Early Concepts of Hysteria
Veith (1965)

- Ancient Egypt, Greece
  - Diseases Produced by Migrating Uterus
- Sydenham (1697)
  - Physical Symptoms
    - Produced by Emotional Causes
  - ≈ Psychosomatic Disorder
- Briquet (1859)
  - Multiple, Chronic Physical Complaints
    - No Obvious Organic Basis
  - ≈ Somatization Disorder

Charcot’s Concept of Hysteria
Charcot (1877); Kihlstrom (1994)

- Symptoms Mimicking Organic Illnesses
  - Tactile Sense
  - Special Senses
  - Motor Function
- Produced by Emotion, Suggestion
- Diathesis-Stress Theory
  - Hereditary Constitutional Weakness
  - Adaptation Compromised by Traumatic Stress
- “Functional” Lesions
  - Psychological rather than Physical Causes

Janet’s Concept of Hysteria
Janet (1889, 1894, 1907); Kihlstrom (1994)

- Constriction of Awareness
  - Unconscious Perception, Memory, Action
- Psychological Automatisms
  - Complex Responses to Situation
    - Idea, Action, Emotion
  - Normally Accessible to Awareness, Control
- Dissociation
  - Automatism “Split Off”
  - Outside Conscious Awareness, Control

The Case of Irene
Janet (1907)

- Sight of Dead Mother
- Sound of Her Voice
- Movements While Carrying the Body
- Whole Personality of Irene

Hysteria in Freud
Breuer & Freud (1893-1895); Freud (1915)

- Studies on Hysteria
  - “Hysterics Suffer from Reminiscences”
  - Repression of Traumatic Events
  - Unconscious Expression of Repressed Memories
- Doctrine of Repression
  - Seduction Theory (1893-1895)
    - Early Traumatic Experience
  - Theory of Infantile Sexuality (1905)
    - Instinctual Conflict
Original Doctrine of Repression
Ellenberger (1970), after Breuer & Freud (1893-1895)

Hysteria: The 19th-Century Legacy
- “Organic” - “Functional” Distinction
  - Brain Insult, Injury, Disease
- Somatogenesis vs. Psychogenesis
  - Biological vs. Psychological Cause
    - Neural Correlates of Mental States/Processes
- Role of Trauma
  - Doctrine of Dissociation (Janet)
    - “Accidental” – “Weakest Link”
  - Doctrine of Repression (Freud)
    - Intentional (though Unconscious)

Dissociative Disorders
- Awareness of Memory, Identity
  - Psychogenic Amnesia
    - Dissociative Amnesia
  - Psychogenic Fugue
    - Dissociative Fugue
  - Multiple Personality Disorder
    - Dissociative Identity Disorder
  - Depersonalization and Derealization
    - Depersonalization/Derealization Disorder
- But Traumatic Etiology Not Necessary

Interpersonality Amnesia in Eve
Thigpen & Cleckley (1954, 1957)

The Case of Jonah
Ludwig et al. (1972)
- Jonah, “The Square”
  - Suffers from Blackouts
  - Shy, Retiring, Sensitive
- Sammy, “The Lawyer”
  - Intellectual, Rational
- King Young, “The Lover”
  - Pleasure-Oriented, Glib Talker
- Usoffa Abdullah, the Son of Omega, “The Warrior”
  - Cold, Belligerent, Angry

Interpersonality Amnesia in Jonah
Ludwig et al. (1972)
Implicit Memory in Fugue
Lyon (1985)

- Jane Doe
  - Discovered by Police
  - Disheveled, Wandering, No Identification
  - No Memory, No Identity
- Clinical Evaluation
  - Modeling Use of Telephone
    - “Dial Randomly”
    - Connected with Mother

Conversion Disorders

- “Pseudoneurological” Disorders
  - Distinguished from Psychosomatic Disorders
- “Hysterical” Anesthesias
  - Deafness
  - Blindness
  - Tactile Anesthesia
- “Hysterical” Paralysis, Aphonia
- Functional vs. Organic
- Somatic Symptom and Related Disorders
  - Somatoform vs. Dissociative

Analysis of Visual Conversion Disorder

- 3-Choice Decision Task
  - Chance Performance = 33%
- 3-Light Visual Cue
  - Phases
    - 1-8, Cue Present
    - 10, Cue Absent
    - 11-14, Inform Patient of Visual Processing
    - 15-19, Exhortations for Maximal Performance
    - 20, Cue Absent
    - 21, Cue Present

