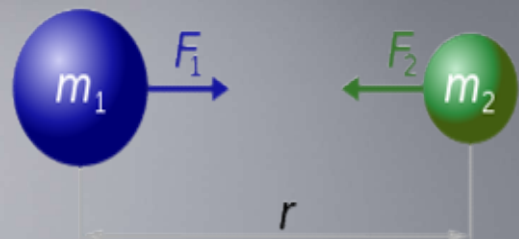


# WEEK 1

## Introduction

Unit 2: Wilhelm Wundt  
Establishment of psychology as science

## Isaac Newton: 1642 – 1726

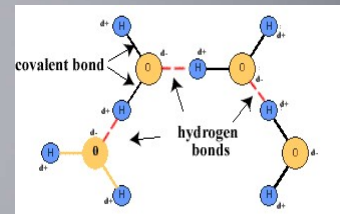


$$F_1 = F_2 = G \frac{m_1 \times m_2}{r^2}$$

## Antoine Lavoisier (1743 – 1794)

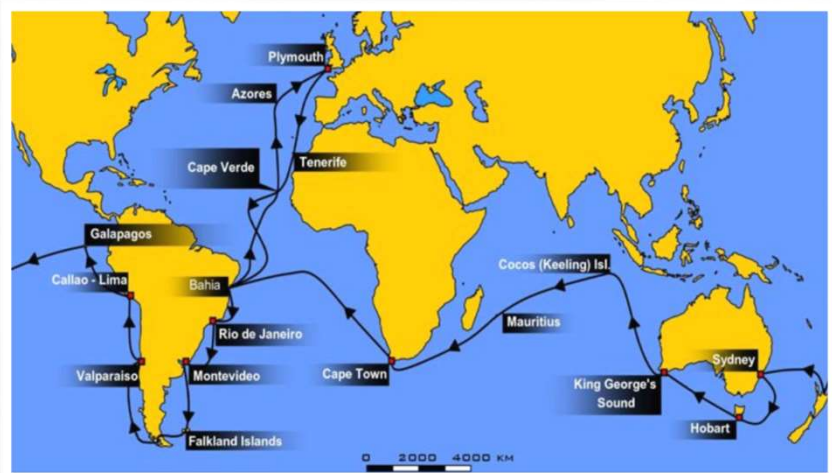
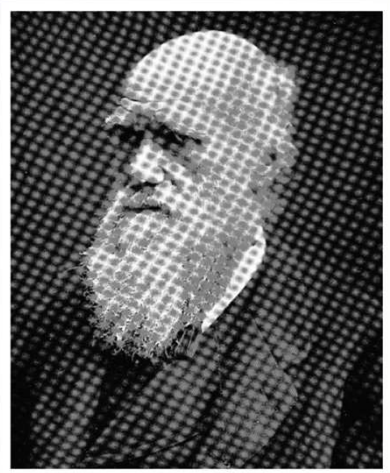


- ❖ Father of modern chemistry
- ❖ Discovering oxygen and hydrogen and the process of combustion

