

# “Hysteria” and Hypnosis

Fall 2014

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## 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



Kahun Papyrus,  
1800 BCE





1859

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## 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



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## Janet's Concept of Hysteria

Janet (1889, 1894, 1907); Kihlstrom (1994)



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

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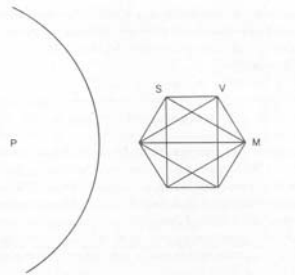
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## The Case of Irene

Janet (1907)

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



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## 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

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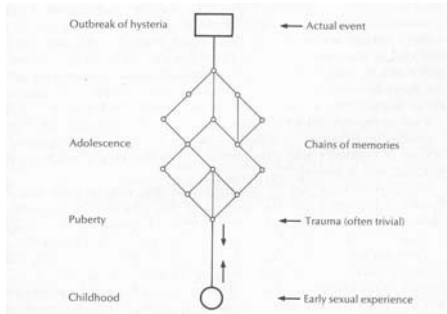
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## Original Doctrine of Repression

Ellenberger (1970), after Breuer & Freud (1893-1895)



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## 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)

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## Dissociative Disorders

American Psychiatric Association, *DSM-5* (2013)



- 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

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### Interpersonality Amnesia in Eve


Thigpen & Cleckley (1954, 1957)



**Eve White**

↙ ↘

**Eve Black** ← → **Jane**



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### 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

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### Interpersonality Amnesia in Jonah

Ludwig et al. (1972)

**Sammy**

↔

**King Young**

↔

**Jonah**

↓

**Usoffa Abdullah**

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## 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



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## Conversion Disorders

American Psychiatric Association, *DSM-5* (2013)



- “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

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## Analysis of Visual Conversion Disorder

Bryant & McConkey (1989), after Brady & Lind (1961, 1965)

- 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

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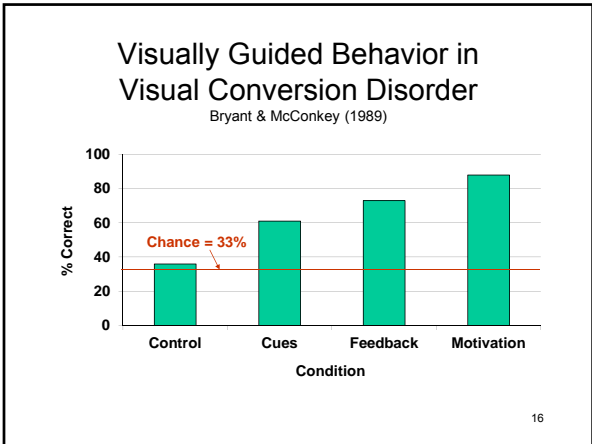
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- ### Dissociations in “Functional” Disorders
- “Hysteria”
    - Dissociative Disorders
      - Memory
    - Conversion Disorders
      - Perception, Action
  - Explicit vs. Implicit Expressions of...
    - Memory
    - Perception, Action
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- ### 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
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## 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

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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



Huffington Post (06/26/2013)

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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)



A Clinical Lesson at the Salpêtrière  
Pierre Brouha (1887)

A Laboratory Model  
for Dissociative Disorder?

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## “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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## Esdale on His Success

Esdale (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....”

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## Esdale on His Success

Esdale (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.”

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## 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!

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## 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

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## 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

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## 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

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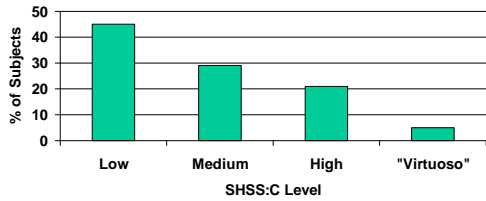
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## Distribution of Hypnotizability

Hilgard (1965)

12-Point Scale



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## Major Surgery: Hypnosis as Sole Analgesic

Hilgard & Hilgard (1975)



- Appendectomy
- Caesarian Section
- Skin Graft
- Cardiac Surgery
- Orthopedic Surgery
- Ligature/Stripping of Veins

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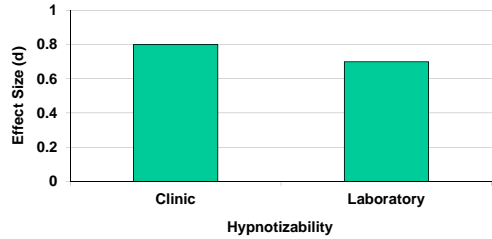
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## Meta-Analysis of Hypnotic Analgesia

