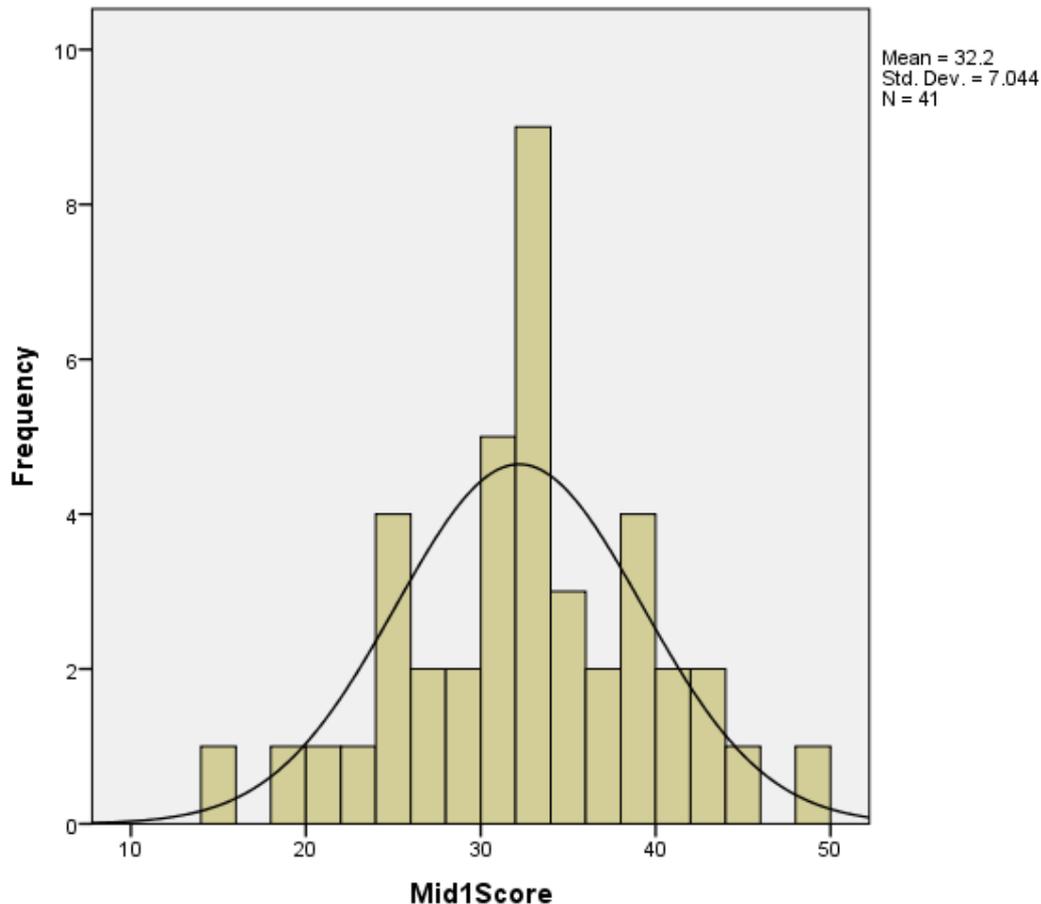


CHAPTER 4 – WILHELM WUNDT AND THE FOUNDING OF PSYCHOLOGY

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Midterm Results

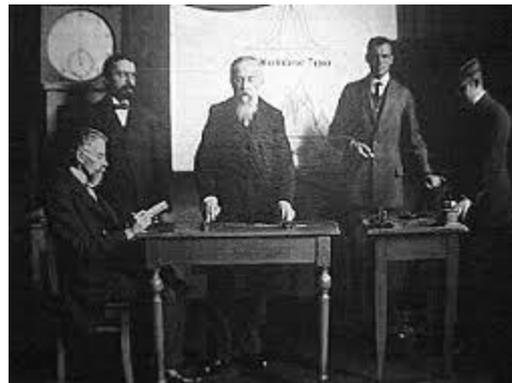


Score	Grade	N
41-50	A	6
36-40	B	6
31-35	C	15
27-30	D	6
0-26	F	8

Top score was 48 out of 50
Top score for curve was 45

Wilhelm Wundt (1832-1920)

- Psychology began as an experimental science with the founding of **Wilhelm Wundt's** lab in 1879.
- He is often identified as “the world’s first true psychologist” and the “founder of Psychology.”



Wundt with his lab
research assistants



Apparatus used in
his studies.

Nature vs Nurture in Wundt's Life

- Shy, reserved person who disliked meeting strangers, new experiences.
- From a long line of famous scientists.
- Daydreamer.
- Hard worker.
- Strabismus (eye trouble)
- No playmates or siblings, alone a lot.
- Demanding father.
- Grandpa took him lots of places.
- Nurturing tutor from 8-12 years old.
- Worked with famous people at university.

The German Gymnasium

- A fee-charging secondary school for students age 10 and over who meet high entrance standards.
- Presents a rigorous curriculum to prepare students for university study – like a “prep school” in the US.
 - ▣ Teachers typically hold doctoral degrees and devote themselves entirely to teaching.
 - ▣ The reputation of the gymnasium depends on the how well its students do on the university entrance exams.
- Wundt failed gymnasium because of unbridled day-dreaming, calling it his “school of suffering.”

