

Exploratory PK Experiments Using Light as the Stimulus

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Consideration of psi experiments with animals indicated the need for a method of testing with the following characteristics: (1) a PK test, in which no conditioning or pretesting was needed; (2) the stimulus was such that the animals were not under significant stress before or during testing; and (3) the animals could be tested in their home cages, thus not requiring them to adapt to a new environment and not requiring that they be handled or gentled. The use of light as an aversive stimulus met all the desired qualifications.¹

A testing chamber was built in which the light was controlled by a Schmidt binary RNG ($P = 1/2$) interfaced to a computer. A testing session consisted of 100 trials. Every three minutes an RNG decision was collected and, if it was a miss, the light was turned on for 45 seconds. The primary testing involved three male hooded rats who were housed in separate cages and had unlimited access to running wheels. The amount of running was recorded.

For the first study, rat C1 showed overall *missing* (i.e., the light on more frequently than expected) on his six test sessions $t=-5.86$, 5 *df*; $p < .005$, two-tailed). Rat C2 showed suggestive hitting ($p \approx .06$, two-tailed), while the results for C3 were at chance. In the second study, C1 had significantly positive scores ($p < .02$, two-tailed), while C2 and C3 gave chance scores. In a third study, only C1 was tested and the results were at chance for the 15 sessions. Further examination of the data for all three studies indicated that C1 showed a consistent incline in scores over his first 14 test sessions (collected over approximately 8 months) and had chance scores after that. Rat C1 was also behaviorally distinct since he ran approximately twice as much as the

¹ 1. For information about the aversive nature of light for rodents, see:

CAMPBELL, B.A. & MESSING, R.B. Aversion thresholds and aversion different limens for white light in albino and hooded rats. *Journal of Experimental Psychology*, 1969, 82, 353-359.

LOCKARD, R.B. Some effects of light upon the behavior of rodents. *Psychological Bulletin*, 1963, 60, 509-529.

MESING, R.B. The sensitivity of albino rats to lights of different wavelengths: A behavioral assessment. *Vision Research*, 1972, 753-761.

other rats during the first few months of testing, which suggests that individual differences may be important in animal work.

Other animals that were tested less extensively included three white laboratory rats, six other hooded rats, three gerbils, two wild mice and three wild rats. These animals were housed and tested either individually or in pairs. All results were nonsignificant. Groups of cockroaches were also tested, but no evidence for PK effects was found.

The fluorescent bulb in the test chamber approximately duplicated the sun's spectrum and was designed for growing plants. (It was a *white* light.) A dying African violet was also tested with the light randomly being turned either on or off for three-minute periods, but again no evidence of PK was found. (The "need-relevance" of the light for the plant's survival is indicated by the fact that the plant thrived when it was placed in the chamber with the light on continuously during the day.)

This exploratory work may be of interest because the use of light li stimulus has several methodological advantages and because the results suggest that there may possibly have been a PK effect associated with a rat which was behaviorally distinct from the others. These experiments are only of suggestive value, however, since the testing equipment was not as reliable as would be needed for conclusive work (several sessions had to be discarded because of equipment failures) and the interesting results were only a part of the generally nonsignificant results.—*Author's abstract*

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