atRium Brno Training School Report

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➢ Who am I?

I am an archaeologist whose work focuses on European Pre-Roman Iron Age remains. Currently, I work as a postdoc for the SFB 1266 Scales of Transformation in Kiel (Schleswig-Holstein, Germany), where I do landscape archaeology and study the evolution of settlement patterns and population dynamics.

➢ Reasons for participating in the Atrium Workshop in Brno

Up until now, my workflow was divided between R for statistical tests and analyses and QGIS for data visualization, spatial analyses and mapping. I was also used to creating datasets manually from published literature and excavation reports or by accessing individual datasets through open repositories (Zenodo, Nakala).

I had thus two goals when I applied for the Atrium workshop. First, I wanted to learn how to use R for spatial data in order to move my workflow entirely to R. By scripting every step of the data manipulation, analysis and mapping, my research and its results would become completely reproducible. Second, I needed to understand how to efficiently harvest data available online in order to broaden the geographical scope of my work and to raise new research questions based on diagnostic queries. This would become possible by getting to know the ARIADNE database and its structures, and by learning the basics of SPARQL.

These goals were fully met thanks to our lecturers' efforts and the training program they put in place.

➢ Training program

On Monday 16th of September, Peter Tkáč gave us an introduction to R, and especially to the tidyverse for data visualization and manipulation – which as very useful because I am used to doing everything in base R.
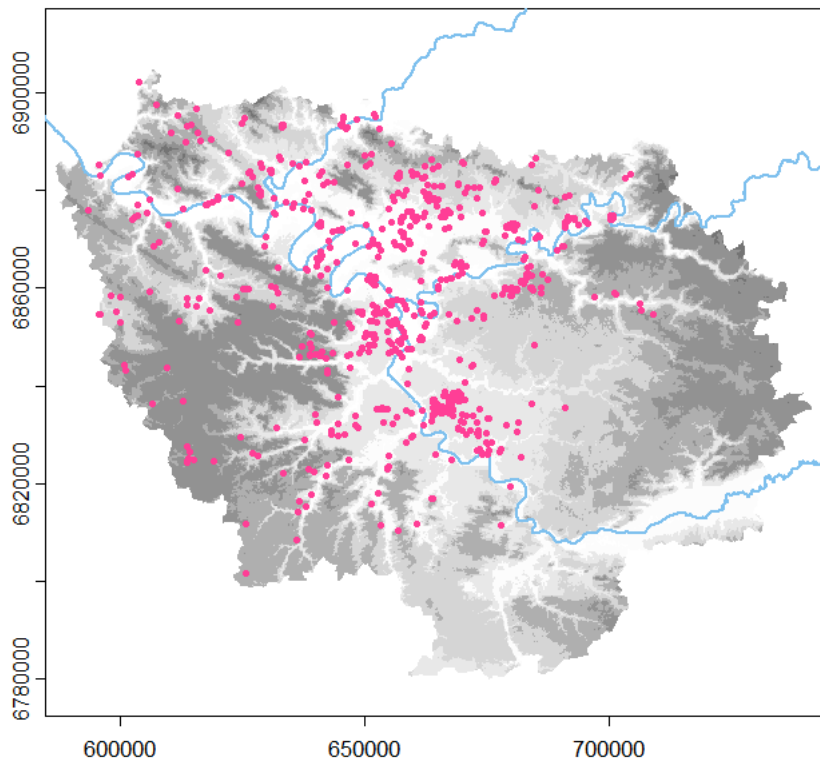
Tuesday 17th of September was devoted to the exploration of ARIADNE under the guidance of Petr Pajdla. He started with an introduction to Linked Open Data. Though the topic was quite complex, Petr gave us a good overview of the possibilities given by SPARQL in order to query data from DBpedia, Wikidata and ARIADNE in R.

Wednesday 18th of September was an introduction to spatial data in R by Giacomo Bilotti. His presentation was essential for the following day, as it gave us the basics for visualizing and manipulating spatial data using an example dataset from Jordan.

On Thursday 19th of September, Michael Kempf led us through some more advanced spatial analyses in R. In particular, we looked into first order and second order properties of a distribution of points (point pattern). We went through density assessment (KDE, Ripley's K-function) and how to intersect environmental information (from a DEM) and the point pattern. I liked the idea of having us write the code ourselves to get a better sense of what is going on in the script.

The last day of the workshop, Friday 20th of September, was devoted to either personal projects or more practical SPARQL training. I went for spatial analyses on R using my personal dataset from the Paris Basin. Here is a snippet (no republishing please!):

MNT - Île-de-France

The training's structure was efficient, as it combined both presentations and follow-along code scripts. All materials were easily accessed and relevant. Clarity of content must be highlighted. This resulted in a work-intensive, but friendly environment. I am positive that I will put to use my new skills in R in my current and future research.

➢ Some highlights from my trip (not work-related!)

The organizers and the lecturers were easy to talk to, well organized and very knowledgeable. There were also several bonding opportunities with the team and the other participants during coffee and lunch breaks as well as in the evening. In general, the atmosphere was both relaxed and stimulating intellectually. These kinds of workshops, if successful like this one, clearly play a role in fostering new professional ties for early career researchers such as myself.

The Archaeological Institute in Brno had great facilities. The building was newly renovated, well equipped and comfortable. This makes it easy to focus on the work at hand!

This workshop has also given me the opportunity to discover the city of Brno, and it was a joy to walk through its colorful streets. Its heritage is quite rich, and I could visit the famous Villa Tugendhat and the Museum of Moravia. Restaurant offers are also plentiful: I found many delicious places to eat thanks to the organizers' tips (with a good deal of vegetarian options!).

Brno seen from the heights of the Špilberk Castle and the cathedral at night (Photos C. Quatrelivre)

Some delicious vegan desserts at FRYENDS. A couple of interesting archaeological artifacts from the Museum of Moravia: a *kantharos* with feet dated to the Bronze Age and detail from bronze ornaments of a vase, found in a La Tène necropolis of Brno-Maloměřice (Photos C. Quatrelivre)

To conclude,

- the workshop was well organized, both on a practical level and on a scientific one,
- and on a personal level, several events during the week served the purpose of consolidating the bonds between participants,
- I can confidently say that I have expanded my skill set,
- and I know how to exploit ARIADNE's full potential for further research.