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Randomization Test p -Values versus Significance Levels

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Bryan Manly responds to Richard Anderson's article *Conceptual Distinction between the Critical p Value and the Type I Error Rate in Permutation Testing*.

Key words: P-value, randomization test.

Response

The p -value from a randomization test is no more and no less than the probability of getting a test statistic as *extreme* or *more extreme* than that observed if the data are effectively in a random order. The examples by Hayes (1996) and Mewhort, et al. (2009) do not meet that criterion and, therefore, are not relevant.

Dr. Bryan Manly is a consultant with Western EcoSystem Technology, Inc. Before that, he was Chair of Statistics and Director of the Center for Applications of Statistics and Mathematics at the University of Otago, New Zealand. He specializes in applications of statistics in ecology and environmental science. He has particular expertise in the design and analysis of biological sampling programs, multivariate analysis, population modeling, computer-intensive methods and the design and analysis of studies on resource selection by animals. Email him at: bmanly@west-inc.com.

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