Visually Guided Behavior in Visual Conversion Disorder
Bryant & McConkey (1989)

- Unified View of Dissociative Disorders
  - Kihlstrom (1994)
  - Disruption of the Monitoring and/or Controlling Functions of Consciousness
  - Not Attributable to Brain Insult, Injury, or Disease
  - Reversible
  - Evidence of Intact Functioning Outside of Awareness
    - Implicit Memory
    - Implicit Perception

Dissociations in “Functional” Disorders

- “Hysteria”
  - Dissociative Disorders
    - Memory
  - Conversion Disorders
    - Perception, Action
- Explicit vs. Implicit Expressions of...
  - Memory
  - Perception, Action
Taxonomy of Dissociative Disorders
Kihlstrom (1994)

- Affecting Memory, Identity
  - Functional Amnesia, Fugue
  - Multiple Personality Disorder
- Affecting Sensation, Perception
  - Functional Blindness, Deafness
  - Functional Analgesia, Anesthesia
- Affecting Voluntary Action
  - Functional Weakness, Paralysis
  - Aphonia, Swallowing
  - Urinary Retention

Hypnosis

- Social Interaction
  - Subject, Hypnotist
- Imaginative Experiences
- Altered in Consciousness
  - Perception, Memory, Voluntary Control
  - Subjective Conviction (Delusion)
  - Experienced Involuntariness (Compulsion)
- A Laboratory Model for Hysteria?
  - Functional vs. Organic
  - Psychogenic vs. Somatogenic

Dissociative Phenomena in Hypnosis
Functional Alterations in Conscious Awareness

- Perception
  - Analgesia, Tactile Anesthesia
  - Blindness, Deafness, Anosmia
  - Positive, Negative Hallucinations
- Memory
  - Posthypnotic Amnesia
  - Age Regression
- Action
  - Ideomotor Suggestions (Direct, Challenge)
  - Posthypnotic Suggestion (with Amnesia)

“Credulous” and “Skeptical” Views of Hypnotic Phenomena
Sutcliffe (1960, 1961)

- Credulous
  - Mental processes affected by hypnosis are the same as those that would be instigated by the actual stimulus state of affairs
- Skeptical
  - Mental processes are unaffected by hypnotic procedures, but the subject acts as if the world were as suggested by the hypnotist

Esaide on His Success
Esaide (1846)

I have every month more operations of this kind…, and I only see two ways of accounting for it:

my patients, on returning home, either say to their friends similarly afflicted, “Wah! Brother, what a soft man the doctor Sahib is! He cut me to pieces for twenty minutes, and I made him believe that I did not feel it. Isn’t it a capital joke? Do go and play him the same trick….

Esaide on His Success
Esaide (1846)

Or they say to their brother sufferers, -- “look at me; I have got rid of my burthen…, and am restored to the use of my body, and can again work for my bread:

this, I assure you, the doctor Sahib did when I was asleep, and I knew nothing about it; -- you will be equally lucky, I dare say; and I advise you to go try; you need not be cut if you feel it.”
The Irony of Self-Reports
Kihlstrom (2014, p. 140)

Too many psychologists take self-reports seriously only when they are made by people who are brain-damaged!

A “Neodissociative” View of Hypnosis
Hilgard (1977); Kihlstrom, 2007, 2008

• Sutcliffe’s “Third View”
  – Hypnotic Subjects are Deluded
    • Believe that the World is as Suggested by the Hypnotist
  – Hypnosis Entails a Division of Consciousness
    • Unaware of Percepts, Memories, Thoughts
      • Influence Behavior Unconsciously
    • Subject Unaware of Voluntary Control
      • Generates Experience of Involuntariness

Hypnotic Susceptibility Scales

• Induction Procedure
• Test Suggestions
• Behavioral Scoring Criteria
• Stanford Hypnotic Susceptibility Scale
  – Harvard Group Scale of Hypnotic Susceptibility
  – Stanford Profile Scales of Hypnotic Susceptibility

Stanford Hypnotic Susceptibility Scale, Form C
Weitzenhoffer & Hilgard (1962)

