and last of all the nerve of
right hearing. This supplies a natural
basis for class of sensations

1. Organic feelings
2. Skin sensations: touch, or
heat, cold and pain, pressure.
3. Sensations of smell and taste.
4. Sensations of sight.
5. Sensations of hearing.
Organic sensations.
With regard to this order—two points to notice: (1) Order largely determines the nature of our feeling of humankind. The most real world for us, come what may, is partly the body as felt through our sensations, partly tangible world. The world which challenges and routes our muscular effort.

(2) Order shows us that the development is from the undetermined to the determined, from the vague to the distinct. The first sensations are vague, complex feelings of comfort or discomfort. "We start with a big, blooming, buzzing compound." The progress of the mind is by the differentiation of vague feelings into more detailed and definite feelings.

Organic sensations—those connected with a stimulation, a change in the organism itself rather than with the presence or absence of a stimulus external to the organ. In the case of sensations such as pain, angry, hot, sharp, scalding, burning...
There is an independence of the external stimulus. Burnings doubles produced by an external agency, such as tingles changing in complex of today. After the external agency is removed, the burn persists as a state of the organs, and continues to give rise to sensations of burning. The organ's sensations are of great importance from the point of view of affective tone—little importance for cognition of external objects.

Normally, all the many sensations which come from our body produce a resultant total effect, which though not sharply attended to, colors our whole consciousness. The feeling, “I’m alright,” is common sensibility. Now particular organ sensations are singled out from this common sensibility only when they are particularly intense.
Organic Resonance
Specific organic sensations arise out of common sensations, and they have a powerful feeling tone. This feeling tone is only in part connected with the specific sensations themselves. E.g., the pain of hunger is only in part connected with the special sensations arising from the special conditions of the alimentary canal. Besides, this special sensation and its feeling tone, there is also a marked disturbance of nervous sensibility, quite distinct from the normal sense. A wave of agitation would pass through the whole organism, affecting the circulation etc. Now, this nervous diffusion, the resulting organic disturbance, represents to a lesser or greater extent in which special sensations have a marked feeling tone of their own. Thus, overpowering odours tend to make us feel, a bitter taste causes a cold shiver, the painting resembling pressed paper organic resonance, so that even when sensations are quite alike, there will be a similarity of feeling tone, owing to this...
Sounds are like colours.

Similar feeling tone

Touch!!
organic resonance. e.g., we speak of gay or sombre colours, of stimulating or depressing sounds, or shrill or muffled, and we speak of colours as shrill or muffled in the manner.

Sensations of touch and pressure. SKIN SENSATIONS.

Introduction to Experimental Psychology. Myers, H. A.

TOUCH.

Touch. The sensibility of the skin is of the pressure type, i.e., the skin is not a continuous organ of touch or temperature. It has points or patches. By carefully exploring the skin with a thin needle mounted on a wooden handle, one can be able to locate precisely the point on the skin which are sensitive to heat, cold, pain, etc., as the case may be.
What do we mean by touch sensations?

Certain psychologists, e.g. Charig Angell, identify touch sensations with sensations of pressure. Sensations are ordinarily connected with touch, as hard vs. soft, rough vs. smooth, wet vs. dry, are most easily defined in terms of pressure. Thus hardness is a sensation of resisted pressure in the direction of depth, softness a sensation of unrejected effort. Roughness a sensation of resisted pressure along a surface, smoothness of unrejected effort.

Also, heat a drop of water on the hand, and sensation is purely one of pressure. This seems paradoxical unless we include under sensations of pressure, a limiting case—sensations of passive contact. When we speak of only, clammy, etc., we have in mind certain characteristic tones undetectable to pressure sensations. If Keats, describing meleamine—"slushy, cozy, melting down the throat like a beautified strawberry."

We better to consider pressure sensation...
This is often a feeling of effort in the contemplation of an action. This may be a sensation.
as variations in the intensity of touch; such
as experiences of misinterpreted touch;
sensations of pressure dist from sense of effort.

These so-called sensations of effort are, it
seems to me, not properly sensations at all,
but feelings, or they are subjective & not
objective sensibilities. The feeling of effort
is a feeling which enables us to gauge
fairly accurately beforehand how much
energy we shall have to expend in perform-
ing a certain piece of work with our muscles.
As without actually attempting a
movement, we can feel our powerlessness
and exhaustion.

It is commonly held that these
feelings of effort are sensations, that
we become aware of them through afferent
nerves from the muscles. The motor
muscles into play, and their contraction
produces to afferent impulses which on
reaching the brain, are interpreted as
feelings of effort. From this theory the
brain simply receives and registers the
The "Back Stroke" Theory

All muscular sensations use the Back Stroke
stimulus sent to the muscles, so that the actual motor process and commence only at effect after the muscles have contracted. This is the famous back-stroke theory.

That some impression comes in this way is certain. Physiologists have shown that there are afferent nerves passing from the muscles to the higher centres in the brain. We may take it that all our muscular sensations, pain, tension, pressure, come in by back-stroke, i.e., they are as objectives in origin as sensations of touch proper. But in order to get some further light, there are three aspects of this problem which need to be kept distinct.

Muscular sens. proper. These follow upon stimulation of muscles, tendons, joints, and muscular fibre in the skin.
2. Here are the feelings of effort proper. Feelings of innervation, and these are not sensations arising from different impulses from the muscular system. Prof. Bain clearly distinguishes the two factors. Here is, he says, a genuine difference of nature between muscular feeling and sensation proper. Such phrases as the sense of power, the sense of resistance, the feeling of energy and effect, these express an attitude of mind quite other than that of passive sensations. This through these feelings of effort and energy, that, as to Bain, we view our experience of a world that resists our effort. Even in our sense of extension is based on our consciousness of effort and forth. We acquire this feeling of extension most readily through easy movement. As when the arm makes a sweet between two reaching surfaces.

3. Though agreeing with this view in the main, there is, it seems to me, a defect in Bain's reasoning, which
somehow between feelings of effort and content
unless guarded against, may lead to
confusion. Bar does not distinguish
between these feelings of movements and
contact activity. How both feelings of
effort and conatns agree in being
distinct from mere sensations, but they
are not therefore to be identified. A
feeling is after all a feeling and not a
tendency. None the less, there is a close
connection between the feeling of effort
and contact. Our ordinary contact
experiences are not accompanied by feelings of
effort, but only by feelings of desire.

But suppose that our interest
lies in our control over our natural environ-
ment. Now the character of this environ-
ment that interests us. We are determined
to overcome the resistance, and feel that
we have power to do so. Thus this feeling
of power grows up in intimate connec-
tion with the feeling of resistance, but
within these feelings of resistance are
these feelings of power and sensations.
For this reason —
sensations given only the appearance of things. Feelings of resistance, on the contrary, speak to us of a manner external to us, which resist our attempts to mould. They presuppose some rudimentary form of self-consciousness, and with this the consciousness of a world external not only to the body, but to the self. These feelings are all advanced which can only be so bad.
The feeling of resistance makes us aware of the material world.
Lecture 9

Repetition of last lecture.

Feeling of effort not identified with sensation.
Effort becomes intelligible only in relation to
sensation.

Feeling is our sensitiveness to reality.
Through this feeling of activity put forth to
overcome resistance, we first become conscious
of an external world. Sensation alone would
not produce this consciousness.

The material world first becomes known
as an obstacle. Descartes made
a fundamental distinction between what
was extended (matter) and what was
conscious (mind). This extendedness of
matter is not its fundamental characteristic
but the fact that it is an obstacle to our
effort.

The mere acquaintance with obstacle does
not amount to real knowledge of it. This
latter can only come through protracted
experience. We learn gradually how
to manipulate objects, by finding out what
As for cones, conus, and not rods.

Roos - for dim light
Cones - " strong light"
ways these objects should be treated.
We learn the nature of our material environment through adapting ourselves to it.

Sensations of vision

Structure of the eye.

Pupil is opening, surrounded by elastic iris. The
femoral pupil lets in light, focused on to retina at back.
Fovea is point of clearest vision.

Two kinds of end organs of retina —
rods and cones. The spot at which the
retina is perforated by the optic nerve has
no thid, and is called the blind spot. Most
retinal part of retina is fovea, where we
find cones, and not rods. Large enough
to take an image of 3cm diameter at a
distance of one metre. At all other parts of
retina, we find both rods and cones, though the
rods predominate.

Rods comes quite different. Rods
are specially adapted to receive weaker light.
Cones for strong, full light. Now both
rods; cones are capable of yielding a white
Cones will give white when stimulated by white. Rods always give white or gray.
...sensation; but the cones will yield the whitish sensation only when given the stimulus of white light. But the rods are affected by coloured light in precisely the same way as they are by white light. The sensations yielded are always white or gray. The rods, however, are blind to a purified red. The rods being more sensitive to feeble stimuli than the cones, it follows that with the outer lying parts of the retina, which are made up of rods, we can better perceive a feeble light than we can with the fovea, which contains cones only. In trying to see faint stars, we misjudge size while these supernumerary parts of the retina. The only bright light the cones yield favours the greater part of the total intensity of the sensation; and the reason is that the rod gets easily fatigued by white light.

**Colour Blindness**

First noticed by Dalton, the chemist. The problem of colour blindness is closely connected with the varying sensitivities of the different parts of the retina. At the extreme margin of the retina is totally sensitive.
No tomato colours (other than white, red, black),
for here there are no cones, but only rods,
and the rods can only yield a grey or white
sensation. Hence where there is total colour
blindness, it seems probable that the cones
do not function, but only the rods.

Totally colour-blind people see well in
a dim light, but are dazzled by a full
bright light.

The problem of partial colour blindness
is more complicated, but here we seem to find
the main key to the problem in a certain
peculiarity of the normal eye. Just as
the extreme margin of the retina is totally
colour-blind, so at an intermediate point
between the margin and the fovea, the retina is
partially colour-blind. Thisblind toned
and green, sensitive only to blue and
yellow as a rule, partially colour-blind
people fail to distinguish green from red.
This might be because green seems red to
them or vice versa. But there is not
a probable hypothesis. This certainly not
true in certain cases, for some colour-b.
Theories re Colour-Blindness.

Young-Helmholtz Theory

3 Standard colours: red (magenta), green (yellowish), blue (cyan).
people are part colour blind only in one eye, and they testify that when the normal person sees red as green, they see nothing but gray. Lesman theories of colour blindness

Young's Helmholtz Theory.
The theory maintains that there are three standard colours: red, green, blue. That these, when variously combined, suffice to produce all the colour sensations, including the whites and reds. Three different systems of physiological apparatus are assumed, to which these colours are related. Where all three are highly stimulated, we have sensation of white. On this theory a series of gray sensations are simply differences in intensity of the white. Black is experienced when the three primary color systems are wholly inactive.

