# Computational mechanisms in language acquisition

Juan Manuel Toro
ICREA - Universitat Pompeu Fabra
juanmanuel.toro@upf.edu

In the present course I will discuss the main computational mechanisms involved in language acquisition. I will introduce statistical and rule learning processes and explore how they are modulated by linguistic representations. As a special case study, I will review recent research on functional differences between consonants and vowels. I will also explore the extent to which humans share with other animals some of the basic cognitive processes that allow us to learn linguistic regularities, including the principles described by the Iambic-Trochaic Law. The idea is to give a general picture of the cognitive processes involved in early language learning and their biological bases.

The course will heavily rely on the discussion of empirical data. Participants will be asked to read one paper before each class. I will present the concepts relevant for the topic, and together with the participants, we will discuss the paper assigned and how it relates to the issues presented in class.

Sessions:

1. Statistical learning I (adjacent and non-adjacent dependencies)

2. Statistical learning II (linguistic modulation)

3. Rule learning I (token-independent patterns)

4. Rule learning II (a specialized mechanism?)

5. Cs and Vs (functional differences)

6. Cs and Vs (computational mechanisms)

7. Cs and Vs (a comparative case study)

8. Iambic-Trochaic Law

9. Shared perceptual mechanisms

10. Recursion