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PHINEAS GAGE

A man who survived a **rod** through his head, but...

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Who Was Phineas Gage?



Phineas Gage was a 25-year-old railway construction foreman in the USA.

In 1848, he survived a severe brain injury caused by a tamping iron passing through his skull.

What made this case famous wasn't survival,

It was the dramatic change in his personality and behavior.

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The Accident

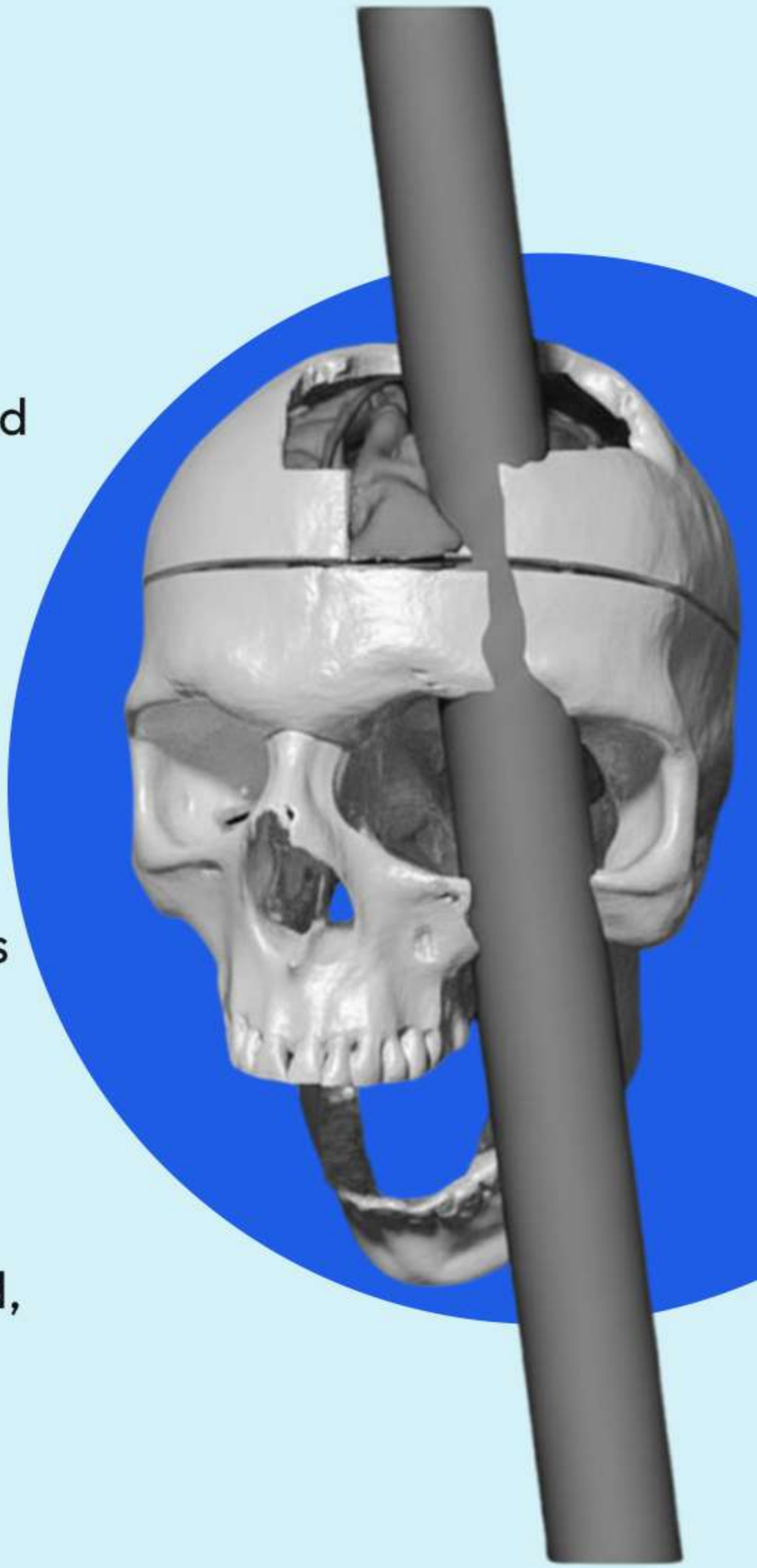
(What Exactly Happened?)

- A 3.5-foot iron rod entered through his left cheek
- Passed behind the eye
- Exited through the frontal region of the skull

Despite massive injury:

- ✓ Conscious within minutes
- ✓ Could speak and walk
- ✓ Retained basic memory and intelligence

But something else changed, his behavior.



