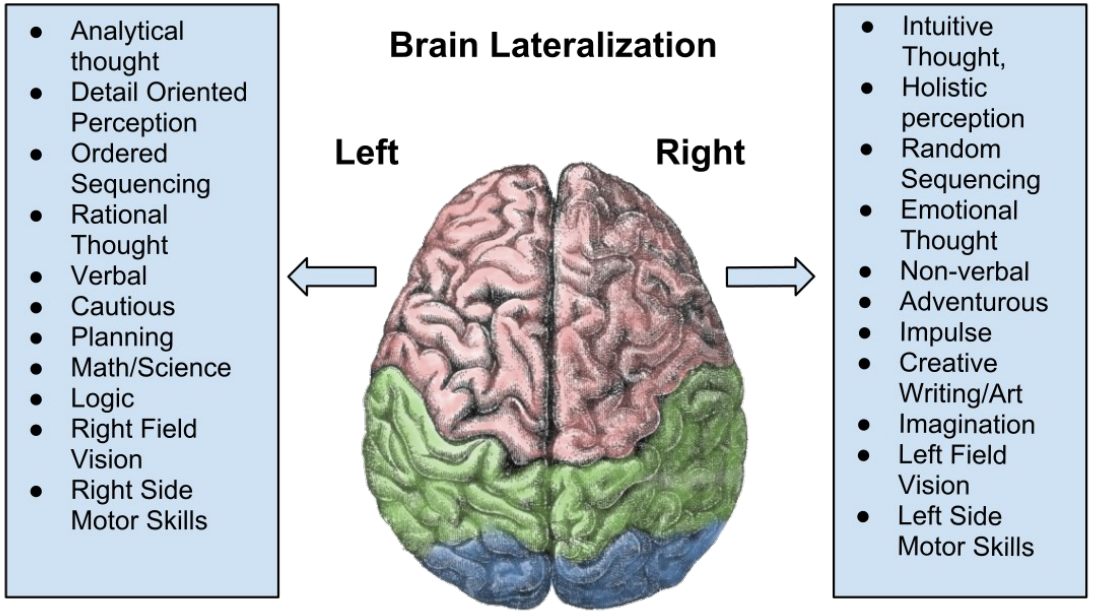
Lateralisasi

otak

Tujuan pembelajaran:

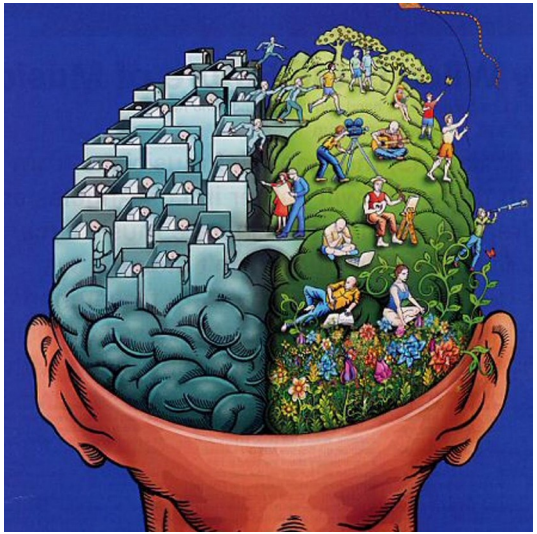
- lateralisasi otak manusia

Lateralisasi otak manusia



Lateralisasi otak manusia

Kiri:
- bahasa
- matematika
- penulisan
- ilmu
- fakta
- logika
- konvergensi



Kanan:
- intuisi
- artistik
- musikal
- berwawasan luas
- imajinasi
- gambar 3D
- perbedaan

Mitos otak kanan / otak kiri

An Evaluation of the Left-Brain vs. Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging

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Abstract

Lateralized brain regions subserve functions such as language and visuospatial processing. It has been conjectured that individuals may be left-brain dominant or right-brain dominant based on personality and cognitive style, but neuroimaging data has not provided clear evidence whether such phenotypic differences in the strength of left-dominant or right-dominant networks exist. We evaluated whether strongly lateralized connections covaried within the same individuals. Data were analyzed from publicly available resting state scans for 1011 individuals between the ages of 7 and 29. For each subject, functional lateralization was measured for each pair of 7266 regions covering the gray matter at 5-mm resolution as a difference in correlation before and after inverting images across the midsagittal plane. The difference in gray matter density between homotopic coordinates was used as a regressor to reduce the effect of structural asymmetries on functional lateralization. Nine left- and 11 right-lateralized hubs were identified as peaks in the degree map from the graph of significantly lateralized connections. The left-lateralized hubs included regions from the default mode network (medial prefrontal cortex, posterior cingulate cortex, and temporoparietal junction) and language regions (e.g., Broca Area and Wernicke Area), whereas the right-lateralized hubs included regions from the attention control network (e.g., lateral intraparietal sulcus, anterior insula, area MT, and frontal eye fields). Left- and right-lateralized hubs formed two separable networks of mutually lateralized regions. Connections involving only left- or only right-lateralized hubs showed positive correlation across subjects, but only for connections sharing a node. Lateralization of brain connections appears to be a local rather than global property of brain networks, and our data are not consistent with a whole-brain phenotype of greater “left-brained” or greater “right-brained” network strength across individuals. Small increases in lateralization with age were seen, but no differences in gender were observed.

Refleksi – Albert Einstein

Einstein bukan hanya fisikawan terhebat, tetapi dia juga seorang musisi & pelaut ulung

Ringkasan

Orang kreatif bisa berotak kiri atau berotak kanan

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