

## Freud: From the Brain to the Unconscious Mind



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## Early 19<sup>th</sup> Century Attempts to Link Mind to Brain

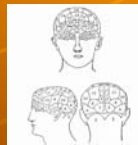
Franz Joseph Gall

Distinguish cognitive faculties

- verbal memory
- destructiveness
- physical love



Localize them by correlating them with skull protrusions



Opposition led by Cartesians: mind is indivisible



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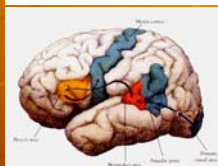
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## Broca and Wernicke

Broca (1861): patient Tan—deficit in articulate speech linked to lesion in frontal lobe



Wernicke (1870s-1880s) identified a second language disorder and promoted a “connectionist” perspective



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## Freud's Early Neurobiological Career

- published papers on neuroanatomy including three papers on the structure of the medulla oblongata (lower part of the brain stem in front of cerebellum and below the pons; involved in voluntary movement)
- worked on new techniques for staining nerve tracts and for tracing embryological nerve fiber
- lecture on "The Structure of the Elements of the Nervous System" which can be read as advocating neurons as separate units

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## On Aphasia (1891)

"It appears to us, however, that the significance of the factor of localization for aphasia has been overrated, and that we should be well advised once again to concern ourselves with the functional states of the apparatus of speech" (p. 105).

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## Freud and Hughlings Jackson

"In assessing the functions of the speech apparatus under pathological conditions we are adopting as a guiding principle Hughlings Jackson's doctrine that all these modes of reaction represent instances of functional retrogression (dis-involution) of a highly organized apparatus, and therefore correspond to earlier states of its functional development. This means that in all circumstances an arrangement of associations which, having been acquired later, belongs to a higher level of functioning, will be lost, while an earlier and simpler one will be preserved. From this point of a view, a great number of aphasic phenomena can be explained. The loss through damage to the speech apparatus, of new languages as super-associations, while the mother tongue is preserved. Next, the nature of the speech remnants in motor aphasia which are so frequently only "yes" and "no" and other words in use since the beginning of speech development" (p. 87).

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## Freud's Early Views on Paraphasia

"We only want to mention that the paraphasia observed in aphasic patients does not differ from the incorrect use and the distortion of words which the healthy person can observe in himself in states of fatigue or divided attention or under the influence of disturbing affects.--the kind of thing that often happens to our lecturers and causes the listener painful embarrassment. It is tempting to regard paraphasia in the widest sense as a purely functional symptom, a sign of reduced efficiency of the apparatus of speech associations. This does not exclude that they may occur in most typical form as organic local symptoms." (p. 13)

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## Project for a Scientific Psychology

"The intention is to furnish a psychology that shall be a natural science: that is, to represent psychical processes as quantitatively determinate states of specifiable material particles, thus making those processes perspicuous and free from contradiction".

Strong view of mind-brain relations: a given type of mental activity is to be equated with a particular type of brain activity

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## Brentano and the Intentionality of the Mental



- ◆ Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object, and what we might call, though not wholly unambiguously, reference to a content, direction toward an object (which is not to be understood here as meaning a thing), or immanent objectivity. Every mental phenomenon includes something as object within itself... (Brentano, *Psychology from an Empirical Standpoint*, p. 88)

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## Collaboration with Josef Breuer

The case of Anna O.

- Breuer treated her in 1880-82 by using hypnosis to recover the onset of each symptom
- Claimed that once she re-experienced the original situation with emotion, the symptom dissipated
- In fact, most of the symptoms soon returned



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## Freud's Visit to Charcot

Major investigator of neurological diseases of the motor system such as multiple sclerosis, Parkinson's, and Tourette's Syndrome.

Focus in the later part of his career on hysteria:

- Established, partly through photographic evidence, regular patterns in hysteric patients
- Construed hysteria as due to a hereditarily weak neurological system and triggered by a traumatic event



Employed hypnosis in the study of hysteria, to which he claimed only hysterics were susceptible.

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## Mesmer and Hypnosis

In the 1770s Franz Anton Mesmer became intrigued with the effects of magnets on the body

- magnetic baquet, a wooden tub nearly five feet across, and one foot deep, filled with water, patterns of bottles and iron filings from which iron rods projected which patients held
- "magnetized" tree from which ropes hung that patients held
- these devices induced "crises" (convulsions)



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## Mesmer and Hypnosis (continued)

Later Mesmer found he could induce the crisis without magnets and attributed this to his own animal magnetism

Still maintained the use of magnets and bright dress for their dramatic effects



Jacques de Chastenet reconstrued Mesmerism as involving a state of artificial somnambulism in which subjects are especially subject to suggestion

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## Mesmerism and Hypnosis

1843: James Braid in England re-christens the process *neurohypnosis* or *hypnosis*, characterizing the state as a form of sleep

Hypnosis almost accepted as an anesthetic technique

- John Elliotson (1843) and James Esdaille (1846) report numerous cases of pain free surgery with hypnosis
- But the advent of use of ether supplanted it

1877: Charcot begins to investigate the use of hypnosis in the treatment of hysterics. Argues that susceptibility of hypnosis is a distinctive feature of hysteria

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## Freud & Breuer's Account of Anna O. and the Black Snake Episode

After visiting Charcot, Freud returned to Vienna and resumed his collaboration with Breuer's resulting in *Studies on Hysteria* (1895). Report on Anna O.

