“Hysteria” and Hypnosis

Fall 2014

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)

Eve White

Eve Black

Jane

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 Abdulla, the Son of Omega, “The Warrior”
  - Cold, Belligerent, Angry

Interpersonality Amnesia in Jonah
Ludwig et al. (1972)

Sammy

Jonah

King Young

Usoffa Abdullah
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
    • 1-9, 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)

Dissociations in “Functional” Disorders

- “Hysteria”
  - Dissociative Disorders
    - Memory
  - Conversion Disorders
    - Perception, Action
- Explicit vs. Implicit Expressions of…
  - Memory
  - Perception, Action

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
**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
  - Aphonias, Swallowing
  - Urinary Retention

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**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

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**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

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Esdaile on His Success
Esdaile (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....

---

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)

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)

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

Psychophysics of Hypnotic Analgesia
Hilgard (1967)
Cold-Pressor Pain
Hilgard (1969)

Pain Rating (60 sec)

Hypnotizability

Low Medium High

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)

Treatment

Hyp True False Morph Diaz Asp Plac

Acupuncture
Ischemic Pain
Stern et al. (1977)

Two Components to Pain
McGill Pain Questionnaire

Sensory Pain Suffering
- Flickering - Tiring
- Jumping - Sickening
- Pricking - Fearful
- Sharp - Punishing
- Pinching - Wretched
- Tugging - Annoying
- Hot
- Tingling
- Dull
- Tender

Pain and Suffering in Ischemia
Knox, Morgan, & Hilgard (1974)
Hypnosis as an Adjunct to Conscious Sedation
Lang et al. (2000)

- Outpatient Surgery for Diagnosis
- Conscious Sedation
  - Patient-Controlled Analgesia
- Adjunctive Behavioral Techniques
  - Hypnosis
  - Attention Manipulation

Pain During Surgery
Lang et al. (2000)

Anxiety During Surgery
Lang et al. (2000)
Medication Use During Surgery

Lang et al. (2000)

![Bar Chart: Units of Medication Requested vs. Received for Sedation, Hypnosis, and Attention Treatments.]

Adverse Events During Surgery

Lang et al. (2000)

![Bar Chart: Adverse Events for Sedation, Hypnosis, and Attention Treatments.]

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
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.”

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

Pain Ratings
Rainville et al. (1997)

- Increase
- Decrease

Rating
Unpleasantness Intensity
Dimension

0 20 40 60 80 100

0 20 40 60 80 100
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 2

- 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.”

Posthypnotic Amnesia
Kihlstrom (1980), Experiment 2

<table>
<thead>
<tr>
<th>Hypnotizability</th>
<th>Reverse</th>
<th>Initial</th>
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<tbody>
<tr>
<td>Low/Nonamnesic</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Very High/Amnesic</td>
<td>12</td>
<td>16</td>
</tr>
</tbody>
</table>

Implicit Memory in 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

**Category Generation**

<table>
<thead>
<tr>
<th>Hypnotizability</th>
<th>Low/Nonamnesic</th>
<th>Very High/Amnesic</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Targets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Neutral</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

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)

**Amnesic Highs vs. Nonamnesic Lows**

<table>
<thead>
<tr>
<th>Test</th>
<th>Low</th>
<th>High</th>
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<tbody>
<tr>
<td>Cued Recall</td>
<td></td>
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</tr>
<tr>
<td>Fragment Test</td>
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<tr>
<td>Free Ass'n</td>
<td></td>
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</tr>
</tbody>
</table>
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)

![Graph showing Estimated Contribution of Memory Components]

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
Priming in Hypnotic Blindness

Bryant & McConkey (1989)

Recall Spelling

"Seen" "Unseen" New

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