

# Titchener's Structuralism and James' Functionalism

By Amy Quarton

# Discussion Questions

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- Who is Edward Titchener? How did Titchener contribute to psychology?
- What is structuralism? What is introspection?
- What is functionalism? How did functionalism develop?
- Who were the other pioneers of functionalism? How did they contribute to functionalism?
- What are the differences between structuralism and functionalism?



**Who is Edward Titchener?  
How did Titchener  
contribute to psychology?**



# Who is Edward Titchener?

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- **Edward B. Titchener** (1867-1927) was an English psychologist and the founder of structuralism.
- Raised by his grandfather, he was taught the “gentleman’s code” and followed it throughout his life.



# Who is Edward Titchener?

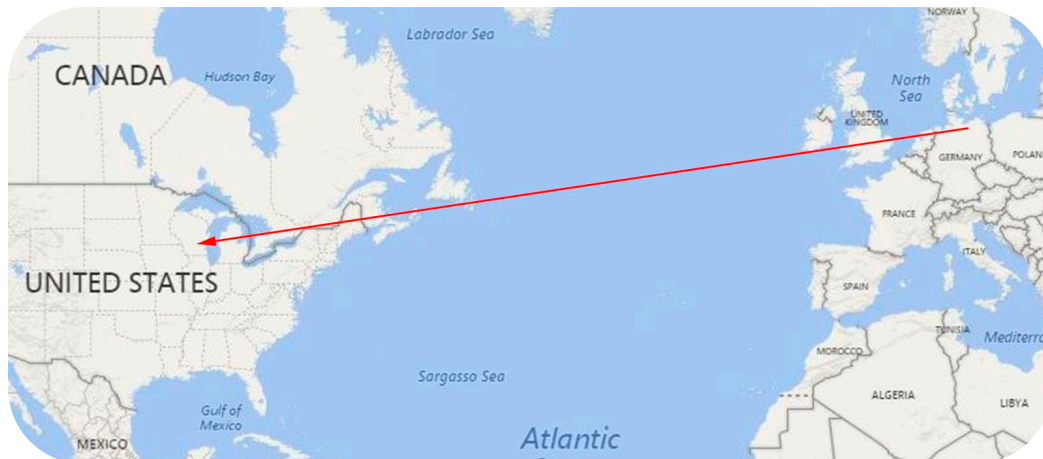
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- While at Oxford University, he became enamored with the *preciseness* of the lab.
  - Throughout his life, he judged his colleagues by these high standards and had little respect for their work (which he deemed sloppy).
- In 1892, he earned a PhD from the University of Leipzig, where Wundt was promoting his introspective method.

# Who is Edward Titchener?

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- Also in 1892, he moved to the USA to teach at Cornell University and brought Wundt's German psychology with him.
- By 1900, he was a major figure in both Europe and the USA.



# How did Titchener contribute to psychology?

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## 1. He founded **structuralism** in the **1890s**.

- He attempted to break consciousness into its elements and analyze the *structure* of these elements.
- Although structuralism eventually failed, he and his supporters helped establish psychology's reputation as a *scientific* field of study.

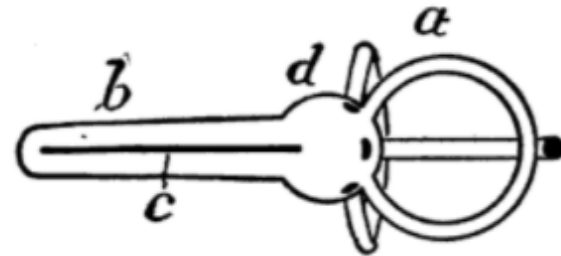


FIG. 4. — Diagram (schematic) of the internal ear, in longitudinal section. *a*, semicircular canals; *b*, cochlea; *c*, basilar membrane; *d*, vestibule.

Titchener's illustration of the structure of the ear

# How did Titchener contribute to psychology?

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## 2. He promoted psychology!

