Serial order learning and performance by chimpanzees and gorillas on a computerized task

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Abstract: Multiple primate species have demonstrated a propensity for serial order learning that qualitatively differs from many tested non-primates. The interaction between physiology, sociality and cognition evinces the need to examine this ability throughout the primate order and across different stages of performance. Zoo-living gorillas (n=3) and chimpanzees (n=3) learned to order progressively-built lists of 3,4, and 5 symbols on a touchscreen computer. While performance increased on longer lists for both species ($F=20.1$, $p<0.001$), overall gorillas performed more accurately ($F=149.1$, $p<0.001$) and exhibited longer response latencies ($F=89.2$, $p<0.001$) compared to chimpanzees. Task errors most frequently comprised selection of the symbol associated with the next ordinal position ($F=124.3$, $p<0.001$). Results support an ape-typical learning process, while performance differences may indicate the influence of species-traits impacting attention, arousal, and impulsivity.