

## Lecture 13: Gestalt Psychology

### I. INTRODUCTION

#### A. Introduction

- And back in Germany....
  - Philosophical views held that consciousness cannot be *reduced* to sensory stimulation, and conscious experience is different from the elements that compose it.
    - Ernst Mach postulated that two perceptions, space form and time form, appeared to be independent of the particular elements that composed them.
      - Mach (and Ehrenfels) proposed that form is something that emerges from the elements of sensation.
    - William James postulated the integral stream of consciousness as the focus of psychology, in contrast to isolated mental elements which composed the mind.

### I. INTRODUCTION

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- And back in Germany....
  - German psychologists took issue with Wundt's elementism
    - Several German psychologists argued that consciousness couldn't be reduced to elements without distorting the meaning of conscious experience.
  - Assumed that experience is a meaningful, intact configuration or Gestalt
    - They advocated a molar approach, which concentrates on phenomenological experience – mental experience as it occurred to the naïve observer, without further analysis (experience as it appears in consciousness).

### I. INTRODUCTION

#### A. Introduction

- And back in Germany....
  - Brentano and Stumpf were specifically influential on the Gestaltists.
    - The first Gestaltists (Max Wertheimer, Kurt Koffka , Wolfgang Köhler) studied under Stumpf.
  - Brentano and Stumpf had proposed Act Psychology:
    - Act psychology focused on the acts of perceiving, sensing, or problem solving
  - The Act psychologists and the Gestaltists were both phenomenologists.
    - Explored consciousness as a whole not as elements

## I. INTRODUCTION

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- And back in Germany....
- Gestaltists wanted to model psychology after field theory, not Newtonian physics.
  - In Newtonian physics there are direct causal events which operate by an "atomistic" principle of operation.
    - The analogy is of a analog watch where there are gears and a carefully laid out causal sequence.
  - In classic Field Theory, there are an array of forces operating simultaneously with self-organizing tendencies.
    - The analogy is a soap bubble, whose spherical shape is not defined by a rigid mathematical formula, but emerges spontaneously by the parallel action of surface tension acting at all points in the surface simultaneously.

## II. THE GESTALTISTS

### A. Max Wertheimer

- Max Wertheimer (1880 –1943)
  - A Czech-born Jew
    - Was a student of Külpe best known for the idea of imageless thoughts.
  - Studied the phi phenomenon with research assistants Köhler & Koffka
    - A perception of apparent movement when the elements of the experience are, in fact, stationary.
      - 1912: Experimental Studies of the Perception of Movement.
  - Perceptions are different than the sensations that comprise them



## II. THE GESTALTISTS

### B. Kurt Koffka

- Kurt Koffka (1886 –1941)
  - He was born and educated in Berlin and earned his PhD there in 1909 as a student of Carl Stumpf.
    - He worked with Wertheimer in Berlin on the Phi Phenomenon.
  - Wrote several books and articles regarding Gestalt psychology.
    - His *Perception: An introduction to Gestalt-theorie* although important, left the impression that Gestaltists were only interested in perception.



## II. THE GESTALTISTS

### C. Wolfgang Köhler

- Wolfgang Köhler (1887 –1967)
  - Was Stumpf's student in Berlin
    - 1913, Köhler was director of the Prussian Academy of Sciences anthropoid research station.
  - Wrote *The Mentality of Apes* (1917).
    - Challenged trial and error theories of problem solving in animals.
    - Köhler concluded chimps experienced an insight (aha experience), in which, having realized an answer to a problem, they then proceeded to carry it out in a way that was *unwaveringly purposeful*.



## II. THE GESTALTISTS

### D. Americanization of Gestalt Psychology

- The 3 founders of Gestalt Psychology ended up in America
  - In 1922, Kurt Koffka left Germany for the U.S. to teach at Smith College, until he retired.
  - In 1933, Max Wertheimer moved to the United States to escape Nazi Germany and taught at the New School for Social Research in New York City, where he stayed until his retirement.
  - In 1935 Wolfgang Köhler moved to the U.S. after a fallout with the Nazi regime. He taught at Swarthmore College just outside of Philadelphia until he retired.

## II. THE GESTALTISTS

### E. Students of Gestalt Psychology

- Students of the Gestaltists are well known:
  - **Rudolf Arnheim:** Worked with the Gestaltists in Berlin. Best known as an art and film theorist, he wrote the influential *Art and Visual Perception*.
  - **Karl Duncker:** Worked with the Gestaltists in Berlin. Duncker studied problem-solving and coined the term *functional fixedness*.
  - **Kurt Gottschaldt:** Received his Ph.D. in Berlin, with the Gestaltists. Demonstrated the power of wholes over inserted parts which gave rise to the Gottschaldt Embedded Figures Test (EFT).

## II. THE GESTALTISTS

### E. Students of Gestalt Psychology

- Students of the Gestaltists are well known.
  - **Kurt Goldstein:** Contemporary with Gestalt psychologists in Berlin and US. Developed a holistic view of brain function, based on research that showed that people with brain damage learned to use other parts of their brains in compensation. He extended holism to the entire organism.
  - He postulated that there was only one drive in human functioning, and coined the term self-actualization which influenced the founders of the American humanistic psychology movement.

