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Linear enamel hypoplasia (LEH) is a common developmental defect on the outer tooth surface, and is associated with stressors like malnutrition or illness. We recently showed that LEH are more common in mountain gorillas than previously recognized, but they are significantly shallower than in other apes ($p < 0.001$). While shallow defects are assumed to reflect reduced stress severity, enamel geometry may also influence defect morphology. In canine histologic sections of wild Virunga mountain gorillas ($N = 3$) and other great apes ($N = 6$), we measured the angle with which enamel growth increments approach the outer tooth surface. We found that mountain gorillas have significantly shallower striae angles than other apes (ANOVA, $p = 0.027$), which may reflect faster enamel secretion rates and contribute to comparatively shallow defects. Within mountain gorillas, we compared LEH depth among naturally accumulated skeletons collected by Dian Fossey (Smithsonian's NMNH; 1968–1974) and those collected recently (Mountain Gorilla Skeletal Project, Rwanda; post-1996). The gorillas collected by Fossey ($N = 17$ defects; mean depth = 25.8μ) have deeper defects than those that lived more recently ($N = 79$ defects; mean depth = 19.6μ ; Welch's t-test, $p = 0.059$). These results suggest that variation in defect expression among great ape teeth likely reflects the combined influence of enamel geometry and stress. Future studies incorporating associated records will provide the first data on LEH etiology in gorillas. NSF (IGERT 0801634; BCS 0852866, 0964944, 1520221,1613626), The Leakey Foundation, NGS (8486–08)

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MIXED EVIDENCE FOR ECOLOGICAL RISK AVERSION IN JUVENILE WILD CHIMPANZEES (PAN TROGLODYTES SCHWEINFURTHII) AT GOMBE NATIONAL PARK, TANZANIA

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The ecological risk aversion hypothesis (ERAH) proposes that prolonged primate juvenescence is a response to predation and starvation risks. To avoid predation, juveniles maintain close proximity to adults, increasing competition and limiting foraging efficiency. Slow growth minimizes juveniles' metabolic needs, diminishing subsequent starvation risk. However, past studies investigating the ERAH in wild primates have yielded mixed results. Here, we use 26 months of observational data from Gombe National

Park, Tanzania to test the ERAH in wild chimpanzees by comparing the time juveniles spent in close proximity to conspecific adults while feeding and resting. Because predation risks theoretically decrease with increased body size, we predict that juvenile proximity to adults will decrease as they age. Additionally, we expect juveniles to spend more time in close proximity to adults while feeding and resting terrestrially than arboreally because the ground likely poses higher predation risk. Contrary to our predictions, juvenile proximity to adults increased with juvenile age ($F_{1,12.21} = 15.12$; $p = 0.02$). However, supporting our predictions, juveniles spent more time in close proximity to adults while resting terrestrially than arboreally ($F_{1,52.97} = 7.51$; $p = 0.01$), but not while feeding ($F_{1,51.97} = 1.08$; $p = 0.30$). This pattern suggests that resting may be riskier than feeding, when individuals are upright and may be more vigilant for conspecific competition and predators. Other factors, such as social opportunities and resource distribution, may also contribute to patterns of juvenile proximity to adults.

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EXPLAINING PLAY PARTNER PREFERENCES AMONG KANYAWARA CHIMPANZEES: ARE MALES SPECIFICALLY TARGETED AS PARTNERS OR ARE THEY SIMPLY MORE WILLING TO PLAY?

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Like male children, young male chimpanzees exhibit rougher play styles than females (Meaney et al., 1985). Among children this contributes self-organized same-sex play, reflecting both same-sex partner preferences and female avoidance of rough-and-tumble of male play-styles (Martin et al., 2005). However, among immature chimpanzees at Kanyawara, both sexes seem to prefer male partners after controlling for availability (Sabbi et al., 2016). In this study we ask: can this pattern be explained simply by increased willingness to play among males? Or do both sexes specifically target male partners in lieu of females? We observed 740 play bouts among immature chimpanzees ($n = 24,15$ females, 9 males) of the Kanayawara community in Kibale National Park, Uganda from January–August 2015. For each bout, we recorded identity, age, and sex of initiating and target partners; and manner of play initiation and termination. There was no sex difference in total play bouts (T-Test, $p = 0.44$), or bouts initiated per hour (T-Test, $p = 0.79$). Males and females also terminated play bouts (T-Test, $p = 0.73$) and rejected play bout solicitations at relatively equal rates (T-Test, $p = 0.89$). However, when play bouts ended in switching partners, males were more likely to be selected as new partners ($X^2 = 7.183$, $p = 0.0475$). Thus, females were not less playful or less willing to play than males, supporting the conclusion that males were actively preferred partners of both males and females.