

Mummy's Boys: Sex Differential Maternal Offspring Relationships in Semi-feral Horses

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In polygynous species with high reproductive skew in males, mothers often show differential investment between sons and daughters; however consistent sex differential investment has not been found by previous studies in horses. We investigated sex differences in mother-offspring relationships in nutritionally independent sub-adult semi-feral Carneddau Welsh mountain ponies *Equus ferus caballus*. Mothers and their sub-adult sons had consistently closer relationships than mothers and daughters.

Stronger affiliative bonds between mothers and sons were quantified by their maintenance of closer proximity, higher rates of affiliative interactions and more frequent suckling bouts. These measures of affiliation were temporally associated with higher aggression levels directed towards sub-adults by other band members, particularly stallions.

We suggest that aggression may serve as the proximate mechanism driving male dispersal in feral horses and that the stronger mother-son bond signals an attempt to delay their dispersal, highlighting conflict within the band concerning dispersal timing. Since males become increasingly central within the band over time, with mature stallions requiring excellent social skills in order to both acquire and keep a band of mares, we propose that delaying colts' dispersal allows for further development of these skills in a relatively safe environment. This additional investment is expected to maximise their reproductive success.

This study illustrates how social network theory can be used to quantify individuals' social experiences, contributing to a greater understanding of the evolution of group living. It also gives us further insight into the mechanisms underlying dispersal in wild and semi-wild horse populations and how conflict often arises when individual needs differ.

Key words: dispersal, *Equus ferus caballus*, social, maternal investment

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