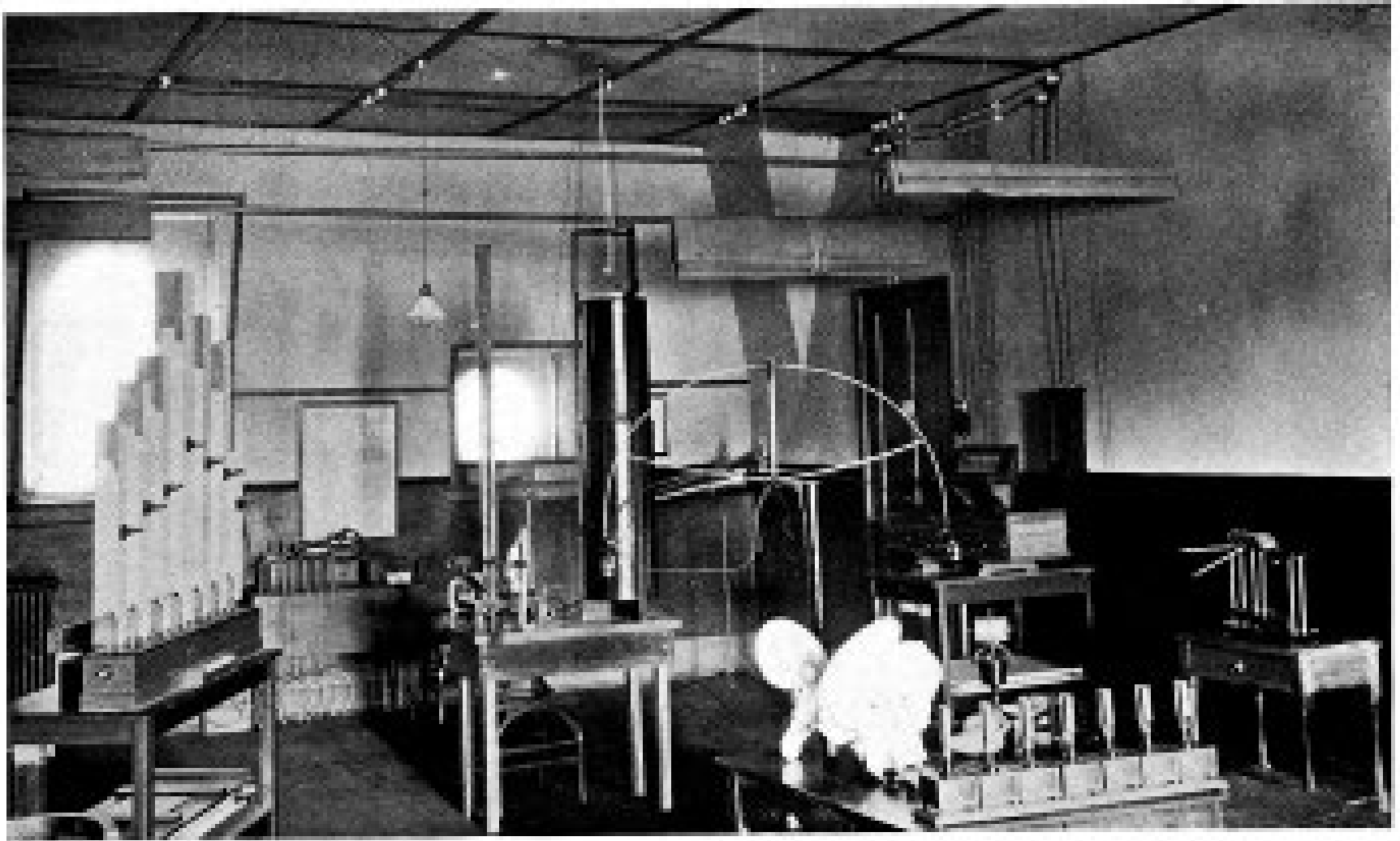
- The Postulates of a Structural Psychology (1898)
- An Outline of Psychology (1907)
- Lectures on the Experimental Psychology of the Thought-Processes (1909)
- A Text-Book of Psychology (1910)



# How did Titchener contribute to psychology?

## 3. He promoted experimental research methods.

- At Cornell University, he expanded the psychology lab.
- He recruited students, published 60+ articles, co-edited the *American Journal of Psychology*, translated Wundt's and Külpe's texts, and published several other books.
- He preferred **experimental self-observation**, where highly trained observers described their mental experiences of carefully controlled sensory events.



Titchener's lab at Cornell University

# How did Titchener contribute to psychology?

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## 4. He promoted some women's careers.

- Nearly 38% of his doctoral students were women (21 of 56).
- His 1<sup>st</sup> doctoral student, Margaret Washburn, was the 1<sup>st</sup> woman to earn a PhD in psychology in 1894.
- He urged Cornell University to hire a woman psychologist.

# How did Titchener contribute to psychology?

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5. In 1904, he founded the Experimentalists, group dedicated to experimental research.
- In accordance with his gentlemen's code, women were prohibited from joining and could not attend meetings.
  - Today, this group is known as the Society of Experimental Psychologists (and women are encouraged to join).

**SEP**

**SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS**

**FOUNDED 1904**

# How did Titchener contribute to psychology?

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6. He published two volumes of *Experimental Psychology: A Manual of Laboratory Practice*, a manual designed to train students in basic laboratory procedures.

- In 1901, he published Volume 1.
- In 1905, he published Volume 2.

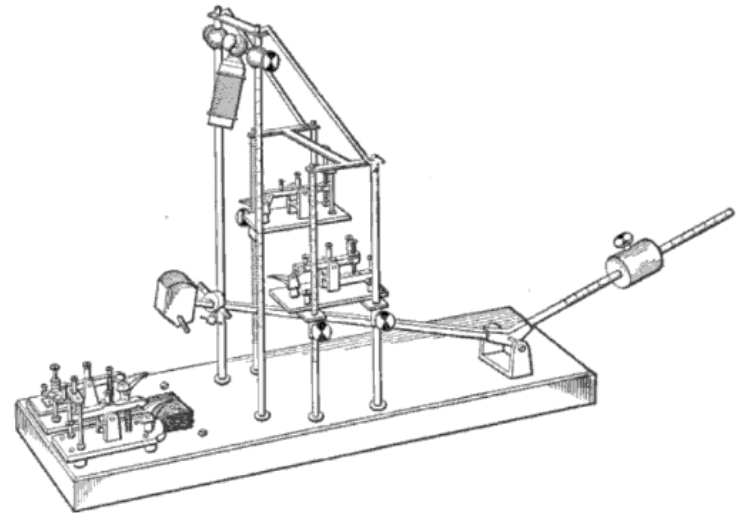


FIG. 45.—Wundt's large control hammer.

