

# ULiège Open Science Day 2024

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## Title

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The "My data organization is as good as yours" fallacy.

## Abstract

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With the development of acquisition tools, (biomedical) data are steadily becoming more complicated to handle. This complexity stems from the ever-larger amount of data acquired, from diverse modalities in different file formats, but also the longer and asynchronous timeline of their acquisition, over days to years. To make sense of the accumulated data, it is necessary to precisely and unambiguously describe the content of such "large" dataset.

In neuroimaging, scientists have been using open-source software since the mid-1990's but there existed no consensus on how researchers should systematically organize their data. Typically each lab would structure their dataset in their own way, such that only one/few researcher/s would know how to make sense of them. Moreover, the data could be spread across supports, e.g. in a lab book on a shelf, some Excel file on a laptop, and several hard-drives! Such lack of consensus leads to misunderstandings and time wasted on rearranging data or rewriting scripts expecting certain structure. In 2016, Gorgolewski et al. proposed the "Brain Imaging Data Structure" (BIDS): a framework to solve these issues in a practical and easy-to-adopt way, using open file formats[1,2].

Since then, BIDS has been broadly adopted by the neuroimaging community and extended to describe several additional modalities and 'data derivatives'. BIDS success can be linked to its being a community effort, addressing clear use cases, solving common end-user problems, and presenting low technical barrier to entry[3]. Making data FAIR (Findable, Accessible, Interpretable, Reusable) calls for much more than "dumping" a zip file on a public server. Relying on a acknowledged well-defined standard, with a thorough description of the (meta)data, is necessary. BIDS effectively provides a simple and intuitive way to organize and describe your neuroimaging/behavioural data. These principles could be extended to other fields.

[1] <https://doi.org/10.1038/sdata.2016.44>

[2] <https://bids.neuroimaging.io/>

[3] [https://doi.org/10.1162/imag\\_a\\_00103](https://doi.org/10.1162/imag_a_00103)

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