Kering's Theory.
The fundamental colours, the pure red, yellow, green and blue, obtainable by
Three zones

White  
Gray

Blue  

Yellow  

Full colour maroon
In addition there are the pure white and the pure black sensations, the gray is being derived by comounding blacks and whites in different proportions. Hence this accepts black as one of the colors in visual sensation.

This theory supported both by facts of normal vision, and largely by the facts of color blindness. Suppose we fixate a certain point steadily whilst someone introduces into the extreme margin of the field of vision, the colored patch, this is gradually removed towards the focal centre, we shall see it first as grey, then as yellow or as blue as the color of the patch. Gradually we shall see in its proper color. This shows we have 3 different color zones on retina. The only one is totally color blind, the intermediate one is blind to red and green, and in the central one we have a complete color vision. If we make precisely the line of the green, the red which remains grey until...
opposite the central field, we find that they are exactly complementary colours, i.e., the colours which, when mixed together as lights, make white — blue and orange. —

If we notice that they are the precise green and red which we come across in normal cases of colour blindness.

These facts taken together suggest that there is a special green-red apparatus in the retina, what he green red are elementary colours. Further we find that a blue and yellow which on introspection are seen to be perfectly free from any hue either of red or of green, on this ground they are accepted as fundamental colours.

Finally, as a means in black and white obtains both in total colour; blindness and at the outer zone of the retina, it is assumed that white and black are fundamental colours.

Theories of Myers, i.e., discussing relative amount of these theories, says that the cyan-colour, among more red in some cases, but in general being favoured.
Introspection - Psychological
Comparative observation - Non-Psychical
Methodological Section.

Treatings of the data and special methods of psychology.

The psychologist has to recognize two main classes of data:

1. Mental processes, including sensations.
2. Data representative of mental processes.

Both are psychological data, but the former only are psychical. The non-psychical data consist in gestures which express and record mental activities corresponding to these two classes of data. Observation in psychology takes two forms: the form of introspection, when the data are psychical or mental; the form of comparative observation, when the data as presented are non-psychical.

These two forms of observation are not equally fundamental. Introspective psychology is the initial basis of comparative psychology.
Introduction sensory + mental activities

Physician v Psychologist
Our inferences of the workings of other minds can be drawn from our observation of the gestures or records which symbolize them, but only through the help of our own self-knowledge abduced from introspection.

We may distinguish two main types of introspection:

1. Sensory
2. Introspection of mental activities.

The sensory introspection: the question we ask is “What is the precise nature of the sensation as I experience it?”

The physicist had the feeling which sense observation has for the physicist, the psychologist. The interest and outlooks were quite different in the two cases. The physicist aims at applying objective standards. Now what he sees. He wants to know how warm a certain liquid is, not how warm it feels. He uses an objective sense, the thermometer, a sense whose readings will not vary with the individual user. He wishes to get rid of what he calls...
Rules for successful introspection

1. In external interference of pass

2. Attention & Reflection + memory

3. Exact description of processes

4. Guard against fatigue and monotony.
personal equation.

The physicist is interested in the relations between facts, things themselves. The psychologist is interested in the relations which observed facts stand to the subject which experiences them.

Kitchener gives certain practical rules for carrying out introspection successfully in the sphere of sensation. Have yourself placed under such conditions that there is the minimum chance of external interference. Attend to the stimulus, when it is removed, recall the sensation by an act of memory. Then give a verbal account of the processes constituting your sense of the stimulus. Think. To forget investigation promises to be a long one, we should finally make a point of working upon it rather for a short time daily during a no. of days than for a length of time together during a few days. This provides a great safeguard during a long sitting. Again, we should work at the same hour of each day.
Lessons objection raised by bombs
This means that the conditions of presence remain constant from day to day.

2nd Type of Introspection

Introspection of mental activities

It has been alleged that such introspection is not possible. In order to observe, your mind must frame from the activities you wish to observe. If it does not do so, you cannot observe. If it does so, there is nothing left to observe.

This view brings out well the difficulties of introspection, but it does not prove impossible, since the capacity of the self to detach itself somewhat from itself, that, act. without essentially interfering with them, is ignored. Or, as Mill pointed out, one fails to see that even if there is nothing left actually to observe, there may be much that is left to remember. As Mill puts it, "whatever we are directly aware of, we can directly observe." So introspection is not proved impossible.
But the further question remains. "Granted we can observe our emotions, can we scientifically report upon them?"

Answer is: If introspection means grappling systematically with the nature of our activities, then introspection must become retrospection. To study the object we must hold it before us in memory. "Introspection must become post-meditation."

Introspection, then, as the basis of psych. method, rests on the fact that we not only feel our act as it occurs, but for some time after can remember what this feeling actually was, and can penetrate into memory with our reflective thinking.
Introspection has a distorting and deadening effect (emotions etc).

Memory not vivid enough, so must be supplemented by mental or eye glances.
Difficulties attaching to Introspection

1. Introspection tends to distort the subject matter. Thus, in observing my anger, I tend to lose sight of stimulus; the stimulus once forgotten, the anger subsides, and I am cheated of my observation. But we must not exaggerate the distorting effect of introspect. For if an emotion is at all deep, intense, it will act in its essentials. So the relevant features of an emotional process may not be affected by our attention to emotion.

2. The object of introspection, when held in memory, tends to evanesce as a remedy to this tendency, Mellenre recommends an accumulation of mental side glances. What is needed is a habit of mental alertness. To concentrate attention on the process would be to notice it, but a fleeting observation may be made if the habit has been acquired without throwing the mind off the rails.
Intrapsychic Results hard to verify.

Limitations of the method.
Difficulty of verification. But this is only an exaggeration of the difficulty found in all observations. i.e. all observations need the correction which a consensus of observers can give, and also further correction through further observations. Much may be done by bringing introspective records under experimental control.

This introspective method has certain limitations. This lies in the fact that we can never hope to watch or record a memory fact past to the earlier and ineffective stages of mental development. On the basis of this, how could there be a psychology of the infant, the savage, the mentally weak or diseased? Also mental facts which are not conscious. These limitations may be largely overcome by methods based on comparative observation. The objects which the count method deals are not presentations i.e. they are not facts, as they are presented to an individual subject. They are facts.
as they stand objectively in rel. to other
facts in a world independent of our
varying sensibilities. It follows that these
facts must be studied in the impersonal
way characteristic of natural science; 
what remains after ascertaining these
objective facts is a somewhat complex
process of interpretation. Words or
must be interpreted according to our rules; exp.

The danger to which we are thus liable
is that of confusing that of another person
act as acts, his mental processes will
be similar to ours. The danger concerns only
our interpretation of the actions of savages,
children, or animals.

With a view to meeting this difficulty,
Lloyd Morgan has suggested the fall
canons of interpretation. — "In no case
may we interpret an action as the
outcome of the exercise of a highly physical
faculty; nor can be interpreted as the
outcome of the exercise of a faculty which
stands lower in the psychological scale.
In the light of this, we have no right
To assume that animals have the power of forming general ideas, or conceiving ideas of identity, relations which might be interpreted on the ass, that they have this power, can be explained without making the assumption.

The success of these interpretations of physical states in terms of physical laws depends not only on close analytical observation, but also very largely on the study of the gestures of these steps. Thus in order to understand the individual dog, we must begin at his birth and follow his history throughout.

Through a study of gestures or develop, must we get at the meaning of animal intelligence.

The value of experience in giving precision to one's interpretations of words other than our own is of the greatest. One experiment is worth more than a thousand anecdotes. The success of the experiment depends on the degree of control which we possess over what we experiment on. When, as in the case of most animals,
Mental Development.
In dealing with creatures of habit, we have a firm basis of control in our knowledge of these habits. In case of human adults, exp. would be almost useless but for ment. of language, which allows and to interpret his own actions. Indeed, experiment on human subjects is almost only an extension of introspection, though the introduction of systematic control; as a rule by apparatus. Actual introspection is essential to experim. Psych. If statistics are to have any value, the problem must be carefully defined, and the inner mental conditions actually stated. "Exp. without subject. is no more than a play thing borrowed from physics" (Mr. Ewing).  

Mental Development  

Acquisition of Experience  
1) Perceptual process  
2) Ideational process  
Subordinated as on next page
On pure level
Senses but no image
Can't impress. Make use without a def image.
Acquisition of Experience

Practical process

Idea mental process

acq. of
meaning
acq. of
skill
acq. of
meaning
acq. of
skill

Lecture 12

Mental development presupposes power to learn by experience. This only poss. is that an acquired meaning and acquired skill are in some way retained & become operative in determining direction of further development. We have first to consider how we learn by experience. On that lower level of mental life where we use our senses but not our imagination, where we behave purposefully and intelligently but do not think in any gen. sense of the word or indulge in any train of ideas, do not analyze or compare. To make this first type intelligible we must show 2 things: that we possess an impression, make affective use of it without even having any image of it; for only so can our senses control our movement without help from
Can behave intelligently without hunting and sign

Relentlessness
Imaginativeness.

We must show it is possible to behave intelligently without actually thinking out the situation. Development is more than a mere change. This presupposes a progressive change. It is a change moreover in which the past penetrates into the future so that our environment is always to some extent familiar from the outset. Most general name for this conservation of the after-effects of previous mental process is Retentiveness. The question is: how are these after-effects retained? We speak of impressions being stored up in the memory presumably in form of images, but if this were the case then when we recognize anything as familiar it should be, because we had been able to summon up some stored up image of the past to compare with the present impression. As a matter of fact this is not what really happens. Introspection shows that we always recognize immediately without help of any revived image a subsequent comparisons between this image and reality. Take a crucial case, the fact that
Past experience retained as a disposition
some persons are unable to picture colours mentally, i.e. they cannot visualize red or green when these are not immediately seen by the eye, yet they recognize these colours immediately when presented to sense. Hence their identification involves no use of mental imagery. Moreover, there are abnormal pathological cases where all power of mental imagery has gone; yet the power of sense recognition remains unimpaired. Our own introspective analyses, the direct evidence of pathology show that recognition as such does not involve the revival of mental imagery. On other hand recognition would not be possible if our previous experience of colours left no trace behind. Wherein does this indescribable trace consist, how is it retained? It is retained as a disposition. Left 2 weights same size, but left weight held in hands for 3 minutes at a time. Then 2 weights were made the same weight and he found weight in left hand heavier than right, as the right hand had been acc
Primary retentiveness
to put forth more energy to lift heavier weight.