# How did Titchener contribute to psychology?

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- In the USA, students learned about psychology's methods through “drill courses.”
  - Working in pairs, they alternated between the roles of experimenter and observer.
  - “Qualitative” studies involved an introspective account of sensory, perceptual, and affective events.
  - “Quantitative” studies involved numerical data (e.g., reaction times, stimulus intensity).

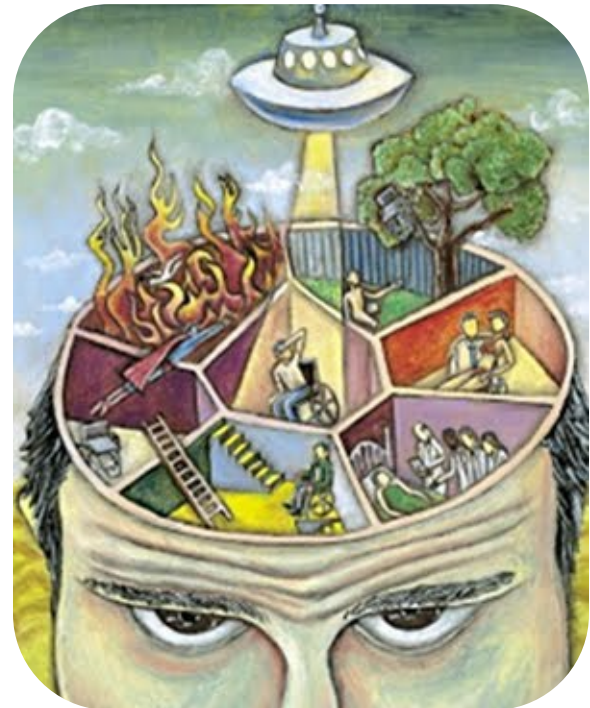


**What is structuralism?**  
**What is introspection?**



# What is structuralism?

- Titchener founded **structuralism** in the 1890s.
  - It is the study of the basic structures and elements of consciousness and how they combine to form more complex structures.
  - Structuralists focused on sensation and perception.
  - He likened it to anatomy.



# What is structuralism?

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- Titchener identified 3 basic elements of the mind

*Sensations* are the basic elements of perception.

- E.g., quality, intensity, duration, and clearness

*Images* are the basic elements of ideas.

- E.g., quality, intensity, duration, and clearness

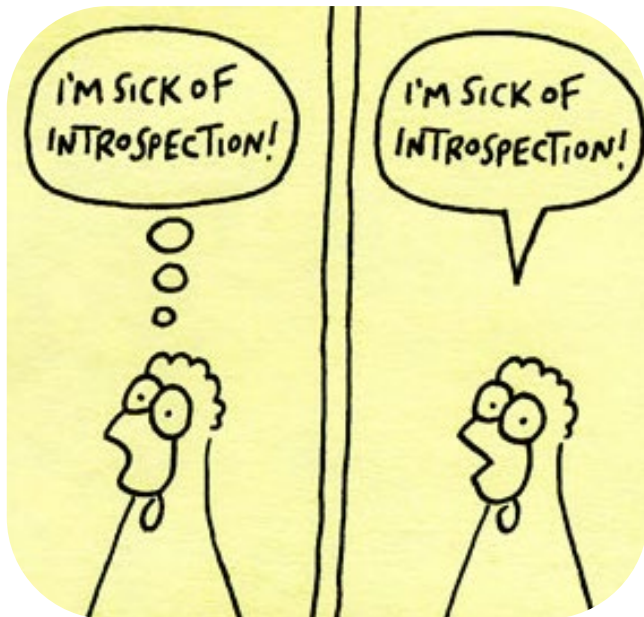
*Affects/feelings* are the basic elements of emotions.

- E.g., quality (pleasantness/unpleasantness), intensity, and duration (not clearness)

# What is introspection?

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- Titchener used **introspection** to study consciousness qualitatively and quantitatively.



- His version was more precise than Külpe's and Wundt's version.
- Highly trained observers experienced a carefully controlled sensory event and simultaneously described their mental experience of it.

# What is introspection?

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- Some people struggled to fully experience an event and reflect on it *simultaneously*.
  - In response, Titchener trained his observers to:
    - Describe the experience from memory.
    - Break the experience into stages (i.e., fractionation).
    - Develop an **introspective habit** by learning to take mental notes without interfering with consciousness.




**What is functionalism?  
How did functionalism  
develop?**



# What is functionalism?

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- **James** founded functionalism in the **1890s**.
  - **Functionalism** is the study of the mind's functions.
  - From the **1890s** to the **1920s**, it was the dominant way of thinking in psychology.
  - It was modeled after Darwin's theory and abandoned Wundt's introspective methods.

