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Neural correlates of vocal learning in songbirds and humans

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Title: Neural correlates of vocal learning in songbirds and humans : cross-species fMRI studies into individual differences

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Stellingen

Behorende bij het proefschrift

Neural correlates of vocal learning in songbirds and humans

Anne M. van der Kant

1. Individual differences in vocal learning are reflected in neural activity during learning and perception of species-specific vocalizations in both humans and songbirds. - *Chapters 3, 4 and 5*
2. The finding that midbrain structures are able to distinguish species-specific vocalizations based on experience implies that the midbrain's function is more complex than previously thought. - *Chapter 3*
3. The fact that a sensitive period is hypothesized for both birdsong learning and human language acquisition implies that juvenile zebra finches form a better model for language learning than adult zebra finches. - *Chapter 4*
4. When correlated to behavior, individual differences in white matter structure tell us something about experience, while individual differences in brain function might only relate to the task at hand. - *Chapter 6*
5. Out of the neuro-imaging methods currently available, fMRI is most promising for inter-species comparative research.
6. Comparing learning processes can be informative even if the resulting vocalization systems (language and birdsong) differ greatly in their complexity.
7. Convergence can be found not only on the behavioral, but also on the neural level.
8. The best way to reveal which parts of language are uniquely human is to first strip it of all underlying cognitive capacities that can be found in other animals.
9. A restless mind may be beneficial if one wants to keep a broad perspective.
10. The environmental pressures of modern-day academia have led to the extinction of *Homo Universalis*.