So far we have considered retention in its relation to recognition after an interval of obliquence. The same considerations apply to what is called primary retention. We know retention which goes on during the very act of apprehension. Instances at the close of a melody, a perception of the last few notes was largely determined by the disposition left by preceding notes. Though we don't recall these preceding notes in form of separate images of sound. Or again, the perception of a person running away from you does not necessarily involve any visual picturing of course he is going to take even when he disappears from sight. I may be running to catch a man. He disappears round a corner, but I don't need to keep an image of man running on other side of corner. I fix my eye on turning it make for that. Any mental imagery would cause me to slacken speed. So generally any process of actual search or looking does
not presuppose any imagery, but experience arises gradually acquired during the process as effective at each point only as a collective or total disposition. Our further analysis of the problem of how we acquire meaning perceptually, can be dealt with only by further question: how do we acquire skill under these conditions? How do we learn by experience at this level so as to modify certain behaviors in the light of it? Now, explanation of the way in which skill is acquired, this experience is promoted in last resort by nature of conative itself. One of the essence of conative process. Why that tends to persist until its need is satisfied, and why habit shows not mere persistence but persistence with varying effort. The conative impulse being an impulse to satisfy a need would cease to be this if it persisted without variation in an unsuccessful course. It would be no more than a mere mechanical process until it goes on to the method by which we acquire skill perceptually is determined by nature of impulse itself, often aptly called
"method of persistence with varied effort"

(Experiment with animals will show how this perceptual behavior takes place)

Lecture 13

Perceptual or Ideational Process

Illustrations

A cat confined with food outside

- An undiscriminate scramble: a bursting into all sorts of random movement, clawing, pulling etc. In great majority of cases, this resulted in a chance success. In repetition, an increase in success or elimination of unsuccessful actions.

The whole activity was a development of motor impulse. The cats did not look for a situation, but used great vigilance. Success never led them to notice that actions of a certain kind were needed; it to decide to adopt this. They acted from impulse not decision. The random movement which led to satisfaction came more and more as with the presentation
of the inhibitory of the cag. It became stamped in while the hand stimulated the stamped out.
So far we note that what takes place is a gradual restriction of the influence which at first is blind. We note too that the process can only be understood by self access. Falsities to its conative aspect; i.e., winds, have meaning only in rel. to their conative processes.
1st time curves The exact times taken by the animals in effecting their escape on each occasion were plotted down in curves, so that as the curve diminished the curve sloped downwards. The general character of learning by experience is visible to the eye in these curves, for the surface of the curve is gradual and irregular, there is no indication of any given pitch at which the animals obtain merged into process.
Times were 160, 50, 90, 60, 15, 28, 20, 50, 22, 11, 15, 20, 10, 12, 14, 8, 8, 5, 10, 8, 6.

The whole character of the animal's procedure, together with the slope of the curves,
Irregularity of success precludes debinarne faculty.
and the failure to succeed sometimes after succeeding once or twice would exclude any hypothesis which assumed a debt companion any kind of gradation, or any mental analysis rift accidental from essentials.

There is a further group of facts showing further light on this point.

They show that the animals reached to the actual situation, not to this as that specially selected nature of it. Thus after opening box A by clawing a loop in front, the cat would take a much shorter time in opening box B, though there it had to claw a loop behind. The question arises: "Does this imply discrimination of essential likeness and accidental differences?" Does the cat perceive the specific difference bet. the two boxes, and fire whenever they are identical, red to what is essential? The answer must be NO, in the cats would also claw at the loop when the door was open, not at the place where the loop had been, though it was no longer there.
The reaction then was not to a well-defined object, but to a vague situation. This is the total situation which lets loose the impulse; so you may add to or subtract from the situation, still excite the impulse, as long as the similarity is kept. We see then that general ideas or concepts play no part in learning by experience at this level; but we may go further and say that neither is any of ideas in the ordinary sense involved.

Thus the cats could not learn to adopt the right course by seeing others do it. They could not by mere observation acquire the idea of getting out with a certain mode of reaction. One cage was divided into two compartments by a wire screen. From one compartment there was means of escape by pulling a loop, and a cat was placed in it who had acquired the trick. In the second compartment another cat was put to observe the trick, which he followed; but he didn’t profit, for when placed in the other compartment, he was
Animals learn by action.
parked long in getting out.

Another more important point is, that the
animals could only learn by doing it them-
selves. Through one cat, whose getting out
successfully was rewarded by food, insisting
on getting in again, m lobster and pine fish
in every case. Did the cat ass. the mental
picture of being fed with the idea of the act
of getting into the box. Now this natural
explanation seems upset by the fol-
lowing circumstance. — If instead of
pushing the cat towards the doorway,
letting it go in itself, we first shut the door
and drop the cat in through a hole in the top,
it will not learn to get in of its own accord.
The cat who has gone in itself through the
door has an impulse to get in through the door.
But the second cat has no impulse either to
go through the door or drop through the hole.
Again, when put beside the hole, it made
no attempt to get in. None of the animals
learned the action through being passively
put through it. The cat who escapes
only by pulling a loop is not helped.
Percept. Activity requires actual sensation
by its paw being made to pull the cloth down. In many cases the animal succeeded merely by the movement shown, but by a different.

Another Illustration: Prof. Angell.

Rats! The nature of the rat just studied. A maze constructed, a food placed in the middle. After about 20 attempts succeeded. What senses did they use to guide them? Very little use of sense of sight, for as good in dark as light. Blind rats as good, rats always run into obstacles, i.e. sense of smell practically nothing to do with it. Tend to had nothing to do with it.

Real guiding sensations were sensations of movement, muscle, tendons, skin.

Main characteristics of percept. activity.

0. Perceptual activity is inseparably bound up with actual sensation, i.e.
By means of bodily movements

Involves attention

More or less isolated
Perceptual activity is guided exclusively by sensations actually present. Thus are the actual sights of the kind that prompts the action of the kind in crowding.

1. Percept activity progresses only for bodily movement, which bring organs of sense to new stimuli.

2. P.D. must more reflex activity; it does involve an attitude of attention, of searching and watching, and an attitude of readjustment. But readjustment is invariably prompted and guided by present sense experiences.

3. P.D.'s are more or less isolated. Each is marked by its own felt need, and is more or less appropriate to movements. There is no capacity, debt to transfer a piece of experience gathered in one process and make it operate as solving a diff. in some other process. E.g. terminals don't combine means found effective for one end with means found another end so as to attain a new result distinct from either.
For perceptual activity, there is no world save the immediate experience. A world involves ideas — Ideational process.

P. Act - actual Senst. Ideal - can have images.

Ideal activity not the bodily act but the features of lang.
6. Another consequence of this isolation so that "in perceptual consciousness the
new world at all, but only a no of
attacked experiences of life in, this
exist self save the more or less momentary
locally self; the true world and the true
self both involve ideal constructions

Lesson 14

Corresponding avios of ideational process

How are the limitations of perceptual course to
be overcome by ideat. activity?

0. Perceptual activity was wedded to actual
sensation. Divorce is made poor by the act of
idea. Act. To attend to images, aff. their
meanings, also work with them as effective
factors in the furtherance of its ends.

0. Ideational activity always involves some
element of motor activity, but it does not
move towards its end as perceptual activity
does, through bodily action. It expresses
characteristically through gestures & language
Ed. can expatriate

Ed. can make use of part-wits forpressful
3. Ideational activity is not bound down to the present. It can take leaps into the future. It can cross bridges before it comes to them. It can ideally represent future occur before they occur. Perceptual process must always advance from the existing situation, but ideational process can advance from the idea of what is to come, and guide itself in the light of its foresight.

4. Ideational activity confers upon man the power of bringing the lessons of one experience to bear upon the affair of a quite different experience. Thus e.g. the construction of a tool, as showing the putting together of parts for a purpose — a primitive axe, with its sharp flint edge lashed to a bit of wood as a handle. Here we have three parts put together for a purpose — wooden handle, hard flint, sharp edge. The constructor has brought together into a new whole and for a new purpose, the result of experiences previously disconnected in his perceptual life, and this only the power of ideational revival that has enabled him to do this.
A world for ed. only
6. Thought can only be said to exist for ideal concepts; for there is a peculiar kind of ideas to connect into one whole the detached data of sense perception. These are connected by interlocking intermediate ideal links. I.e., an object left in one place is found in another, and discrepancies are removed by common. 2nd exp. Ideally, i.e. by representing some mode of explaining the transference. Similarly, the personal self involves a complex ideal construction which binds together as a single system past and future and possible experiences, the thought of others, etc.

Association and Reproduction of Ideas

In every interest process, we are busy building up associations between our experiences. The nature may be that of time sequence or contiguity in space. These associations, which we are continually making about the different central parts of our life, are retained as dispositions, i.e., as dispositions for
reproducing under the stimulus of some clue or other the associates belonging to the same interest system as the clue itself. Or it may be that the old associations re-emerge spontaneously when some inhibiting check has been withdrawn.

Now the general principle of association, retention, and recall, has been formulated by Thoras as follows. "Experiences which have occurred as parts of a process having unity and continuity of interest, leave behind a single complex proposition which tends to be recalled as a whole when any part of the original experience is repeated. How does this recall take place? Suppose we are in the mood for remembering, and someone utters the word "examination". There is at once a sense of recognition. To hear the word is to recognize its meaning as familiar. Thus we grasp at once vague total familiar expression. Then we realize that the word has given our mind a certain def. set. It has turned us in a certain direction.
Idea = Image + Meaning

(=Connexion)
So that we have at once a vague pre-notion of the memory it will eventually draw up from the depths of our minds. Then very simply follows the idea of mental crystallization. Whatever first grasped as an indissoluble whole, we now begin to grasp in a series of determinate parts. - medium in answering papers to. The total first impression is now articulated into a brain a web of distinct ideas or meanings. There is a procession of distinct images, and each image is in a vehicle in which some meaning is sealed. Very often the image will be a merely verbal one. Thus the word examinable may grow into a tree of words like work, textbook, list, degree; and each of these words will bring its own context with its idea - image + meaning.

Now as any given meaning may have become associated with other ideas in the great variety of mental processes, and as there is a tendency for lack of these I.P.'s to be repelled when
Recall centered by

1. Repetition

2. Recovery

3. Vividness

4. Congruency in emotional tone

5. Low general mood and tendency toward introspection
The one is given, the question arises as to which of these P's has the best chance of being revived.