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Behavioral & Personality Changes

Before the accident:



Responsible



Socially appropriate



Emotionally stable

After the accident:



Impulsive and aggressive



Poor judgment and planning

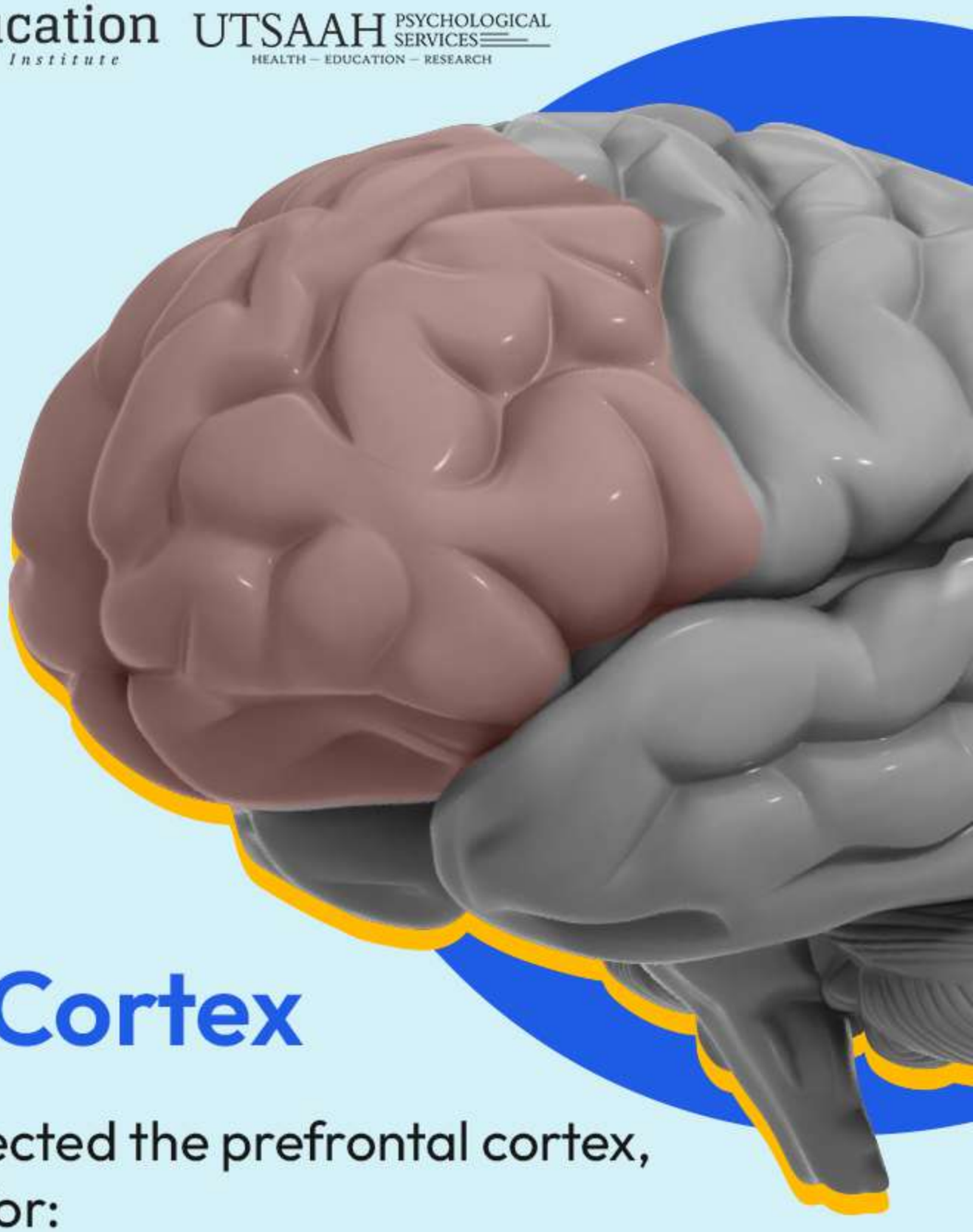


Socially inappropriate behavior

This contrast became the core psychological significance of the case.

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Role of the Prefrontal Cortex

The injury mainly affected the prefrontal cortex, which is responsible for:

- Decision-making
- Emotional regulation
- Personality expression
- Social behavior and impulse control

Damage here does not reduce intelligence; it disrupts executive functions.