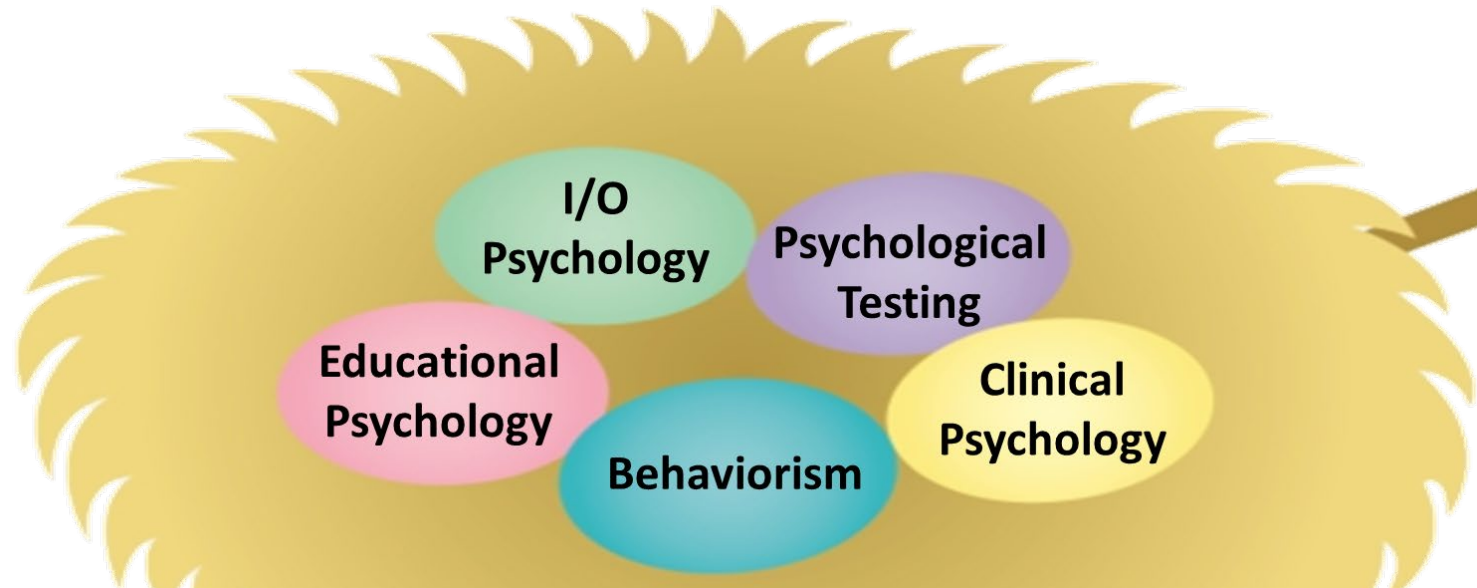


How do mental processes help us adapt to the environment?

# What is functionalism?

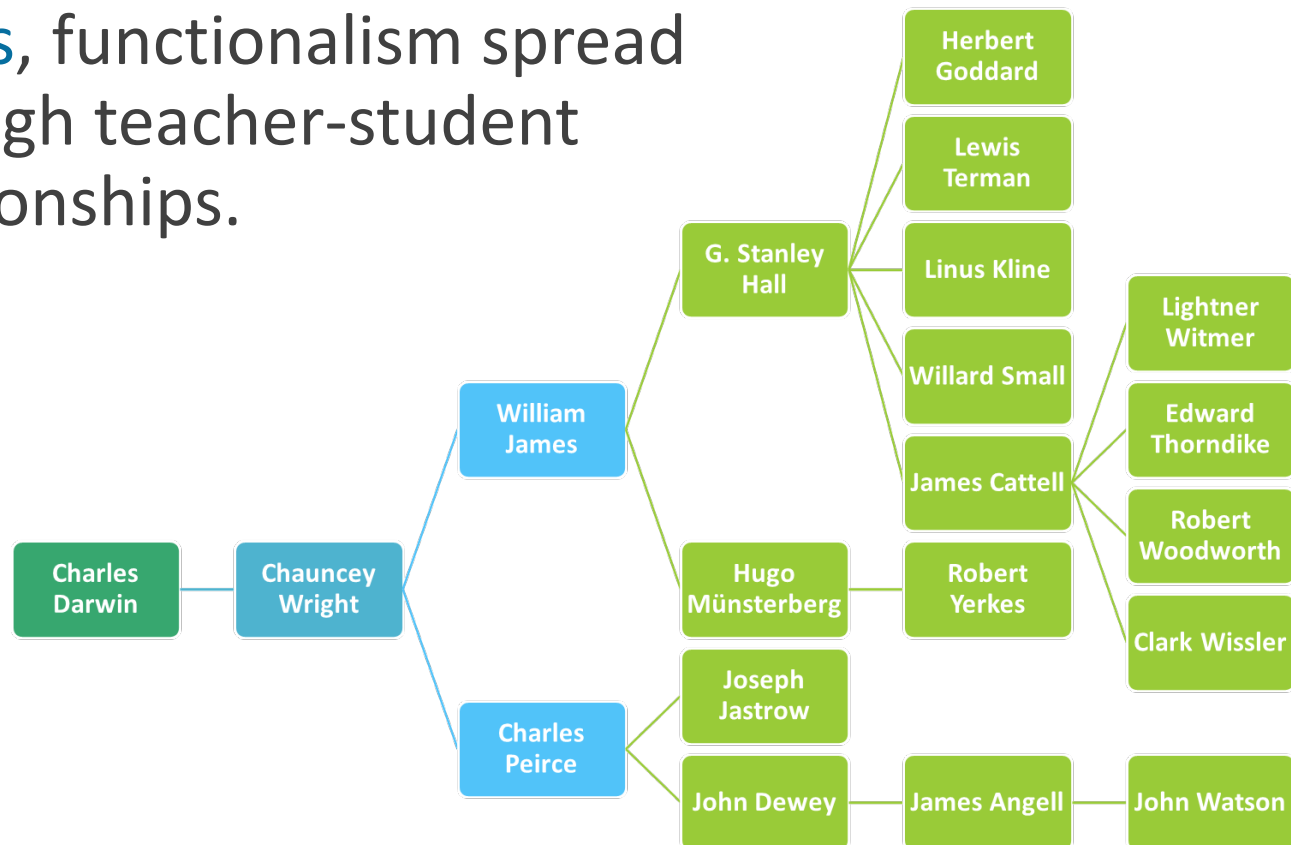
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- Functionalism was the “nest” in which many types of psychology were “hatched.”
  - American psychology was influenced heavily by James’ functionalism and Darwin’s evolutionary theory.



