The Brede Wiki running on MediaWiki software represents data in templates. Data is from published peer-reviewed neuroscience articles. Further information is ontologies of, e.g., brain regions and brain functions. Since data in the templates is represented in a simple format all template data can be extracted and represented in SQL. From an SQL database specialized searches can be performed, e.g., search on Talairach coordinates.

Several databases exist for storing Talairach coordinates, but contributing data is not straightforward. For the Brede Database contributors need to download a Matlab program, understand it, enter data and submit it to the database curator which then adds it to the database. A wiki presents a much more direct way of editing. Wikis are often unstructured. However, some wikis, such as semantic wikis, are capable of labeling its content so data can be ‘structured’ and understood by a computer. Using the template functionality in MediaWiki—the Wikipedia software—is one simple approach for a structured wiki.

Data from MediaWiki templates have been extracted from Wikipedia and the large-scale DBpedia Web-based database have been built from the data. Wikipedia templates can form the basis for descriptive as well as multivariate statistical analyses. The Brede Wiki uses the MediaWiki templates to structure data.

In the Brede Wiki the templates of MediaWiki store structured information. Template definitions construct infoboxes and some constructs schematic natural language. Information in the templates includes ontologies for brain function (cognitive components), brain regions, organizations, events and software. Further templates describe researchers and papers. For result data Talairach coordinate, gene personality association and Brain volume templates are defined.

Apart from standard wiki input Brede Wiki template coordinate data can be extracted from an SPM extension. Another of our structured wikis (see figure) can output its personality genetics data in template format ready for inclusion in the Brede Wiki.

The Brede Wiki currently holds around 700 pages. Of these pages are 115 for brain regions, 84 for papers with 47 containing Talairach coordinates, 66 for researchers, 9 for organization and 25 for software descriptions. These numbers could increase if data from other databases were automatically added to the wiki with programs such as the bots on Wikipedia that have built, e.g., the ‘Gene Wiki’. Thanks to the Lundbeck Foundation for funding and Lars Kai Hansen and Daniela Baldev for discussions.

Acknowledgment

The Brede Wiki may construct links for Web-based services such that individual Talairach coordinates can be searched and visualized, e.g., with the Brede Database, SumsDB or ICBM View. Text searches are provided to DOAJ, Open J-Gate and Google.

References