

Selected Topics in Psychology
Historical Review of Psychology
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Module - 1
Lecture - 2
Psychology: Emerging of a Discipline

Today, when I am suppose to talk to you about, how psychology emerged as a discipline. It reminds me of, an experience that I had of several years back.

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During my under graduate is, when I was going through the history of psychology, because it was a prescribed in the course template at my university. I found the history of psychology to be very dull and dry. And the primary reason, I guess now is, that thinks were told to me in a very very what to call, a linear fashion A, where the different schools, the major personality and their contributions.

Now, it was talk to me and this is how, even several law for the text books of history of psychology also talks about. Somehow, I found it extremely dull, very, very dry, not at all facility. 20 years, down the line, today, when I read the history of psychology and

when, I am in a position to a larger extent to relate things. The constructs the personality, the time frame. The happening, that was taking place in and around, the other areas.

Now, I find the history of psychology to be very fascinating. And I also find it relevant. Something that, I did not find a know 20 years back. Two important things, that I understood was, the first that, at any given time in the society, there are certain practical needs. And development that takes place in any discipline, basically is an attempt to ((Refer Time: 02:22)) those practical needs of the society. And so has happened, even in the case of psychology, where attempt was made, because there was social compulsion. Because, there was a need for certain things at that given point in time. And therefore, things develop the way, they have developed. And second, that the strengths and the limitations, can be very well understood, only when you viewed things in their historical context. The movement, you know, dealing it from the context. The strengths and the limitations of something, that has historically taken place. It is very difficult to a visualize it.

And therefore, now I find that the history of psychology, when I am trying to in a very, very comprehensive way, share it with you. I find it extremely relevant, I find it very fascinating. Traditionally, what has happened is that, usually the books, the university curriculum, they will talk about a major in schools. And then you will have the different stole wards, who give certain theory, who give certain preposition. They are ((Refer Time: 03:46)).

This could be one way of approaching, how psychology emerges at this discipline. The second approach could be, where you take the major influences. The way, I have now put it here, where you have the philosophical influences.

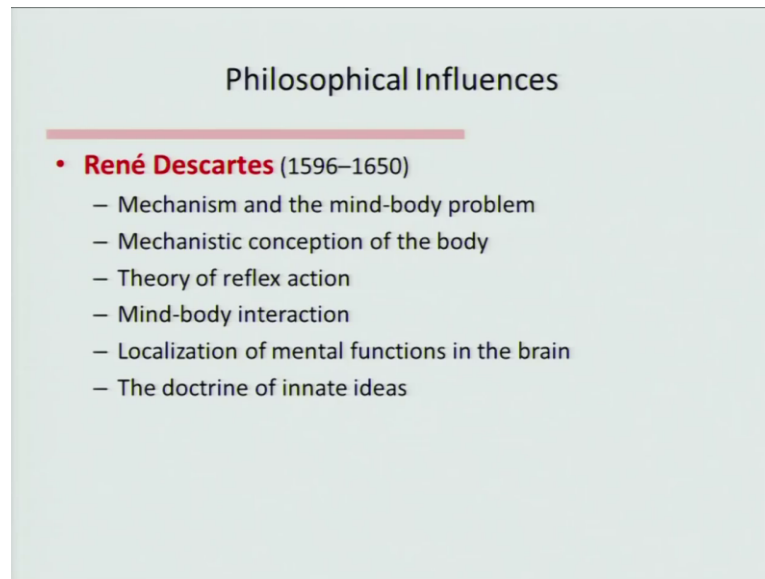
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The influences that was exhorted by development in the areas of a physiological sciences. And then how different school of thoughts gradually started evolving. And then finally, how contemporary development is taken place in the areas of psychology. Now, when I do all this, I will deviate a bit after couple of minutes, what I will primarily do is, I look at now, two strong influences, the philosophical influences and the physiological influences.

And then I would go to the major schools. And even, if the major schools, I would only talk about the major theories or the major ideas; that was developed at that point in time. And specially, my ((Refer Time: 05:00)) would be, let how finally, even though, we had initially began with a philosophical influences. How, psychology gradually started emerging as discipline, which was more into the scientific study of behavior, more into our systematic study of behavior. And how, this discipline actually became a much more scientific in nature.

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The slide is titled "Philosophical Influences" in a bold, black font, centered at the top. Below the title is a horizontal red line. Underneath the line is a bulleted list. The first bullet point is "René Descartes (1596–1650)" in red text. Below it are six sub-bullets in black text, each preceded by a hyphen: "Mechanism and the mind-body problem", "Mechanistic conception of the body", "Theory of reflex action", "Mind-body interaction", "Localization of mental functions in the brain", and "The doctrine of innate ideas".

So, first, we begin with the philosophical influences. And as you know, I am just summarizing these major influences. Rene Descartes was the first person, who you can give the credit of influences in psychology. And primarily, he was talking about the mechanism and the mind body problem. A mechanistic conception of the body was another important construed; that he influences. The theory of reflex actions was something that, you can wrote it to Rene Descartes.

Mind body interaction was another very, very strong and important construct. That actually came, because of the influences of Rene Descartes. And two important things, one the localization of mental function in the brain and doctrine of innate ideas. You would find that, these six important developments in the area of psychology can be ((Refer Time: 06:33)) to the Rene Descartes.

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Philosophical Influences

- **David Hartley** (1705–1757)
 - Repetition

- **James Mill** (1773–1836)
 - Mind as a machine

- **John Stuart Mill** (1806–1873)
 - Mental chemistry

Auguste Comte, John Locke and George Berkeley, these three important philosophers also influence psychology to a greater extent. And Comte can be given the credit for influencing the concept like, positivism, materialism and empiricism. And John Locke talked about, how mind acquires knowledge. And George Berkeley gets the credit of talking about mentalism.

Then, we have, the influences of David Hartley, James mill and John Stuart mill. Where, David Hartley was actuality talking about reputation. It was John mill, who talk about mind as a machine. And John Stuart mill actually talking about the mental chemistry. So, many of these things, you find later on being discussed in their domain of psychology, which actually has it is root in the early philosophical influences.

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The slide is titled "Physiological Influences" and is set against a light green background with a thin black border. A horizontal red line is positioned above the first bullet point. The text is organized into two main sections, each starting with a red bullet point. The first section is for Marshall Hall (1790–1857), with two sub-points: "Reflex behaviour" and "Extirpation: Removing or destroying part of an animal's brain and observing the resulting behaviour". The second section is for Paul Broca (1824–1880), with one sub-point: "Clinical method: Posthumous examination of brain structures to correlate damaged areas to behaviour".

Physiological Influences

- **Marshall Hall** (1790–1857)
 - Reflex behaviour
 - Extirpation: Removing or destroying part of an animal's brain and observing the resulting behaviour
- **Paul Broca** (1824–1880)
 - Clinical method: Posthumous examination of brain structures to correlate damaged areas to behaviour

Another important influences at psychology had, was from those who are working in the area of physiology. And an important constructs like, reflex behavior was proposed by Marshall Hall. Hall also talks about, something called extirpation, which actuality was a process were you remove or you destroy, part of the brain of an animal. And then you try to observe the behavioral changes of the animal us under gone.

So, this was another technique, which actually was part of physiology. But, later on, you find that psychology also was heavily influenced by this technique. Paul Broca, everybody in psychology knows him. And he actually is given the credit of a evolving this clinical method, were posthumously examination of brain structure was done. And he would primarily try to correlate the change that has taken place in the brain.

And an accordingly, he would correlate with the behavioral at the individual was showing. So, basically a post survival stage, post death of an individual. You just know examine the brain. And you correlate the brain with the behavior. This was little different form the method; that was given by Marshall Hall, where he was trying to destroy remove part of the animal's brain.

And then trying to the see the changes, that the animal has under gone. By 1870, an

interesting method came forward. Till now, the methods were either extirpation or the clinical method.