# What is functionalism?

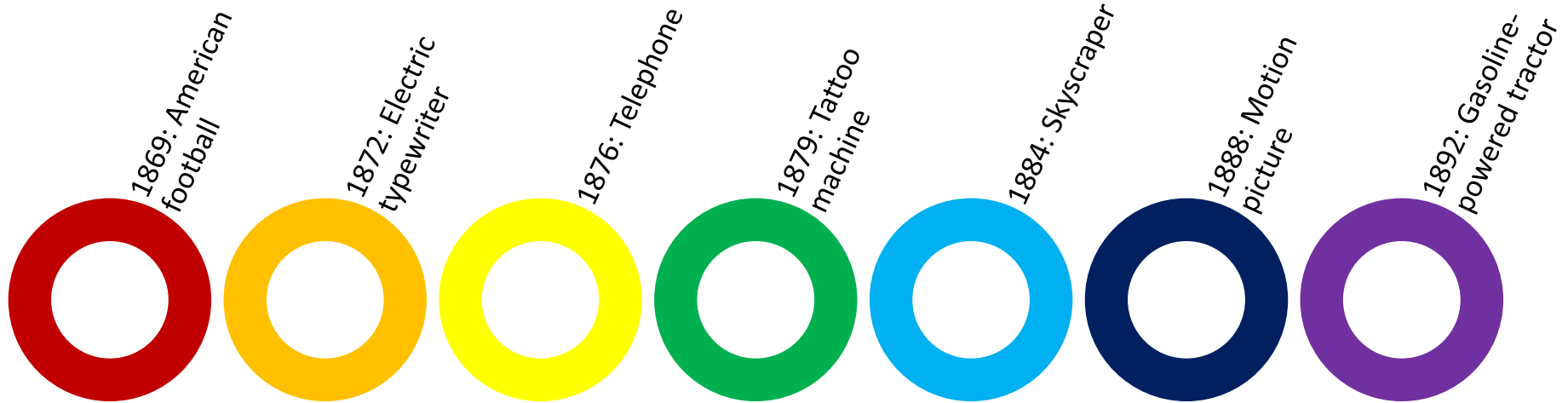
- In the late 1800s and early 1900s, functionalism spread through teacher-student relationships.



# How did functionalism develop?

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- From the **mid-** to **late-1800s**, the USA expanded its transportation infrastructure.
  - Americans began to value competition, winning, independence, and power.



# How did functionalism develop?

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- American values aligned with **Herbert Spencer's social Darwinism**.
  - He (not Darwin) coined the phrase “survival of the fittest,” those who win battles for limited resources.
  - He argued that the fittest will rise to the top of society.

# How did functionalism develop?

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- Evolutionary thinking sparked an interest in the human species problem.
  - Why are we diverse in affect, behavior, and cognition?
  - What is the function of our differences?
  - What environmental forces led to these differences?

Why do we  
laugh?

Why do we help  
each other?

Why do we feel  
jealous?

# How did functionalism develop?

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- **Chauncey Wright** (1830-1875) promoted evolutionary theory from **1859** (when he read Darwin's book) and **1875** (when he died).
  - At Darwin's request, he wrote an article about the evolution of consciousness, arguing that its function is to give us control over our behaviors.
  - In **1872**, he helped establish the Metaphysical Club in Cambridge, Massachusetts.

# How did functionalism develop?

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- In the 1870s, he mentored William James, who also helped establish the Metaphysical Club.
  - James promoted Wright's ideas after his death in 1875.
  - James said the mind has adapted to help us make better decisions (and increase the likelihood that we survive).
  - In the late 1890s, functionalism was born from his work.

