

Explore-exploit trade-off in vocal learning

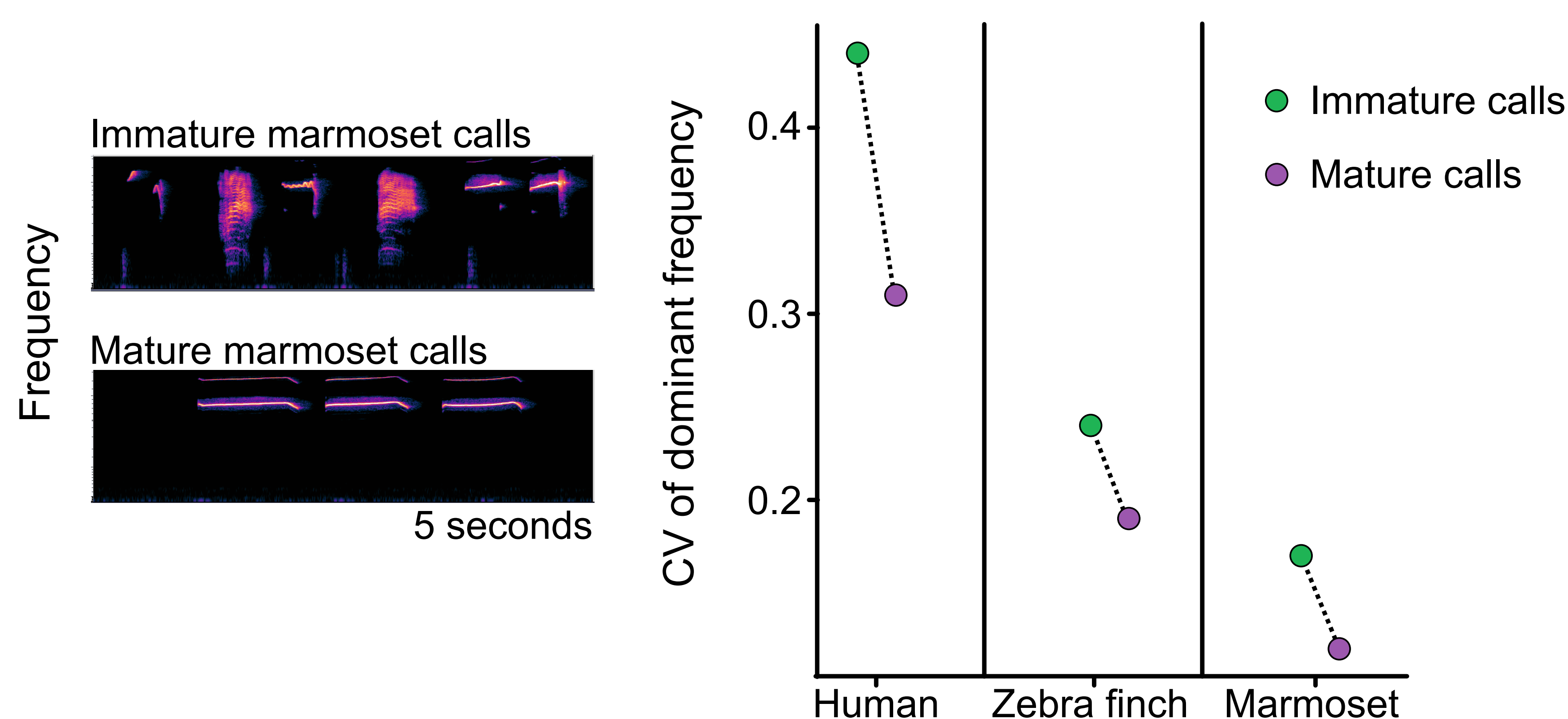


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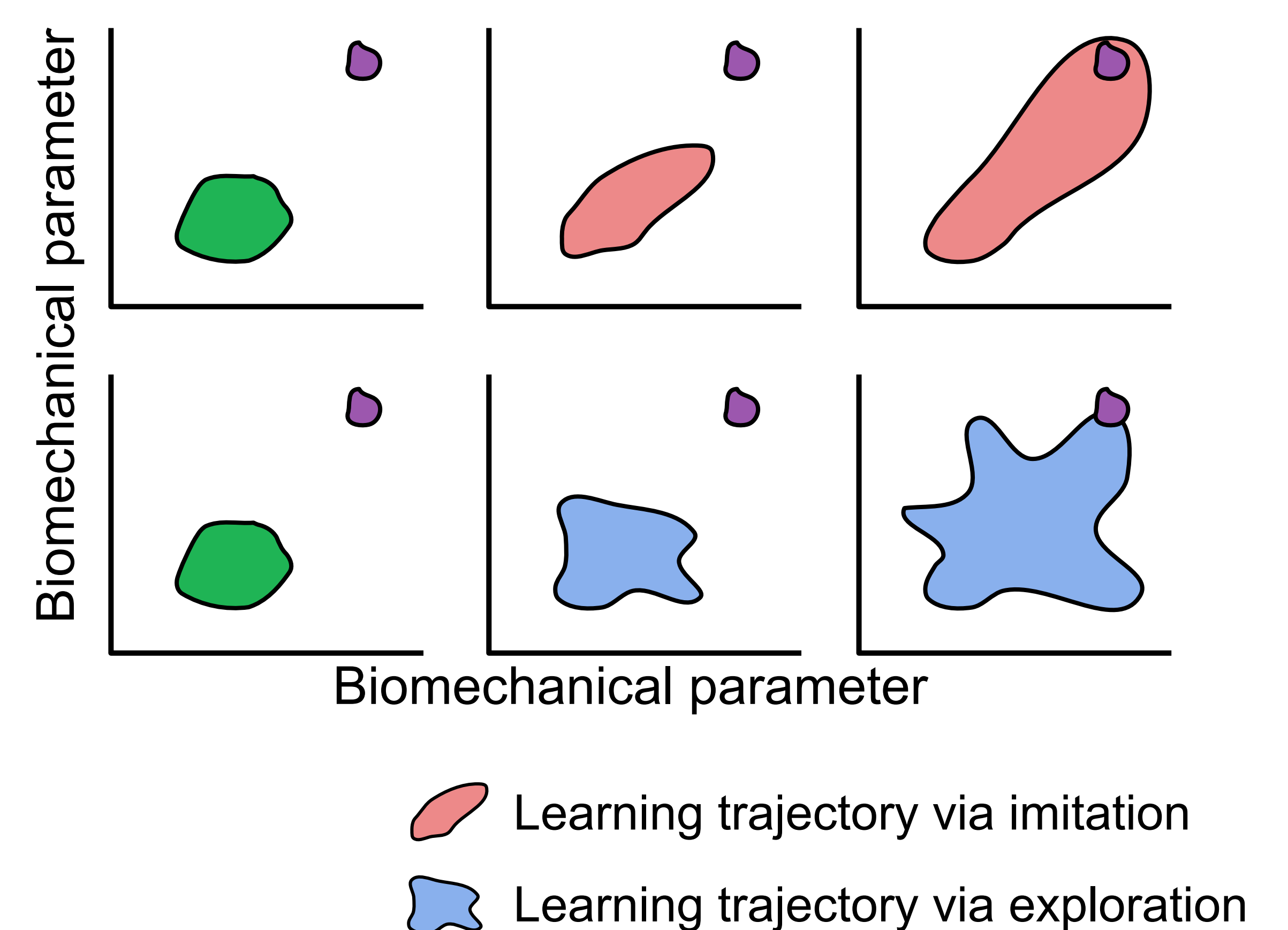
Early **exploration** facilitates vocal development

- What is the role of **imitation** and of **exploration** in vocal learning?
- How to model this process in an **embodied** manner?
- How do infants solve the problem of "**poverty of stimulus**" when learning?