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The slide is titled "Physiological Influences" and lists three key figures and their contributions:

- **Gustav Fritsch and Eduard Hitzig (1870)**
 - Electrical stimulation: Weak electric current on the cerebral cortex to observe motor responses
- **Hermann von Helmholtz (1821–1894)**
 - Physics, physiology and psychology
- **Ernst Weber (1795–1878)**
 - Two-Point Thresholds
 - Just Noticeable Difference

But then Fritsch and Hitzig, they came forward with the method of electrical stimulation. Where weak electric current were introduced to the cerebral cortex. And then the motor behavior of the subject, the individual was observed. And he would find that electrical stimulation as a technique has been used for very, very long in a history of psychology.

Another important person was Hermann Helmholtz, who not only influences psychology. But, a primarily his contribution was in the areas of physics, in the areas of psychology and by default, he also influences development of psychology. Weber, who actually, gets the credit of two things, the concept of two point threshold and concept of, just notable difference, till date those who study, the psychology of perception. In the perception process, people do refer to two point threshold and just noticeable difference. And under graduate student, must be doing practical and this constructs.

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Physiological Influences

- **Gustav Theodor Fechner** (1801–1887)
 - Mind and body: A quantitative relationship
 - Absolute & differential threshold
 - Methods of psychophysics
 - Method of average error
 - Method of constant stimuli
 - Method of limits
 - Fechner developed one and systematized the remaining two methods used today

And another important person, who influences psychology, was Fechner. Fechner D, talk about the mind in the body, but most important Fechner should we given the credit of developing a technique were by the mind body relationship can be quantify. Remember, earlier also, now right from philosophical days itself, the relationship was mind and the body was always being studies. It was always primary area of interest for behavioral society.

But, Fechner should given the credit, because he did talk about the mind and body relationship, but then the idea was primarily to quantify this relationship. And till date, psychology is under the influences of continuation of human behavior. The concept of absolute and different threshold was also talk about by Fechner. And the three methods of psycho physic that we read nowadays, the average error, the methods of constant stimuli and the methods of limits.

Fechner is giving the credit of limit is one of the methods. And actually, he systematized now the remaining of two methods. And all these three methods are now establish methods at have part of psycho physics. Gradually, psychology after the influences of this philosophical and people, who working in the areas office psychology, psychology started gradually taking it is shape.

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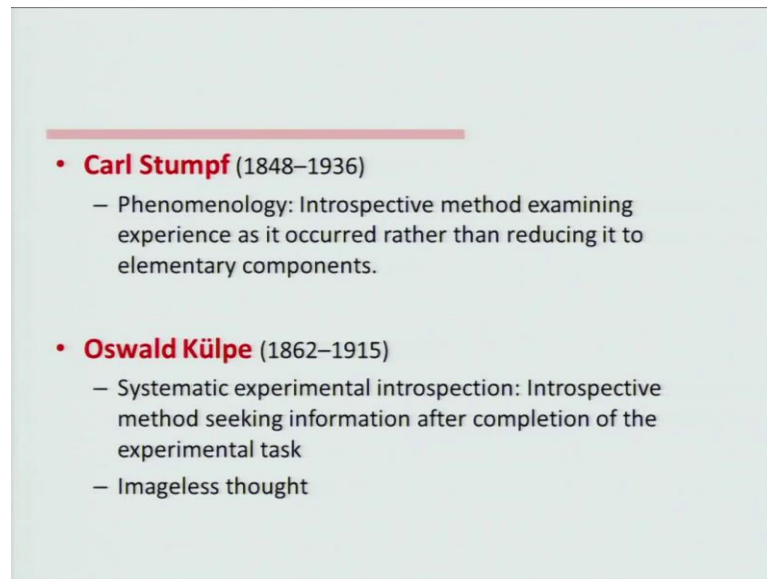
- **Wilhelm Wundt** (1832–1920)
 - Study of conscious experience: Mediate and immediate experience
 - Method of introspection
 - Elements of conscious experience
 - Apperception: Process of organizing mental elements
- **Hermann Ebbinghaus** (1850–1909)
 - Learning: Nonsense syllables
- **Franz Brentano** (1838–1917)
 - Study of mental acts

And we all have heard about Wilhelm Wundt, who primarily talks about the study of conscious experience. And to him conscious experience was both mediate and immediate experience. Methods of introspection was giving a major credit and the hole of psychology started no revealing around this very methods, that Wilhelm Wundt talk about. He did talk about the elements of conscious experience.

And primarily the whole concept of apperception, which is actually how you organizations. Now, the animals in your minds that was, now some things that want talk about. Hermann rehabbing as we all know him, he gets the credit of influencing a construct of learning, were spirally he talk to about the nonsense elements. Till date, you find the reference of nonsense syllables.

Whenever, you talk about learning, whenever you talk about memory, all experiment across board, invariably have the usage of nonsense syllables. Franz Brentano was another important parson, who did talk about the study of the mental acts.

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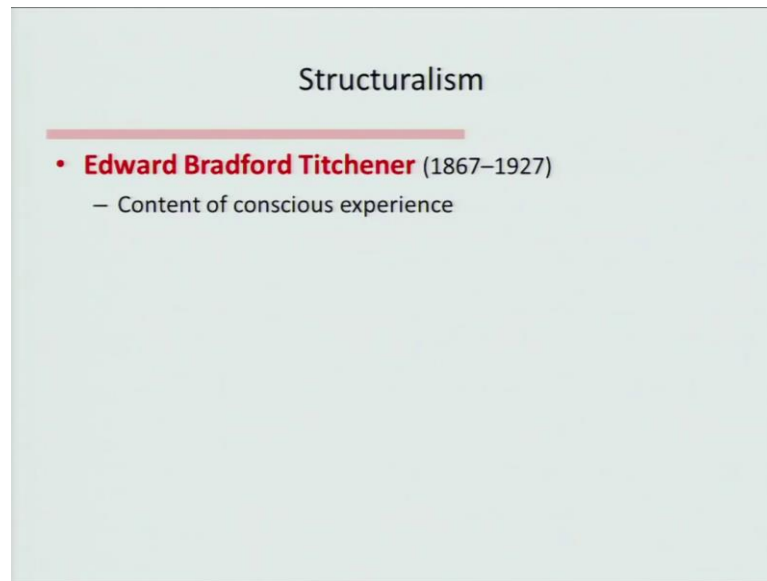


- **Carl Stumpf** (1848–1936)
 - Phenomenology: Introspective method examining experience as it occurred rather than reducing it to elementary components.
- **Oswald Külpe** (1862–1915)
 - Systematic experimental introspection: Introspective method seeking information after completion of the experimental task
 - Imageless thought

And Stumpf came with phenomenology, which was actually an introspective method, which was the examining the experience as it occurred rather than reducing it to elementary component. And Stumpf way of looking at introspective us the method, started making of devastation from what would not had initial suggested. And then it was Külpe, who talk about the systematic experimental introspection.

And were introspective method was use to seeking information about an individual, after the experimental task was completed. And then of course Külpe also gets the credit is of talking about image less thought.

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A now, I am taking the root that is usually followed in most of the books of history of psychology. And most the university whose structured followed the this templates, were you talk about different schools. But, I must tell you that may idea is, to just summarize major individual and their contribution. The major construct, that was talk about under ablating of that wary school of thought in psychology.

