

USING M- AND G-TYPE FACTOR ANALYSES TO BETTER UNDERSTAND PERSONALITY

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To estimate the reliabilities of measures, most studies of nonhuman animal personality rely on multiple measures. Thus, the data structure is multi-level and contains information about the animal and the rater. To exploit these data, I developed two new variants of factor analyses useful for understanding the personalities of nonhuman primates and other animals. The first technique, M-Type factor analysis, involves extracting factors underlying covariances that describe the relationships among a subject's traits. The second technique, G-Type factor analysis, involves extracting factors underlying covariances that describe the relationships among a rater's perceptions, biases, and other influences. In this talk I will show how these analyses can be conducted using standard statistical software. I will then show how these approaches were used to test whether anthropomorphic projections underlie the personality ratings of two groups of chimpanzees. The first group includes 202 zoo-housed chimpanzees in the United States and Australia. The second group includes 151 chimpanzees located in Japan and housed in zoos research centers, a sanctuary. Finally, I will explore the meaning of the rater-based factors using a set of data on the personalities of 125 free-ranging rhesus macaques living on Cayo Santiago and the personalities of their raters. The implications of the results and further uses of the method will be discussed.

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