Series Position Effects in Random Event Generator Experiments

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The skeptical community has tended to invoke for their purposes a ubiquitous "decline effect" that has long plagued parapsychological experimentation, as well as more conventional psychological studies, wherein initially interesting results are found to evaporate as replications are pursued. This issue seemed to us sufficiently crucial, from our engineering perspective, to be pursued in considerable *ad hoc* detail, with rather surprising, and potentially illuminating results.

Abstract

Effect sizes achieved by human operators in random event generator anomalies experiments show correlations with the ordinal positions of the experimental series in both the collective and individual databases. Specifically, there are statistically significant tendencies for operators to produce better scores over their first series, then to fall off in performance in their second and third series, and then to recover to some intermediate levels during their fourth, fifth, and subsequent series. Such correlations appear in both local and remote experiments, and are also indicated over a sequence of different experimental protocols, but no similar effects are found in baseline or calibration data. These serial position patterns thus appear to be primarily psychological in origin, and may subsume the rudimentary "decline," "primacy," "recency," and "terminal" effects propounded in the parapsychological and psychological literature. The results also emphasize the importance of very large individual databases in determining the asymptotic effect sizes in any given experiment of this type.

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