Chapter Four: The New Psychology

PSY 495: History and Systems
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The New Psychology

The structure of psychology
- Hierarchy of mental systems
  - Lowest level
  - Midlevel
  - Highest level

Wilhelm Wundt

Biographical history notes not in your book
- It is estimated that Wundt wrote over 50,000 pages in his lifetime
  - That's 2 pages per day
- Wrote his autobiography
  - Revised it
  - Allowed himself to die
- Original training was as M.D.
Wilhelm Wundt

- Worked at Heidelberg while Helmholtz was there
- Moved to Zurich and then Leipzig
  - Founded psychological laboratory in Leipzig in 1879
- Began answering philosophical questions using physiological methods
  - Brass instrument psychology

Wilhelm Wundt

- Students flocked to Leipzig until the turn of the century
- Proved psychology could be productive
  - Could build a body of knowledge
- 1950’s & 1960’s:
  - Ideas incorporated into modern cognitive psychology

Wilhelm Wundt

- Theoretical Orientation
  - Not necessarily integrated
  - Some ideas cannot be precisely articulated
  - Rejected positivism
    - Psychologists should construct theory from phenomena
    - Construction of theory produces a hunt for data
      - Scientific research looks for underlying causal relationships that are logically coherent
Wilhelm Wundt
- Idealist
  - Perceptual content is simply the subjective appearance behind which real objects hide
- Distinguished between natural science and psychology
  - Natural science
    - Studies objective things in the outside world
  - Psychology
    - Studies immediate experience

Wilhelm Wundt
- Dualist
  - Major focus was on mental processes
  - Examined behavior that reflected mental processes
- Voluntarism
  - All psychic activity is influenced by the will
  - Cognitive processes never occur in a vacuum
    - Always influenced by the motives of people
    - Humans are not rational organisms

Wilhelm Wundt
- Apperception
  - The process by which a mental event enters the focal area of consciousness
  - Manifestation of volition
- Creative synthesis
  - Mental constructions from component processes always produce novel consequences
    - Whole is different than the sum of the parts
      - Did not explain why this happened
      - Created a number of subsidiary principles to explain creative synthesis
Wilhelm Wundt

- **Principle of Psychological Relations**
  - There is an innate level of organization operating in the human mind that prevents psychical phenomena from being reduced to a level that would destroy an organism
  - Allows for the elementary processes of the mind to occur in an organized fashion rather than a series of discrete events

- **Principle of Psychological Contrasts**
  - Opposing mental experiences intensify each other
  - Thus experiences are relative, not absolute

Wilhelm Wundt

- **Principle of Heterogeneity of Ends**
  - Occurs due to developmental changes that occur in individuals or social groups
    - Emergent unanticipated results, not originally planned for, will inevitably occur

- **Principle of Mental Growth**
  - Mental development occurs in a manner similar to embryological development

- **Principle of Development Toward Opposites**
  - Cyclical patterns of development characterize both individuals and society

Wilhelm Wundt

- Activities tend to fluctuate between two opposite extremes
- One type of mental experience increases the tension to operate in the opposite manner
Wilhelm Wundt

3 Programs of Study
- Cognitions, emotions, and motivations were his subject matter
  - Goal was to isolate each construct for study and then see how each was integrated

Emotion drives cognition and motivation drives them both
- Voluntary attentional processes are the units of consciousness
- All psychological constructs need to be construed in volitional terms

Program of Study #1
- Understanding Immediate Experience
  - This is the program that Wundt for which is typically recognized
  - Goals:
    - Determine the elements of consciousness
    - Determine the mechanisms responsible for synthesis
    - Discover the laws guiding synthesis
    - Examined inputs for conscious experience
    - Memory and sensory input
Wilhelm Wundt

- Mind is a generalization
  - Totality of conscious experience at any given moment
- Mind is activity
  - Elements of consciousness are activities
    - Therefore, you cannot see them in immediate conscious experience
    - All elements are tied together
    - Need to isolate experiences in order to study them

Wilhelm Wundt

- 3 sources of experience
  - Outside world
  - Memory
  - Feeling
- Sensations
  - Derived from 2 sources
    - Outside world
    - Memory
  - Have 2 qualities
    - Intensity
    - Quality

Wilhelm Wundt

- Tridimensional theory of feelings
  - Pleasure/displeasure
  - Tension/relaxation
  - Excitement/depression
- Subjects for experiments were also experimenters and vice versa
- Introspection
  - Examination of one’s own mind to inspect and report on personal thoughts and feelings
Wundt’s rules:
- Observers must be able to determine when the process is to be introduced
- Observers must be in a state of readiness or strained attention
- It must be possible to repeat the observation several times
- It must be possible to vary the experimental conditions in terms of the controlled manipulation of the stimuli
- Observers must complete 10,000 practice introspections.