There are 4.5 main factors operative in influencing this result: 1. That of frequency, the repetition favors recall, thoughts tend to weaken their most labile associates. 2. Factor of recency, which has more power as a rule over an impressionable mind than the factor of frequency. "If Shakespeare's plays are mentioned, and we were last night reading Richard II, vestiges of that play rather than of Hamlet or Othello will float through on mists." 3. Factor of vividness. 4. Congruity in emotional tone. The chance of an idea being revived depends largely on its harmonizing with our mood. The same idea will not recall the same associates when we are cheerful as when we are depressed.

More particularly the interest dominat the mind at the moment of revival lends to exert a marked influence on
Potentially interested, needs only opportunity to discuss ideas.
whatever branch of ideas are summed. What is relevant to the branch of material at the moment tends to be recalled to the exclusion of the irrelevant. Stout's 'Groundwork.' 121

This subject of interest accounts for a great many cases of spontaneous renewal.

Influence of Dispositional Interest

We cannot assume that every idea must be introjected by a previous idea. Thus we may awake in the night and our thought will turn to some absorbing interest, though there is nothing to suggest it. To make this clearer - a distinction. The word interest is ambiguous. You may have an interest actually being felt, or you may have a general tendency to feel an interest, as when we say that so and so is interested in mathematics.

Are this potential interest which acts for the emergence of ideas. Our interest may be manifest, being counted out by others. They need no clue to cause their revival, but only a leveraging on the pressure of attention as opportunity.
Contiguity tends also to help recall and association.
So-called Laws of Association

The fundamental law of association is the law of interest. Immersed as we are in the expanse of the present, we weave our own web of memory after the pattern supplied by our interests; and what holds for association holds also for recall. The partial meaning tends to recall all the parts which have been connected with it in any previous interest process. Now a special case of the law of interest is the law of Reproduction through Contiguity. When two events have occurred together or in immediate succession, the one tends when re-exposed, to recall the other. We may tend because it is only when the two events have been frequently experienced together that contiguity in time or space becomes a really effective ground of recall so that the law of contiguity applies only when the assoc. have been stamped in by frequent repetition.
\[ A_r = C + D, \]
\[ A = C + D. \]

Common element C.

Individuality grown by D, + D.
Lecture 15

Reproduction of Similar

(A). The face of a man I meet in the street, recalls (B). the face of a friend of his. The two faces are similar; had they not been similar, recall would not have taken place. How are we to explain mechanism of this process.

Haut says that the element of C in A, is alone responsible for the revival of D in A. i.e. A + D have an identical nucleus, but differently developed. In the present case, by recog. of the element C in A, expands in direction of C + D, going say to the fact that I have recently seen my friend, or have strong desires interest in him. This reproduction of similar

Involves certain fundamental processes of abstraction which enable me to dissociate the common element C from the total percept A. If it involves reproduction through recency, frequency, or dispositional interest, i.e., the element C has often or recently oc


Idea tend to evolve over movement in:
1. Kindness
2. Bravery
3. Absence of interfering machines
my previous experience, been experienced simultaneously with the further element D. Hence through one form or another of act through contingently the process D, recalls the image A.

Acquaintance of control over ideas

All ideas tend to issue in movements of certain actions proper or else bodily gestures of one kind or another. How the expression of ideas in action is frequently precluded owing to the absence of the object upon which the movement would naturally be directed; expression can then get no further than bodily gesture. E.g. The hungry deaf-mute, in the absence of food, puts his hand to his mouth — this is the idea of hunger issuing in actual movement. Now there are certain conditions which partly favour this tendency of ideas to issue in gesture  N.B.

83. Mindness with which an idea is held, implying intense emotional excitement.
0. Persistency with which an idea is held, implying concentration of will.

3. Absence of interfering conditions.

As instance of 0, take thought reading considered from point of view of muscle reading (cf. the pantomime game).

Barney's Psychical Research.

The effect of 0 is seen conspicuously in the case of hypnotised persons; in a lesser degree, too, in the case of children and uncultivated persons.

A hypnotised person, in a state, will act out any idea put into his mind by the operator. Reason is this—

in the hypnotised person all ideas are inhibited save those suggested by the hypnotiser. These have the field to themselves and so pass forthwith into expressive action. In a normal individual these phenomena do not occur.

When the mental life is complex and awake, as in normal adults, the mere tendencies of ideas are continually being neutralised—contracted or diverted.
Movement - raw mat. 1/2 long
Lang - push control of expen
and the person's checks on expression are
0. respect for other peoples' feelings and opinion
1. interest in the discussion of meaning with
   other members of ideas.

With regard to 0, even our best friends
would not fear constant articulation
in reading, thinking, etc. to the social
factor prevents pantomime.

With regard to 1, an idea has two
pathways of discharge open to it. It may
call up its successor by means of ideas, or
simply express itself in gesture. If it
flows along the line of association, it
will not flow with the muscles, expression
will then be suppressed. (but this expression
is never quite complete.)

The special importance of expressing
movements form the raw material of
language. Language itself is not so
much the mere expression of ideas as
the purposeful control of such expression.

"language is to endeavor and
defeat sense, to first this. Main control
over the flow of ideas, first of one's
From organized spontaneous gestures we get the lamp of the mind.
own ideas, and then through communication of ideas in the minds of other people.

As to origin, language is essentially interpretative. The idea just acts itself out spontaneously, with no other motive perhaps than the force of the emotion behind it later on, under the expressed

the spontaneous gestures are purposely organized and we get the primitive language of imitative gesture.

This or that bears two factors:

1. Analysis
2. Synthesis.

Thus, among certain Indians of N.B.,
the sign for an old man was to lean on a stick and move a step or two forward. Here a characteristic act, typical of old age, has been watched in its entirety, and two elements of the act disengaged by analysis. 1. Leaning on a stick. 2. Lolling a step a two forward. These are synthesized as part of one mimetic gesture. We have then in a simple form the secret of all genuine ideational activity.
Ideal activity.

1. Lang supplies the motor control of the ideal act.

Supreme function of Lang.
just means breaking up a situation through analysis, and reconstruc-
ting it through synthesis in a purposeful way, and in both activities the part played by language is always that of mean-
control. The deeper direction of ideas which comes from our consciousness of the ideals and requirements of our thinking, as of consciousness, question of language, is irrational insight. The supran-
function of language is to render such insight communicable by control-
ing its expression in a purposeful way.

Translation from intuitive to conventional language.

In fact, an intrinsic affinity between sign and object, transcends a conventional language.

YE ENDE OF YE PSYCHOLOGIE.
Second Term 1913

1. Perceptual
2. Educational
3. Logical
Lecture 1

Logic

The cognitive tendency, the power to take note of a thing in some way to grasp its meaning, is present at birth. In this cognitive thread grows a trend to all future endeavours. Donation defines itself through cognition. There are many stages of cognitive thinking, and some pass from perceptual to ideational process. Then from ideational to logical, the function of cognition changes conceptually.

The general function of cognition is to attend and develop meaning. In perceptual cog, the person grasps the meaning of a concrete set as a whole, and by the help of the shrunken effecting learn the method of trial and error, to adjust his movement accordingly.

In ideational cognition, the principle is - the thinker has learned to grasp the meaning of a sign, and has thereby learned the use of language. Thus stages in the life of a sign.
Three stages in life of a sign

- "Expressive" Stage
- "Associative" Stage
- "Representative" Stage
Originally just the motor expression of an idea. Hunger, an idea, expresses itself in signs — hand to mouth to — and this gesture is the idea of hunger occurring in expression. mood. This first stage is an "expressive" stage. Later on, after some experience of seeing a bending a gesture, an association will be set up between the gesture and the idea which it expresses. and the gesture will now recall the idea through association. To the second stage is the "associative" stage. The third stage we may call the "representative" stage.

Very important to note that the meaning of a sign is always something over and above the mere associations by the help of which it first established itself. The fact of understanding the meaning of a word, which is the fundamental fact in conventional language, this understanding cannot be found arising from association. (Helen Keller)

In grasping the possibilities of a sign, education has found a means for
meaning of a word or sign not its own intrinsic meaning: it represents a reality

A sign gives freedom from the concrete

lands are 0 permanent

0 then position can be controlled
both in freeing itself from world experience, as same time relating itself intimately with it, the meaning of a sign can be known intrinsic meaning. Thus a red signal's meaning is not a light shining through red glass. Its meaning now has a specific danger. Generally, the meaning which one thinking apprehends through words - it is the meaning of the bare instrument which conveys the sense, but the meaning of the reality which the instrument serves only to reveal. On the other hand, use of the sign gives us freedom from concrete reality. For the meanings of words can be controlled in a way in which the mean. of concrete can't be controlled. They are permanent. I can think about the meaning of the sign, danger when the danger is over. I can control the relative positions of words. I can make structures, bud, of meaning, and so arranged as exactly to suit my purpose, all our paragraphs are ideal constructions of this kind.
thought process - analysis + synthesis

Analysis involves power of taking thing from its setting

Synthesis involves comparison of aspects
Lecture 2

The essential characteristics of a thought process is its method of advance through analysis and synthesis. This analysis means in the first place a discrimination of aspects of concrete objects. An orange - its colour, size, taste etc. An orange, when we distinguish within a given fact the various factors which go to make it up, on the conditions on which that fact depends. But analysis implies more than the power of mere discrimination. It implies the power of abstraction - power to withdraw an aspect or fact from its concrete context, and to consider it in itself quite apart from all the relations which the individual situation presents.

Synthesis means, primarily, comparison. We bring together the products of abstraction, with a view to determining wherein they agree, and wherein they differ, and this comparing us a special case of "relating" (cf. the fit of rel. conn. bet. two objects).
Definition of Thought
all ideal construction is due to this
synthetic activity of thought, and every
idea is at root an organising principle
(or "universal") with power to bring a
no. of disconnected facts or events into
a systematic unity or form. The thought
process, which proceeds by analysis, synthesis
shares the purposiveness which marks every
I. P., but its purposiveness is intended,
deliberate, so that we may define
thought as "a purposive activity which
aims at understanding through the
instrument of language a situation or a
problem, and if need be, reconstructing
a tangled skein in a relevant and
methodical manner." Thus two
fund. marks of thought are

1. Its relevancy to purpose

2. Its methodical analysis & synthesis

The highest development of Idealism
coherence is reached when such cog.
becomes disinterested, i.e. uninterested
in the object for its own sake. This is
The Scientific attitude
- interest in object for its own sake

Ideal of Truth

LOGIC: "The theory of truth thinking"

Definition of Logic
The attitude of pure science. Here the end at which thought aims is truth; and we might add that the basis from which it starts is consistency. Such thought as this may be called “truth thinking” — thinking inspired by the ideal of truth, and what is more, recognising the authority of that ideal. In reaching this, thought has become self-conscious. It has caught sight of an ideal unison with its own nature. It has ceased to function as a mere means in securing alien ends.

