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Data visualization in academic research

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Data visualization in academic research

The case of the **BAKERY** project

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What is the role of visualization in academic research?

- Publications

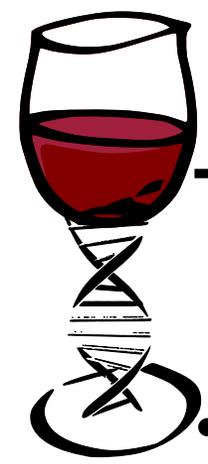
- The exact representation of data in all their shades
- Then people look at the figures first, so they have to be « sexy »

- For posters, orals ,presentations, etc.

- As in any form of communication, the most important is the **message**.
 - Clarity
 - Efficiency

- Open Science

- Data availability
- Reproducibility of scripts for analyses AND graphs



The **Bakery** project

- It is a participative project, thus created with and animated by the actors of the field
- Sourdough bread
- Influence of practices on bread quality and microbial diversity





A lot of data !!

- Lots of bakers all over France
- Several types of flours, different types of practices
- Lots of measurements on bread and microbial diversity (yeasts and bacteria)



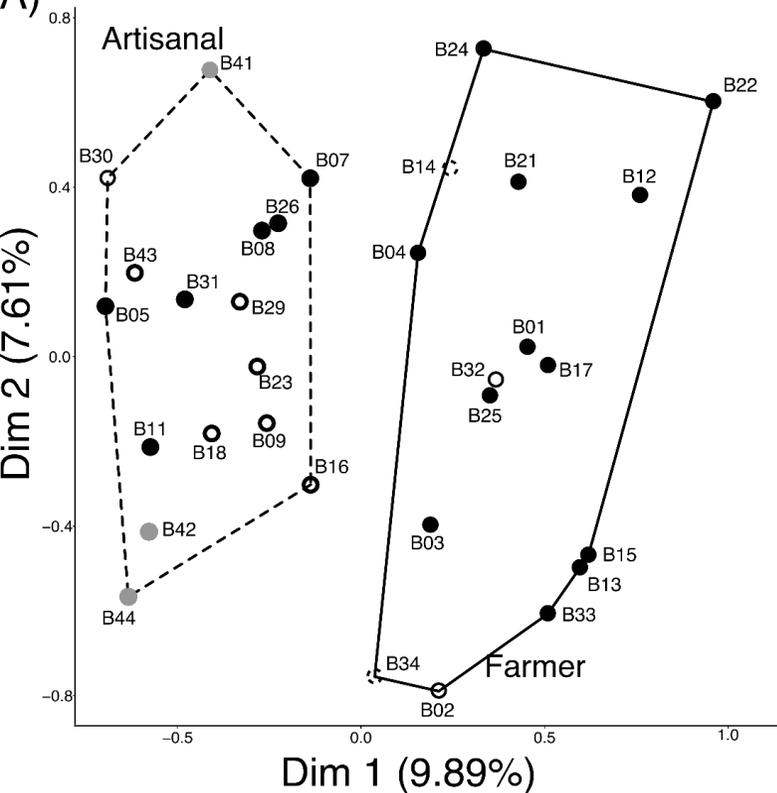
Visualization 1 - How are bakers' practices structured?

- Is there a structure?
- What are the most differentiating practices?
- This is a scientific paper, so it is mandatory to illustrate both methods and results.

