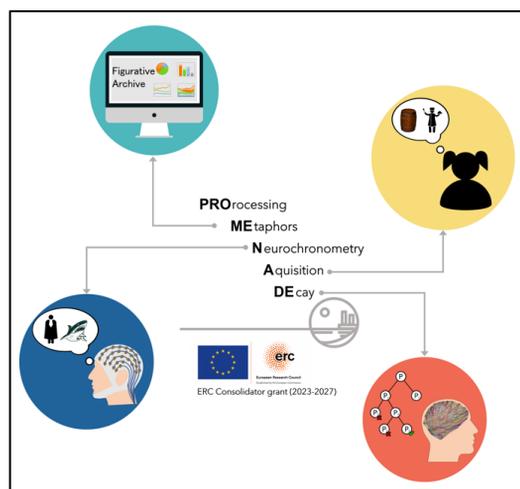


## New Project

### The ERC project PROMENADE

As a neurolinguist, the focus of my interest starts from language, and the different methodologies available open different windows to answer questions on how we process language. This is why over the years, I have worked on my favorite language phenomenon – metaphor – using different tools: first fMRI, then EEG, then studies involving clinical groups and children. This gave me a privileged viewpoint, as I was able to examine metaphor from different angles and capture different processes associated with it, but many questions are still unanswered. Among these, the ones that I believe are most relevant are: 1) Granted that metaphors are associated with increased costs in the brain, are there different phases in the process of metaphor understanding? How does this process unfold? 2) How do perceptual and motor experiences enter these phases and combine with verbal material? 3) Can we use these phases to explain the difficulties with metaphors experienced by young children and by clinical groups? In my ERC project, I will try to answer these questions and sketch a comprehensive model of metaphor processing, in the brain and in the lifespan, based on evidence from different methodologies. The project is called PROMENADE (PROcessing METaphors: Neurochronometry, Acquisition and Decay), which is of course a metaphor itself, pointing to the new avenues expected to emerge from the project, and it was launched on January 1<sup>st</sup>, 2023.

To give you a bit more details on the content of the project, the starting point is of course theoretical. Based mainly on the evidence I have accumulated over the years and keeping Relevance Theory as a background, I have started to sketch a model that involves two processes, one linked to the pragmatic adjustment of the lexical concepts and one linked to the derivation of the full-fledged figurative meaning (i.e., the implicature(s)). I have also proposed that these processes are multimodal in nature, that is, they might involve visual images as well as sensory-motor aspects.



If the model above is correct, then I expect a biphasic pattern of brain activity, that can be modulated by visual and motor imagery processes: this will be tested in WP2 of PROMENADE, which will make use of a 128-channel EEG system to implement a series of different experiments on healthy adults. Furthermore, I expect to be able to track down changes in children’s metaphor skills via modifications of their brain response to metaphors. In WP3 of PROMENADE, we will assess children longitudinally over a period of three years and the findings will shape a novel training program to promote children’s abilities to understand metaphors. In WP4 we will analyze data coming from different metaphor tasks administered to clinical groups, including both psychiatric and neurological populations. We will use machine learning approaches to disentangle different types of error, possibly specific to different populations. The many metaphors used throughout the project will be collected in a “figurative archive” to promote further research. You can see the architecture of PROMENADE in Figure 1.

*continue reading on the next page*

## New Project

*continued*

What are the strengths of PROMENADE? I believe that the main strength is the fresh theoretical look it takes on metaphor: I will try to overcome classic debates such as the one on direct vs. indirect access hypothesis, to isolate processes that do not necessarily involve longer processing times. Also, I will go beyond strict embodiment accounts, to embrace a multimodal view of metaphorical and linguistic processes in general. Another strength is the cross-methodological approach, in line with the idea that complex questions require multiple sources of information to be solved. Finally, I like to think that my project can truly impact society, by increasing awareness of metaphorical expressions in communication and proposing ways to promote and restore metaphor skills as a predictor of social functioning.

To conclude, I am extremely grateful to the European Research Council for funding my research and giving me the opportunity to bring my research to an upper level, closest to core theory as well as closer to society, and to strengthen my research group (speaking of which, see Figure 2 for a nice picture of the current team). I will be happy to consider collaboration proposals and if you want to know the last findings, check the project page on the lab website!

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