Apperception
- The process by which a mental event enters the focal area of consciousness
- How mental events are organized
- Manifestation of volition
- How do we end up with coherent and meaningful ongoing conscious experiences?
  - Experience is more than the sum of the individual constituents
  - Voluntary creative process and what we get out of it is a logical flow of thought

Immediate experiences organize spatially and temporally
- This association is contributed by the person
- Organization is independent, constructive and under voluntary control

Program of Study #2
- Identifying specific cognitive processes involved in the various kinds of information processing
  - Focus on selective attention, automatic and controlled attentional processes, chunking, and an attempt to isolate the various processing components
Wilhelm Wundt

- Isolate various cognitive processing states and measure their duration
- Subtraction method
  - a = simple reaction time
  - b = two choice reaction time
  - c = single response time with a decision
  - b – a = the time it takes to discriminate between two stimuli and make a response
  - c – a = time it takes for discrimination alone
  - (b – a) – (c – a) = time to make a choice response
  - b – c = time to make a choice response

Wilhelm Wundt

- Ability to isolate processing stages gave temporal parameters
  - 5 processing stages
    - Electrical stimulation from eye to brain
    - Stimulus perceived and enters the range of consciousness
    - Stimulus is selectively attended
      - Apperception
      - Choose to execute response
      - Motor response carried out
    - Rationale
      - If you can create two tasks that differ by one aspect, you can measure selective attention

Wilhelm Wundt

- Lab completed a number of studies like this
  - Very easy to insert new tasks into the chain and determine how long it took to perform the inserted task

Program of Study #3
- Folk Psychology
  - A lot of data from this program was fabricated
  - Examined cultural history
  - Construction of knowledge in the context of cultural history
Wilhelm Wundt

- Goal for this program was to move from the lab to the field and see how knowledge was constructed in the real world
  - Cannot study intellectual process in the lab
- Divided culture into 4 groups/periods:
  - Primitive period
  - Totemic/tribal culture
  - Age of gods and heroes
  - Modern culture

Wilhelm Wundt

- Each culture has its own group mind
- Wundt felt that the German culture was the top of the hierarchy
- Important mechanisms in the development of culture
  - Dynamics as motives
    - Motives change as a result of intended and unintended consequences
    - The ends that result many times are not embedded in the original purpose
    - There are always remnants of the purposes no matter how far removed from them you are

Wilhelm Wundt

- Examined how myth develops
  - Basic motives for myth
    - Fear of death or sickness
  - Engenders a belief in magic and demons
  - This belief is seen when a person dies
  - Fear gives rise to myth
    - Because of association of fear of death and terror of sudden illness
  - Now being sick arouses fear of demons
  - Leads to the rise of both demonic and protective magic
Wilhelm Wundt
- Soon get proliferation of objects to protect against different types of magic
- More and more items appear and some begin to be decorated
  - Guess what? It's art!
- Clothing begins to ward off demons
- Shaman comes about in tribal culture
- Also examined the development of language
  - Gutteral language
  - Nonsyntactical verbal language
  - Modern language

Wilhelm Wundt
- Emotion gives rise to cognition
  - Earliest forms of language arose to express emotion

Other Developments in German Psychology
- Hermann Ebbinghaus (1850-1909)
  - First to examine learning and memory
  - Influenced by Fechner
  - Research on learning
    - Before Ebbinghaus—worked backwards
    - Ebbinghaus started with initial association
      - Could control the conditions under which the association was learned
      - Made the research more objective
Other Developments in German Psychology

- Over 5 years, he carried out a series of carefully controlled studies using himself as the only subject.
- Found that the difficulty of learning material could be measured by the number of trials needed to learn it.
- Research with nonsense syllables:
  - Syllables presented in a meaningless series to study memory processes.
- Recognized problem with using stories or poetry to study memory:
  - Meanings or associations are already formed.
  - Can facilitate learning.
  - Therefore, Ebbinghaus used a meaningless series of syllables to examine learning.
- Studied the difference between the speed of memorizing lists of syllables vs. the speed of memorizing lists of material that had meaning:
  - Easier to memorize that which had meaning.
- Length of material to be learned effects the number of repetitions:
  - Ebbinghaus forgetting curve:
    - Material is forgotten rapidly in the first few hours and then levels off after that.
  - On Memory (1885):
    - Research was so exacting that it continues to be cited in psychology textbooks 100+ years after this book was published.
- Other contributions to Psychology.
Other Developments in German Psychology

Georg Elias Müller (1850-1934)
- First to work in memory after Ebbinghaus
- Thought Ebbinghaus made the learning process seem too mechanical and automatic
  - People are more active in learning
  - Association by contiguity cannot explain learning

Other Developments in German Psychology
- Conscious attitudes such as readiness, hesitation, and doubt influence learning
- Interference theory of learning
  - The act of forgetting results from learning new material that interferes with the ability to recall previously learned material
  - Proactive interference
    - Past learning interferes with learning something new
  - Retroactive interference
    - New learning interferes with recalling already learned information

Other Developments in German Psychology
- Frantz Brentano
  - *Psychology from an Empirical Standpoint (1874)*
  - Precursor of Gestalt psychology
  - Goal of psychology: observation
  - Act Psychology
    - Focus on mental activities, not mental contents
Other Developments in German Psychology

- Consciousness is an activity directed toward a goal
- Required a different method of study

Carl Stumpf
- Wundt’s major rival
- *Psychology of Tone* (1883, 1890)
- Phenomenology
  - Introspective method that examined experience as it occurred; did not try to break it down into parts

Other Developments in German Psychology

- Another influence on Gestalt psychology
- Interested in music and acoustics
- Berlin Association for Child Psychology
- Theory of emotion
  - Reduced feelings to sensations

Oswald Kulpe
- Another Wundt opponent

Other Developments in German Psychology

- *Outline of Psychology* (1893)
- Differences w/Wundt
- Systematic Experimental Introspection
- Imageless thought
  - Meaning in thought can occur w/o any sensory or imaginal component

Wurzberg Laboratory
- Karl Marbe
- Henry Watt
References