We have now reached the threshold of logic. Truth thinking as such is not logical, any more than a man of science is a logician.

Logic stands as the theory of truth thinking, and under truth thinking I here include the consistency of thinking which is its basis. More specifically, one may say that logic is the theory of a systematic study of the principles, methods, instruments, through which
Psychology and Logé
Both interested in both thinking, but
from different points of view

Psychology - mental processes and conditions
Psychical events, not principles.

Logé - principles which guard against fallacy.
we may be led to think truth-wise and not fallacy-wise. Logical thinking = methodological thinking. This methodological thinking, is entirely distinct from psychological thinking, and logic entirely distinct from psychology.

Both psychology and logic are interested in truth thinking, but the path of mere, the direction of intellect, is quite different. Psychology will study the mental processes involved in truth thinking, the conditions under which these processes are operative. The psychology of cognition is perfectly within its limits when it takes upon itself to analyse methods, or logical thinking, the thinking of the logician, but it considers these operations as mere psychological happenings in no way concerned to consider the methods of the instrument or the principles through which we may succeed in thinking without fallacy. To do this is the function of logic.
Duty: best error + fallacy

Saying that water is H₂O is a scientific error. A error must be exposed by scientific methods. To say, contra, that if all men are mortal, then all mortals are men, is a fallacy to be exposed by logical methods.


Error in fact may imply no error in method.

A fallacy is an error in logical thinking.
We must distinguish logic not only from myth but from the truth. Questions of science in general are not systematic truth-thinking. Logic is the attempt to think rightly all nature and conditions of systematic truth-thinking (you may note a difference between error and fallacy.)

To think truly is to think without error. To think rightly, as logic aims at doing, is to think without fallacy.

If we define a fallacy as a logical error, we must be careful to distinguish it from mere error of fact. Does the error render our thinking unfaithful to fact? Yes, it is an error as to fact, and need simply be error in method or principle. Does the error render our thinking illogical? Yes, then an error as to principle, as to method of thinking, and this error is called a fallacy.

Now logic, we may say, is a war against fallacy, just as science is an war against ignorance and errors of fact. Coming closer, we may say that...
The Seven "Deadly Sins"

1. We must fix the foundation which remains

2. We never check it properly
There are seven deadly sins of the intellect from which it is the aim of logic to deliver us:

i. Lack of purpose
ii. Irrelevance
iii. Lack of system
iv. Ambiguity
v. Inconsistency
vi. Invalidity
vii. Inconclusiveness

As regards:

i. It is clear that until the aim or at least the direction of our thinking is determined, we are disabled from sticking to the point. For this reason, that we have not yet faced the point or direction at all in which we are to aim.

ii. Having fixed the point, we must stick to it. In an argument the premises must be relevant to the topic under discussion, and the conclusion drawn must bear on the topic, and not outside.

iii. Aim and topic determined, it still
3. Marshal our arguments

4. Wennott make ambiguous
   (Law of Non Ambiguity)

5. Wennott make consistent in thought
   (Laws of Thought)

6. Wennott make correct inferences
   (Law of Reality)

7. Our proof must be sound
remains as a third logical essential for well-directed thinking, that the facts should be marshalled in the arguments developed in proper order by appropriate methods.

In preliminary course of logic, note last form.

iv. Logic in its relation to language dominated by principle of non-ambiguity.

v. Logic in its relation to statements or propositions. Here the principles involved are the principles of logical consistency, the so-called laws of thought.

vi. We have logic in its relation to inference—principles of logical validity.

vii. Logic in its relation to proof, the principles of logical demonstration.
First give meaning a name then prove it!

Regulating principle

Indefiniteness is always allowable

Only where there is ambiguity

By comparison
Lecture 3.

Problem of Definition and Division, and the principle of non-ambiguity.

Two-fold approach, twinned and direct, starting with pure. Two fundamental but unsuitable approaches, through the dissection of certain fundamental logical elements.

1. Essential function of thought is the grasping and developing of meaning. First unit step is fixing and steadying a meaning as logical premise. But for the proper logical control of meaning, these not enough. The meaning must be defined. The principle of control from which meanings are defined have been called the principle of non-ambiguity. The requirements of a regulated principle are mainly three:

(i) It should show and understanding of the nature of what it is to control.

(ii) It should understand when not to exercise its prerogative.

(iii) It should, when it does exercise this prerogative, as an adaptation to circumstance and context.

As regards (i), the principle of non-ambiguity.
Indefiniteness and ambiguity

Definition usually proceeds through comparison
respects that independences which is proper to the meaning of words. The independences of meaning, or resistance of a certain vital plasticity or flexibility, render a defect which needs remedy. It is only when independences amount to ambiguity that definition is called for.

Again, we recognize that it would be pedantic to define whenever the meaning of a word needed to be stated, and as a rule, a rough and ready prescription gives our meaning sufficiently well. The sense of a word will be unfamiliar, but to remove this defect it may be enough to set the main drift of our meaning in clear relief. It may make necessary to define the outline or scope of our meaning.

A definition proper, then, is called for only as the remedy for felt ambiguity, i.e., for that part kind of vagueness which threatens to land us in confusion and contradiction.

Thirdly, if a definition is called for, how do we proceed to construct it? As a rule, by a process of comparison. We compare the meaning we need to define with each other.
This comparison shows:

- Points of agreement - genus
- Points of difference - differentia

Compare a boot with a shoe:

- Genus - sole etc.
- Diff. - uppers - foot protects ankle etc.

"Proximate genus"
meanings as are most closely related to it.

the comparison of A and B things entails two things:

1. the essential marks of agreement between A and B.

2. difference

essential from the view of difference from which need for deh. anes.

marks of agreement = genus

marks of difference = differentia

Definition: per genus et differentiam

Logical definition is not only genus et differentiam, but more precisely 'per genus prorsum et diff.' the proximate genus being the agreement that stands nearest to the diff of the meanings compared. To be sure that the genus is proximate, and not remote, it is enough if we keep faithfully to the method of defining which we have just sketched out. One must take care to compare the word we want to define (definendum), with those meanings most closely allied to it, and most in danger of being confused with it.

By adhering to this natural method we best know that our definition will fit a be exactly commenemake
A definition must not be too narrow or too wide, i.e. "commensurate".

0. Must be formally correct (e.g., plus and diff.)

0. Must contain nothing superfluous.
This the aim of all def. To establish an equation between the definiendum and what is defined. A definition will fit when the nether too narrow or too wide.

* e.g., A bird is a flying creature — This is too wide and definition. An animal with wings — too narrow.

Now reached two fund. Rules of definition:
1. Definition must be formally correct. i.e., must give genus & differentia.
2. Definition must be commensurate. i.e., nether too narrow nor too wide.

Closely allied with the second rule is the requirement that the def. shall contain nothing superfluous.

In A. B., an echo qualitatively heard by good will over and above what is demanded by contract.

[In this case, qualitatively, contains echo, will be, eecho, over and above what is required by contract. Thus there is need superfluitly.]

There are a no. of subsidiary rules of def. which are more in the nature of caution.
Avoid Vicious Circle,

i.e. Don't repeat a definition,

and a synonym etc.
Rule 3. We must avoid a vicious circle in defining "circularum definiendo". You must not define a term by the aid of terms which either repeat the word defined, or cannot themselves be defined without the help of the definenda.

Illustrations:

- Truth is morally, in speech, act.
- Man is a human being.
- The Sun is the center of the solar system.
- These is a cancerous preparation of milk.
- An archbishop is a desk dignitary who performs archiepiscopal functions.
- Heat is a thermal energy.

In connexion with second part of rule. N.B. Aristotle

"The Sun is a star that shines by day. This star's (sun) day is the period during which our system..."

This fails to avoid the vicious circle in connexion with correlative terms (cause + effect, parent + child, etc.) which mutually imply each other. Here we should seek out some relation common to both terms, and this..."
Definition must be metaphorical.

Terms of def. must be more elementary than term defined.
The 2 terms by referring them not to each other but to this relation.

Take teacher & pupil.

A teacher is a person who gives systematic information to a pupil.

A fourth rule is that the terms of the definition must be of the same order as the term defined. They must not be figurative or metaphorical. A metaphor, we may say, is the use of a word in a transferred sense, so the sense is transferred from one order to another. Memory in the tablet of the mind.

A fifth rule is that the terms of definition must be more elementary than the term defined. It must not define what is ignotum, i.e. what is ignotum. E.g. The number 3 is the cube root of 27. Here the terms ‘cube root of 27’ are more elementary than 3.

Remember the rule to enter the meaning of verbs in a term which from one plot of meaning is less elementary than the definitum, but for another plot of meaning be more elementary.
1. Must give genus, differentia, be commensurate
2. Have no vicious circle
3. Not be metaphorical
4. Be more elementary than definitive
5. *Portia* idea should be defined positively, vice versa

Definition: mere synonymous ambiguity

(genus differentia)
e.g. A helix is a fashigeal panel.
This is from botanist's point of view.
A fern is a pterisynonium plant.
This good definition from point of view of classification.

Rule 6
A definition of a positive idea should be positive throughout. A def of a neg.
idea should have a neg differentia.
An alien is a resident not a citizen but a being is not a vegetarian, would be.

Lecture 4
The definition of a term does not give
the full meaning of the term. It just gives that
meaning which suffices to remove ambiguity.
The whole relevant meaning of a word will therefore
include not only the marks needed for defining,
but also other non-defining marks.

This is connected with theory of the
Predicates — the different kinds of attribute which
can be predicated of a subject. These reduce
themselves to these opposite
terms — so that defining predicate which
The meaning defined shares in common with
Genus

- Meaning

- Terms

- Proportions

- Sub-genus

- Infraclass

- Genus

- Diff. Prop.

- Prox. Genus

- Rerogenera

- Infima Species

Genus: Shares in common with other meaning.

Differentia: Distiguishes from other meaning.

Differentia may give:

- Genetic mark.

- Embodied rule of construction.

- Diagnostic mark.

- Specific some relevant feature.
The other meanings through comparison with which its definition is obtained. Any genus admit of being split into species. But two have a summum genus which cannot be split any further made more general.

**Differentia** is that defining predicate which distinguishes the meaning defined from the other meanings through comparison with which a definition is reached. The differentia gives the distinguishing mark.

