

Longevity and personality in captive chimpanzees (*Pan troglodytes*)

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Over the past 20 years, the study of personality has blossomed within primatology. Rating inventories have been extensively used across species to identify personality factor structures for different species. Chimpanzees share a common six-factor structure, composed of Dominance, Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Conscientiousness, Agreeableness, and Extraversion, have been tied to positive effects on overall health and longevity in humans, while Neuroticism is associated with shorter life span. In captive gorillas, Extraversion alone is associated with longevity. We undertook a study of all captive, personality questionnaire-rated chimpanzees; the Chimpanzee and Hominoid Personality Questionnaires have been used to assess almost 600 chimpanzees from Europe, Australia, Japan, and the United States. With these data we investigated which personality dimensions and other life history characteristics might predict all-cause mortality. In an accelerated failure survival analysis, we found a strong effect of Extraversion ($b = -4.74$, $p < 0.0001$), as well as lesser but significant effects of Agreeableness ($b = 2.87$, $p < 0.01$) and Dominance ($b = 1.64$, $p < 0.05$). Female and wild born chimpanzees appear to also live significantly longer ($ps < 0.01$). The robustness of an animal's social network and the quality of its social interactions play a role in the health of social organisms. This is reflected in the importance of Extraversion for gorilla and chimpanzee health, and Agreeableness and Dominance for chimpanzees. Yet, the effect of Agreeableness is also similar to what has been found in humans.