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Why This Case Changed Psychology

Before Gage's case, many believed:

Personality and moral behavior were not linked to the brain

After the case:

- ✓ Clear evidence that specific brain areas control specific functions
- ✓ Strong support for the localization of brain function

This case bridged neurology + psychology.



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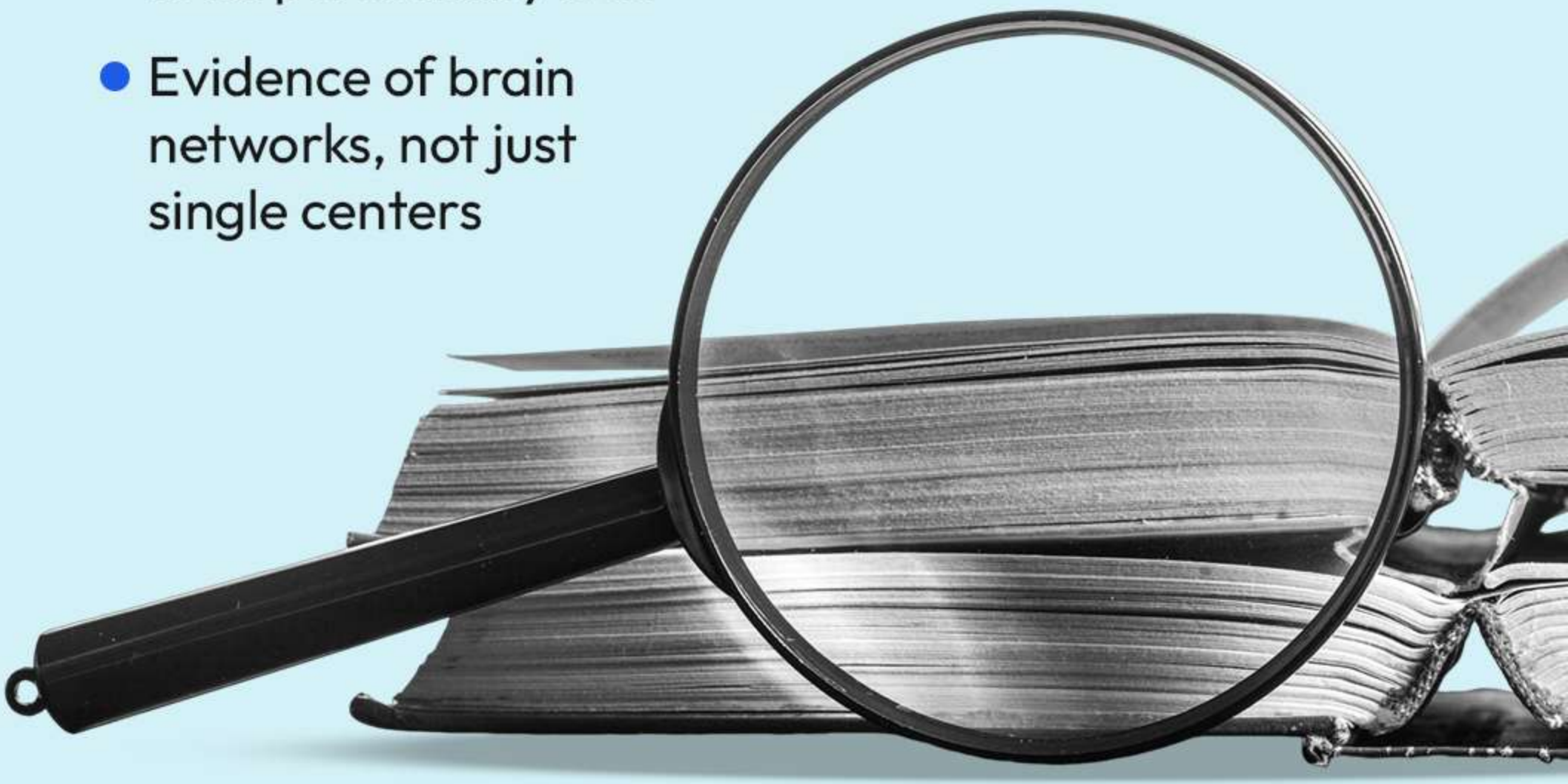
Research & Modern Interpretation

Later reconstructions (CT scans & simulations) showed:

- Extensive damage to ventromedial prefrontal cortex
- Explains emotional dysregulation and poor decision-making

Modern psychology views Gage as:

- A disconnection syndrome, not total personality loss
- Evidence of brain networks, not just single centers



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