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

Katherine E. Wagner
Lester E. Fisher Center for the Study and Conservation of Apes, Lincoln Park Zoo, Chicago, IL 60614

Stephen R. Ross
Lester E. Fisher Center for the Study and Conservation of Apes, Lincoln Park Zoo, Chicago, IL 60614

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.