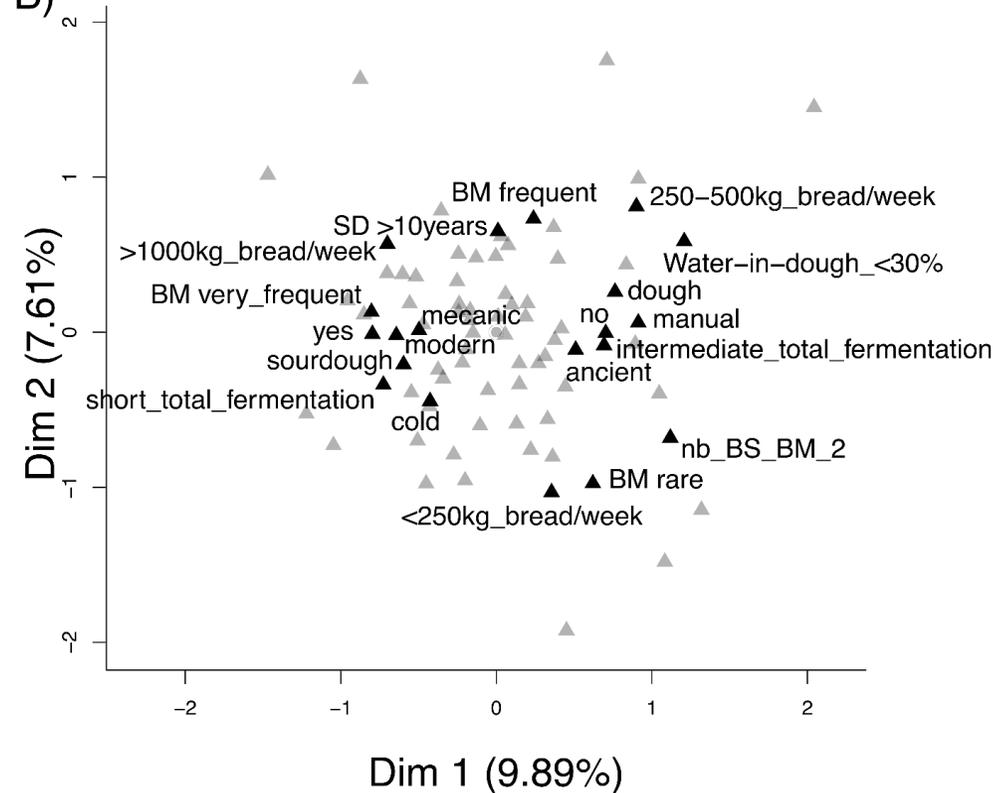


Visualization 1 - How are bakers' practices structured?

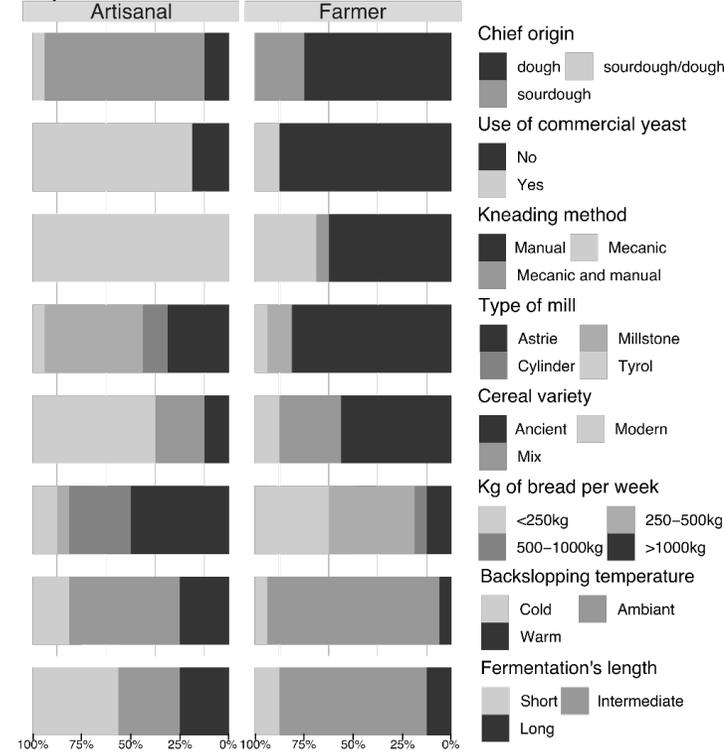
A)



B)