Montgomery et al. (2000)



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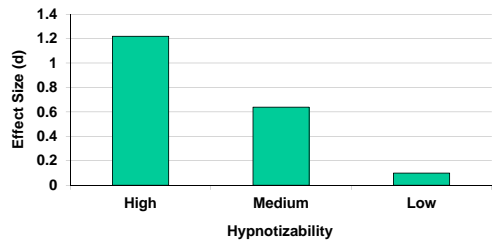
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## Meta-Analysis of Hypnotic Analgesia

Montgomery et al. (2000)



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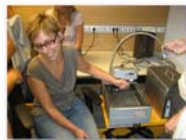
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## Psychophysics of Hypnotic Analgesia

Hilgard (1967)

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



University of Leuven

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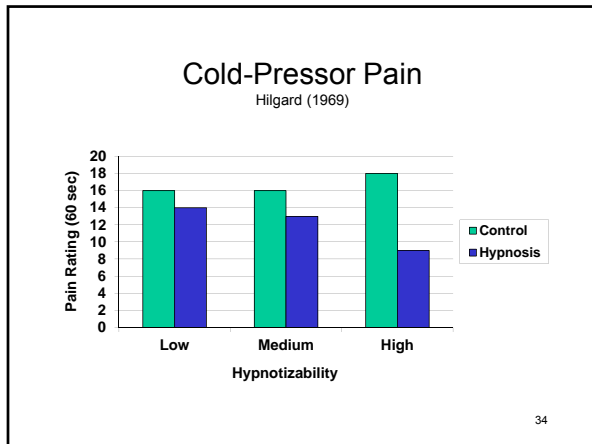
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### Comparative Effects of Hypnotic Analgesia

Stern et al. (1977)

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

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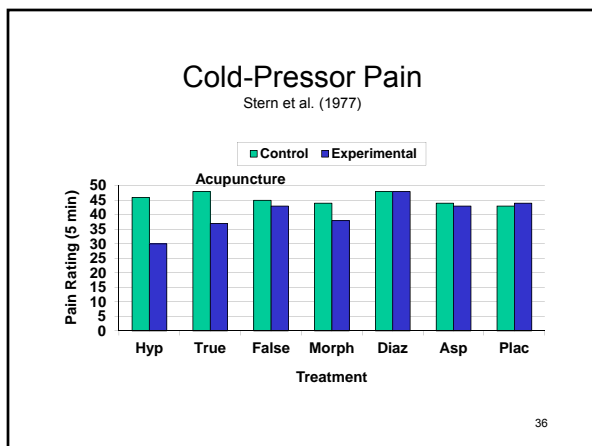
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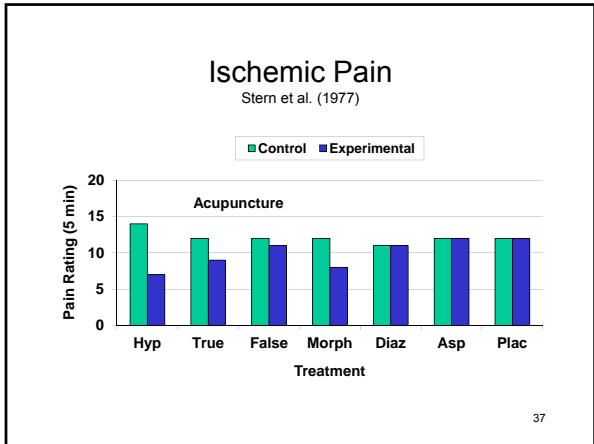
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### Two Components to Pain

McGill Pain Questionnaire

<p><u>Sensory Pain</u></p> <ul style="list-style-type: none"> <li>Flickering</li> <li>Jumping</li> <li>Pricking</li> <li>Sharp,</li> <li>Pinching</li> <li>Tugging</li> <li>Hot</li> <li>Tingling</li> <li>Dull</li> <li>Tender</li> </ul>	<p><u>Suffering</u></p> <ul style="list-style-type: none"> <li>Tiring</li> <li>Sickening</li> <li>Fearful</li> <li>Punishing</li> <li>Wretched</li> <li>Annoying</li> </ul>
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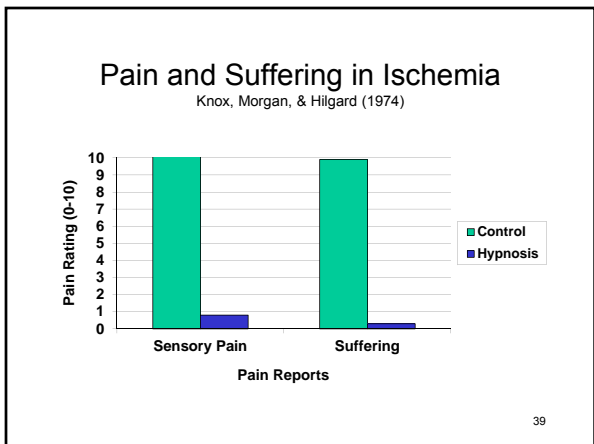
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## Hypnosis as an Adjunct to Conscious Sedation