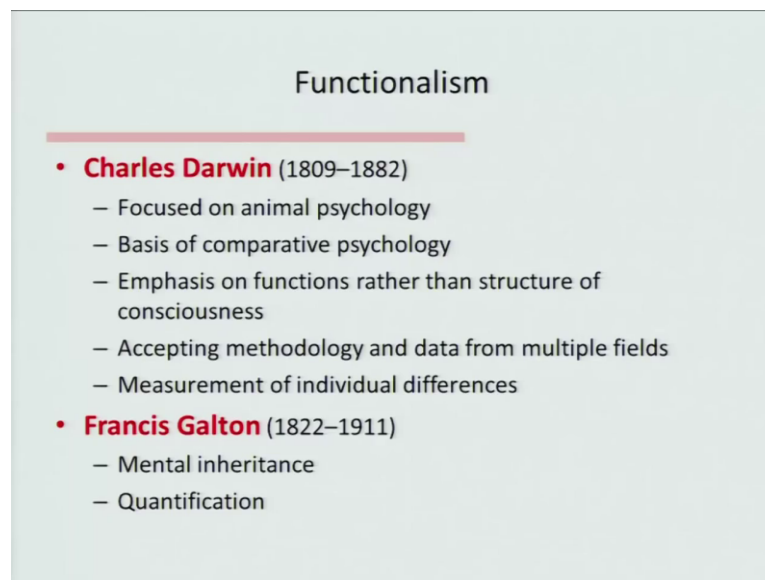
But, then once again, I will make a deviation, once I complete the new Friedan's thereafter. And then there will no gradually going to much more details of, how psychology stared taking it is shape and becoming more and more systematic and scientific study of behavior.

So, coming to structuralism, Titchener give the concept of the conscious experience and he did contribute the lot to it. And then comes functionalism, were the primary emphasis force more on the functional outcome. And once again, now you can trace it back to Charles Darwin. Charles Darwin did not make direct impact on psychology at his time. He had a very diver's interest and if you can relate the parented development to the contribution of Charles Darwin.

You will find inserting relationship, for example, comparative psychology is one of the

branches of psychology. And when you start to see the roots of this domain of knowledge, you contrast back Charles Darwin, who had actually focused on animal psychology.

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The slide is titled "Functionalism" and is set against a light blue background. It features a red horizontal line above a bulleted list. The list contains two main entries, each with a red bullet point and a sub-list of contributions.

- **Charles Darwin** (1809–1882)
 - Focused on animal psychology
 - Basis of comparative psychology
 - Emphasis on functions rather than structure of consciousness
 - Accepting methodology and data from multiple fields
 - Measurement of individual differences
- **Francis Galton** (1822–1911)
 - Mental inheritance
 - Quantification

So, primarily the focused of attention on animal psychology could be construed as the basis for comparative psychology. Another interesting thing was, that even thus concern was the focused of tension till that time. Charles Darwin suggested that the focused deserved to be on the functions rather than structure of consciousness. And two most important things, one that Charles Darwin should be given the credit of accepting method, used in other areas.

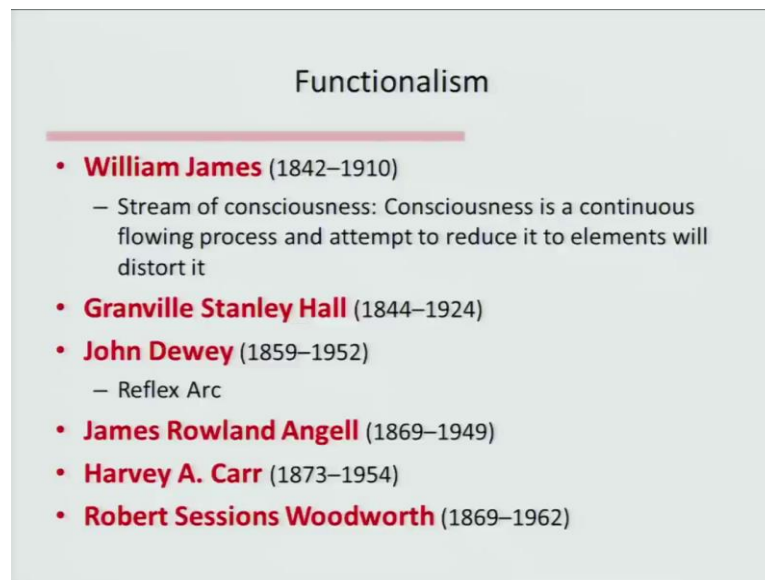
As well as using data now, which is of interest of, different domains of knowledge. So, today, what we refer to as interdisciplinary, what we refer to us multiple disciplinary. It was Charles Darwin, who should be given the credit, who actually advocated for accepting the method on the data from multiple sources. And most importantly, the construct of individual difference, the important of measurement of individual difference, what something that can once again trust back to Charles Darwin.

So, that way, you can have this four important contribution of Charles Darwin, which

actually part of functionalism. If you want to trust it back Sir Francis Galton, another interesting individual, who actually talk about mental inheritance. And he is known for his mental inheritance and talking all about it. But, most important things, that he actually contributed to was quantifications.

What Francis Galton was repeatedly talking about was, at there is the possibility of quantifying, whatever you observed in human behavior.

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Functionalism

- **William James** (1842–1910)
 - Stream of consciousness: Consciousness is a continuous flowing process and attempt to reduce it to elements will distort it
- **Granville Stanley Hall** (1844–1924)
- **John Dewey** (1859–1952)
 - Reflex Arc
- **James Rowland Angell** (1869–1949)
- **Harvey A. Carr** (1873–1954)
- **Robert Sessions Woodworth** (1869–1962)

Then, of course William James, who talk about stream of consciousness of in consciousness was the continuous flowing process. And any attempt to reduce it to elements would actually destroy it. Beside, William James to have no long lists a people in a psychology, who influences psychology in one way. On the other, for example, you can take Hall, Dewey, Angel, Carr and off course Wood Worth.

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Legacy of Functionalism

- **Applied Psychology**
- **James McKeen Cattell** (1860–1944)
 - Testing

- **Clinical Psychology Movement:**
 - **Lightner Witmer** (1867–1956)

- **Industrial-Organizational Psychology Movement:**
 - **Walter Dill Scott** (1869–1955)

But the most important thing was the legacy of functionalism, which actually us more and more and more to making psychology a very, very application oriented discipline. One the contribution of Cattell, who was actually into psychology testing and Lightner Witmer are entire focus would be on the testing movement how actually now form one piece of work, it actually into the whole area of the interest.

And second, the two important movements, that took place, one clinical psychology movement and the industrial organizations psychology movement. And there you find the difference of the Lightner Witmer. And Walter Scott in the two difference movement and this major contributions, which made psychology more and more application oriented discipline.

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Gestalt Psychology

- **Max Wertheimer** (1880–1943)
- **Kurt Koffka** (1886–1941)
- **Wolfgang Köhler** (1887–1967)
 - Gestalt Principles of Perceptual Organization
 - Insight: Study of Apes

- **Kurt Lewin** (1890–1947)
 - Field Theory
- Motivation & Zeigarnik Effect

Besides that, the whole set of now gets of psychology, what they are called us Wertheimer, Koffka, Kohler. They contributed a lot to understating the whole principal of perceptual organizations. But, very interestingly, when you read to the construct of development of insight, especially, the study of apps. There you find that, even the whole contrast of education of information, learning of information.

And how insight places and importing roles in this the credit can again be given to the ester psychologist. And off course, we know the important of filed theory Kurt Lewin gets the credit for the study of motivation and all psychology would know the Zeigarnik effect.

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Behaviourism

- **Edward Lee Thorndike** (1874–1949)
 - Puzzle Box
 - Trial & Error
 - Law of effect
 - Law of exercise

- **Ivan Petrovitch Pavlov** (1849–1936)
 - Classical Conditioning

Then, we come to behaviorism, where the major theory came Thorndike to come forward with new insurgent called the puzzle box, where he did it experiment. And this is how to the method trial and error came in to picture. And two important laws came into distance law of effect and law exercise. Ivan Pavlov, we all know him, who gives the whole concept of classical conditioning. All though, Ivan Pavlov was working from some other problem, but the outcome that he got influences psychology, what called the strong us possible extent and we have know the whole construct of classical conditioning.

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The slide is titled "Behaviourism" and features a red horizontal line. It lists three key figures in behaviorism:

- **John B. Watson** (1878–1958)
- **Edward Chace Tolman** (1886–1959)
 - Intervening Variables
- **Clark Leonard Hull** (1884–1952)
 - Hypothetico-deductive method

Watson and influences psychology like anything, Tolman and should also be given the credit of interdict the concept of intervening variables the psychology. Till, that I know psychology was mostly look at, know from the independent and depending clusters of veritable. It was Tolman, who did interdict the concept of intervening variables and then Clark Hull, who did talk about the hypothetic deductive method.