Early Years

- Completed medical training in 3 years at the University of Heidelberg (1855).
 - ▣ His dissertation was on the touch sensitivity of hysterical patients; he called this his first experimental work.
- He worked with organic chemist Bunsen to study the effects of restricted salt intake on urine composition, using himself as the subject.
- He decided to pursue an academic and research career after seeing publication of his work in the Journal of Practical Chemistry (1853).

Wundt's Academic Tree



Doctoral
Advisor

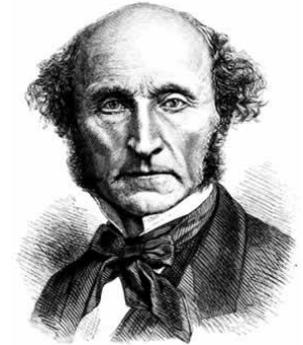


Johannes Müller (1801-1858)

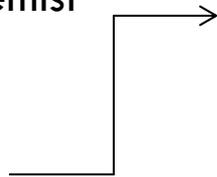
Also studied with Muller & Du
Bois-Reymond in Berlin (1856)



John Stuart
Mill, an early
influence



Wilhelm Bunsen
Organic
Chemist



Wilhelm Wundt
Univ. of Heidelberg

Assistant to
Hermann von
Helmholtz
at Heidelberg



Postdoctoral Mentors

His Early Academic Career

- In 1857, Wundt returned to the Univ. of Heidelberg as a lecturer in the Dept of Physiology.
 - ▣ He taught experimental physiology and had a health breakdown.
- When he returned, he worked as the assistant to Helmholtz who had recently joined the university.
 - ▣ He taught physiology to med students and developed a course in anthropology (social and cultural psychology).
 - ▣ He wrote a book on sense perception and outlined a program for psychology that he followed in his career.

Wundt's Program for Psychology

- Psychology falls between the physical & social sciences
 - ▣ Experimental and research methods used in the physical sciences were to be applied to psychological questions.
- Three main subdivisions:
 - ▣ One branch would be an inductive experimental science
 - ▣ The second would study reflections of higher mental processes, such as language, myths, aesthetics, religion & social customs via literature & naturalistic observation
 - ▣ The third would integrate the social & physical sciences into a **scientific metaphysics** – coherent theory of the universe.

Other Early Activities

- Published the two-volume “Lectures on the Human and Animal Mind” about cultural psychology.
- Resigned from the Institute of Physiology.
 - ▣ Helmholtz did not fire him for lack of math knowledge.
- Was elected president of the socialistic Heidelberg Workingmen’s Educational Association.
- Served two 2-year terms in the Baden Parliament.
- Taught at Heidelberg (3 yrs), Zurich chair of inductive philosophy (1 yr) then went to Univ. of Leipzig.

The First Psychology Lab (1876)

- Wundt was appointed to the chair of philosophy at the University of Leipzig which assigned him a room to store his equipment, which became his lab.
- He used a variety of equipment in his teaching demonstrations and research:
 - ▣ Tachistoscopes, chronoscopes, electrical stimulators, pendulums, timers and sensory mapping devices.
 - ▣ In 1879 he began experiments that were not part of his teaching – he marks this as the beginning of his lab.
- Colleagues questioned the legitimacy of his studies.

Haus zum Riesen



The “House of the Giant” building in Heidelberg where Wundt established his first laboratory in 1865 (as it appears today).

However, 1879 is accepted as the year psychology first became an experimental science – in the Konvikt Building.

Wundt’s later lab building in Leipzig was destroyed in a bombing raid in 1943 (during WW II).

Famous Students of Wundt

- Wundt studied with Helmholtz and Bunsen, both famous.
- Many of Wundt's students became prominent too:
 - G. Stanley Hall
 - Cattell
 - Kraepelin
 - Munsterberg
 - Kulpe
 - Titchener

“Principles of Physiological Psychology”

- Wundt wrote this two-volume textbook to use with his courses. See: <http://psychclassics.yorku.ca/Wundt/Physio/>
- Physiological psychology did not refer to the study of the physiological basis of psychology (as today) but to a psychology using experimental techniques.
 - ▣ Wundt was self-consciously staking out a new field, so he is clearly the first person we can call a psychologist.
- The book was very successful, going through multiple printings and expansion to three volumes.

Contents

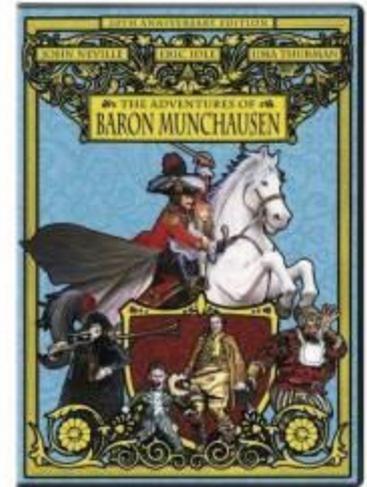
- First, the “bodily substrate of mental life” – brain anatomy and function, the nervous system.
 - ▣ Obsolete now so not useful to modern students.
- Second, characteristics of sensations: quality, intensity, extent & duration, plus a theory of perception.
- Part IV – Wundt defined psychology as:
“investigation of conscious processes in the modes of connection peculiar to them.”

