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Stability of reindeer harems according to male age and social rank

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Sexual selection is the evolutionary process that favours adaptations that increase mating success of individuals. It encompasses “intra-sexual competition” as well as “mate choice”. During the rut, reindeer (*Rangifer tarandus*) form harems, i.e. a gathering of individuals where a dominant male (“*the harem holder*”) is chasing subordinate males and herding females to monopolise all matings. Despite being herded by males, females can move from a harem to another. Thus, harems are not stable and the factors affecting females’ movements are not well known. We investigated whether age and social rank of males would influence the stability of harems. We predicted that the most dominant and aged males should control more stable harems because females should stay in these harems but should leave harems controlled by younger and more subordinate males. From 1996 to 2005, we manipulated the male age structure and the sex ratio of a reindeer herd at Kutuharju (Kaamanen, Finland). Male dominance and to a lesser extent their age affected harem stability. Dominant males controlled more stable harems. Nevertheless, the stability of harems tended to increase with the age of the harem holder too. The stability of the harems decreased with the percentage of males of all ages in the population as a consequence of increased intra-sexual competition, but was not affected by the percentage of adult males. Our study suggests that the stability of harems is determined primarily by the ability of the dominant male to control females’ movements. Dominance status of a male, rather than its age, is most important in controlling more stable harems.