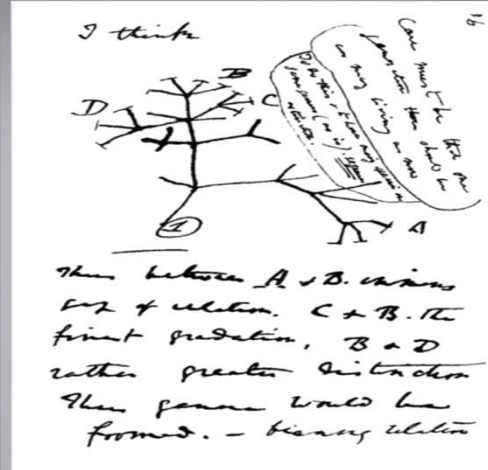


- ❖ Developed the metric system and extensive list of chemical elements

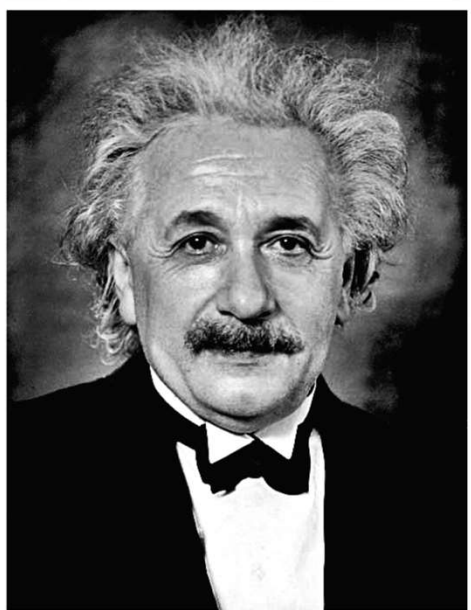
## Charles Darwin 1809 – 1882



## Charles Darwin 1809 –1882

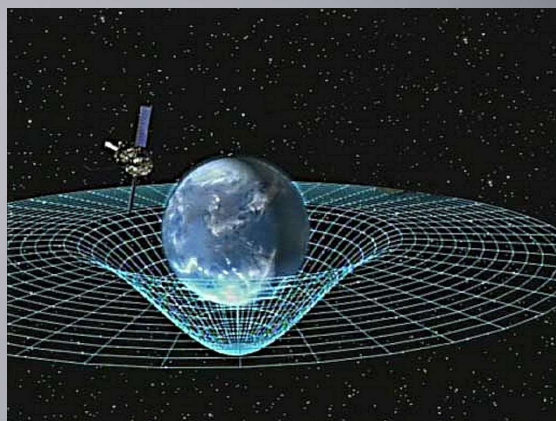


## Albert Einstein



Theory of relativity

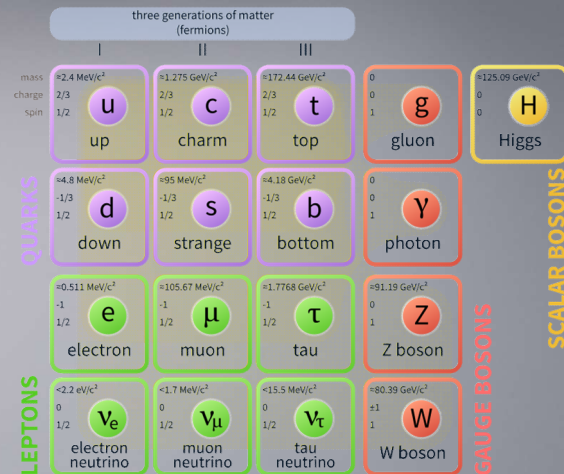
$$E=mc^2$$



## Peter Higgs



### Standard Model of Elementary Particles



Higgs Boson particle

## Wilhelm Wundt 1832 – 1920



- ❖ Wilhelm Wundt, considered the father of modern psychology, established psychology as an independent branch of science in 1879.

## Wilhelm Wundt 1832 – 1920

- ❖ Wundt received the doctorate in medicine at University of Heidelberg (1856).
- ❖ He was hired by at University of Heidelberg and became an assistant to the physicist/physiologist Hermann von Helmholtz in 1858 and became responsible for teaching the course in physiology.

## Wilhelm Wundt 1832 – 1920

- ❖ In 1864 he was promoted to associate professor in Anthropology and Medical Psychology and published a volume on human physiology.

## Founding of modern psychology



- ❖ He is considered the father of modern psychology, established psychology as an independent branch of science in 1879.

## Founding of modern psychology

- ❖ He became interested in psychology and published *Lectures on Human and Animal Psychology* (1863–1864).
- ❖ He then published his influential book, *Principles of physiological Psychology*, (1874) which was the first book on experimental psychology.

## Founding of modern psychology

- ❖ He became a professor of philosophy at the University of Leipzig (1875) and was influenced by Ernst Heinrich Weber (1795–1878) and Gustav Theodor Fechner (1801–1887) in psychophysics and also by Gottfried Wilhelm Leibniz.

## Founding of modern psychology

- ❖ Wundt taught courses and seminar on:
  - Anthropology
  - Brain and Nerves
  - Cosmology
  - Epistemology
  - Historical and General Philosophy
  - Logic
  - Physiology
  - Psychology of language

## Wundt's laboratory



Wundt ordered the making of research instruments suitable for psychological experiments and such as tachistoscopes, chronoscopes, pendulums, reaction time measurement device, and sensory mapping devices.

