sDiv working group meeting summary
"sPriority - Mechanisms and Quantification of Priority Effects"

The first sPriority meeting had three main objectives:

1. Getting to know each other and create collaborative group dynamics
2. Identifying and prioritizing sPriority deliverables (e.g., synthesis and data-driven papers, creation of a database, etc.)
3. Forming operational sub-groups with specific tasks and agree on clear deliverables for the second meeting

Working group members identified two main outputs that will result from this first meeting:

1. A synthesis paper describing what priority effects are, how they are connected to other ecological concepts, and how they have been studied across scales, disciplines, and taxonomic groups. This paper will also provide recommendations for testing and quantifying priority effects, and will identify important research gaps in priority effect research.
2. A meta-analysis aiming to quantify how common and strong priority effects are in experiments that manipulated species arrival order, and to identify the main (a)biotic factors modulating the direction and strength of priority effects.

We created two core teams to work on these two deliverables. By the beginning of the second meeting, we aim to have a manuscript of the synthesis paper ready for submission, as well as preliminary results to work on for the meta-analysis.

During the meeting, activities were composed of plenary discussions, short presentations, and break-out sessions to work on specific tasks. Working group members focused their discussions on definitions of priority effects used in different fields of biology, as well as on pressing research questions concerning priority effects. These discussions benefited from the expertise of all participants, who work with different study systems. In addition to short presentations given by PIs Delory and Fukami, Dr Emma Ladouceur gave two presentations that were of interest to sPriority members: (1) a presentation about the Global Restore Project and its associated database (which will be a key resource for our working group), and (2) a presentation to share tips and methods for conducting a systematic literature review and building a database suitable for meta-analyses. During break-out sessions, working group members split into different groups to work on the following tasks:

- Writing the outline and planning the content for a synthesis paper (including a conceptual figure);
- Formalizing and prioritizing questions and hypotheses to focus on in the context of a quantitative synthesis on priority effects using data from experiments that explicitly manipulated the timing and order of arrival of species (meta-analysis);
- Agreeing on the methodology that will be followed to conduct a systematic literature review (list of keywords, etc.) and build a database for our meta-analysis.

Due to the COVID-19 pandemic, this first sPriority meeting was organized using a hybrid format. While most participants from Europe were able to travel to Leipzig, seven participants working in North America attended the meeting remotely via Zoom. Given the significant time zone challenge, we hold one plenary meeting per day, which lasted a few hours each day, so that participants could brainstorm and share progress made during the separate North American time and European time sessions with the entire group. Despite this challenge, the working atmosphere was excellent, largely due to the commitment, positive attitude, and numerous contributions of all the members of the working group.

The success of this first meeting is also due to the great technical and organizational support we received from the sDiv staff (e.g., booking of hotel rooms, catering, etc.). Sulochana Swathi Kannan, scientific assistant at sDiv, was a fantastic help. The meeting rooms had all the equipment needed to hold hybrid meetings and brainstorm ideas (e.g., 360° camera, microphones spread across the room, white boards, etc.), with half of the participants being in the room and the other half attending remotely. The availability of several meeting rooms also allowed in-person participants to work into smaller, more focused groups.

The second sPriority meeting will take place from 26 to 30 September 2022.

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