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The slide is titled "Behaviourism" and features a red horizontal line. It lists one key figure in behaviorism:

- **B. F. Skinner** (1904–1990)
 - Operant conditioning
 - Schedules of reinforcement
 - Successive approximation: Explanation for acquisition of complex behaviour

But, once again, B. F. Skinner, who did come forward with major construct of operant conditioning. And besides, know the spelling, whole construct of operant conditioning skinner also get the credit of introducing the scheduled of reinforcement, which once again is mega construct in psychology. And the concept of successive approximation, which actually explains how complex behavior accrued by human beings.

So, these were the major constructs that were actually talked about during the era of behaviorism.

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Behaviourism

- **Sociobehaviorism:**
- **Albert Bandura** (1925-)
 - Vicarious reinforcement
 - Self-efficacy
- **Julian Rotter** (1916-)
 - Locus of control

But, once again, socio behaviorism now came into picture and specially, you have two important individuals contributed in these areas. Albert Bandura, who gets the credit for introducing the concept of vicarious reinforcement and also talking about self-efficacy. Julian Rotter, who did talk about, locus of control, all psychology would certainly be reading the constructs given by them.

And many of these concepts are still part of not only the understanding of this subject. But, also you find them being used in their practical class.

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Psychoanalysis

- **Sigmund Freud** (1856–1939)
 - Theories of unconscious mind
 - Sexual basis of neurosis
 - Dream Analysis
 - Psychoanalysis as a therapeutic
 - Psychoanalysis as a system of personality

And come psycho analysis, where Sigmund Freud, suddenly know talk a different term, were he talk about the theories of the unconscious mind. He did focuses on the sexual basis of neurosis. Evolved dream analysis technique and most importantly, he did talk about psychoanalysis both as a therapeutic technique and he also talk about psychoanalysis as a system of personality.

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Psychoanalysis

- **Anna Freud** (1895–1982)
- **Melanie Klein** (1882–1960)
- **Carl Jung** (1875–1961)
- **Alfred Adler** (1870–1937)
- **Karen Horney** (1885–1952)

And later on, came Anna Freud, Klein, Carl Jung, Alfred Adler and Karen Horney, all of them, who are usually called neo-Freudians, who did not know challenge the major consternation of psychoanalysis. But, did to right to explain human behavior, in way which was devoting from the usually way Freud Klein explain. So, was the major contribution? But, then by that time, the personality was being explain a by psychoanalysis.

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The slide is titled "Evolution of Personality Theory" and features a red horizontal line. It lists two key figures in Humanistic Psychology:

- **Humanistic Psychology**
- **Abraham Maslow** (1908–1970)
 - Self-Actualization
- **Carl Rogers** (1902–1987)
 - Positive regard: The unconditional motherly love for an infant

There was another parallel developed that to place, where a now different personality theory is started. And there emerged the whole humanistic psychology and especially two inveigle Abraham Maslow to give the concept of self actualization. And Carl Roars, who talk about who did talk about positive regard, the unconditional love of the mother for an infant, he talk about it and this two were important construct.

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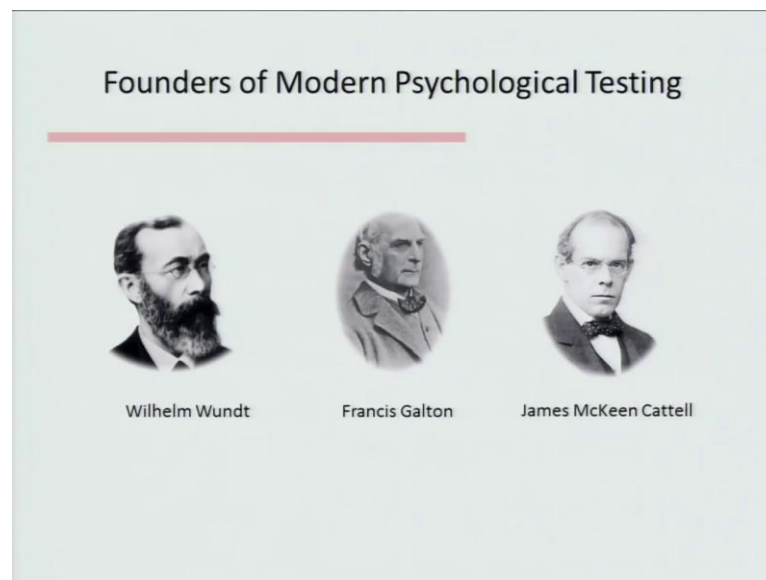
Gradually, psychology started taking a different and then came an important turn around in the history of psychology, what I am referring to here is contemporary development. When George Miller started his work, George Miller's work was not psychology, this was into language. And later on, he did contribute in a very big way, talking about psychoanalysis. And then it was Ulric Neisser, who did know compare the functions of human being with respect to the metaphor used to computer.

And this was the major turnaround, there was a shift from the x o r pattern and understanding human behavior, where we talk about stimuli organic response. When you talked about input transformation and output and this how clicked psychology came into the picture. More and more influences of the physical process, which made it cognitive neuroscience.

In fact, later on in this series there is a section on near psychology, where you would have now to the speaker talking about different topics. And then know there was also this influence of biology, where it not only a study has psycho biology, but it was also intersection from social biology point of view. And more and more importantly, the evolutionary psychology most out has an interesting areas where behavior was no longer back to usually biology way of explanation.

So, the traditional method use in psychology, the scientific regard of making predestination about human behavior. But, then also taking an evolutionary view point. Having no summarized the historic of psychology an initial.

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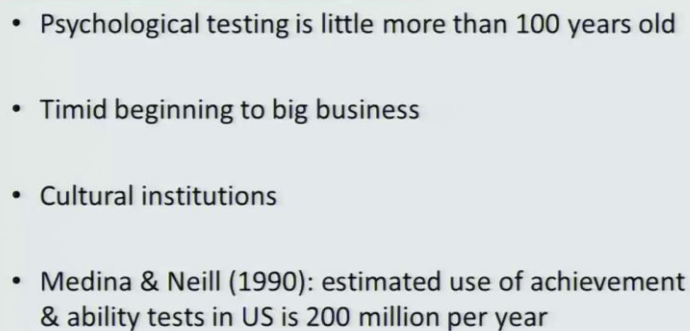
Now, making an attempt to visit the scientific psychology. And as I told you, that I would now you making very, very, surgical intervention into the history of psychology, were I would try to trace, how psychology actually become more and more a scientific as they domain of study. Now, for this I am selectively choosing the whole historic of psychology testing. And you can consider and Wilhelm Wundt. Francis and Galton James Cattle can be considering as the founders of the modern psychology testing.

But, I am must tell you that, if you start looking at historic of once again the testing he would relays, that testing can be trust back two of very, very old parties in china. So, now onwards, what I doing that, I will first being with mega, china, what actually were being parties there. And then we learn most two different European countries is, were different.

Development to palace coming to US psychology taking forward it is modern format a will than between European and US. And then once again he reenter back to idea as see

how now development to palace within this country and inspect it has on over the development of psychology is the discipline.

