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**The music of language : exploring grammar, prosody and rhythm perception in zebra finches and budgerigars**  
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## **The music of language**

Exploring prosody, rhythm and grammar perception in zebra finches and budgerigars

Michelle Spierings

- 1) Perceptual chunking of long strings of sounds is made easier by adding near subliminal pauses between chunks of the string, both for humans and for zebra finches. (*this thesis, chapter 2*)
- 2) Perceiving the sound of a clock as tick-tock (and not as tock-tick) is not specific to humans or the acoustic experience of humans; other animal species have a similar perceptual grouping bias. (*this thesis, chapter 3*)
- 3) A sensitivity for prosodic features of speech is an ability shared between humans and zebra finches, a small songbird species. (*this thesis, chapter 4*)
- 4) Rhythm perception is not dependent on vocal learning per se, it is more likely that there is a gradual distribution of rhythm perception abilities across vocal learning and vocal non-learning species. (*this thesis, chapter 5*)
- 5) Zebra finches can perceive and produce some rhythmic structures. This makes them a good model species for comparative studies on music and rhythm. (*this thesis, chapter 6*)
- 6) Although rarely found in animals, abstract learning of acoustic patterns is not unique to humans, but is shared with a parrot species. (*this thesis, chapter 7*)
- 7) Each species requires its own methods to test cognitive abilities. As we continue to develop better and more specific paradigms, we are more likely to discover unexpected and impressive abilities in more animal species.
- 8) When subjects fail to learn the abstract patterns of sounds in behavioural experiments, it does not mean that they cannot learn them, they might just be solving the task in another way.
- 9) Although humans might have a unique combination of cognitive abilities, none of these specific abilities stands out to be uniquely human.
- 10) The separation between vocal learners and non-vocal learners is too rigid, different species might have different aspects of the general vocal learning ability.
- 11) Different views on the same topic are a great benefit to the scientific process. Scientist might therefore profit from interacting in interdisciplinary project groups.
- 12) The scientific society communicates primarily with its own members. However, as knowledge is a general good, scientist should also inform the general public in an intelligible way.
- 13) Although generalisation of sounds or objects is useful, in a social context generalisation should be applied with caution.
- 14) Science and art share one crucial thing, the elements are already there, the challenge lies in finding or assembling them.