## Wundt's laboratory

- ❖ Wundt supervised 184 Ph.D. students from 70 countries between 1875 and 1919, including:
- ❖ Oswald Külpe, University of Wurzburg
- ❖ Ernst Meumann, Leipzig, developmental psychology.
- ❖ Hugo Münsterberg, Harvard, pioneer in applied psychology
- ❖ James McKeen Cattell, Clark, first US psychology professor



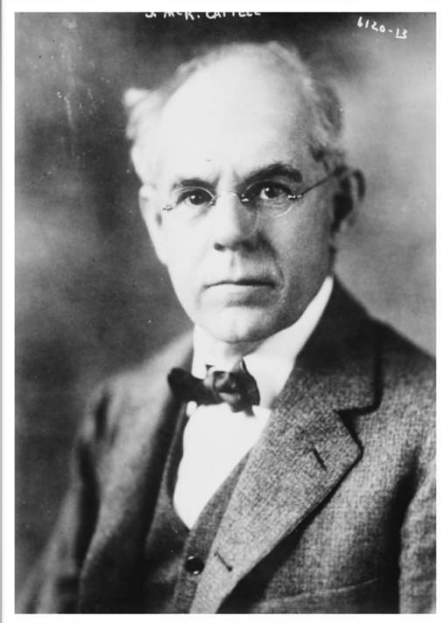
## Wundt's laboratory

- ❖ Granville Stanley Hall, the father of the child psychology
- ❖ Charles Hubbard Judd, Chicago, cultural psychology
- ❖ Walter Dill Scott, Harvard, Industrial psychology
- ❖ Edward Bradford Titchener, Cornell, introduced structuralism
- ❖ Lightner Witmer, first psychological clinic, clinical psychology

## Wundt's laboratory

- ❖ Frank Angell, Stanford, established experimental psychology
- ❖ Edward Wheeler Scripture, Yale, speech psychology, founder of the American Psychological Association.
- ❖ Charles Spearman, London, Spearman correlation, factor analysis, general intelligence factor g.

## James McKeen Cattell (1860 –1944)

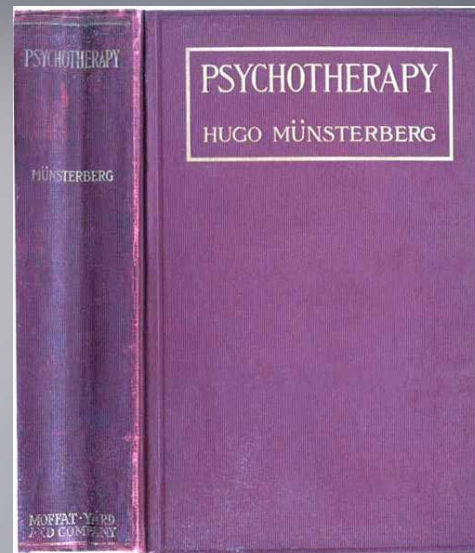


- ❖ He was the first professor of psychology at USA, teaching at University of Pennsylvania.
- ❖ He was the first Wundt's student from USA to publish a dissertation in psychology.

## James McKeen Cattell (1860 –1944)

- ❖ He was the editor and publisher of scientific journals, such *Psychological Review and Science*.
- ❖ Although psychology was considered to be a pseudoscience, he established psychology as a legitimate science.
- ❖ He conducted research on individual differences and introduced experimental methodology.

## Hugo Münsterberg (1863 –1916)



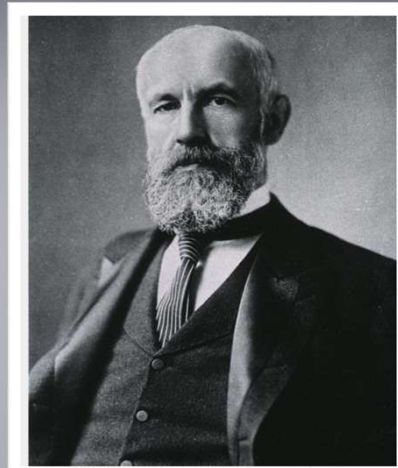
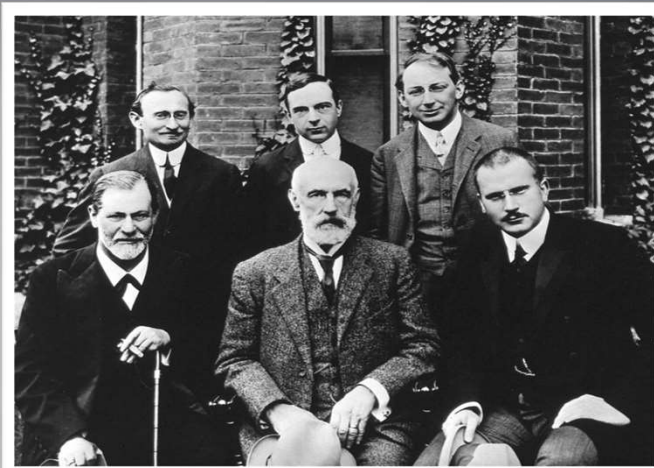
## Hugo Münsterberg (1863 –1916)

- ❖ He was a pioneer in applied psychology, establishing industrial/organizational psychology, publishing *Psychology and Industrial Efficiency* (1913), forensic psychology to show why eye witness testimony can be unreliable, and medical and clinical psychology to treat patients.

