



Reflections from a participant...

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# About me...

- Currently working @ swisstopo (Federal Office of Topography, Switzerland); responsible for Interactive Map Applications (public end-user products)
- Former Master student and PhD @ University of Bern, Switzerland (Biology, Behavioural Ecology and Evolution); scientific background



# Motivation

- Very interesting work is presented and I have learned a lot yesterday and today
- Results and products come out of the lab and are heading for users and customers
- Experimental works arise: "Field studies", "User tests", "Real world evaluation" etc.



# Doing experiments

- Design
- Testing procedure (do the experiment)
- Data collection (before, during, after)
- Data analysis
- Interpretation and conclusions



# Avoid mistakes

1. Unjustified **conclusions** are made from observational (i.e., correlational) data.
2. Data are not independent (“**pseudoreplication**”).
3. Treatments are confounded by **time and sequence effects**.
4. No efforts are made to avoid **observer bias**.
5. Potential artifacts arise when animals are **not accustomed to experimental procedures**.
6. **Unsuitable controls** are used.
7. An attempt is made to “**prove**” the **null hypothesis** with small samples.

*[http://www.planta.cn/forum/files\\_planta/milinski\\_asb1997\\_teach\\_160.pdf](http://www.planta.cn/forum/files_planta/milinski_asb1997_teach_160.pdf)*



# What you can do

- Learn and accept that it IS an important aspect of scientific work
- Get help: touch a person from Mathematics / Statistics division of your institution
- Engage in and profit from knowledge networks (e.g. ICA Commission on Use and User Issues => <http://univie.ac.at/icacomuse/>)



# Your profit

"Good intentions are OK as long as they are believed and not questioned, but you are better off when you have done everything correctly"

Thank you...

...and enjoy tonight's  
Workshop Dinner ;-)