## II. THE GESTALTISTS

### E. Students of Gestalt Psychology

- Students of the Gestaltists are well known.
  - **Kurt Lewin:** He studied with the Stumpf in Berlin. He was one of the modern pioneers of organizational and applied psychology and the founder of social psychology. He was one of the first researchers to study group dynamics and organizational development. Developed *Lewin's Equation* for behavior  $B=f(P,E)$  which is a foundation of Field Theory
  - His students included Muzafer Sherif, Solomon Asch, and Leon Festinger Roger Barker, Bluma Zeigarnik, and Morton Deutsch.

## II. THE GESTALTISTS

### E. Students of Gestalt Psychology

- Students of the Gestaltists are well known.
  - **Abraham Luchins:** Worked with Wertheimer and known for his research on the role of a *mental set* as tested by the water jar problems.
  - **Wolfgang Metzger:** Metzger was a student and associate of the founders Gestalt theory. Was Wertheimer's successor in Berlin and became a spokesperson for Gestalt in Germany.
  - **Bluma Zeigarnik:** Soviet psychologist who discovered the Zeigarnik effect and established experimental psychopathology. Student of Kurt Lewin, and worked with Vygotsky and Luria.

## III. GESTALT PSYCHOLOGY: PRINCIPLES

### A. Introduction

- Gestalt Psychology included eight new critical ideas.
  1. Field theory
  2. Psychophysical isomorphism
  3. Brain is a dynamic configuration of forces that transforms sensory information
  4. Top down analysis
  5. Law of Prägnanz
  6. Perceptual constancy
  7. Perceptual Gestalten
  8. Subjective and Objective Reality

## III. GESTALT PSYCHOLOGY: PRINCIPLES

### B. Field Theory

- Field theory
  - Gestaltists propose that the brain contains structural fields of electrochemical forces.
    - Upon entering a field, sensory data both modify the structure of the field and are modified by the field.
    - Our experience results from the interaction of the sensory data and the force fields in the brain.
  - Cognitive experience results from the fields of brain activity transforming sensory data and giving that data characteristics it otherwise would not possess.
    - According to this analysis, the whole (electrochemical force fields in the brain) exists prior to the parts (individual sensations) and it is the whole that gives the parts their identity and meaning.

## III. GESTALT PSYCHOLOGY: PRINCIPLES

### B. Field Theory

- Field theory
  - For Lewin, who developed *Field Theory*, human behavior is explained by complex dynamic forces acting on an individual at a given.
  - Central to this is the concept of Life Space.
    - These influences, called psychological facts, consist of an *awareness* of internal events, external events and recollections of prior experiences.
    - Only those facts (real or imagined) that are currently present in the life space can influence a person's thinking and behavior.
  - Biological and psychological needs cause tension in the life space, and the satisfaction of the need reduces the tension.

### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### C. Psychophysical isomorphism

- Psychophysical isomorphism
  - The force fields in the brain transform incoming sensory data and that is the transformed data that we experience consciously.
  - Isomorphism comes from the Greek meaning “similar shape.”
  - The patterns of brain activity and the patterns of conscious experience are structurally equivalent.

### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### D. Brain is a Dynamic Configuration

- Brain is a dynamic configuration of forces that transforms sensory information
  - Instead of viewing the brain as a passive receiver and recorder of sensory information
  - The notion of isomorphism necessitated an opposition to the constancy hypothesis, which states there is a one-to-one correspondence between environmental stimuli and sensations.

### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### E. Top Down Analysis

- Top down analysis
  - For Gestalt psychology, organized brain activity dominates our perception, not the stimuli that enter into that activity.
  - Therefore, the whole is more important than the parts, thus reversing one of psychology’s oldest traditions.
  - Analysis proceeded from the top to the bottom instead of from the bottom to the top, in other words analysis proceeded from the whole to the parts.

### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### F. Law of Prägnanz (pregnant with meaning)

- Law of Prägnanz
  - The law asserts that all cognitive experiences will tend to be as organized, symmetrical, simple, and regular as they can be, given the pattern of brain activity at any given moment.
  - The psychological organization will always be as good as conditions allow because fields of brain activity will always distribute themselves in the simplest way possible under the prevailing conditions.
  - This is what “as good as conditions allow” means.

### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### G. Perceptual Constancy

- Perceptual constancy
  - The way we respond to objects as if they are the same, even though the actual stimulation our senses receive may vary greatly.
  - This phenomenon is not a function of sensation plus learning but is a function of the ongoing brain activity and the fields' activity.



### III. GESTALT PSYCHOLOGY: PRINCIPLES

#### H. Subjective and Objective Reality

- Subjective and Objective Reality
  - Koffka distinguished between the geographical environment (physical environment) and the behavioral environment (our subjective interpretation of the geographical environment).
  - Our own subjective reality governs our actions more than the physical environment.