"In July 1880 . . . her father fell seriously ill of a sub-pleural abscess. Anna shared the duties of nursing him with her mother. She once woke up during the night in great anxiety about the patient, who was in a high fever; and she was under the strain of expecting the arrival of a surgeon from Vienna who was to operate. . . . Anna was sitting at the bedside with her right arm over the back of her chair. She fell into a waking dream and saw a black snake coming towards the sick man from the wall to bite him. (It is most likely that there were in fact snakes in the field behind the house and that these had previously given the girl a fright; they would thus have provided the material for her hallucination.) . . .

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## Black Snake Episode Continued

"She tried to keep the snake off, but it was as though she was paralysed. Her right arm, over the back of the chair, had gone to sleep and had become anaesthetic and paretic; and when she looked at it the fingers turned into little snakes with death's heads (the nails). (It seems probable that she had tried to use her paralysed right arm to drive off the snake and that its anaesthesia and paralysis had consequently become associated with the hallucination of the snake.) When the snake vanished, in her terror she tried to pray. But language failed her: she could find no tongue in which to speak, till at last she thought of some children's verses in English and then found herself able to think and pray in that language. The whistle of the train that was bringing the doctor whom she expected broke the spell" (pp. 92-93).

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## Freud's Emerging Theory of the Unconscious

Hysteria results from undischarged memories of psychological traumas

- Memories originated when the nervous system was in a special physiological condition or "hypnotic state"
- Stored in a manner cut off from consciousness but which could intrude on ongoing activities, producing "conversion" or somatic innervation
- Focus on the intentional (in Brentano's sense) character of these symptoms

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## Beyond Hypnosis

Freud found hypnosis to be an unreliable technique (many patients not easily hypnotized)

He proposed other techniques than hypnosis to access these states

Sometimes simple suggestion would work, but often generated resistance

Dream interpretation

Free association

Paraphasias—now viewed as a route to the unconscious mind

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## Freud on Dream Interpretation

Dreams often do not make sense, but an interpretation can nonetheless be developed (often with resistance from the dreamer)

Freud contended that the right interpretation often involved sexual content, including fulfillment of hidden wishes (for males, sex with one's mother and death of one's father)

Resistance became a sign that Freud was on to the right interpretation



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## The Character of the Hidden Unconscious World

Content and reasoning much like that of ordinary experience

But suppressed so that metaphors and other secret codings are required

Psychodynamic model built on a hydraulic metaphor

- Deep desires—activity of the Id exerting force
- Unacceptable in the social so opposed by the superego
- Ego must try to keep the Id in check but it exerts force
- Find alternative expression—sublimation
- Repression—may lead to eruption

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## Why Think there are Unconscious Psychological States?

Not enough that mental states are affected by non-conscious processes

Conscious processes are clearly affected by such things as nutrition and circulation, but that does not make these other processes mental

Rather, the unconscious must show the traits of psychological states

One thing they often reflect is our *intentional* categorization—hysterical paralyses, for example, reflect our folk conception of how our bodies work, not the neural organization

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## Relation of Psychodynamics to Brain Processes

Freud never fully gave up the aspirations of the Project for a Scientific Psychology

But he did come to believe that the most productive accounts for the time would focus on psychological factors

“psychoanalysis must keep itself free from any hypothesis that is alien to it, whether of an anatomical, chemical, or physiological kind, and must operate with purely psychological auxiliary ideas”

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## Flanagan's Thesis of Psychological Autonomy

“The moral I want to extract (and attribute to Freud) is simply this: intentional content must figure essentially in psychological explanation. A purely psychological language, consisting of the vocabulary of (conscious or unconscious) belief, memory, desire, wish, and so on, can provide a framework in which intentional content figures essentially, while the languages of chemistry, physics, and neuroscience, at present at least, cannot” (p. 63).

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## Is the Psychodynamic Story Scientific?



Karl Popper: Scientific theories are falsifiable (we can specify what sorts of evidence, if it were developed, would force us to reject them)

But Freudian psychodynamic accounts are not falsifiable. Why would he think that?

Are they unfalsifiable? How might they turn out to be false?

Research programs generally are not directly falsifiable, although they must give rise to specific theories that are and they must make progress.

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## Does therapeutic practice provide evidence?

Tally argument

"After all, his [the patient's] conflicts will only be successfully solved and his resistances overcome if the anticipatory ideas he is given [by the analyst] tally with what is real in him. Whatever in the doctor's conjectures is inaccurate drops out in the course of the analysis..." (Freud, 1917, p. 452).

Is this a good argument?

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## What are the consequences of the introduction of the unconscious

For our sense of who we are?

For the practice of psychology as a science?

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