**Who were the other  
pioneers of functionalism?  
How did they contribute to  
functionalism?**

# Who were the other pioneers of functionalism?

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## UNIVERSITY OF CHICAGO

- John Dewey
- James R. Angell



## COLUMBIA UNIVERSITY

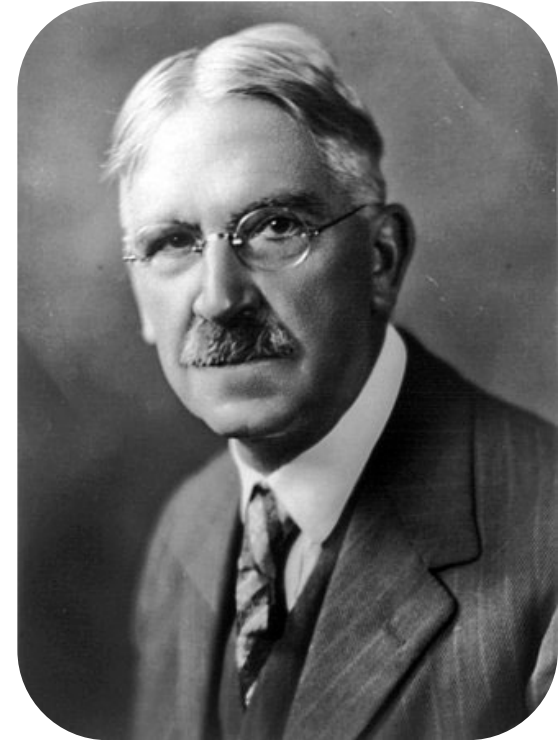
- James M. Cattell
- Edward L. Thorndike



# How did Dewey contribute to functionalism?

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- In 1884, John Dewey (1859-1952) earned his PhD from John Hopkins University under Hall and Pierce.
- From 1894-1904, he chaired the University of Chicago's philosophy department and recruited other functionalists.



# How did Dewey contribute to functionalism?

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- In 1896, he defined the reflex arc as a coordinated system that helps us adjust to their environment.
  - For instance, seeing and touching occur together and help us adapt through our experiences.
- In 1899, he served as the 8<sup>th</sup> APA president.
- He mentored James Angell (next).

# How did Angell contribute to functionalism?

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- **James R. Angell** (1869-1949) studied with Dewey at the University of Michigan and Hermann Ebbinghaus in Germany.
- From **1895** to **1911**, he promoted functionalism as Dewey's successor at the University of Chicago.

# How did Angell contribute to functionalism?

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- He conducted reaction time, imagery, and sound localization studies.
- In 1904, he published a popular textbook, *Psychology: An Introductory Study of the Structure and Functions of Human Consciousness*.
- In 1906, he served as the 15<sup>th</sup> APA president.
- He mentored John B. Watson, the father of behaviorism.

# Who were the other pioneers of functionalism?

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## UNIVERSITY OF CHICAGO

- John Dewey
- James R. Angell



THE UNIVERSITY OF  
CHICAGO

## COLUMBIA UNIVERSITY

- James M. Cattell
- Edward L. Thorndike

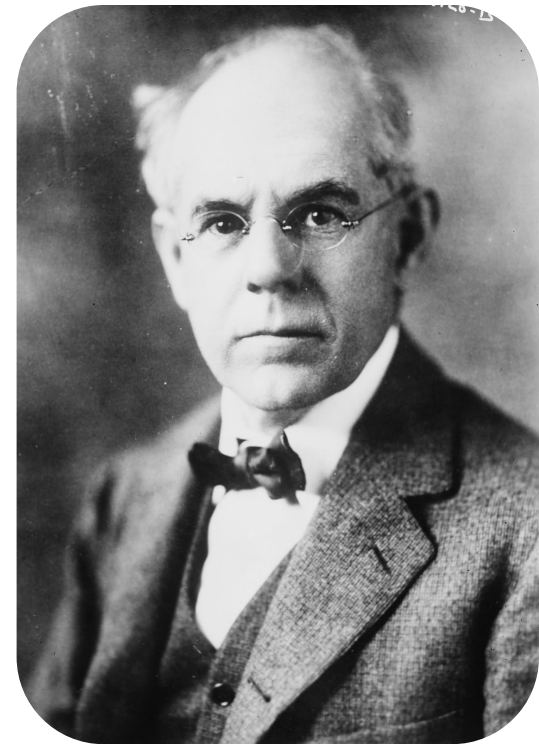


COLUMBIA  
UNIVERSITY

# How did Cattell contribute to functionalism?

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- In 1886, James M. Cattell (1860-1944) earned his PhD at the University of Leipzig under Wundt.
- In 1890, he administered a test battery to student volunteers at the University of Pennsylvania and coined the term mental tests.



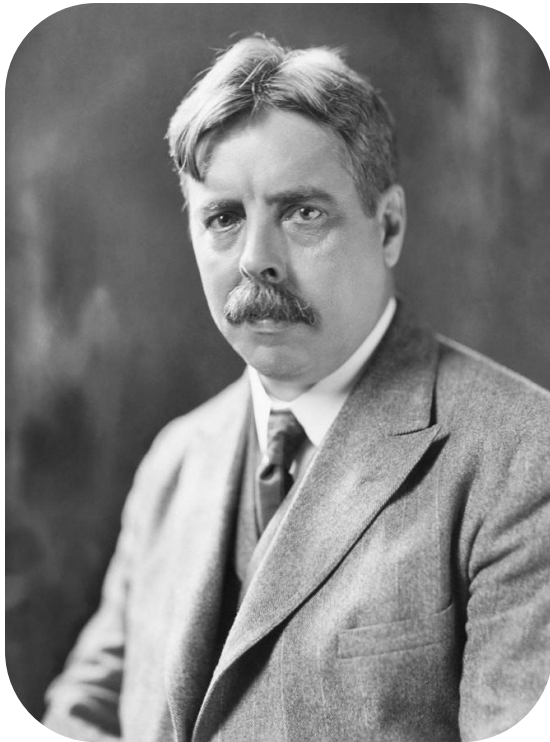
# How did Cattell contribute to functionalism?