• Eye Closure (Induction)
• Hand Lowering
• Moving Hands Apart
• Mosquito Hallucination
• Arm Rigidity
• Dream (about hypnosis)
• Age Regression
  – 5th, 2nd grades
• Anosmia
• Arm Immobilization
• Voice Hallucination
• Negative Visual Hallucination
• (Posthypnotic Suggestion)
  • Posthypnotic Amnesia

Distribution of Hypnotizability
Hilgard (1965)

12-Point Scale

% of Subjects
0 10 20 30 40 50
Low Medium High "Virtuoso"

SHSS-C Level

Major Surgery: Hypnosis as Sole Analgesic
Hilgard & Hilgard (1975)

• Appendectomy
• Caesarian Section
• Skin Graft
• Cardiac Surgery
• Orthopedic Surgery
• Ligature/Stripping of Veins
Meta-Analysis of Hypnotic Analgesia
Montgomery et al. (2000)

Effect Size (d)

Clinic Laboratory

Hypnotizability

Meta-Analysis of Hypnotic Analgesia
Montgomery et al. (2000)

Effect Size (d)

High Medium Low

Hypnotizability

Psychophysics of Hypnotic Analgesia
Hilgard (1967)

• Levels of Hypnotizability
  – Low, Medium, High
• Cold-Pressor Pain
  – 60 Secs
• Pain Reports
  – 1-10 Scale (Open-Ended)
  – Hypnotic Analgesia vs. Control

Cold-Pressor Pain
Hilgard (1969)

Pain Rating (60 sec)

Low Medium High

Hypnotizability

Control Hypnosis

Comparative Effects of Hypnotic Analgesia
Stern et al. (1977)

• Pain Stimuli
  – Cold Pressor, Ischemia
• Challenging Agents
  – Hypnosis
  – Acupuncture + Electrical Stimulation
  – Placebo Acupuncture
  – Morphine
  – Aspirin
  – Diazepam
  – Placebo

Cold-Pressor Pain
Stern et al. (1977)

Pain Rating (5 min)

Hyp True False Morph Diaz Asp Plac

Control Experimental

Acupuncture

Hyp True False Morph Diaz Asp Plac

Treatment
Ischemic Pain  
Starn et al. (1977)

Two Components to Pain
McGill Pain Questionnaire

Pain Rating (5 min)

Treatment

Hyp True False Morph Diaz Asp Plac

Pain and Suffering in Ischemia
Knox, Morgan, & Hilgard (1974)

Hypnosis as an Adjunct to Conscious Sedation
Lang et al. (2000)

Hypnosis and Suffering in Ischemia
Pain Reports

Sensory Pain Suffering

Sedation

Anxiety During Surgery
Lang et al. (2000)

Pain During Surgery
Lang et al. (2000)
Hypnotic Modulation of Suffering
Rainville et al. (1997)

- “Hot Pressor” Pain
- Hypnotic Alteration of Unpleasantness
  - Increase vs. Decrease
  - Sparing Intensity of Pain
- PET Imaging
  - Primary Somatosensory Cortex (SI)
    - Location, Intensity
  - Anterior Cingulate Cortex (ACC)
    - Emotional Significance

Pain, “Suffering” and Activation of Anterior Cingulate Cortex
Rainville et al. (1997)

Posthypnotic Amnesia
Kihlstrom (1980), Experiment 1

- Memorize Wordlist During Hypnosis
  - e.g., girl, chair, flowers, short
- Criterion for Learning
  - 2 Successful Repetitions
- Amnesia Suggestion
  - “You probably will have the impression that you have slept because you will have difficulty remembering the things you did while you were hypnotized.
  - In particular, you will not be able to remember that you learned any words while you were hypnotized. After waking you will have no memory that I told you these words, or what they were.
  - “You will not be able to remember them until I say to you, “Now you remember everything”. Then you will be able to remember everything, including the fact that you learned some words and what they were.”
Posthypnotic Amnesia
Kihlstrom (1980), Experiment 1

Implicit Memory in Posthypnotic Amnesia
Kihlstrom (1980), Experiment 1

- Free-Association Test
  - After Initial Amnesia

- Critical Stimuli
  - Target Memorized Words
    - e.g., Boy-Girl, Table-Chair, Blossom-Flowers

- Neutral Stimuli
  - Target Matched Control Words
    - e.g., Lamp-Light, Dogs-Cats, Man-Woman