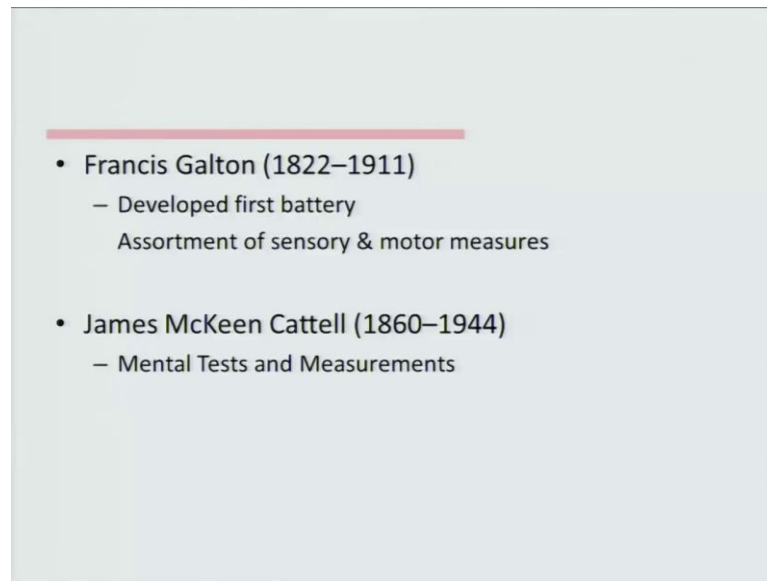
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- Psychological testing is little more than 100 years old
 - Timid beginning to big business
 - Cultural institutions
 - Medina & Neill (1990): estimated use of achievement & ability tests in US is 200 million per year

Psychology testing is little more than 100 year old. But, then even though it very timid beginning, it now became big business you have different, different testing houses were you pay a large amount of money. There are so this of know letter being by different constancy agency, government agency. This is taking shape of big business. Very interestingly, sudden cultural suction, we all around psychology testing and assessment.

Higher effect to Medina and Neel, who estimated that the use of achievement and ability tests in US is the formally 200 million per year. And this gives you, a idea to quantum of this size of this whole development at as taking place.

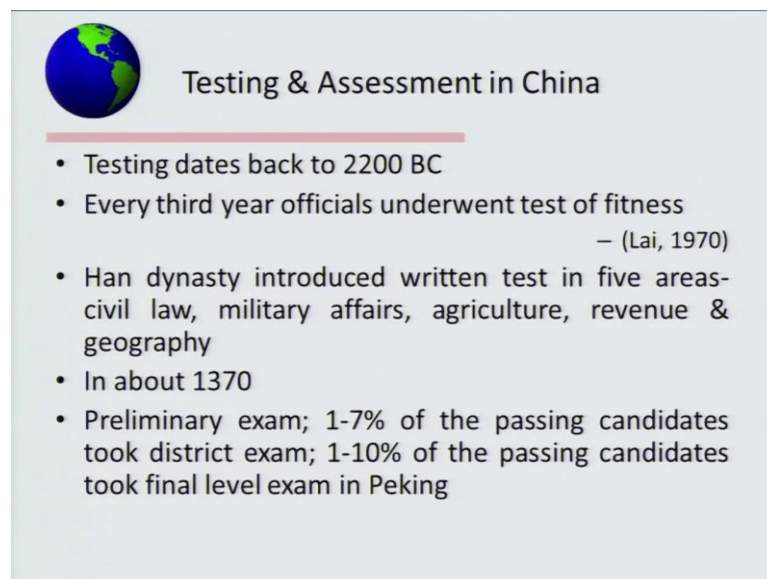
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- Francis Galton (1822–1911)
 - Developed first battery
 - Assortment of sensory & motor measures
- James McKeen Cattell (1860–1944)
 - Mental Tests and Measurements

Going back to history Francis Galton, he can give the credit of development the first battery, what was assortment of sensory. And motor measures and later on, it was cattle, who should be given the credit of talking about mantle tests and the measurements.

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 Testing & Assessment in China

- Testing dates back to 2200 BC
- Every third year officials underwent test of fitness
 - (Lai, 1970)
- Han dynasty introduced written test in five areas- civil law, military affairs, agriculture, revenue & geography
- In about 1370
- Preliminary exam; 1-7% of the passing candidates took district exam; 1-10% of the passing candidates took final level exam in Peking

Having said that now less go back to china and they you realizes the test in can be dated

back to 2200 BC. And I refer to lie hear, to say that very third year the officials in china had to contested to underwent test of fitness. The hand dynasty in china introduced to written test in 5 areas, civil law, military of affairs, agriculture, revenue and geography. This was the five areas. And interestingly, you will find that by 1370, the three tier that was evolved.

The preliminary examinations, were all of the first 1 to 10 percent pass to preliminary exam, they took of the district exam and 1 to 10 person thus he cull piled, it they have to go taking the final exam. So, write from 2200 B C you find that society felt need for testing and human capability. And even though, it was not Hacked psychology in nature. But you do find that there was no pelt need.

That I was referring beginning after 20 years, when I realized that actually there are certain contemporary, need to the society. There are certain now a parasitical need of the society that demands that certain things should it decently wall.

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 Testing & Assessment in China

- Although testing roots to China in 2200 B.C. validation of selection procedure remained an issue
- This system was abolished in 1906

– (Franke, 1963)

And there for now you find now psychology testing was being practiced in china in different from off course. What interest to obey also it that all thus testing can be trust back to 2200 BC. But, the validations of this whole process was actually not into picture

on it always remembering issue that time. And this whole testing system, he was an abolished by 1906.

Another important development that took place was not in the areas of psychology, but in her system displaying psychiatric. In Germany, Grashey was physician, who actually thought of measuring loss of certain capabilities in the brain injured patients. The whole idea was to show word symbols and pictures through slot in the sheet of a paper. That moved slowly over these stimuli.

So, one sheet of a paper, it will have word, it will have symbols, it will have pictures. And then you have another sheet put over it, which will have a slot, they have the open slots. And you move the paper with slows over the pictures, now which us this word symbols and pictures. This is actually what see, memory drum. So, this actually the process by Grashey can be considering this was precursor of the memory drum.

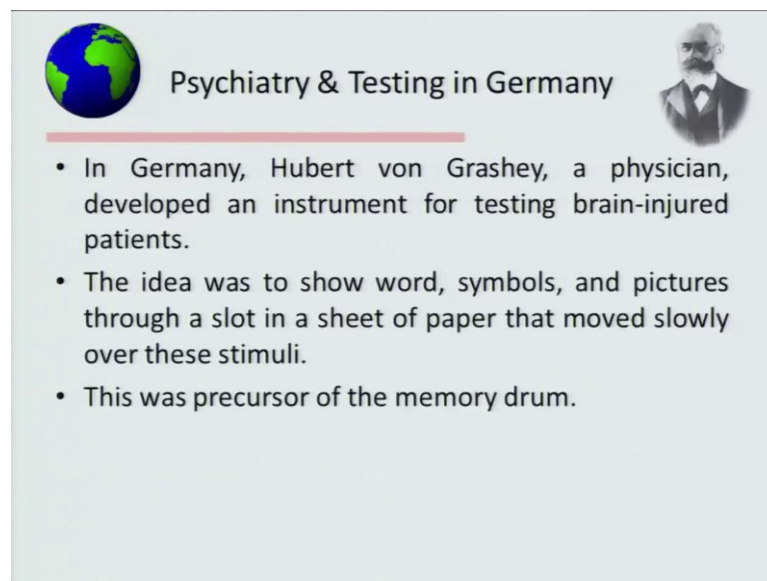
And you see hear the write now screen have the memory drum, off course, now it is being faced out because of the contrition developed of computers. Because, you can replaces presentation of the stimuli. But, traditionally, I do not know the modern term how many people have seeing memory drum. But, I remember by may own under graduation this, were memory drum was you interment in the psychology lab.

Were, now you can see hear roter put there, this roter actually could be use to adjust the speed of the mo vent of the drum. And this and that sky blue plate that you see in the top and white opening there now and open the stets there were you have the blinking arrow. Beneath which drum was there, which were use to a know put a sheet of prepare to faced it, with the stimuli.

Like the stimuli, would then we again anything a largely to used to be words, it could be nonsense syllabus, it could be pictures. All you in sure is that without error you are in a position to present stimulate to your human subject after a certain temporal limited. So, you have known design your experiment an you show in that after every laps of these many seconds. That stimulate would change and memory used serve this purpose.

Now, off course with development of computer, memory drum an instrument as last probably significance. But, then it play a very, very significant role. All I am trying to say is that it is not only the concept that develop, it is also the need of the society. It is also the development of certain tools, the development of certain techniques. That should be technique in to account, when we talk of how psychology human as a discipline.