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- In 1891, he moved to Columbia University.
  - In 1901, Clark Wissler failed to find correlations between the test results and students' academic performance.
- In 1895, he served as the 4<sup>th</sup> APA president.
- In 1921, he formed “The Psychological Corporation” to promote applied psychology.
- He mentored Edward Thorndike.

# How did Thorndike contribute to functionalism?

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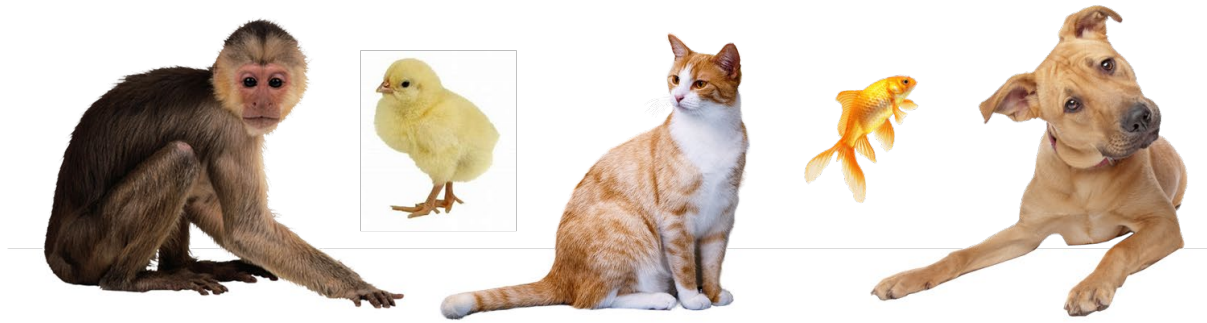


- In 1898, Edward Thorndike (1874-1949) earned a PhD from Columbia University under Cattell.
- He is known as a pioneer in the use of animals in experiments, comparative psychology, and educational psychology.

# How did Thorndike contribute to functionalism?

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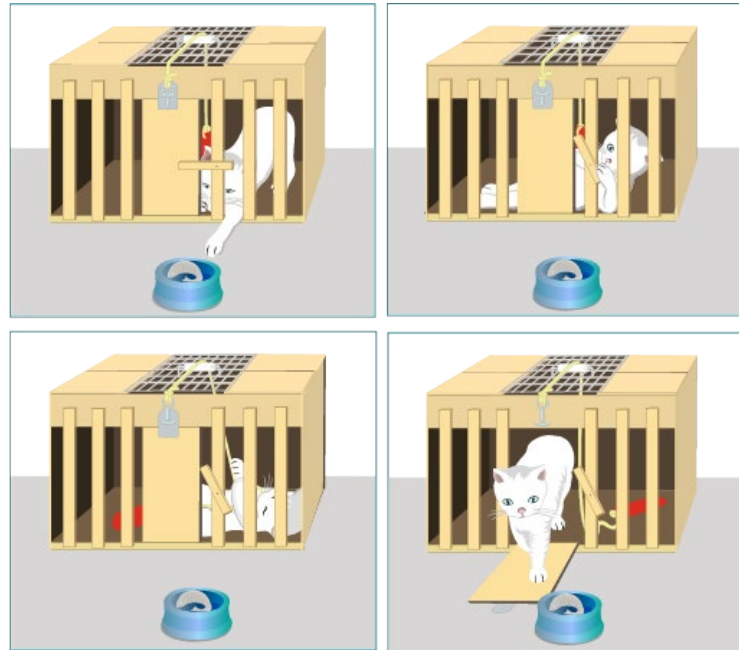
- In 1899, he started teaching at Columbia University, where he remained until retirement.
- He urged researchers to use these strategies:
  - Study more than a single case.
  - Repeat the experiments.
  - Control learning histories and the environment.



# How did Thorndike contribute to functionalism?

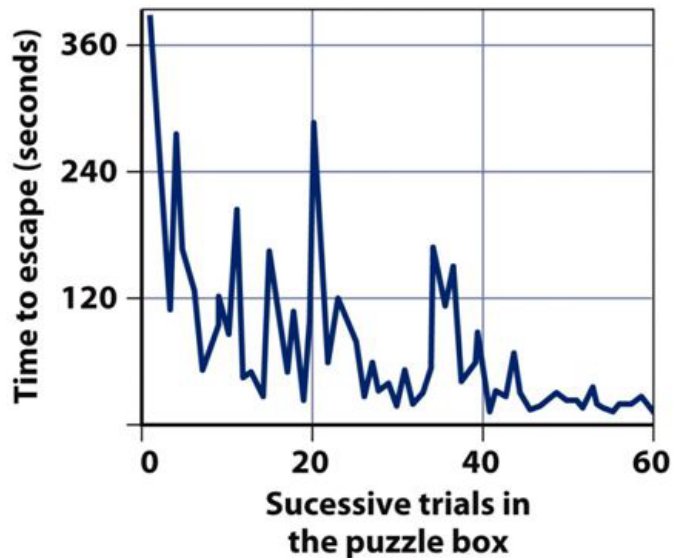
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- He was one of the first to study the impact of consequences on behavior.
- In 1898, he published his famous studies.
  - He had placed cats in enclosed puzzle boxes and recorded their behavior as they tried to escape.