Lang et al. (2000)

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



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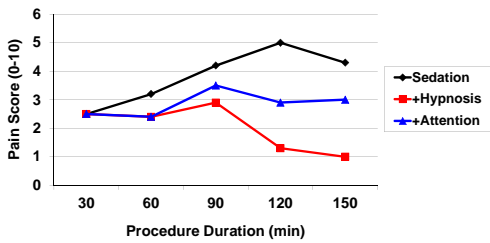
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## Pain During Surgery

Lang et al. (2000)



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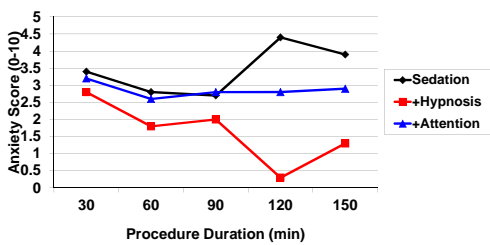
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## Anxiety During Surgery

Lang et al. (2000)



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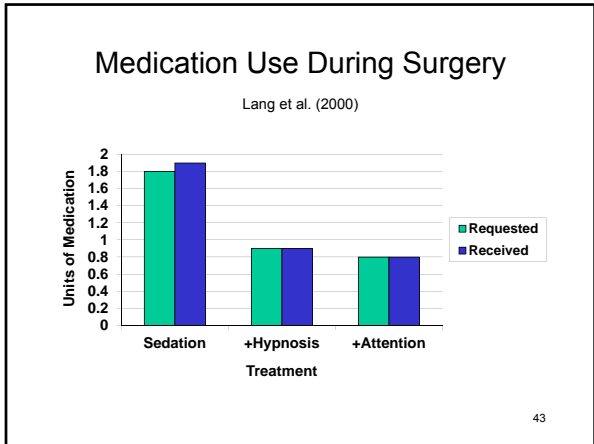
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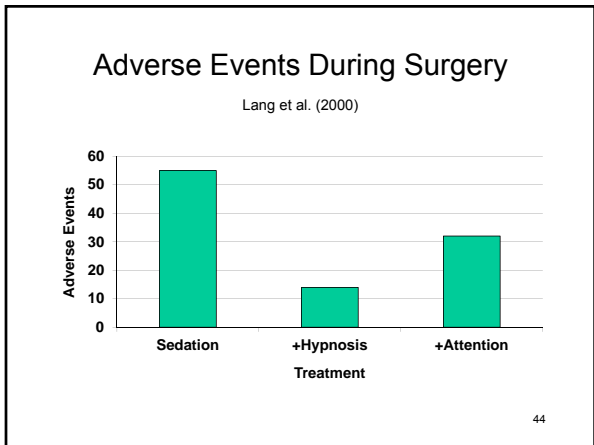
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- ### Hypnotic Modulation of Suffering
- Rainville et al. (1997)
- “Hot Pressor” Pain
  - Hypnotic Alteration of Unpleasantness
    - Increase vs. Decrease
    - Sparing Intensity of Pain
  - PET Imaging
    - Primary Somatosensory Cortex (SI)
      - Location, Intensity
    - Anterior Cingulate Cortex (ACC)
      - Emotional Significance
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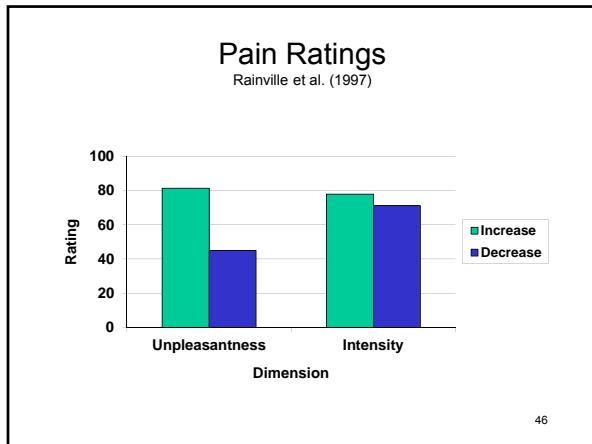
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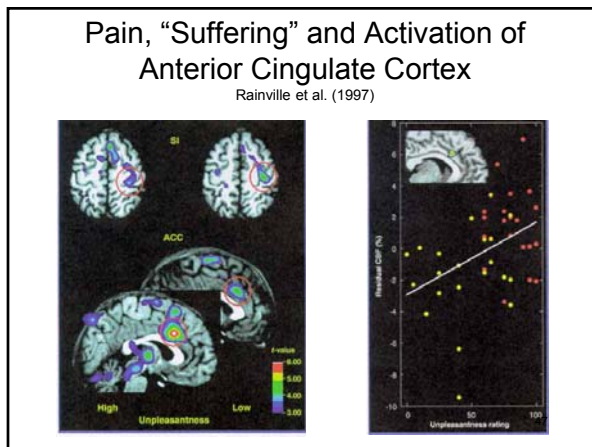
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### Posthypnotic Amnesia

