High social status, maternal support play important role in mating success of male bonobos

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Camillo is the highest ranking male bonobo of the study group. He is often seen in his mother's company. Credit: Caroline Deimel, Lui Kotale Bonobo Project

(PhysOrg.com) -- Success makes sexy - this does not only apply to human beings, but also to various animals. Male bonobos appear to benefit from this phenomenon as well.

A team of researchers led by Gottfried Hohmann of the Max Planck Institute for Evolutionary Anthropology has discovered that the higher up a male bonobo is placed in the social hierarchy, the greater his mating success is with female bonobos. But even males who are not so highly placed are still in with a chance of impressing females.

Researchers reported for the first time direct support from mothers to their sons in agonistic conflicts over access to estrous females. Martin Surbeck from the Max Planck Institute for Evolutionary Anthropology discovered that the presence of mothers enhances the mating success of their sons and thereby causes mating to be more evenly distributed among the males. As bonobo males remain in their natal group and adult females have the leverage to intervene in male conflicts, maternal support extends into adulthood and potentially affects male reproductive success. (published in: Proceedings of the Royal Society B*: Biological Sciences*)

Variation in male mating success is often related to rank differences. Males who are unable to monopolize estrous females alone may engage in coalitions with other group members to chase higher ranking males off these females and to thus enhance their own mating success.

Studies on chimpanzees and dolphins suggest that coalitions are independent of kinship. Information from species in which females remain in their natal group, on the other hand, shows the importance of kin support, especially from mothers, on the reproductive success of their daughters. Therefore, one might expect a similar effect on sons in species in which males remain in their natal group like bonobos. "With our study we wanted to find out whether in bonobos the mating success of the sons was indeed influenced by the support they received from their mothers", says Martin Surbeck.

The researchers evaluated the determinants of mating success in male bonobos using data from nine males in a wild population and determined kinship relations using genetic markers. Results reveal a steep, linear male dominance hierarchy and a positive correlation between dominance status and mating success. In addition to rank, the presence of mothers does indeed enhance the mating success of sons and thereby reduces the proportion of matings by the highest ranking male.

Mothers and sons seem to be inseparable and mothers provide agonistic aid to sons in conflicts with other males. As bonobos are male-philopatric, i.e. males remain in their natal group, and adult females occupy high dominance status, maternal support extends into adulthood and females have the leverage to intervene in male conflicts. The absence of female support to unrelated males suggests that mothers gain indirect fitness benefits by supporting their sons. "Females do not grant this kind of support to unrelated males. By helping their sons the mothers may likely increase the number of their own grandchildren", says Martin Surbeck.

More information: Martin Surbeck, Roger Mundry and Gottfried Hohmann, Mothers matter! Maternal support, dominance status, and mating success in male bonobos (Pan paniscus), *Proceedings of the Royal Society B: Biological Sciences*. Sep 1, 2010.

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