There are two notable kinds of differentia. It may give a generic mark, i.e., a mark which embodies a rule of construction. Thus the following will give a generic mark: the vector of a circle is a line, traced by a point, which moves in one plane at a constant distance from one point in that plane. Thus most math. terms are given in terms of genus & generic mark. The differentia may also give a diagnostic mark, i.e., it may specify some salient feature, selected precisely on account of its salience. Thus it's a diagnostic mark of iodine that it colours starch blue. Or take the def. of the ineluctably...
Questions to be asked in defining definitions

Examples
Hustle; that British species of cardboard which is not prickly.

We may be required either to embrace a definition, ping on palaces, or else, not only to embrace but also to reshape it.

1. Criticism of given definitions
   
   Questions we must ask:
   
   (a) Is the definition metaphorical?
   (b) Must a vicious circle? is ambiguous?
   (c) Is the def. formally correct?
   (d) Does the definition fit?

Take this definition:

"An eclipse is when the sun or moon is covered with a shadow."

The definition is formally incorrect, because no genus explicitly stated. Hence an eclipse must be a kind of what? Then it is ambiguous, and it is not stated whether the definition intended to apply to total or partial eclipse or both again (does the def fit) we note that the def is too narrow. Thus an eclipse of the sun is caused not by the moon's shadow, but by the moon itself. Moreover, the def does not include eclipses of planets or..."
Too narrow, and too wide!

metaphorical, and too wide.

Too wide!

Vicious circle!
on the eclipse of one star by its companion

"A dog is a domestic animal."

Man, in criticism, the man-critical def. does not fit. Are all kinds of dogs domestic? No! Wouldn't include the dogs. Thus definition too narrow.

Is the normal dog the only domestic animal? Thus def. too wide.

"Ignorance is a blind guide."

The definition is metaphorical. The ignorance is mental, a blind guide of a physical sort. Also too wide because it applies to impulsive desire.

"Man is a featherless biped."

Def. is too wide, i.e., it includes the plucked fowl, the kangaroo, perhaps.

"accidentally so the sitting close to one's work." Not a logical definition - because ad. sede - seat for - etymological.
Reconstruction of def of MAN
- zoologically

- psychology
"A lameness is a washerwoman."

- Duplication.

A material substance is a solid, liquid, gas. This is not a definition, but a division.

Examples of second type.

We are asked to express and reconstruct. The best plan is to carry out both together, i.e., by first raising objections and then meeting them.

Take def. "Man is a rational animal."

Note clearly our purposes. Then suppose that our purposes zoological then the following objections may be raised. 0. The genus "animal" must proximate. 

- Correction. "Man is a rational anthropoid." 0. Rational is not a characteristic relevant to zoology. 

- Correction. Man is an anthropoid with relevantly large cerebral hemispheres.

Suppose our interest is psychologial. Then 0. "Animal" is not a genus relevant to psych. 

Correction. "Man is a conscious being endowed with reason." 0. Are not dogs, forever, in a sense rational? 

Correction.
O  Wheat
Man is a conscious being, capable of thinking connectedly with the help of general ideas. Interest might be ethical.

Relation between rational and animal must be established.

"A triangle is a plane figure all the angles of which are equal to two right angles.

Interest is geometrical.

0. The word "all" is ambiguous — may be used collectively or distributively.

Collective: all — the sum of

Distributive: all — each.

Definition: a triangle is a plane figure the sum of whose angles equals two right angles.

0. Definition is two-sided

Definition: a plane figure enclosing a space, the sum of whose interior angles = two right angles.

0. Definition still too narrow. Does not include triangles with curved sides.

Definition: either have too narrow what we are to a plane rectilineal 6, or else we should have to cancel the attribute = 2 right angles.

In latter case definition would be: "A ..."
Le name

A common name

A proper name
a figure bounded by 3 lines and enclosing a space.

To Page 131 "Logical Form"

Indirect line of approach

The logical elements — by these I mean those
three simplest products of logical analysis. The
name, the concept, the term.

The concept and the term are prominently
aspect of meaning. The name is an aspect of the verbal expression of meaning.

The name

Lecture 5.

The name is a conventional mark mean
to indicate individual objects or else their
attributes or their mutual relations. As indi-
ating individual objects, a name is of two
kinds — common and proper.

A common name is a conventional mark
attached to a class of objects and intended to
indicate any individual member of that class. A
proper name is a conventional mark attached
to an individual object and intended to function
Concept

Meaning marked by a name

- concepts - general
- singular
- attributive

Fundamental mark of a concept is to be a meaning.
as an individualising mark.

As indicating an attribute of an ind. st.
a name may be called an attributive sign.
thousands, virtue, happiness, etc., would be
attributive names; and as indicating a
relation to an ind. st., a name may be called
a relative name—e.g. brotherhood, intercourse
concept—usually defined as the
meaning of a class name, but this def
also names for logical purposes.
We need
to include under the term concept meanings
which have an individ. reference.

The
more logical definition of a concept is that
this a meaning indicated by a name.

Divide concepts into three classes:

1. General concept—meaning indicated
by a common name

2. Singular concept—meaning indicated
by a proper name, or by a functional
equivalent.

3. Attributive or relational concept—meaning
ind. by another rel. name.

Fundamental mark of a concept is
to be a meaning of a general concept.
General concept.

Inigual concept
as a meaning actually or potentially applicable in the same sense as an instance of objects.

A Rational animal - applicable to all existing men, those to follow ...

A concept is still general if it is potentially applicable to many instances even though as a matter of fact it is applicable to one instance only. e.g. an English sovereign are always married.

A singular concept has a meaning which in the very sense it bears an applicability to a determinate object only. Thus "The mother of the two Gracchi" is a meaning applicable to one person only, whereas "centre of gravity of the universe" - a singular concept, but with no special name. "Prudence" - practical wisdom.

In considering meaning indicated by a name we must distinguish two aspects of this meaning: (i) developed or determinate aspect; (ii) undeveloped or undeveloped meaning.
The concept is the developed meaning. Underdeveloped meaning is that which awaits clear expression.

Thus a concept is the "intension" of an idea, a most developed form.

connotation - defining marks
intension - all + model.
what we've called the concept. Under meanings that which awaits clear form in expression. In particular, devise the meaning of the definition before it is expressed in definitional form. Let us agree to call this undeloped meaning an idea. We may then say that the concept is an idea developed and fitted for logical use. Now the fullest relevant meaning of which an idea is capable is called the intension, so that the intension of an idea is the concept in its most developed form. \textit{N.B.} In giving intension of an idea, reference is not to the objects indicated by the idea, but to the qualities belonging to those objects.) That partial intension of an idea which gives just the development of meaning needed to clear the idea from all ambiguity is known as its connotation. To that the connotation gives the defining marks, and the intension gives + the non-defining marks.

Inductive intension (little logical force) (accidental marks)
Definition - ?

The Conn: t: f: term is the attributes that are selected as defining marks (remove ambiguity).
The intension of a terms is the full relevant unfolding of the meaning of a terms including both int, non-defining marks.
The denot: of a term is the alternative class into which the meaning can be subdivided.
The extension of a term is the result of applying the meaning of a term to instances.

What do we define?
The extension of an idea is the application of the connotation of the idea to individual objects. An idea cannot be applied till it has been made determinate.

Relation of definition to connotation:

1. Definition is ambiguous — anyone of its senses — 0 as a process. The definition means the defining process.

2. Definition is often used as equivalent of connotation. Thus meaning of man is *rational animal*.

3. Referred to as meaning the proposition which predicated the connotation of the definiendum. e.g. *man* — a rational animal

What is that we define?

The schools of thought, the Realists, the Conceptualists, the Nominalists, have fought. Realists maintain that we define things

Nominalists

Conceptualists

The position we take up resembles by our view as to the function of definition.
An object of definition is meaningless (indeed, for only meaning can be ambiguous)

We are Idealists

Realism v. Idealism
The function of def. is to prevent or correct ambiguity - but only meanings are ambiguous - things not ambiguous, and names are ambiguous only through the ambiguities of the meanings for which they stand. Hence, the object of definitions: meaning. But to be more explicit still, we must add that what we define is the undeveloped meaning, or the idea. We don't define concepts, because it is precisely through concepts that we define ideas. So strictly, we can't agree with any of the three named. So we ought to call ourselves idealists or definitionists.

The idealist contention is that we define things in this sense - that we define the real essences as forms of things. This contention rested on the belief that real things are real only in virtue of a universal element which informs them in form from within. This is the universal element which the realist seeks to define. We are far from agreeing with this view.
Kenneth take our point of view!
Every scientific engineer seeks to discover new things under the name of laws, but explanation and definition are different issues. - mainly for this reason: we cannot define meanings apart from a reference to the special subjective interest of each of our concepts, which serve our intellectual interests. So that from the point of view of definition, the essence of a thing must always be variable quality apart from which it would cease to be the thing. Also, for the defining essence is 0. That which is essential from the point of view of our special interests. 0. That which is essential solely for the removing of ambiguity. So that we must be careful of meaning of word essence in definition.
Sulla Prenna cannot be relevantly defined.

Tommia - the mother of the two Gracchi.

Mother - female parent.

Singular ideas admit of as many definitions as there are points of view.

Balfour - one Benevistian in 1900

or Philosopher who wrote “Sound of Belief.”
Lecture 6

Are there any ideas which cannot be defined? Among general ideas, the summa genera cannot be plurally defined in terms of genus and differentia.

Can singular ideas be defined? (Can proper names be defined? - his question needless, for we define ideas, not mere words.)

Certainly they can, by means of a genus and an individualizing mark. The purpose of definition is to destill all ambiguity as to meaning. Thus we define a singular idea by a singular significant concept, just as we define a general idea by a general significant concept.

The definition of a singular idea does not, of course, exhaust the full intention of the idea. Once the defining intent is fixed, certain attributes will be singled out as sufficient to preclude ambiguity. Hence singular ideas admit of as many definitions as there are points of view.

No scheme of meanings can be thought out which does not rest on last referent terms.
When is now?

Stout, p. 53 "Botulogic"

Division — "the splitting up of a genus into constituent species."

fundamentum divisionis
necessarily, on interpretation; for the most fundamental of all meanings are those which can be understood only in and through the presence of the object indicated. E.g. I, now, here, this, that idea. Can't make these meanings clear to yourself in a general way.

Logical Division may be defined as the splitting up of a genus into its constituent species: man - race, religion, nationality, etc.

Division, like definition, rests on the recognition of a part of view. Every division rests on a certain basis of division - fundamentum divisionis. By this we mean the principle of selection which we adopt in dividing. This is the attribute which furnishes the ground of distinction between the species of a genus.