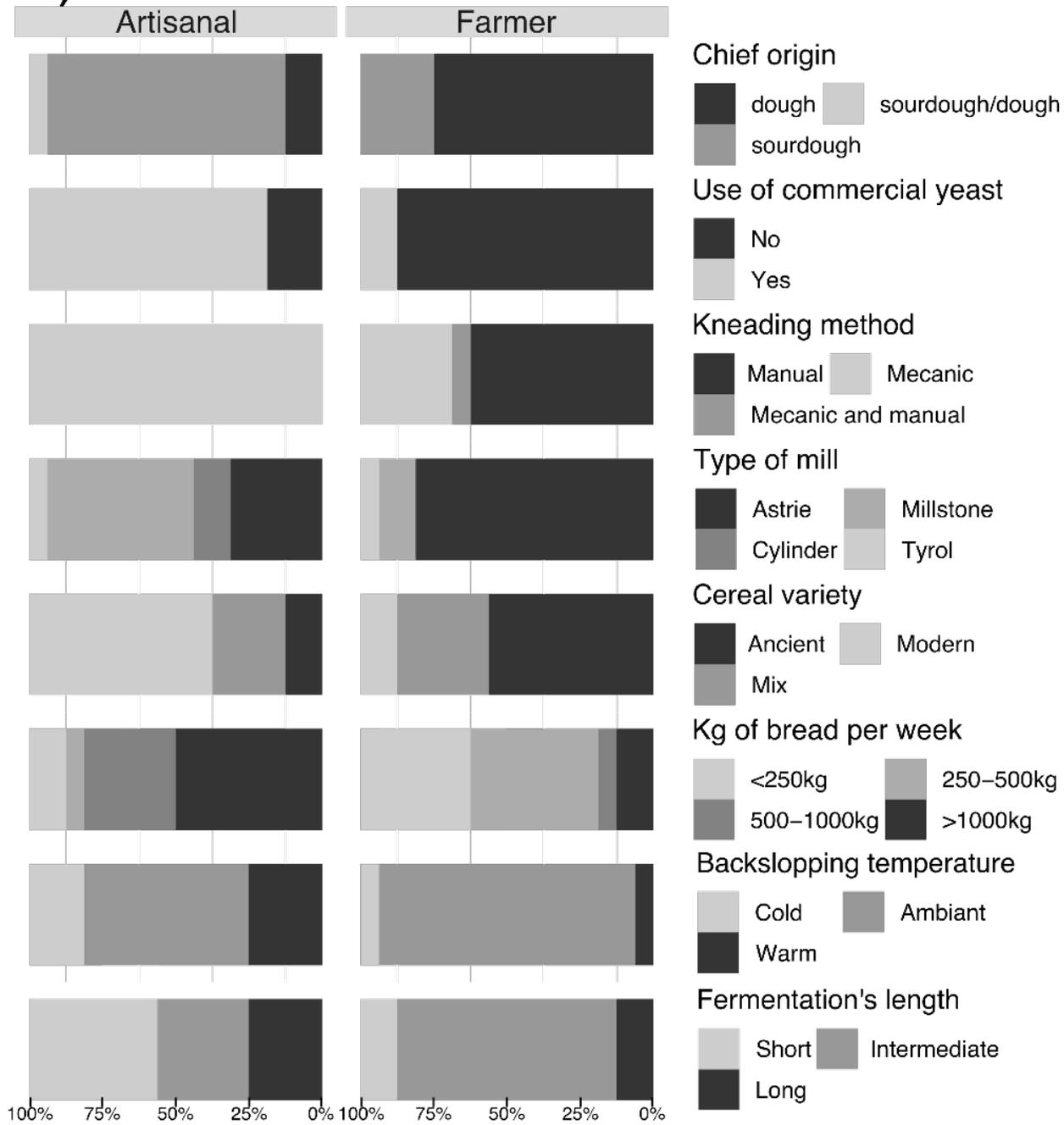


C)





