

How adaptation trades off against robustness in macaque reconciliation

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Despite sharing basic patterns of social organization, macaques display a broad range of interspecific variation in their style of social relationships. Between-group comparisons show in particular that conciliatory tendencies between nonkin are consistently below 12% in some species whereas they are around 50% or more in others. The use of phylogenetic analyses methods allows to assess how robust are such variations and address processes of evolutionary transformation. A first study showed that variations in the social style of macaques correlate with their phylogeny. By tracing the different characters of the social organization of macaques on their phylogenetic tree, it is possible to recognize their most ancient states and reconstruct their typical ancestral organization. A second study confirmed the occurrence of a strong phylogenetic signal for characters like conciliatory tendencies, proportions of explicit reconciliatory contacts, and kin bias in rates of reconciliation, meaning that such characters are linked to the evolutionary radiation of the macaque genus. We additionally found that these characters were correlated to levels of counter-aggression. Using the method of independent contrasts, relationships between conciliatory tendencies and proportions of explicit reconciliatory contacts, and between kin bias and levels of counter-aggression remained consistent after controlling for phylogeny. This reveals that evolutionary change in one character leads to correlated change in other characters. By limiting the changes possible to social organizations, interconnections between characters act as constraints that channel evolutionary processes and allow only a subset of organizations to arise.