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Psychiatry & Testing in Germany

- In Germany, Hubert von Grashey, a physician, developed an instrument for testing brain-injured patients.
- The idea was to show word, symbols, and pictures through a slot in a sheet of paper that moved slowly over these stimuli.
- This was precursor of the memory drum.

Another german psychiatrist a Conrad Rigger, he developed at test battery for brain damaged patients. Now, you remember see an interesting thing know, the first test battery that we were referring to was trace back to Francis Galton.

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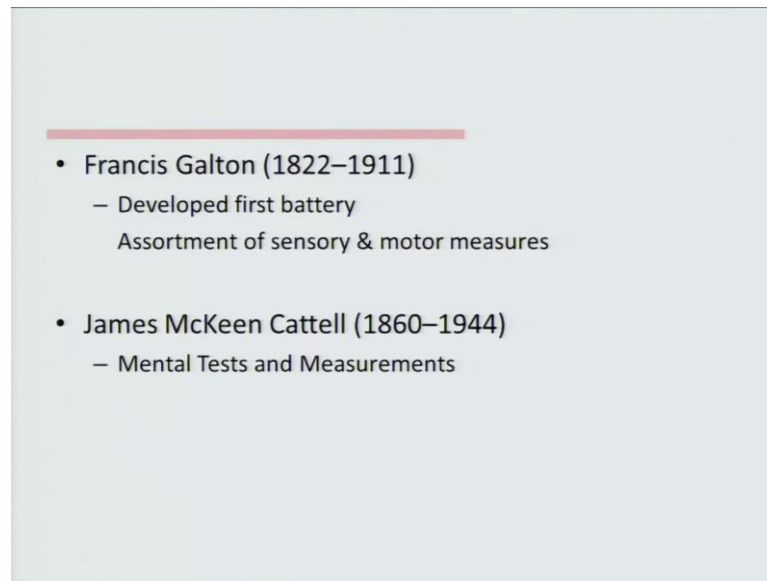
Psychiatry & Testing in Germany

- Conrad Rieger, a German psychiatrist, developed a test battery for brain-damaged patients
- The administration of the battery needed more than 100 hrs
- Although it did not receive that much acceptance, these two developments did contribute to standardization process
- Assessment of brain-damaged patients and psychiatric symptoms was possible

After Francis Galton, you realize that it is basically Grashey who thought of the brain damaged patients. And came for what not with the test battery, but return instruments. An again it was Conrad Rigor who again thought of no assessment of brain damaged patient, but this time, it was not an instrument; it was the test battery the limitation. With this test battery was that, for it is administration you needed more than 100 hours.

Something, let is in practical symptoms usage and although it did not receive that much acceptance, these two developments, the development of memory drum as a tool and the development of the test battery did contribute to the centralization process. So, today, when we talked about standardize this in psychology. You can again refer it back to this tools significant development in the history of psychology.

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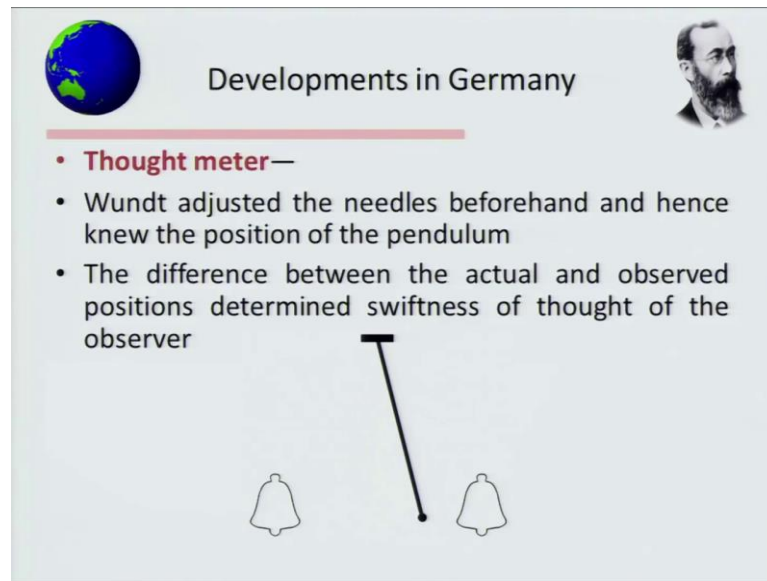


Now, assessment of brain damaged patient and psychiatric symptoms became possible, because of know this two things. Another interesting thing, we are stilling Germany right, we are looking at development taking place in Germany. Experimental psychology thrived know in Europe and also England. And Wilhelm Wundt, he was actually trying to measured mental processes, through the help of a thought meter.

On your screen, what you see a swinging pendant of hitting to bells on two sided was actually know what Wilhelm Wundt called as thought meter. an remember, that with was this was 1862, when you trying to do this. Thought meter actually a Callebaut pendulum with needles on both sides. And while swinging, always no middle to a stick the bells.

Now, the observer had a task note the position the pendulum when he heard the sound of the bell. Now, Wundt had adjusted the needles before hand and therefore, new the position of the pendulum. What actually be recorded was, the difference between the actual an observe position determined the through the experiment. An actually this whole process actually determined the swiftness of thought of the observer.

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The slide is titled "Developments in Germany" and features a globe on the left and a portrait of Wilhelm Wundt on the right. Below the title is a red horizontal line. The main content is a bulleted list:

- **Thought meter**—
- Wundt adjusted the needles beforehand and hence knew the position of the pendulum
- The difference between the actual and observed positions determined swiftness of thought of the observer

Below the text is a diagram of a thought meter, which consists of a vertical line with a horizontal bar at the top, and two bell-shaped indicators at the bottom, one on each side of the vertical line.

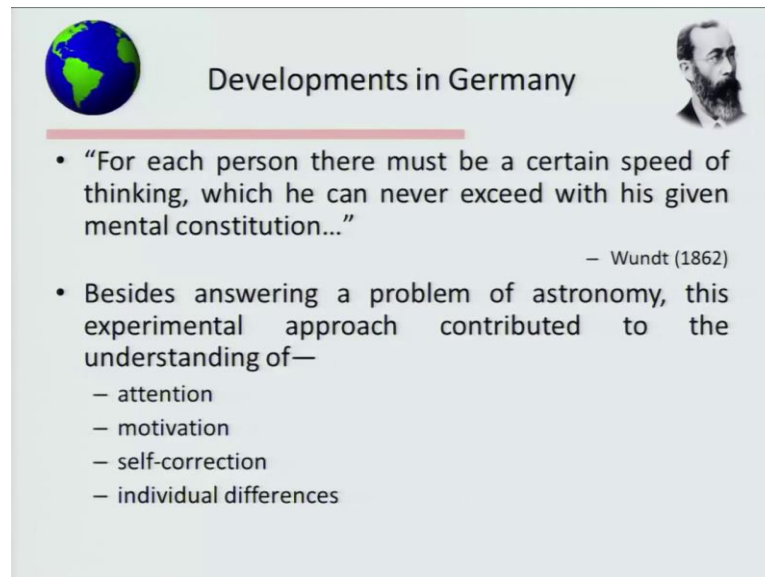
Wilhelm Wundt that for each person there must be a certain speed thinking, which he can never exceed with his given mental constitution. If you know look at thought meter, if you look at the those whole process, it might look as if it was very, very primary type of an investigation of how we human being perform. But, remember that, this very experiment serve the understanding of several processes, which was actually a cause of concern for is scientists in those days.

In the area of astronomy, there was a big debate going on, because people in the observatory would we a keep. No, attracting the movement starts and then two different people would report change by certain time. And therefore, when Wilhelm Wundt experimented, using thought meter, with whatever way it influent psychology. It did serve the purpose of answering the question in astronomy.

Now, an another interesting thing was, that this experimental approach also contributed to the understanding of certain very white psychological process. Such as attention, motivation, self correction and of prime important, once again, individual differences. Now, all four of them are extremely important construct in psychology till date. And you can refer it back to and experiment then by Wilhelm Wundt in 1862. So, this is an interesting are development that took place.