Soldier (F.D. - mode of fighting)
- artillery, cavalry, infantry, engineers
- line and field, garrison and coast
- others similarly divided (another F.D. - military rank)
- officers, privates, other F.D.'s possible...
Metaphysical division

Man - luminous, tall, false

Physical division

Man - head, body, feet, etc.

Logical division

Man - black, yellow, etc.
We must distinguish logical division both from physical division or partition, and also from metaphysical division or analysis. Thus metaphysical division is the mental division of an object into its several attributes. Such division can only be made mentally, whereas physical division corresponds to divisions which can be actually made. Take term organisms - contractor, assimilating - I'm not sure what the parts in meta div. are doing. Metaphysical attributes, but not separable parts.

Physical division is the mental splitting up of a whole into its constituent parts; as when you divide a bee into: stinger, drum, branch, leaves. The point to make is that in physical division the part does not stand to the whole in the same relation as a species does to its genus. The head of an animal is not a sort of animal. In logical div., genus is predicated of the species (an example a plant). But in physical div., the whole is not predicated of the part; the arm is part of body - not the body, as the nose is a plant.
Verbal division

RULES of Logical Division:
1. One set
2. No overlapping
3. Proceed step by step
4. Must be exhaustive
Verbal division also sometimes referred to,
(e.g. watch - a gland, atma piece, a vigil, etc.)

What is common for definition and logical division - the common in suggested by the very
process of comparison through which we obtain our definition. For comparison means
taking two species, then facing their general
and differential marks.

- Square
- Rhombus
- Rectangular

Again, through logical division, we
develop further, in a special way, these
elements in the definition which have been
left indeterminate.

- Triangle - figure bounded by three straight lines
- Plane
- Rectilinear - curvilinear
- Equilateral - isosceles - scalene

Rules of logical division.

0: There must be only one basis of division. If
in the course of a long continued division, the
basis from which we start is exchanged for
another, the old division is stopped and
Cross dirt
a few one started. Advi. with more than one basis so called a cross division.

2. Species into which a genus is divided must be mutually exclusive. There must be no overlapping. To observe this rule it is sufficient to see that rule one is carefully observed, for overlapping usually arises through cross division. (Soldier, officer, infanteryman, etc.) But rule one may be observed, and rule 2 broken through careless defining of ideas. Take term man — rich, easy, poor. But easy may be mixed up in definition with both extremes. Again it is growth to heat rule one and not heat rule 2. May have cross division without overlapping triangle — scalene, isosceles, equilateral. No overlapping, because all equilaterals are equal.

3. We must not move up species and sub-species more than one foot of the division involves more than one step, it should proceed gradually from highest genus to lowest species.
Nicholson

Phelps's Tree
Lecture 7.

1. Division must be exhaustive. We must give all the alternatives which are relevant to the set of classes of division. There is a form of division which by its very form guarantees this exhaustiveness - division by dichotomy. Here we divide again genus into species, S - non-S.

   e.g. animal

   vertebrate non-vertebrate

   One such division is known as Hales's law:

   corporeal non-corporeal

   animate non-animate

   sensible non-sensible

   rational non-rational

   What do we mean by "non-S"?

   First suggestion is that non-S = everything - S

   This interpretation ignores relevancy to reg. of logical division. In logical division, the species S and non-S must be species of one genus. Therefore by non-S we must mean the species of the genus S, which is other than S.

   In interpreting non-S, we
Illustrations on "Problem of Logic"

Denotation

Denotation - product of process of denoting

Connotation - an idea

The partial extension of a meaning which gives the development of meaning needed to clear the idea from all ambiguity is known as its connotation.
must be 

more

conspicuously.

Non-S. must be some

genus that no other than 5.

take term non-blue — not same as
everything — blue simply some colour
other than blue — not every colour other
than blue. 

broad reading is definitive
(fairly red or green or yellow etc)

technical term called denotation.

Denotation in relation to comolation and
extension.

Denotation of a term is the product of
the process of division, just as the connotation
is the product of the process of definition.

It consists of the alternative class distinctions
or species into which the meaning of a general
name can be relevantly divided.

The relation bet. Denotation and extension
so not hells that let non and interection.
Connotation is partial extension.

Denotation is minus sense partial extension.
In denotation we have the scope of a term
specified. In extension of a term we
have the meaning of term applied to
We denote species - we indicate specimens
Species d'Juncto. d'Antilhas. Specimen conjuvatively materiae.
Let G stand for general meaning. The denotation of G will begin through the statement: G denotes \( S_1 \) or \( S_2 \) or \( S_3 \).

The extension would begin through the statement: G afflicts or indicates the rigid members \( I_1 \), and \( I_2 \), and \( I_3 \).

We denote species, and we indicate species.

The species taken disjunctively give the denotation. The species taken conjunctively give the extension.

It may be useful to note the distinction between denotation and extension: terms parallel to that of division and enumeration.

A term is an actual or potential subject or predicate in a categorical proposition. I.e., in a proposition which states a matter of fact. If you take any proposition, the hero is the king of hearts. Subject and predicate.

The terms may be divided in two ways.
Inconsistency

Raws of Meaning
(a) Into subjective and predicate terms
(b) Into abstract and concrete terms.

SECOND

SECOND-MANI-division  (first was antiquity)

INCORRECTNESS

"Laws of meaning and of logical proposition."

What is the meaning of meaning?

What are the principles which define the meaning of meaning?

We saw that meaning was a minimum genus in the universe of logic, and so could not be defined by genus and differentia

Clearly a deeper type of definition is here required. This is given to us by the so-called laws of thought. These which define for us the meaning of meaning.

The term "laws of thought" is not a tautological one, since it confuses the psychological inquiry into laws of thinking, with the logical inquiry into laws of meaning.

We shall prefer to speak of the laws of meaning, or more accurately still, of the logical principles which define the
Two groups of law of meaning

Significant assertions
Non-contradiction
meaning of meaning. These must
divide themselves into two groups
0 Those which define conditions
which any statement of meaning must
fulfil in order to be intelligible. These
are the primâ on which the intelligibility
of science ultimately depends. (Science
a systematic statement of meaning of nature!)
0 Those which define conditions
which the meaning of facts must fulfil
in order to be intelligible. They are the
primâ on which the intelligibility of
nature, or the real universe, depends.

Our concern will be mainly with the
first group, and only secondarily with
the second.

Under the first group of primâ, which
are primâ of formal logic, we shall be
concerned with two main laws — 0 the
laws of significant assertion — 0 the
law of non-contradiction. Of these
the first is the more fundamental. The
second is in a sense, a development
from it. When we come to dev.
important of these laws, we shall see they
define from two grades of meaningless-
ness. – (i) Here is the meaninglessness of
pretending to make an untilt statement
and yet saying nothing at all; i.e. saying
nothing at all. All the idea we start
from, we simply repeat this idea. There’s
another grade of meaninglessness (ii) in
which we actually cancel our own ideas.
We may start with S, & conclude
that S is not S. (We accept a statement,
while belonging to it, serves something
which contradicts it.)

Lecture 8

Special laws through which meaning of
meaning is arrived at.

1. Law of significant assertion. Two mani-
pts. To which this law belongs to – (a) in the
assertion S, P the only one of the predicate,
must have a partially different extension,
vs. partially different correct meaning.

S vs. S – aff – repetition

(i) S vs. S – neg – self-contradiction.

In both cases we have meaninglessness.
S to S. This is how the Brouwer Identity has been stated but as per Page 96 "With the introduction we have specified the meaning. The specification... holds the identity..."

Thus the identity is a meaning so defined within itself through all its manifold developments and the other one similarly... belong to our single system of meaning.

The development of meaning as we pass from S to P.

The Law
5.3.3 - The law of identity. The symbol of identity, of meaning is repetition.

(a) If the assertion: S P is to be asserted, there must be some agreement between the meanings of S and P. They must at least agree in being intelligible, for if either is meaningless or self-contradictory, then either we shall be talking all nothing, else we shall be saying nothing at all: what we are talking about.

If the assertion: S P is to be asserted, there must be a discontinuity of meaning as we pass from S to P; and all discontinuity implies a change in a certain continuity: something in the meaning of S must persist into the meaning of P, and there must be something in the meaning of P which is an add to the meaning of S.

You can form the law of identity, as follows:

When we state our meaning in the form of a categorical fact, some element in the mean of the subject, that at least of mind: object, must be taken over into the predicate, and some element...
Law of Non-Contradiction

\[ S(n \rightarrow P) = S(n \rightarrow \neg P) \]
\[ S(n \rightarrow \neg P) = S(n \rightarrow P) \]
(called \( S(n \rightarrow \neg P) \) bar! \)
in the mean of the pred. must be diff from any part of the meaning of the subject

2. Law of non-contradiction

(a corollary statement has been made, aff or neg.)

Law: "If the statement $s \equiv p$ is accepted, i.e., accepted as a statement of meaning clearly understood, then the statement $s \equiv \neg p$ must be rejected. Further, if the statement $s \equiv \neg p$ is rejected, the statement $s \equiv p$ must be accepted."

Two main pts to notice:

(a) There is, to acceptance and rejection, is essential. The case here is the law in question is a principle which requires consistency in thinking, it cannot come into operation unless we have made a statement or accepted it from another. Once accept it, then whatever further statement we make must be consistent with it.

(b) The hypothetical form is also essential. If $A \equiv B$, then $C \equiv D \equiv$ ad ad

It will not do to express the law in digression.
Must not be dispersive for you. "May have suspension of judgment"

Law of Included Meals
form and say: "Either $S \equiv P$ must be true. \\
or must be rejected." This is mad nonsense. \\
Because there is always a mean between the \\
acceptance and rejection, namely, acceptance of judgment. \\
Thus, you must act. Socialism, reject it. \\
Can't you have an open mind? \\
And with an unverified hypothesis.

3. This is called law of the excluded middle.

1. If $S \equiv P$ true, then $S \not\equiv P$ is false.
2. If $S \not\equiv P$ is false, then $S \equiv P$ is true.

"Napoleon died on an island at the age of 35." 
How can we urge that within this judgment lies 
that it is not true. Facts that 
partly only of the first is true. This is true that 
had died on an island. Not true that he 
died at the age of 35!

"Air is a mixture of oxygen and nitrogen." 
Is this true, a work of contradiction? 
If so, say: true as far as it goes, and also to 
a certain extent false. Other ingredients 
we conclude that forms "If $S \equiv P$, or 
It contradicts, is not true." are not accurate.
(i) If the Sus P is true or Sus P is true (Law of Sec.-middle)
(ii) If the Sus P is false or Sus P is false (Law of non.-contrad.)

This statement of laws criticized.

