

Study of bonobos finds that day care pays off for the babysitters

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Credit: University of Oregon

Drawn to a behavior she didn't understand, a UO researcher watching bonobos in a zoo has revealed how young female bonobos prepare for motherhood.

"After studying bonobos for several years, I noticed that juveniles and adolescents were obsessed with the babies," said Klaree Boose, an instructor in the UO Department of Anthropology. "They played with the babies and carried them around. It appeared to be more than just play behavior."

Her findings, now online, will be part of a special issue of the journal *Physiology & Behavior*. The study documents how young females acquire maternal skills and forge alliances that pay off in times of hostility by handling infants, whether they are related to them or not.

The research, done with captive bonobos at the Columbus Zoo and Aquarium in Ohio, also explains behaviors that scientists have seen but only focused on in the wild, said study co-author Frances White, head of the UO's anthropology department. White has studied bonobos in their natural habit in Africa for years.

"It is common in the wild to see infant bonobos be a focus of enormous interest to others, especially to adolescent bonobos," White said. "It is often noticeable how [bonobo](#) mothers are willing to let others get close and interact with their infants, as compared to chimpanzees who are more restrictive."

This study, she said, allowed the team to take that knowledge and explore individual relationships in a way that has not been done in the wild.

"The Columbus Zoo has done a wonderful job of copying wild behavior in letting the bonobos divide on a day-by-day basis into different groupings, much as they do in the wild," White said. "This zoo setting made this kind of study, which looks at normal wild behaviors, possible."

Bonobos in the wild live in a small area of the Congo Basin in the

Democratic Republic of the Congo. They are often mistaken as chimpanzees but are a separate species. The females hold high-ranking positions and often form female-female coalitions that stand up to males.

Boose—born in Yakima, Washington, but raised in a tiny, rural community north of Ohio's capital city—came to the UO in 2009 after earning a bachelor's degree from Ohio State University. She now holds a doctorate from the UO and has been teaching while completing a series of papers based her observations at the Ohio zoo.

Her new findings, which drew from 1,819 hours of observations of 11 females and eight males during summer months of 2011-2015, were surprising, Boose said.

"Like all ape species, bonobo females don't need somebody to help them take care of their infants," she said. "They are perfectly capable of doing it themselves."

Initially, Boose observed that all juvenile bonobos, ages 3-7, were obsessed with handling the infants, all under age 3. As they entered adolescence, however, females continued to approach the mothers and help care for the infants, while males turned away in favor of other behaviors.

"Handling [behavior](#) picked up among the female adolescents, and it was really intense," Boose said. "They would approach the mothers, groom them briefly and then carry the babies away. They'd move across the enclosure, where they would engage in nurturing and other maternal behaviors with the infants, such as grooming and cradling them, putting them on their belly and carrying them on their back. These were very deliberate caretaking behaviors."

Boose also found a hormonal link to her observations. Elevated levels of

oxytocin—associated with complex social behaviors and social cognition, including maternal and caregiving activities—were common in urine samples collected after infant-handling activities. As young females interact with the infants, Boose said, increased oxytocin may reflect how the body reinforces caregiving activity or social bonding with mothers or infants.

That bonding also reaped dividends for young female bonobos. Mothers often came to the aid of younger females that had handled their [infants](#) when conflicts arose over access to food and other fighting situations.

"When a fight involved a handler, particularly the adolescent [females](#), the mother would help the individual that had handled her infant attack the aggressor, usually an adolescent or adult male but sometimes another female," Boose said. "They would intervene and support them."

The work provides preliminary evidence for where bonobos fit among the various theories about infant handling among primates.

More information: Klaree Boose et al. Infant handling in bonobos (*Pan paniscus*): Exploring functional hypotheses and the relationship to oxytocin, *Physiology & Behavior* (2018). [DOI: 10.1016/j.physbeh.2018.04.012](#)

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