Let us know, now go back from a Germany to England, where Sir Francis Galton actually attempted to measure intellect by measuring reaction time and sensory discrimination.

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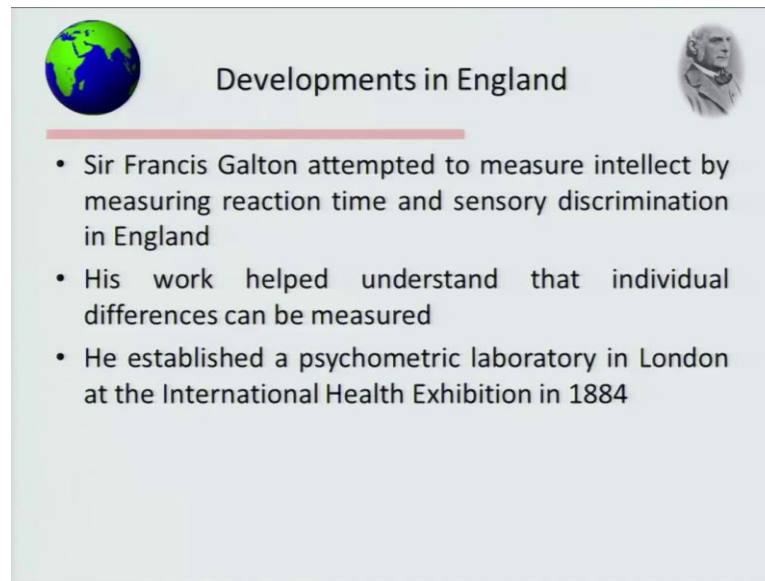
Developments in Germany

- “For each person there must be a certain speed of thinking, which he can never exceed with his given mental constitution...”
– Wundt (1862)
- Besides answering a problem of astronomy, this experimental approach contributed to the understanding of—
 - attention
 - motivation
 - self-correction
 - individual differences

So, these two are important constructs and his work actually helps understand individual differences in a much. I am not going in to the details of what actually proposed. But, what I am trying to tell here is, that the fact that the difference between two individuals can be measured, can be quantified, something that we should give credit to Sir Francis Galton.

Very interestingly, he established a psychometric laboratory in London at the international health exhibition. And again, it was 1884, when we did so.

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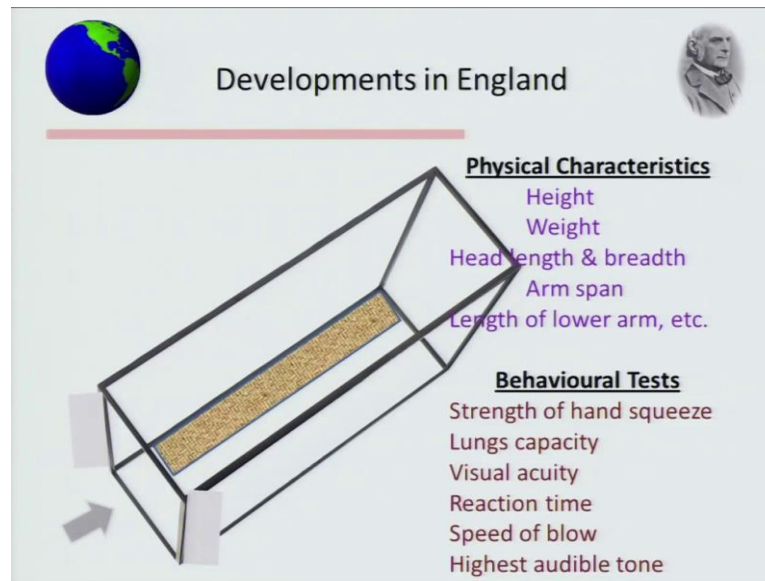
Developments in England

- Sir Francis Galton attempted to measure intellect by measuring reaction time and sensory discrimination in England
- His work helped understand that individual differences can be measured
- He established a psychometric laboratory in London at the International Health Exhibition in 1884

Now, we can see on your screen, there was long quarry door with tables a put their and he had put different the instrument. There. And those instruments were primarily supposed to measure physical characteristics as well as behavioral at say us are all puts. Now, physical characteristics such as height weight head length head breadth, arm span, length of the lower arm and so for the physical characteristics.

The behavioral tests such as strength of hand squeeze lungs capacity, visual acuity, reaction time, speed of blow. And the highest audible tone, that can be received by the individual. These were the behavioral test that we had exhibited at that time.

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Interestingly, 17000 people were tested now how we are during this exhibition. And you will be surprised that, 7500 records of those 75000 individuals are still available. And of course, I refer to the work of Johnson and his colleagues for this. But, most importantly once again as you can see that blinking statement on here on screen, that dynamometer used to measure strength of hand squeeze.


And even now to measure grip strength, to measure this strength of hand, to measure strength of the squeeze dynamometer is still used as a tool. So, something that was used long back at that time, you find that that makes a sense to psychology still date. This method of measuring an intelligent of course perished. But, it did clear that objective tests could be devised.

So, this was an interesting realization and that the scores that you draw out of your objective test, can be used to draw inference. Remember that, now when you talk of statistical interpretation of your data, you do talk about inferential statistics. Psychology as it moves to the extent way of attempts are always being made with respect to, how much inference can be drawn from what we observe.

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Developments in England




- At least 17,000 people were tested and about 7500 records are still available
— (Johnson et al., 1985)
- Dynamometer used to measure strength of hand squeeze is still in use
- This method of measuring intellect perished, but it did clear that objective tests could be devised and scores can be obtained for drawing inferences

Now, let us go to the US, James Cattell developed a series of tests. And he coined the term mental test in his paper mental tests and measurements. What he actually was talking about of course the fact that the bodily and the mental energies, they are inseparable. You cannot separate them, 1, 2 that physiological measure is also an index of mental power of an individual.

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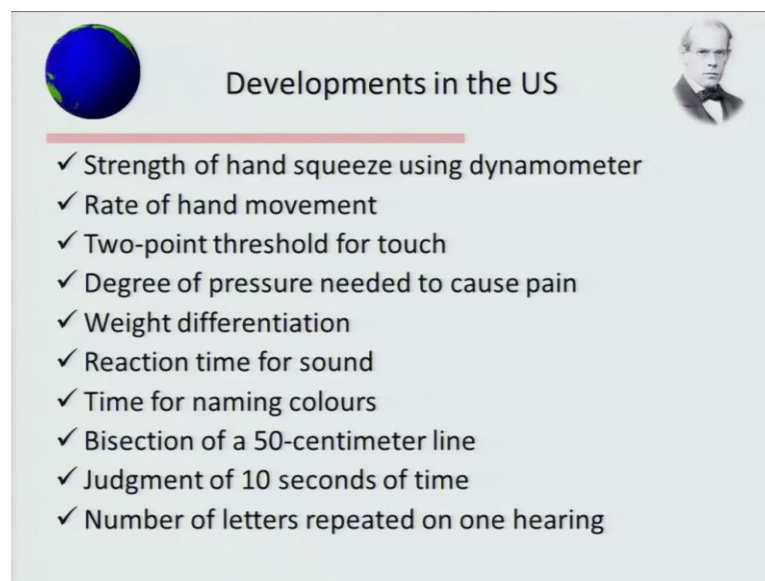
Developments in the US



- James McKeen Cattell developed a series of tests
- He coined the term 'Mental test' in his paper *Mental tests and measurements*
- Bodily and mental energy are inseparable
- A physiological measure is also an index of mental power
- His interest included the following—

And the interest of James Cattle included strength of hand squeeze using, dynamometer, rate of hand movement, two point threshold for touch. I am sure many under graduation students must have than practices on a two point threshold pressure. Degree of pressure, that is needed to cause pain, weight difference, reaction time for sound, time for naming color, bisection of a 50 centimeter line, judgment of 10 second of time. And number of letter a repeated on one hearing.

