

PATERNAL KIN DISCRIMIINATION IN RHESUS MACAQUES (*MACACA MULATTA*) – IDENTIFICATION OF CUES AND MECHANISMS

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Kinship is known to play a central role in structuring social relationships among primates. Strong evidence exists that primates discriminate maternal kin from non-kin using familiarity. Recognizing paternal kin is more difficult as most female primates mate with multiple males during likely conception, which most probably conceals paternity. Nevertheless, there is a growing body of evidence that primates socially favor their paternal kin over non-kin. To date, it remains unknown what cues and mechanism/s are used in paternal kin discrimination. Our goal was to investigate the potential of acoustic cues in paternal kin discrimination, by first testing if rhesus macaques react differently towards calls from paternal kin vs. non-kin. Secondly, we designed an experimental setup to differentiate whether monkeys use familiarity and/or phenotype matching. Preliminary analysis of playback experiments (N=60) conducted on Cayo Santiago (Puerto Rico), where paternal kinship is well established, suggests that females respond stronger towards the presentation of calls from familiar or unfamiliar paternal half sisters, compared to familiar or unfamiliar non kin. Since familiarity did not affect this response, phenotype matching is supported as the underlying mechanism of paternal kin discrimination. Our results are the first indicating the importance of vocalization on paternal kin discrimination and, based upon our experimental setup, we were first able to differentiate between familiarity and phenotype matching as underlying mechanism. Our study strengthens evidence that paternal kinship also shaped the evolution of social behavior and provides a first attempt in differentiating between potential mechanisms in primates.

Keywords: playback experiment, familiarity, phenotype matching, mechanism of paternal kin recognition