## Hugo Münsterberg (1863 –1916)

- ❖ He was invited by William James in 1882 to teach at Harvard University and learned English to lecture.

## Granville Stanley Hall (1846 – 1924)



Front row: Sigmund Freud, Granville Stanley Hall, C. G. Jung;  
Back row: Abraham A. Brill, Ernest Jones, Sándor Ferenczi

## Granville Stanley Hall (1846 – 1924)

- ❖ He founded the *American Journal of Psychology* (1887).
- ❖ He helped to establish the American Psychological Association (1892) and was the first president.

## Granville Stanley Hall (1846 – 1924)

- ❖ He also served as the first president of Clark University.
- ❖ He helped to establish educational psychology and studied the effects of adolescents' "storm and stress" on development and education.

## Charles Hubbard Judd (1873 – 1946)



- ❖ He was an educational psychologist, arguing for the use of scientific method.
- ❖ He was born in India to American missionary parents and continued Wundt's cultural sciences tradition.

## Charles Hubbard Judd (1873 – 1946)

- ❖ He became the director of the Department of Education, University of Chicago in 1909 until 1938.
- ❖ He published *Genetic Psychology for Teachers, Psychology of Social Institutions and Psychology of High-School Subjects* (1915).

## Charles Edward Spearman (1863 –1945)



- ❖ He was an English psychologist and taught at University of London.
- ❖ He developed Spearman's rank correlation coefficient, and helped to develop and coined the term factor analysis.

## Charles Edward Spearman (1863 –1945)

- ❖ His work laid the foundation for confirmatory factor analysis and structural equation modelling.
- ❖ He developed a theory of human intelligence and developed cognitive test to measure General Intelligence Factor, or the  $g$  factor.

## Edward Bradford Titchener (1867–1927)



- ❖ He developed his own brand of psychology known as structuralism.
- ❖ He created the largest doctoral program in psychology at Cornell University.

## Edward Bradford Titchener (1867–1927)

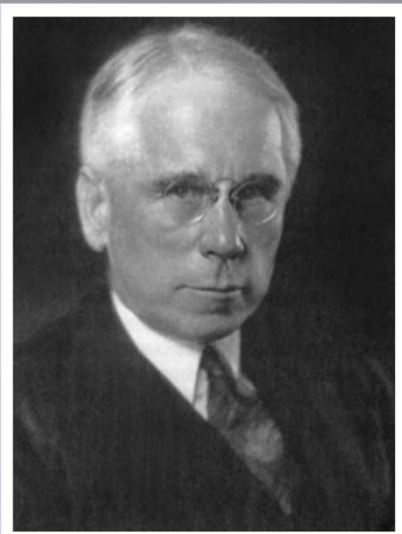
- ❖ He used Wundt's Association and Apperception to understand the structure of mind, using introspection and consciousness.
- ❖ Similar to how oxygen and hydrogen combine to form water, it is possible to understand the human mind by examining its components, such as sensations and how their structure is formed, such as thoughts.



## Edward Bradford Titchener (1867–1927)

- ❖ He studied and introduced the word empathy from the German *word Einfühlungsvermögen*.

## Lightner Witmer (1867 –1956)



- ❖ He has founded the area and introduced the term clinical psychology.
- ❖ While at University of Pennsylvania, he established the first psychological clinic, the first journal in clinical psychology and the first clinical hospital school (1907).

## Lightner Witmer (1867 –1956)

- ❖ He also helped to establish school psychology and establish special education.

## Lightner Witmer (1867 –1956)

He stated: "Although clinical psychology is clearly related to medicine, it is quite as closely related to sociology and pedagogy... An abundance of material for scientific study fails to be utilized, because the interest of psychologists is elsewhere engaged, and those in constant touch with the actual phenomena do not possess the training necessary to make the experience and observation of scientific value..."

## Lightner Witmer (1867 –1956)

“I have borrowed the word ‘clinical’ from medicine, because it is the term I can find to indicate the character of the method which I deem necessary for this work.”