Immediate vs Mediate Experience

- Psychology's goal is to study the psychological processes by which we experience the world.
- **Immediate experience** – the conscious processes we have when stimuli are presented:
 - ▣ The greenness of green paper, the pitch of a tone.
- **Mediate experience** – the physical measurements using instruments of phenomena in the world.
 - ▣ Use of a spectrometer to measure greenness of paper.
 - ▣ Mediate is physics (objective), Immediate is psychology (subjective – we are immersed in our own consciousness)

Introspection

- **Introspection** is experimental self-observation.
- Wundt did not mean “armchair speculation” by this term or “contemplative meditation.”
 - ▣ That leads to fruitless debate and gross self-deception.
 - ▣ Like Baron von Munchausen pulling himself out of quicksand by his own hair.
- Wundt’s introspection included measuring reaction times & word associations and a rigidly controlled experimental procedure for describing sensations.



Rules for Introspection

- The observer had to be in a state of “strained attention”.
- Observations were repeated multiple times.
- Experimental conditions were varied systematically.
- Two elements were described: sensations & feelings.
 - ▣ Complex mental processes result from creative syntheses of these elements (not “atomic elementism”).
- Wundt adapted Mill’s chemical principles.
 - ▣ The mind is a creative, dynamic, volitional force

Wundt's Concept of Mind

- Wundt is called a Structuralist but never used that term, preferring “Voluntarism” instead.
 - ▣ Titchener used the term Structuralism.
- Wundt was not a reductionist or an elementist either – he emphasized active psychological processes.
- Wundt did not define psychology as the study of the mind – that too comes from Titchener.
- Wundt opposed mind-body dualisms.
- His introspection was much more than self-report.

Wundt's Research

- Wundt established the journal “Philosophical Studies” to report findings from his lab.
 - ▣ The name avoided confusion with a Psychological Studies journal studying parapsychology (the occult).
- 50% of his studies were on sensation & perception.
 - ▣ 17% measured reaction times but these were thought to be too imprecise, varying from person to person.
 - ▣ 10% concerned attention & apperception (selective attention).
 - ▣ 10% concerned feeling (3 dimensional theory)

Wundt's Research (Cont.)

- Wundt developed the method of paired comparisons to study feelings along a single dimension.
 - ▣ Physiological measurements also taken (heart rate, muscle tension) anticipating physiological psychology.
- 10% concerned association using word-association tasks identifying inner (intrinsic) & outer (extrinsic) types of connections.
 - ▣ Alcohol increases outer connections.
- Students were assigned to replicate earlier work.

The Role of Subjects

- Today the experimenter is in charge and subjects follow directions.
- In Wundt's lab, subjects were highly trained, psychologically sophisticated members of the lab.
 - ▣ The subject was considered more important than the experimenter because the subject supplied the data.
- Sometimes students alternated as subject vs experimenter, sometimes experiments were subjects.
 - ▣ Called "reactor, observer, participant, individual under observation."

Wundt as Adviser

- Wundt's major contribution to psychology was the students he influenced.
 - ▣ William James spent time in Wundt's lab but didn't like it.
- Wundt directed 186 Ph.D theses (70 in philosophy).
- Statistician Charles Spearman was his student.
- American students of Wundt founded labs in the USA at major universities like Stanford & Yale, NYU and Tufts, most developing their own ideas.

Wundt as Writer

- Extremely prolific:
 - ▣ 2.2 pgs per day for 68 years.
 - ▣ It would take 2-1/2 years to read it all.
- His works are not read today due to writing style.
- William James says unkind things about him, calling him industrious but lacking in genius.
 - ▣ 1% inspiration, 99% perspiration (effort).
- Even Titchener calls his style diffuse and obscure.

Cultural or Ethnic Psychology

- His 10-volume work has been ignored by historians of psychology.
 - ▣ It may be ignored because most of our knowledge of the history of psychology comes from one person (Boring) who does not mention it.
 - ▣ Republished in 1990, it got favorable reviews.
- Wundt was fascinated by the topics that he felt could not be studied experimentally.
- Wundt advocated studying animals & children too.

Wundt the Man

- Many of his students wrote unflattering descriptions of him as a humorless drone.
 - ▣ Wundt was generous in his support of Cattell who was haughty and unfair in describing him back.
 - ▣ Hall called him hardworking but inept with his hands.
 - ▣ Titchener called him humorless, indefatigable and aggressive.
- Students also wrote warmly of experiences with him.
- Wundt had a sense of humor, was a lively lecturer and used demos in class.

Wundt in Perspective

- Wundt is credited with founding experimental psychology.
- He is mischaracterized as narrow in approach but was actually quite broad in his interests and writing.
- We get many of our ideas about Wundt from Titchener who was the things Wundt was not (an elementist interested only in the structure of mind).
- His many students founded labs and departments of psychology & influenced modern psychology.