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...<sup>48</sup>

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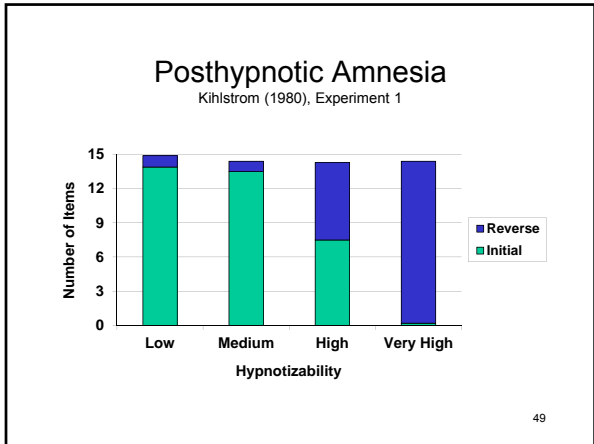
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- ### Implicit Memory in Posthypnotic Amnesia
- Kihlstrom (1980), Experiment 1
- Free-Association Test
    - After Initial Amnesia
  - Critical Stimuli
    - Target Memorized Words
    - e.g., *Boy-Girl*, *Table-Chair*, *Blossom-Flowers*
  - Neutral Stimuli
    - Target Matched Control Words
    - e.g., *Lamp-Light*, *Dogs-Cats*, *Man-Woman*
- Girl*

*Chair*

*Flowers*

*Short*
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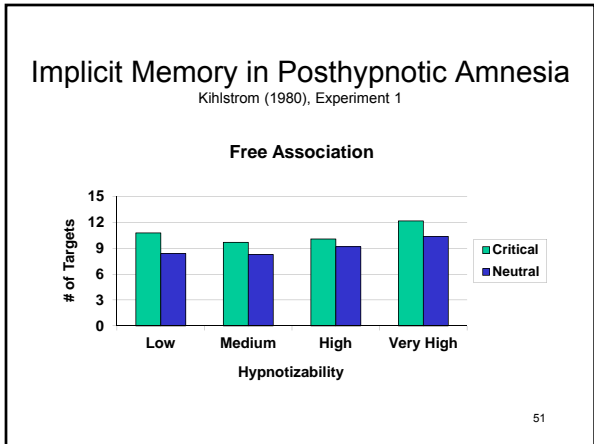
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## Posthypnotic Amnesia

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...52

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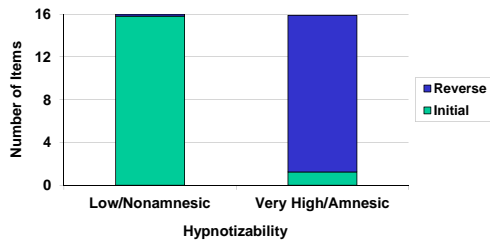
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## Posthypnotic Amnesia

Kihlstrom (1980), Experiment 2



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## 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*

*Judy  
Foot  
Lion  
Day*

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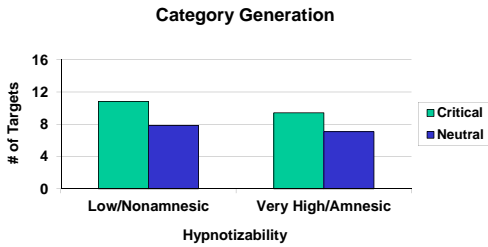
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## Implicit Memory in Posthypnotic Amnesia

