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Abstract:	Acoustic divergence in songbirds is a common feature which rises due to slight error in copying songs by young bird. Though some species can be very accurate in learning, some differences still usually accumulate giving rise to variations. As juvenile birds disperse to neighbouring territories, variations may arise giving rise to 'dialects'. Here I analysed recordings of Purple Sunbird (<i>Cinnyris asiaticus</i>), a resident passerine taken in North- Western India. I found that although there was a noticeable sharing of note repertoire between the regions, phrase sharing was absent. Next, I examined geographic variation in acoustic features in the structure of Purple Sunbird's song by comparing spectro-temporal properties. I also looked at how the acoustic features vary in different habitats by comparing songs taken in urban vs wild areas and closed vs open canopy regions. I found lower frequencies to be significantly higher in closed canopy as compared to open canopy. Most of the parameters analysed had significantly higher frequency in urban areas. Lastly, I looked at phonological syntax in the song of Purple Sunbird. I found that there seems to be a preference of notes in terms of where they appear in a phrase which is consistent with the previous study done in a local population of Purple Sunbirds. Finally, upon analysing the ordering rule in the song, notes were observed to be combining in a restricted manner with other notes suggesting some underlying rule.
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