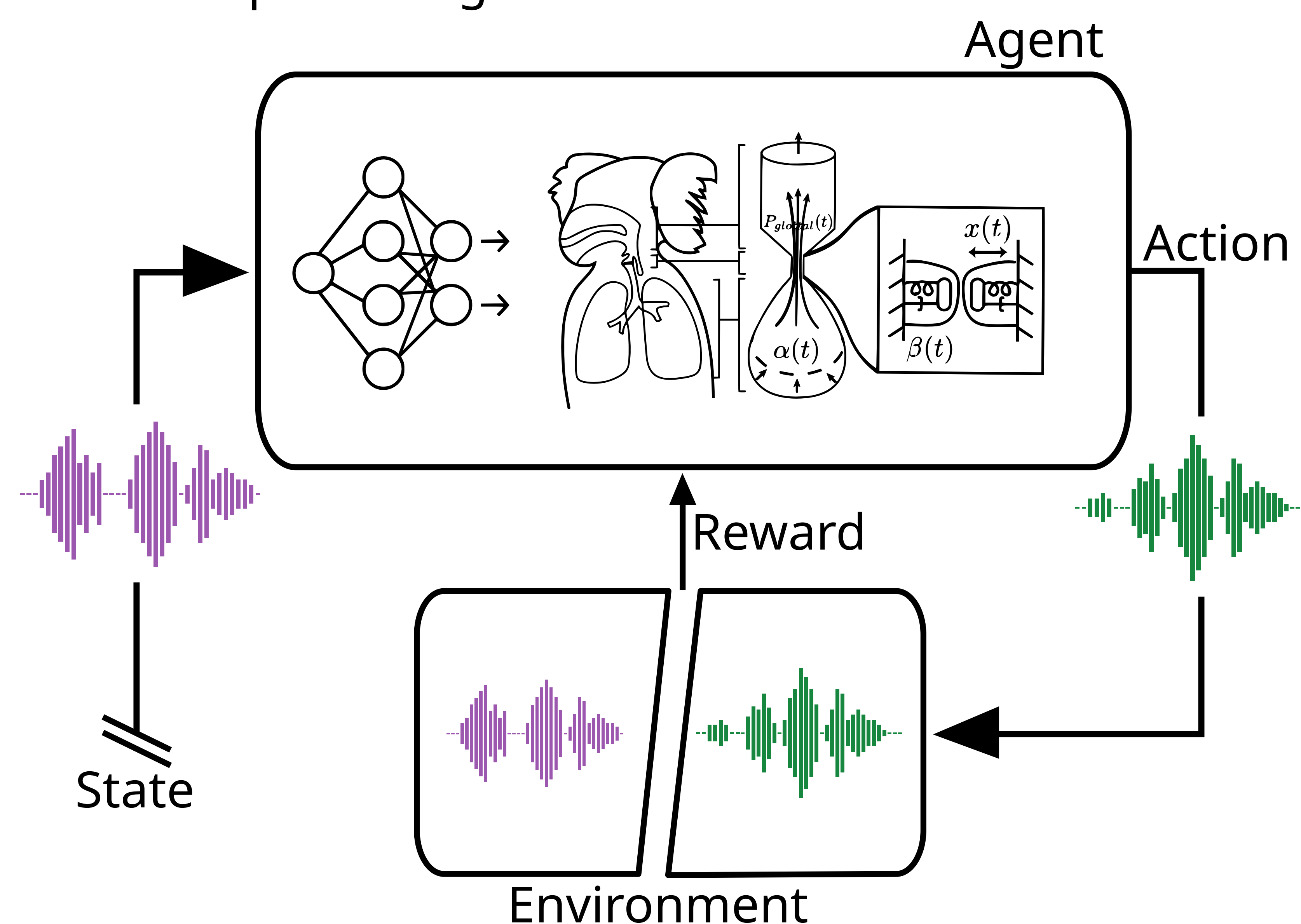
- 1 Immature vocalizations have **higher variability** than mature vocalizations in vocal learning animals.



- 2 Schematics of the space of biomechanical parameters and learned vocalizations over time.



- 3 RL agent is a biomechanical model of vocal tract, and receives reward when producing mature calls.



- 4 The learning process is **faster and more robust** when there's higher exploration.