## Wundt’s visiting students

- ❖ Vladimir Mikhailovich Bekhterev, Russia  
Neurology. Father of objective psychology.
- ❖ Franz Boas, Columbia University, USA. Father of American anthropology.
- ❖ Émile Durkheim, University of Paris, France.  
Pioneer in sociology, social sciences and coined the terms collective consciousness, and *anomie*

## Wundt's visiting students

- ❖ Edmund Husserl, University of Gottingen, Germany Phenomenology. Studied consciousness, intentionality.
- ❖ Bronisław Malinowski, Yale University. Introduced participant observation and conducted field work at Trobriand Island, Papua New Guinea.

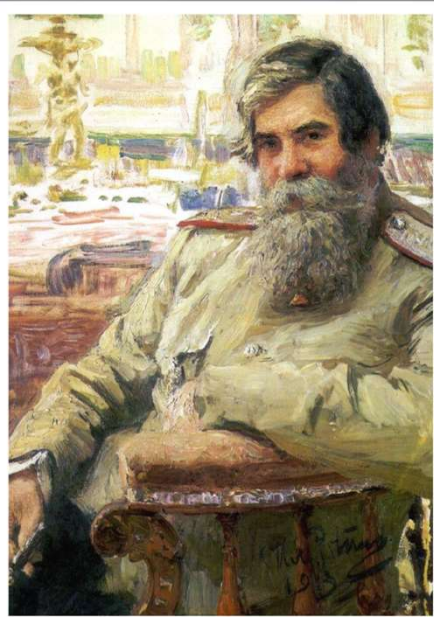
## Wundt's visiting students

- ❖ George Herbert Mead, University of Chicago, USA. Founder of social psychology, symbolic interactionism, and self.
- ❖ Edward Sapir, Yale University, USA. Developed the field of linguistics, anthropological fieldwork studying Native American languages.
- ❖ Ferdinand Tönnies, University of Kiel, sociologist. Distinguished *Gemeinschaft* from *Gesellschaft*.

## Wundt's visiting students

- ❖ Benjamin Lee Whorf, Yale University. Developed Sapir–Wolf Hypothesis, and linguistic relativity.

## Vladimir Mikhailovich Bekhterev (1857 – 1927)

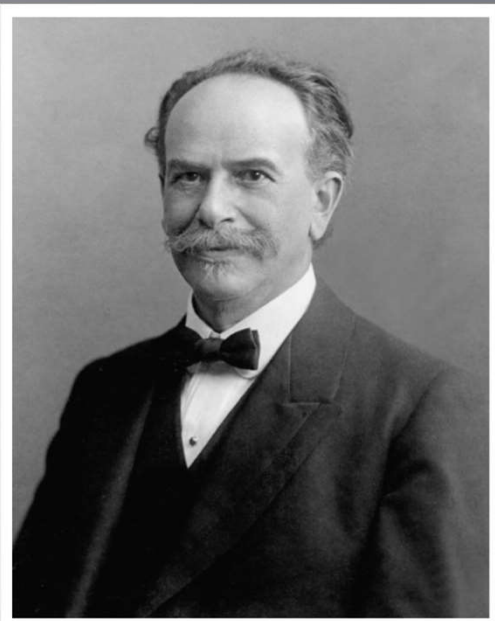


- ❖ He was a Russian psychologist and the father of objective psychology. It states that principle that behavior can be explained by studying reflexes.

## Vladimir Mikhailovich Bekhterev (1857 – 1927)

- ❖ He established experimental psychology in Russia (1886) to study experimentally the nervous system and the structures of the brain.
- ❖ He has contributed to the study of the brain and articulated the role of the hippocampus in memory.
- ❖ In his study of reflexes he studied the arthritis and inflammation of the joint or Bekhterev's disease.

## Franz Boas (1858 – 1942)



- ❖ He is the Father of American Anthropology and taught at Columbia University.
- ❖ His students include A. L. Kroeber, Ruth Benedict, Edward Sapir, Margaret Mead, Melville Herskovits.

## Franz Boas (1858 – 1942)

- ❖ He outlined the position of cultural relativism where cultures cannot be ranked or classified using an objective standard, but they need to be understood from their own frame of reference.
- ❖ He examined how people understood and managed their world in different ways, and it is important to understand the language and culture.

## Franz Boas (1858 – 1942)

- ❖ He divided anthropology into four fields: physical anthropology, linguistics, archaeology, and cultural anthropology.