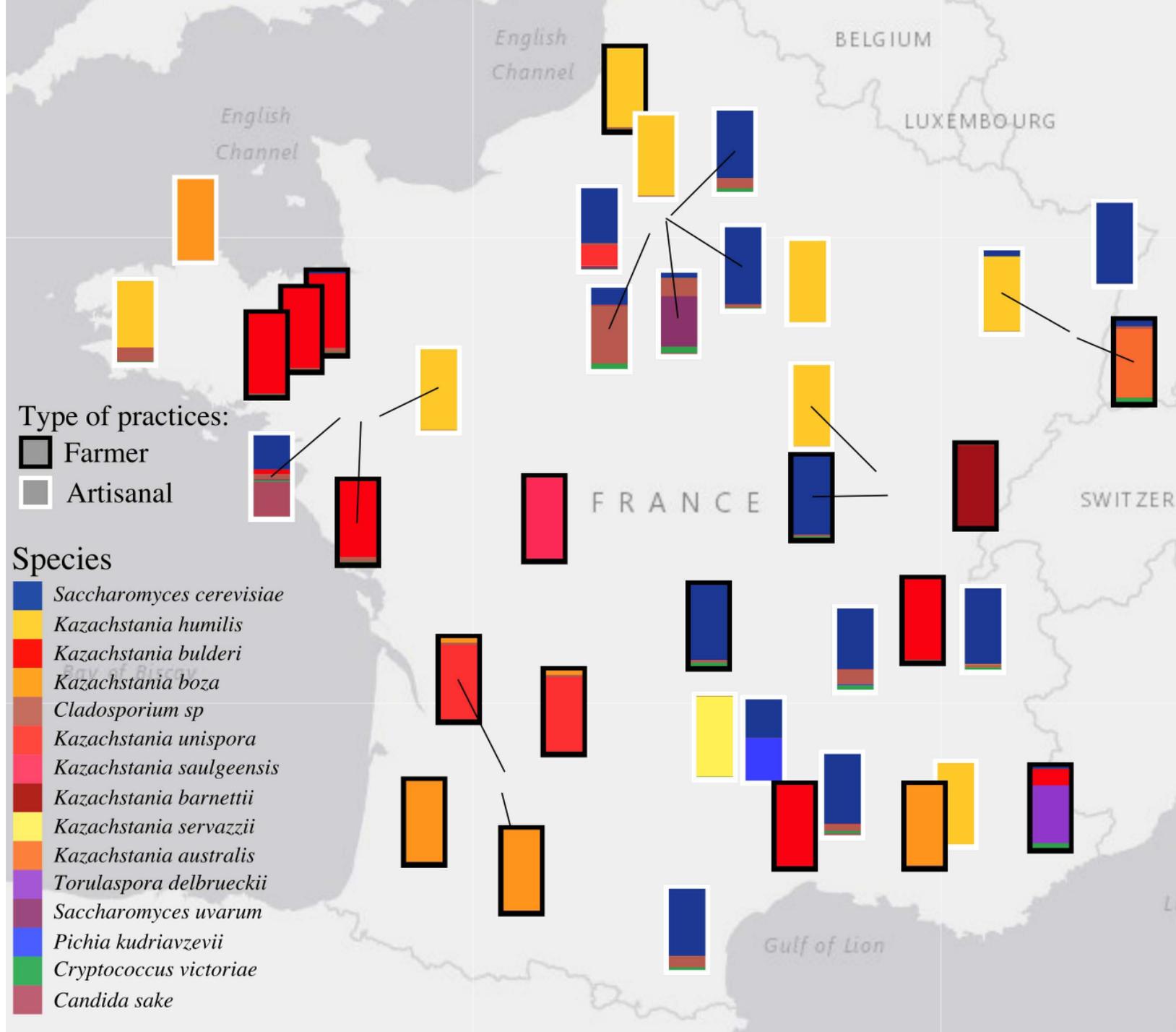
C)

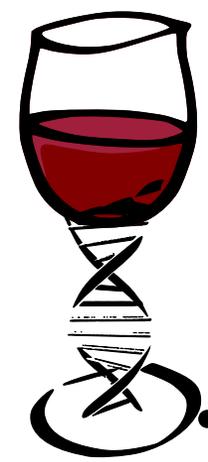




Visualization 2 - What does structure microbial diversity?

- The type of baker
- The microbial diversity
- The Geography





What's the big deal?

- Translate complex analyses into clear visualizations
 - We quickly come across trade-offs
 - Complexity/understanding
 - Variability/Message
- Reproducibility of analyses and graphs
 - Here the graphs are 95% made with R - with some finishing under a vectorial drawing software (inkscape or Affinity Designer).
- The diversity of questions and scientific methods force us to always look for the most adequate representation.