

Mind-body relation

Issue @; given that the brain gives rise to the mind, what is the relation between different brain regions and different mental faculties?

-Holistic: *all* brain regions participate equally in *all* mental activities

versus

-Localizationist: *different* brain regions give rise to different mental activities.

Holism vs. Localizationism

- debate had strong sociopolitical overtones
- phrenology: a first try at a localizationist account

-Brain is made up of 27-43 different 'organs' each corresponding to a specific aspect of personality or intellect

- increased mental ability is associated with increased size of corresponding cortical region
- increased size of cortical region in turn leads to deformation of overlying cranial bone, leading in turn to

-Phrenology's two fatal flaws:

1. incorrect understanding of mental faculties
2. larger brain regions do not lead to bumps on outside of skull, although they do lead to indentations (petalia) on inner surface skull

- Localizationism gets a second chance

-4:30 pm, September 13, 1848 in Cavendish, Vermont

- Phineas Gage

- 25 year old foreman of a work gang.

Localizationism becomes mainstream

- Paul Broca and the localization of language:

1. Language is most unique human behavior

2.

3.

- Patient 'Tan' (Leborgne): Loss of speech without loss of comprehension nor mental function.

Prelude, concluded...

- Broca's work established validity of localization
- But, strong resistance to notion that left and right sides of the brain were anatomically or functionally different, even from Broca himself:

Left brain, Right brain

- Hemispheric asymmetry received little attention between 1880's and 1950s, outside of neurology:
 - Left sided damage = linguistic deficits
 - right sided damage = visuospatial deficits