

## 66/04 - “Extrasensory Perception and Implicit Sequence Learning in a Computer Guessing Task”

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### **Abstract:**

Participants (Ps) ( $N=64$ ), equally divided between strong believers in the paranormal and strong skeptics, guessed out loud which number (1-4) a pseudo-RNG would select for each trial while simultaneously clicking the mouse.

In the 1<sup>st</sup> 2 of 4 runs, the target sequences ( $N=81$ ) were biased, reflecting either pure repetition avoidance (RA) or pure counting (CO), e.g., 2,3,4,1,2,3. As expected, scoring was above chance in both runs but significant only in the RA run. Although all Ps demonstrated marked RA, the deficit was only slightly greater for believers than skeptics. In the RA run, RA correlated negatively and significantly with hits for believers; the correlation reversed slightly for skeptics.

Between Runs 2 and 3, Ps completed a drawing task and questionnaires measuring tolerance of ambiguity and temporal lobe dysfunction (LIMBEX). Believers scored dramatically higher than skeptics on LIMBEX.

Targets for Run 3 ( $N=101$ ) were random, except that if P clicked the mouse when a computer address contained a 1 rather than a 0 (1-state), which occurred randomly 20% of the time, their target for the next trial matched their personal response bias as calculated from the preceding 2 runs. As predicted from decision augmentation theory, believers clicked the mouse when the computer was in the 1-state significantly more often than chance expectation and significantly more often than did skeptics.

In the last run ( $N=100$ ), Ps received either subliminal or supraliminal feedback of the preceding target. For half of each group, after trials 1-10 the targets repeated Ps' previous responses with a lag of 10 (pro-bias targets). The other Ps received a target sequence diametrically opposite to their response bias in Runs 1 and 2 (counter-bias targets). Contrary to expectation, only skeptics showed a greater increase in correct guesses from the 1<sup>st</sup> to the 2<sup>nd</sup> half of the run (implicit sequence learning, or ISL) with pro-bias than counter-bias targets. The subliminality manipulation had no effect. The ISL effect reversed slightly for high LIMBEX Ps; thus, temporal lobe instability seems to prevent ISL. Runs 3 and 4 also tested the “anomalous anticipation effect.” As predicted from the results of 2 previous experiments, skeptics correctly anticipated the nature of the bias (pro or counter) in Run 4 by manifesting the corresponding bias in Run 3, whereas believers anticipated incorrectly. However, this result occurred only if the Run 4 targets were subliminal.

**Keywords:** implicit sequence learning; extrasensory perception; response bias; decision augmentation theory; temporal lobe dysfunction