# How did Thorndike contribute to functionalism?

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- Trials 1-20 – Accidentally moved the latch
- Trials 21-40 – Avoided unsuccessful actions from earlier trials and more quickly moved the latch
- Trials 41+ – Went right to the latch

# How did Thorndike contribute to functionalism?

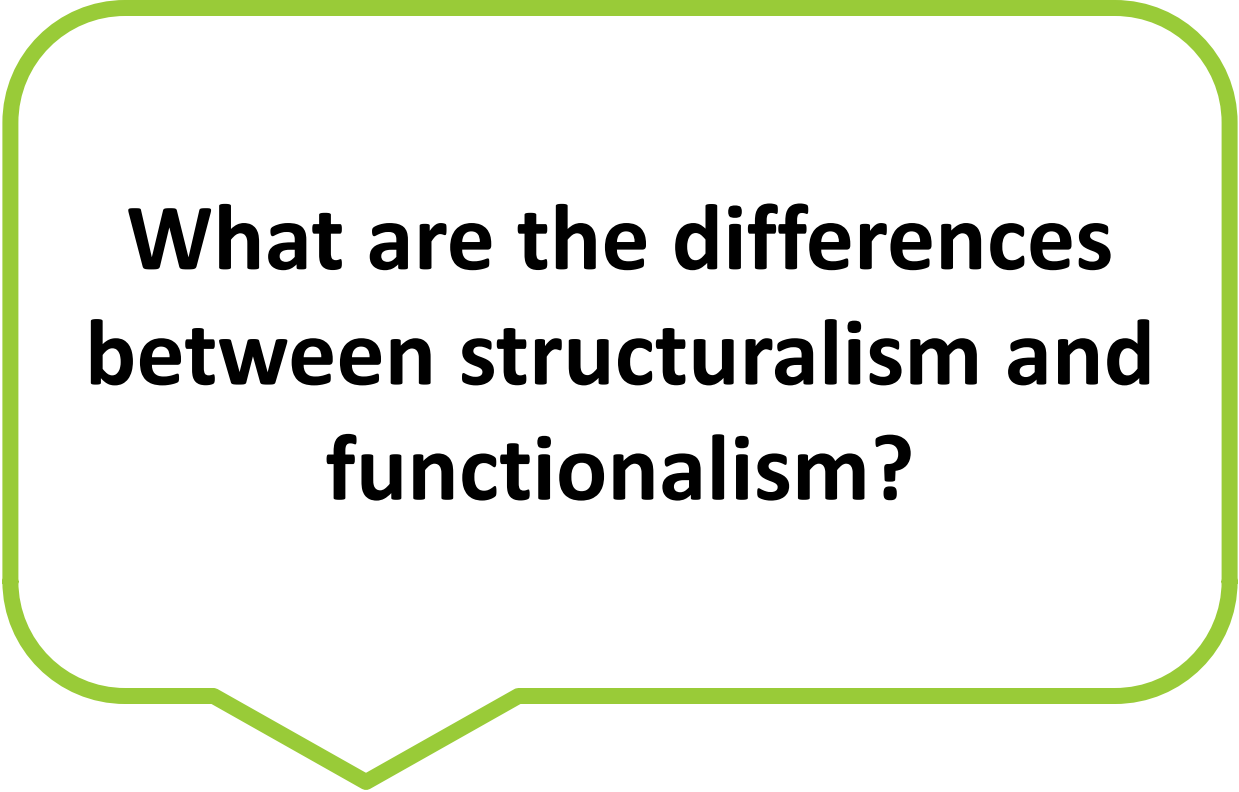
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- Based on the results, he concluded:
  - Learning occurs gradually and incrementally.
  - Learning occurs through prior experience and “trial and accidental success”.
  - Learning can be transferred from one situation to another.
    - When placed in a new box, they searched for a latch and more quickly escaped than in the previous box.

# How did Thorndike contribute to functionalism?

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- He formulated two “laws” of animal behavior:
  - The **law of effect** says successful responses will strengthen (“stamped in”) and unsuccessful responses will weaken (“stamped out”).
  - The **law of exercise** says the connection between a stimulus, situation, and response strengthens with practice (among other things).
- In **1912**, he served as the 21<sup>st</sup> APA president.



**What are the differences  
between structuralism and  
functionalism?**

# What are the differences between structuralism and functionalism?

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## STRUCTURALISM

- Founded by Edward Titchener
- Studied the structures of mental processes
- Promoted by a few in the late 1800s and early 1900s
- Failed to influence modern psychology

## FUNCTIONALISM

- Founded by William James
- Studied the functions of mental processes
- Promoted by many in the late 1800s and early 1900s
- Influenced several subfields of psychology