Hands-on Open Science

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In this workshop, I will introduce four useful open science practices, that is, preregistration, analysis blinding, collaborating with GitHub, and automatically archive data as soon as they are collected.

The first part of this workshop will focus on how to apply open science practices, such as preregistration and analysis blinding. Preregistration is a method to reduce bias in statistical analyses by committing to an analysis plan in advance of data collection. Analysis blinding is achieved by temporarily altering data labels or values to remove crucial effects. Blinding data can be achieved, for instance, by shuffling the key outcome measure in the real data in order to hide the effect of interest while leaving the general data structure intact. Both preregistration and analysis blinding safeguard the confirmatory status of the analyses. However, compared to preregistration, blinded analysis allows researchers to base their analytical decisions on the real dataset, which can be beneficial if the analysis includes data-dependent choices (e.g., a certain factor structure). For this first part of the workshop, participants are encouraged to bring data either from one of their current projects or from a past project to try out these open science practices.

In the second part of the workshop, I will describe how we use GitHub as a collaboration tool. We will create our own git repository, learn how we can integrate our projects in RStudio and how we can suggest changes in someone else's code. Finally, we will discuss open data sharing and how to set up a system that facilitates born-open data. Born-open data are data which are automatically uploaded to GitHub once they are collected. These data are time-stamped and versioned and immediately accessible to colleagues and collaborators. For this part of the workshop, participants should have already created an account on github.com.