

OPERANT TESTING OF A RANDOM-WALK MODEL FOR PAIN PERCEPTION. S. Lautenbacher, W.P. Lehmann, and R. Hölzl, Max-Planck Institut für Psychiatrie, Neurol. Poliklinik, Munich, FRG

825 Poster
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1. Basic Assumptions of the Model

- Pain perception has to be variable near threshold to meet the ongoing behavioral demands. The result is a relationship between stimulus intensity and sensation that is variable over time.
 - This variability has to be reduced towards higher stimulus intensities to avoid tissue damage.
- Consequently, a model for pain perception has to take into consideration variability of sensations with strict limitation in the upper stimulus range.

2. Methods

With an operant discrimination procedure tracking of pain threshold was attempted in 10 subjects with 2-4 sessions each. In an acquisition period (20 trials) discrimination between "painfully hot" and "non-painfully hot" was learned. In the tracking period (80 trials) stimulus intensities were varied according to the preceding reactions.

3. Results and Conclusions

Threshold courses over session were different between subjects and sessions. No special time courses were found. According to this descriptive analysis of data and the above mentioned assumptions a random-walk model with varying probabilities in the stimulus range was selected for data simulation. The correspondence between empirically determined and simulated data was satisfactory.