Kihlstrom (1980), Experiment 2



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## Repetition and Semantic Priming in Posthypnotic Amnesia

Barrier 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)

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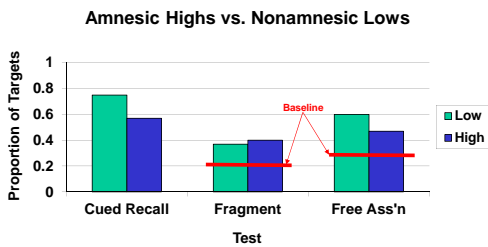
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## Memory Test Performance

Barrier et al. (2001)



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## 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

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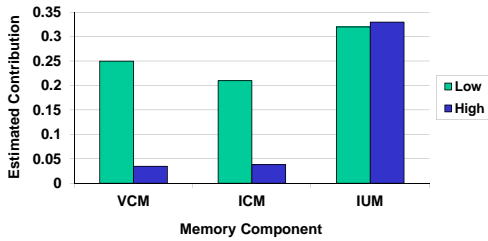
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## Components of Memory in Posthypnotic Amnesia

David et al. (2000)



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## 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?*

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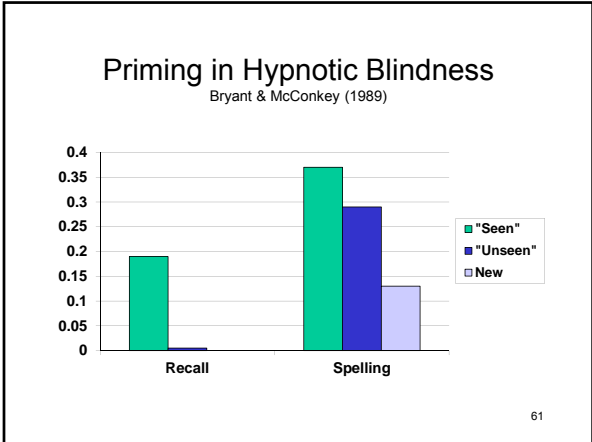
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- ### Posthypnotic Suggestion
- Behavioral Response to Cue
    - Accompanied by Posthypnotic Amnesia
  - Quasi-Automatic
    - “Compulsive Automatism”
    - Executed Outside Awareness
    - Posthypnotic Amnesia
  - But is PHS *Really* Automatic?
    - Inevitable Evocation
    - Efficient Execution
      - Consumes No Cognitive Capacity
- 62

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### 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



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## PET Imaging of Hypnotic Color Blindness

Kosslyn et al. (2000)

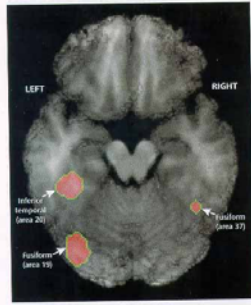
### Fusiform Color Area

Brodmann Area 19  
Brodmann Area 37

### Inferior Temporal Region

Brodmann Area 20

FIGURE 2. PET Image of Perceptually Driven Color Activation in Eight Highly Hypnotizable Subjects\*



\*The named areas were activated more when the subjects were told to view vertically a color stimulus than when they were told to view vertically a gray-scale stimulus. The transverse slice pictured is 12 mm below the line connecting the anterior commissure and posterior commissure. The z-score threshold for this image was 3.09.

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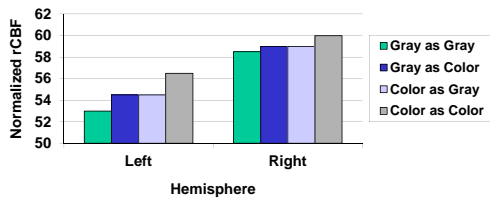
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## Positive/Negative Color Hallucination

Kosslyn et al. (1999)

### Activation in Fusiform Color Region



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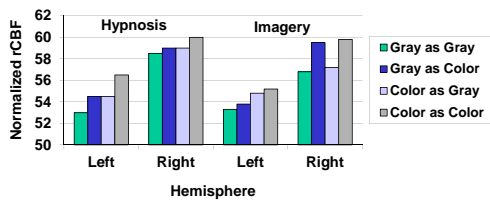
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## Hypnosis and Imagery Compared

Kosslyn et al. (1999)

### Activation in Fusiform Color Region



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### 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*

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