## Émile Durkheim (1858 – 1917)



- ❖ He is a French sociologist, becoming the first professor in sociology at University of Paris. He wanted to establish sociology as an academic discipline.

## Émile Durkheim (1858 – 1917)

- ❖ He was interested in social institutions by investigating morality, religion, law, education, deviance, social stratification, sociology of knowledge and coined the term collective consciousness and investigated anomie.



## Émile Durkheim (1858 – 1917)

- ❖ He argued for social integration and dangers of anomie: “For if society lacks the unity that derives from the fact that the relationships between its parts are exactly regulated, that unity resulting from the harmonious articulation of its various functions assured by effective discipline and if, in addition, society lacks the unity based upon the commitment of men's wills to a common objective...

## Émile Durkheim (1858 – 1917)

...then it is no more than a pile of sand that the least jolt or the slightest puff will suffice to scatter.”

## Edmund Husserl (1859 – 1938)



- ❖ He was a German philosopher at University of Freiberg. He founded the school of phenomenology, focusing on the analysis of intentionality.

## Edmund Husserl (1859 – 1938)

- ❖ The most important characteristic of consciousness is intentional, differentiated from physical phenomena that lacks intentionality.
- ❖ He clearly differentiated between meaning from object.

## Edmund Husserl (1859 – 1938)

- ❖ Through "essential intuition," we are able to grasp the possibility, impossibility, necessity and contingency among concepts and formal categories and they are necessary to understand mathematics.

## Bronisław Malinowski (1884 – 1942)

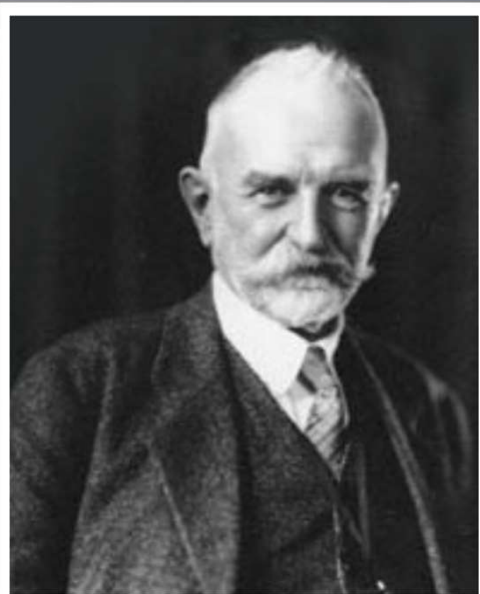


- ❖ He was a Polish anthropologist, teaching at Yale University.
- ❖ He conducted research in Trobriand Islands, Papua New Guinea and developed ethnographic field methods and participatory observation.

## Bronisław Malinowski (1884 – 1942)

- ❖ He investigated psychological functionalism, which is how social and cultural institutions serve the basic human needs.
- ❖ He notes that the goal of anthropologist is "to grasp the native's point of view, his relation to life, to realize his vision of his world."
- ❖ He questioned o universality of Freud's theory of the Oedipus complex since a different process was found in Trobriand Islands.

## George Herbert Mead (1863 –1931)



- ❖ He is an American psychologist, founder of social psychology, symbolic interactionism, and interested in the study of self, publishing *Mind, Self and Society*.

## George Herbert Mead (1863 –1931)

- ❖ He pointed out that "the individual mind can exist only in relation to other minds with shared meanings."
- ❖ He argued that although people believe in reality "out there," but it "is actively created as we act in and toward the world."

## George Herbert Mead (1863 –1931)

- ❖ People remember and base their knowledge of the world on what works and useful to them and are likely to change what no longer works for them.
- ❖ People define the social and physical "objects" they encounter in the world according to their usefulness for them.
- ❖ If we want to understand people, we must base that understanding on what people actually do.

## Edward Sapir (1884 – 1939)



- ❖ He is an American anthropologist-linguist and a student of Franz Boas.
- ❖ He developed the field of linguistics, anthropological fieldwork studying Native American languages.

## Edward Sapir (1884 – 1939)

- ❖ He was interested in understanding individual personalities that make up a society and create cultural patterns among these individuals.
- ❖ He was interested in how language and culture influence each other, linguistic differences, and differences in cultural world views.

## Edward Sapir (1884 – 1939)

- ❖ With his student Benjamin Whorf, he articulated the principle of linguistic relativity in their "Sapir–Whorf" hypothesis," that examines how language influences or determines thought and cognitive categories.