Posthypnotic Amnesia
Kihlstrom (1980), Experiment 1

- Memorize Wordlist During Hypnosis
  - e.g., Judy, Foot, Lion, Fay

- Criterion for Learning
  - 2 Successful Repetitions

- Amnesia Suggestion
  - "You probably will have the impression that you have slept because you will have difficulty remembering the things you did while you were hypnotized."
  - "In particular, you will not be able to remember that you learned any words while you were hypnotized."
  - "After waking you will have no memory that I told you these words, or what they were."
  - "You will not be able to remember them until I say to you, ‘Now you remember everything.’ Then you will be able to remember everything, including the fact that you learned some words and what they were..."52

Posthypnotic Amnesia
Kihlstrom (1980), Experiment 2

- Category-Instances Test
  - After Initial Amnesia

- Critical Stimuli
  - Target Memorized Words
    - e.g., Woman's Name-Judy, Body Part-Foot, Animal-Lion, Time-Day

- Neutral Stimuli
  - Target Matched Control Words
    - e.g., Man's Name-Tom, Country-Germany, Clothing-Blouse, Color-Orange

Implicit Memory in Posthypnotic Amnesia
Kihlstrom (1980), Experiment 2

- Free-Association Test
  - Girl-Chair, Flowers-Short
Implicit Memory in Posthypnotic Amnesia
Kihlstrom (1980), Experiment 2

Repetition and Semantic Priming in Posthypnotic Amnesia
Barnier et al. (2001)
• Study Wordlist in Hypnosis
  – Suggestion for Posthypnotic Amnesia
• Tests of Memory
  – Explicit
    • Cued Recall
  – Implicit
    • Fragment-Completion (Repetition Priming)
    • Word-Association (Semantic Priming)

Memory Test Performance
Barnier et al. (2001)

Components of Memory Performance in Posthypnotic Amnesia
David et al. (2000)
• Study Word List
  – Suggestion for Posthypnotic Amnesia
• Memory Tests
  – Stem-Cued Recall (Explicit)
  – Stem-completion (Implicit)
• Variant on Process-Dissociation Procedure
  – Voluntary Conscious Memory
  – Involuntary Conscious Memory
  – Involuntary Unconscious Memory

Components of Memory in Posthypnotic Amnesia
David et al. (2000)

Priming in Hypnotic Blindness
Bryant & McConkey (1989)
• Hypnotic Blindness
• Words Printed on Cards
  – Homophone plus Disambiguating Cue
    • War and Peace
    • Hare and Tortoise
  – “Seen” vs “Unseen”
• Memory Test
• Spelling Test
  – Auditory Presentation
  – Peace or Piece?
  – Hare or Hair?
Priming in Hypnotic Blindness
Bryant & McConkey (1989)

Posthypnotic Suggestion
• Behavioral Response to Cue
  – Accompanied by Posthypnotic Amnesia
• Quasi-Automatic
  – “Compulsive Automatism”
  – Executed Outside Awareness
  – Posthypnotic Amnesia
• But is PHS Really Automatic?
  – Inevitable Evocation
  – Efficient Execution
  • Consumes No Cognitive Capacity

Hypnotic Alteration in Color Perception
Kosslyn et al. (2000)
• PET Imaging Study
  – All Highly Hypnotizable
• Conditions
  – See Color Pattern in Color
  – See Color Pattern in Grayscale
    • “Color Draining Out”
    • Negative Hallucination
  – See Grayscale Pattern in Color
    • “Color Flowing In”
    • Positive Hallucination
  – See Grayscale Pattern in Grayscale

PET Imaging of Hypnotic Color Blindness
Kosslyn et al. (2000)

Fusiform Color Area
Brodmann Area 19
Brodmann Area 37
Inferior Temporal Region
Brodmann Area 20

Positive/Negative Color Hallucination
Kosslyn et al. (1999)

Hypnosis and Imagery Compared
Kosslyn et al. (1999)
Consciousness in Hypnosis

- Imaginative Experiences, Subjective Reality
- Dissociation Affecting Conscious Awareness
  - Explicit vs. Implicit Memory
  - Explicit vs. Implicit Perception
- Dissociation Affecting Conscious Control
  - Experienced Involuntariness
    - But Hypnotic Behavior Not Truly Automatic
    - No Awareness of Control Processes
- Brain Imaging
  - Correlates of State vs Suggested Experiences