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Brain Mapping: An Overview

Samuel Wilson*

Department of Human Genetics Rm 2/38, Strathcona Anatomy & Dentistry Building, Canada

Editorial

Bio fluid Brain mapping is a set of neuroscience approaches based on mapping (biological) values or features onto spatial representations of the (human or non-human) brain to produce maps. Brain mapping is defined as the study of the anatomy and function of the brain and spinal cord using imaging, immunohistochemistry, molecular & optogenetics, stem cell and cellular biology, engineering, neurophysiology, and nanotechnology, according to the Society for Brain Mapping and Therapeutics (SBMT) definition from 2013. All neuroimaging is included in the process of brain mapping. The result of additional (imaging or non-imaging) data processing or analysis, such as maps projecting (measures of) behaviour onto brain regions, can be thought of as a higher form of neuroimaging, producing brain images supplemented by the result of additional (imaging or non-imaging) data processing or analysis, such as maps projecting (measures of) behaviour onto brain regions (see fMRI). A connectogram, for example, illustrates cortical regions grouped by lobes around a circle. Various typical neurological parameters, such as cortical thickness and curvature, are represented by concentric circles within the ring. Lines depicting white matter fibres in the centre of the circles depict connections between cortical regions, weighted by fractional anisotropy and strength of link. Brain maps with higher resolution are referred to as connectomes. Individual neuronal connections in the brain are included in these maps, which are commonly portrayed as wiring diagrams. Techniques for brain mapping are constantly evolving, and they rely on the creation and refining of image capture, representation, processing, visualisation, and interpretation methods. The mapping element of brain mapping relies heavily on functional and structural neuroimaging. Some experts have disputed statements made in scientific publications and the popular press based on brain imaging, such as the finding of "the portion of the brain responsible" for emotions, musical ability, or a specific memory. Many mapping approaches have a low resolution, despite the fact that a single voxel can contain hundreds of thousands of neurons. Because many functions involve several areas of the brain, this type of claim is likely to be both unverifiable with the technology employed and based on an inaccurate assumption about how brain functions are split in general. Most brain processes may only be accurately described after being measured using much finer-grained measurements that look at a very large number of tiny individual brain circuits rather than vast regions. Many of these studies also contain technical flaws, such as limited sample sizes or inaccurate equipment calibration, which make them unreplicable - factors that are commonly overlooked in the pursuit of a dramatic journal paper or news headline. In certain circumstances, brain mapping techniques are exploited in ways that are not scientifically proven for commercial objectives, lie detection, or medical diagnosis. Eyewire, an interactive citizen science website, was developed in 2012 to map the retinal cells of mice. An American IT firm published the most detailed 3D map of the human brain in 2021. It depicts a millionth of a brain's neurons and connections, as well as blood arteries and other components. The map was created by slicing a 1 mm3 chunk into almost 5 000 nanometer-thin fragments and scanning them with an electron microscope. It took 1.4 petabytes of storage space to create the interactive map. Scientists revealed two months later that they had constructed the first complete neuron-level-resolution 3D map of a monkey brain, which they scanned in 100 hours using a new technology. They only made a portion of the 3D map public because the complete map, even compressed, occupies more than 1 petabyte of storage space.

References

1. Ada Hamosh, Alan F. Scott, Joanna Amberger, Carol Bocchini, David Valle, Victor A. McKusick "Online Mendelian Inheritance in Man (OMIM), a knowledgebase of human genes and genetic disorders." Human Genet Embryol, 13 (2022),52–55,.
2. Nejat Mahdieh, and Bahareh Rabbani. "An Overview of Mutation Detection Methods in Genetic Disorders" Human Genet Embryol. 13 (2022): 375–388 .
3. V T Ramaekers, G Heimann, J Reul, A Thron, J Jaeken "Genetic disorders and cerebellar structural abnormalities in childhood" Human Genet Embryol 13 (2022): 1739–1751
4. Sharon O' Neilla Julie Brault Marie-Jose Stasiabc Ulla and G.Knausa "Genetic disorders coupled to ROS deficiency." Human Genet Embryol 13 (2022): 36-41
5. Clazien Bouwmans, Marieke Krol, Hans Severens, Marc Koopmanschap, Werner Brouwe Leona Hakkaart-van Roijen Bouwmans. "The iMTA productivity cost questionnaire: a standardized instrument for measuring and valuing health-related productivity losses." Human Genet Embryol 13 (2022): 753-758

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***Address for Correspondence:** Samuel Wilson Department of Human Genetics Rm 2/38, Strathcona Anatomy & Dentistry Building, Canada, Email: wilsonsam@emline.org*

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