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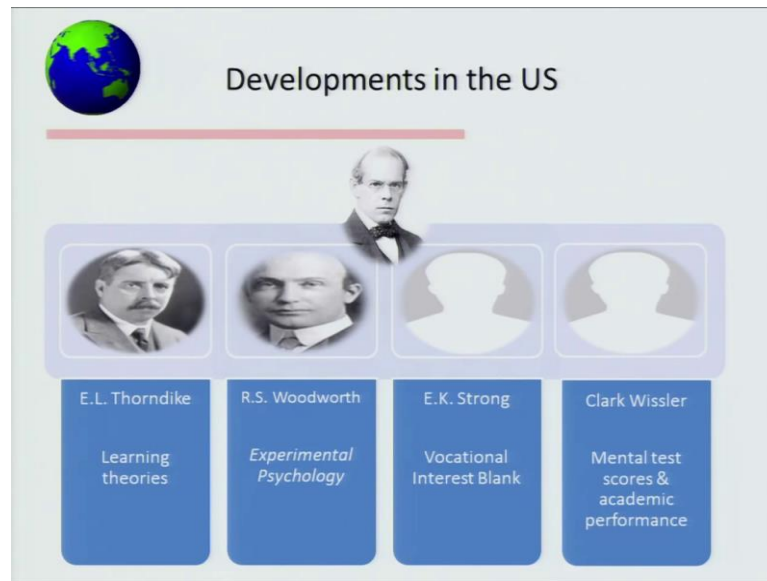
The slide features a blue globe icon on the left and a portrait of James Cattell on the right. The title 'Developments in the US' is centered at the top. Below the title is a list of ten experimental tasks, each preceded by a checkmark.

- ✓ Strength of hand squeeze using dynamometer
- ✓ Rate of hand movement
- ✓ Two-point threshold for touch
- ✓ Degree of pressure needed to cause pain
- ✓ Weight differentiation
- ✓ Reaction time for sound
- ✓ Time for naming colours
- ✓ Bisection of a 50-centimeter line
- ✓ Judgment of 10 seconds of time
- ✓ Number of letters repeated on one hearing

So, these were his interest. Interestingly, James Cattle had off course good number of students, 4 of his students now mate significance contribution to the development of psychology is a discipline. Thorndike, who is famous for learning theories, Wood Worth who wrote the exemplary books on experimental psychology, E. K. Strong, who is given of developing they vocational interest blank. And Wissler, who actually know made correlation study between the mental test scores and the academic performance.

So, actually whether psychology test is purpose that it is meant for, so something that you tested.


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Now, a Wissler in 1901, he did find the absence of correlation between the mental test scores with the academic achievement. Now, experimentalists by that time, gradually started discarding the concept of reaction time and sensory discrimination as a measures of intelligence. And of course, Wissler also no gradually turned is interest anthropology. But, 70 years later, you a find that reaction time, once again, revived as a measure construct.

Today, 2013 with all these modern equipments that are being used in psychology laboratory. You still have reaction time as an important variable in your study. But, once again you can see that this measurement of reaction time, can once again we test back.

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Developments in the US

- Wissler (1901): Absence of correlation between mental test scores with academic achievement
- Experimentalists largely discarded Reaction Time & Sensory Discrimination as measures of intelligence
- Wissler turned towards anthropology

- 70 years later Reaction Time revived once again

We once again come back to Europe, in the middle ages in Europe, a people with intellectual disabilities were occasionally diagnosed as witches. And they were put to death by burning. Bromberg he has known refer to a book, flagellum salutes. Where, he say that a prominent physician advocated beating as treatment for certain types of psychology phenomena.

That is, like melancholia frenzy paralysis epilepsy and facial expression of feeble-minded. So, you can understand to what great extent feeble-mindedness was this regarded by the contemporary society near up.

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Developments in Europe

- In middle ages in Europe people with intellectual disabilities were occasionally “diagnosed” as witches and put to death by burning’
- Bromberg (1959): The book *Flagellum Salutis* (1698) written by a prominent physician advocated beating as treatment for—
 - Melancholia
 - Frenzy
 - Paralysis
 - Epilepsy
 - Facial expression of feeble-minded


But then two French physicians Esquirol and Seguin, they revolutionized thinking of people in the Europe about people who suffer from mental retardation. Now, Esquirol actually was the first propose a three tier classification system for those, who are suffering from mental retardation.

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Developments in France

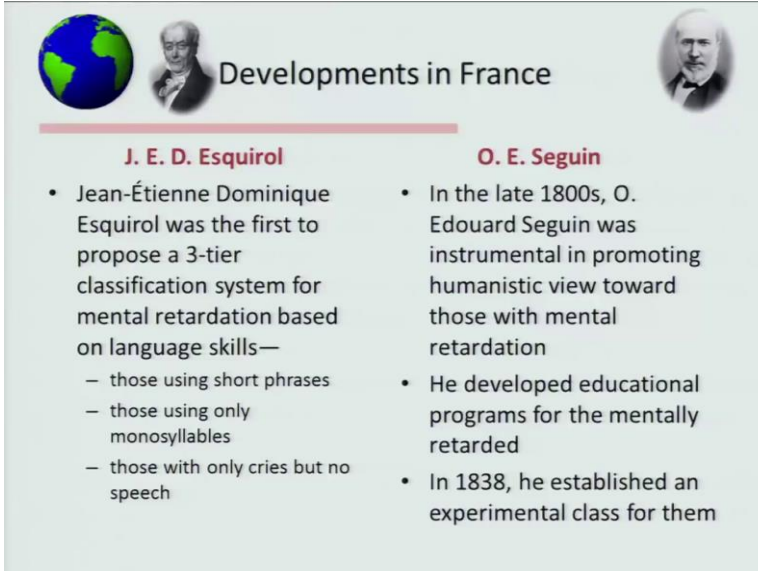
- Two French physicians J. E. D. Esquirol and O. E. Seguin revolutionized thinking about people with mental retardation



And this classification of was based on language skills. First those for use short phrases, two those who use only monosyllables. And of course, those who can only cries, what they cannot speech. In the late, 1800 a Seguin was the one, who was instrumental in a promoting humanistic view towards the individual suffer from mental retardation. And he was the one also developed educational program for the mentally retarded.

In 1838, he established an experimental class for them. So, you find at there was a big change know in terms of catering to the need of people, which mental retardation.

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Developments in France

J. E. D. Esquirol

- Jean-Étienne Dominique Esquirol was the first to propose a 3-tier classification system for mental retardation based on language skills—
 - those using short phrases
 - those using only monosyllables
 - those with only cries but no speech

O. E. Seguin

- In the late 1800s, O. Edouard Seguin was instrumental in promoting humanistic view toward those with mental retardation
- He developed educational programs for the mentally retarded
- In 1838, he established an experimental class for them

Now, Blin and Damaye in France, they can forward with the battery of assessment for the mentally retarded. This at 20 areas no such as spoken language, knowledge of parts of the body, obedience to simple commands, naming common objects or ability to read write and do simple arithmetic.

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Developments in France

- The social background of that time desperately needed a psychological tool for identifying such children
- In 1904, the Minister of Public Instruction in Paris appointed a commission to formulate educational measures
- Alfred Binet and Theodore Simon was asked to help Paris school system identify children unlikely to benefit from ordinary instructions
- Binet came forward with the first test of intelligence in 1905

What you find is, that there was know a big debate taking place in contemporary Europe. And then there was also of felt need by the society, that that set of the people who suffer from certain type of feeble-mindedness or what was later on term as mental retardation how. So, deserves the attention of the psychologies. So, the social background of this time desperately needed a psychological tool for identification of such children.

In 1904 an interesting development to place the minister of public instruction in Paris appointed a commission to formulate educational measures. And Alfred Binet, student Simon, they were asked to help the Paris school system identify children, who are unlikely to benefit from the ordinary instruction. That is being imported, there are and this is how, Binet came forward with is first test of intelligence in 1905. This is considered to be a measure mile tones in modern psychology.