Review of: "Self-organization of songbird neural sequences during social isolation"

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This is a very interested study that shows how learning and development interact to generate vocal sequences in the bird's song system HVC nucleus. In several species, including humans, vocal learning occurs during a sensitive period of development, after which vocal learning is much more limited. However, it is not known how the sensitive period is related to the process of wiring and coordination of activity between song system motor neurons. Authors recorded HVC projecting neurons during development in socially isolated birds and found that sequences (chains of activity), are emerging even in the absence of song tutoring. These accurate neuronal activation sequences are later become coupled with vocal sequences, namely, with stereotyped songs. Further, this study show evidence that vocal plasticity, and the ability to learn a new song decreases with the coupling between neuronal sequences and produced vocal sequences.