Statement: Law of law: P & Q

- If P is accepted then Q must be rejected
- If P is rejected then Q must be accepted

© Law of Legit. Assumption

© Law of non-contradiction

State the condition on which the intelligibility our statements about
are to depend.

© Law of Syllog. of fact

The intelligibility condition on which the intelligibility of fact self depends.

© Law of Syllog. of fact
Perhaps we may best bring out our position
by contrasting it with the current dual
drawn bet. the law of excluded middle,
and the law of non-contradiction.

Our position is this. 1. The
reference to contradiction is wholly
out of place. There can be no contradiction
until a proposition has been definitely
accepted. Each correction of the had way
of stating two laws is to bring to mind
law of excluded middle as its two
varieties. second is to substitute for the
dual form of statement the hypothetical
form.

Lecture 9

The meaning of mean. finds its def in other
the felt terms: 1. Law of Sig. Ass., we
meaning must grow as we pass from subj
to predicate. Pred. must neither repeat
the subject nor cancel it.
2. Law of Non-Contradiction
If SP is accepted, then SP must be rejected.
and if SP is rejected, SP must be accepted.
3. Law of Intelligibility of fact
(c) Law of Excluded Middle

Different at 2 + 3.
If SP is true, then SP is true, and if SP is false, then SP is true.

Law of Excluded Middle implies that no third alternative is thinkable but the truth of SP and its falsity. But we must note (a) but the truth and falsity of a proposition, there is always the poss. of one part of the prof. being true, and the other part false. Further, there is always poss. of a prof. being true only from a certain pt. of view, and often the poss. to acquiesce in the truth of a statement only from a certain standpoint. In such a case we are unable to agree how to act whether the view is either true or not.

Essential diff bet. 2 & 3 law of meaning: The second law states the condition on which the whole of some statements at all fact depends. The third law states the condition on which themselves, of fact itself depends. Hence if we are merely concerned with the speaking intelligently, the meaning of
The laws of meaning are the fundamental logical laws. More fundamental than laws of non-ambiguity.

She may be at home, but not at home to unwelcome visitor.
meaning is suff. defined by the first two laws. But three laws are needed if we are concerned with guaranteeing Hume's, not only of our statement, but also of that concerning which ours are made.

Applicability of law of non-contradiction.
The law of N. C. cannot be applied until the law of non-contradiction has been satisfied, but we must not take this to mean that the law of non-contradiction is more fundamental than the laws of meaning. The latter point out that our statement must have a meaning; the former insists that that law must be clear. In a word, there must be a meaning before that meaning can be ambiguous. The laws of meaning are the found log. laws.

Let us take the foll. pairs of props. I ask in each case whether they contradict each other?

he is at home. she is not "at home"

"The man is strong. This man is not strong"

(May not understand a meaning)
The Proposition
The sun goes round the Earth — appearance. The sun goes round the Earth — assumption.

The proposition (in import) may be defined as a meaning in its simplest completed form so expressed as to challenge our intellectual acceptance or rejection. A term is an incomplete statement of meaning. A question is not a completed term.

This and also a proposition from a wish, for a wish doesn’t challenge our acceptance or rejection; a command appeals to the will, not to the intellect. Finally, inference, explanation, proof. Though these are all completed statements of meaning, they are all more or less complex, and they rest on the proposition as a basis or unit. From all these complex developments we distill the proposition by stating that it is a meaning with simplest completed form.

Here are three main types of proof.
Propositions - categorical
disjunctive
hypothesis

categorical

Sake props - quality - affirmative

Negative
1. Categorical, which is a statement of fact
2. Disjunctive
3. Hypothetical

The disjunctive, the hypothetical propositions state connections between possibilities. In the case of disjunctive, these propositions are two or more alternatives. If \( S \Rightarrow P \) or \( S \Rightarrow P_2 \) and so on.

In the case of the hypothetical propositions, the propositions are related as antecedent to consequence. If \( S \Rightarrow P \), then \( S \Rightarrow P_2 \).

The elements connected together in a categorical proposition are terms.

The elements in (1) are clauses.

By subject, we mean logical subject that all which we are talking about, consisting of some form of quality, into two kinds:

1. Affirmative
2. Negative

N.B. All categorical propositions are ascertainable. Measures are meaning just as general when we say this is not \( P \) as when we say \( S \Rightarrow P \).

Coproximal marks.
Gradually - universal - particular

See also ppp. 141

Innal Logiē
from 110 of men of quantity but just
may be divided into two kinds.

\[ \begin{align*}
\text{Universal} & : \text{all } S \text{ are } P \\
\text{Particular} & : \text{some } S \text{ are } P
\end{align*} \]

If you draw these, thus, we get fundamental propositions.

\[ \begin{align*}
A & : \text{all } S \text{ are } P \text{ } \text{affirm} & \text{SaP} \\
I & : \text{some } S \text{ are } P \text{ } \text{affirm} & \text{SiP} \\
E & : \text{all } S \text{ are not } P \text{ } \text{deny} & \text{SeP} \\
O & : \text{some } S \text{ are not } P \text{ } \text{deny} & \text{SoP}
\end{align*} \]

What is the point of the categorical proposition?

In discussing this, remember first of all be clear as to the use to which the prop is to be put. Now this use will chiefly depend on the aims we have in view, and the aims we have in view will depend on the type of logic we are proposing to develop. Now that type is that which discusses and defines the conditions of sound reasoning, and in so doing we expose an age-old fundamental fallacies of reason, namely and unwisdom. This is com.
called Formal Logic. To that end we have in mind a formal logic to
form a theory of logical inference for sound reasoning, which will
prove useful in cases of consistency, invalidity, and the proof of
the proof must be so

In every test both only. If we
may be nil in 2 ways:

(1) Inexorably, as connecting cut
marks

(2) Inexorably, as indicating cut
object.

Thus we have four forms,

(1) $S(h.t)$ $P(e.c.t)$ — Man's mortal
(2) $S(n.t)$ $P(n.t)$ — Man's mortal
(3) $S(e.c.t)$ $P(h.t)$ — Anan's mortal
(4) $S(e.c.t)$ $P(e.c.t)$ — Anan's mortal.

Of these 4 proof, the 4th is the least adapted
in formal logic. This is the only one in
which esp. mark is bare its natural
mark — identical with.
Each of is only placed before the major statement.

\[
\begin{align*}
S_{a}P &= A = \text{Each of all the S's is identical with any P} \\
S_{i}P &= T = \text{Each of some S's} \\
S_{o}P &= E = \text{Each of all the S's is not any P} \\
S_{o}P &= O = \text{Each of some S's}
\end{align*}
\]

(Some = one at least, but not necessarily all.)
If we express fourth from fully, assume the individuals identical by the term 'man' are identical with individuals by the term 'mortal.' We should state as a further act that this term extension with of prefix is not only the most convenient for our purpose, but also gives us the fullest and most clear meaning. For the extension of a meaning supposes that the extension indicated by the term 'man' is not just the extension of the term's connotation to the mind, but indicated by the term itself. So we can infer the extension will the knowledge of the connotation. On the other hand, we can understand terms in extension, without knowing about the extension at all.

Lecture 10:

The distribution of terms in a categorical proposition. The term is said to be distributed when it is used in its whole extent. A term is said to be undistributed when it's not.
used in its whole extent. The distribution of the predicates
kernels is more difficult. Take a proposition. There we are
held to state that each S corresponds with a P, but the extension of
my kernel is wider than that of S, i.e. the P's
actually referred to are only those whose kernels also
are. We don't refer to all the P's, therefore P's
undistributed. Thus with the I and O pros, the P's
referred to are only those whose P's which coincide with
some S's, and not all P's. i.e. P's undistributed
with E pros, means that each S of all the S's is not
identical with any single one of the P's, so that the
reference line is to all the P's, and P's are distributed
thus, with O pros. This means: each of some S's
is not identical with any single one of the P's,
so that Pagan is distributed.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>I</th>
<th>E</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>w</td>
<td>w</td>
<td>d</td>
<td>d</td>
</tr>
</tbody>
</table>

All S's are P's
Some S's are P's
All S's are not P's
Some S's

Main question of Inference
means that a prop. was a statement of
meaning in its simplest completed form. When I
stated a subject term, there was a question, and O
answer this question when I add the predicate, and in this way complete my meaning. But if the first complements my mean. in one direction, whereas it incomplete in another, i.e. it does not make clear all that is implied in the completed meaning. Hence inference stepwise. Formal inference is that form of the completion of meaning which consists in deriving from acc. statements or premises conclusions which are implied in them. The law or principle of formal inference may be called the law of formal validity or logical necessity. We may summarise it as follows. If a prop. a set of props. is accepted, then the further props. which are implied in what is thus admitted, these and these only must be accepted; and the further propositions which are in contradiction with any one of the admitted; propositions, or with anyone of the props. implied in these, these and these only must be rejected. In this law we may single out three component laws.

0. The positive law of logical implication or logical necessity. If a prop. a set of props. is accepted, then all props. implied in what is thus admitted must also be accepted. This law formulates what we mean by the relation of logical dependence. When we say that
A statement X is implied by Y, what we mean is that anyone who is committed to acc. X, is also committed to acc. Y. We should note the relation between the law of logical necessity and the laws of meaning. To doubt the law of logical necessity is to leave inference meaningless, i.e., no argument would be possible. But to doubt the laws of meaning is to leave statement still meaningless, i.e., no signifying assertion would be possible. (1) The second law which is included in the law of form. val. is the law, "not to go beyond the premises." This is conveyed through the words, "and these only," i.e., acceptance of a prof. X does not lead entitle us within to accept any proposition which is not implied in X a to reject any proposition save such as contradicted X or some one of its implications. (2) The third law included is the law of non-contradiction itself.

Now formal inference is of two kinds: immediate and mediate, and mini. inference is the inference from the acc. a rejection of a prof. to the acc. or rejection of a further prof. on the sole basis of the laws of meaning. While these apply to prof. inference, there are other types of mini. inference: opposition and conversion. The term opposition has natural and technical meaning.
Naturally we say that two props are in opposition only when they contradict each other; but technically two props are said to be logically opposed when having the same subject and predicate they differ in quantity or quality, or in both, quantity and quality.

End of Vol.

Law of Formal Inference

Immediate Inference

Types of Inferences

1. Converges

Mediate Inference

Inference through parts taken conjointly and linked together by common term called the middle term.
Library Digitised Collections

Author/s:
Menzies, Robert Gordon

Title:
Robert Menzies' student notes: Psychology, logic and ethics

Date:
1913

Persistent Link:
http://hdl.handle.net/11343/55400