The Light/Dark Transition Test

Revised 9 July 2004

Apparatus

The light/dark box (45 x 27 x 27 cm) was made of plywood and consisted of two chambers connected by an opening (7.5 x 7.5 cm) located at floor level in the center of the dividing wall. The floor was divided into 9 x 9 cm squares and was covered with Plexiglas. The small chamber (18 x 27 cm) was painted black and the larger chamber (27 x 27 cm) was painted white. Both chambers were covered with lids of clear Plexiglas. Bright illumination was provided by a 60 watt table lamp located 40 cm above the center of the white chamber. The apparatus was located in a 2 x 5 m laboratory room.
Procedure

Mice were carried into the test room in their home cages and placed in the center of the white chamber facing the opening and were allowed to explore the apparatus for 5 minutes. An observer sitting quietly about 1 m from the apparatus recorded the behaviour of the animals in the box. A video camcorder located approximately 150 cm above the center of the maze also recorded the mouse’s behaviour. Behaviours were later scored by video playback using Hindsight for MS-Dos Version 1.5 computer software. After 5 minutes, mice were removed from the box by the base of their tails and returned to their home cage. The maze was then cleaned with a solution of 70% ethyl alcohol and permitted to dry between tests.

Behaviours scored included:

Transitions: number of times the animal passes in or out of the light and dark chambers
Locomotion: number of times the animal crossed lines drawn on the floor of the light and dark sides of the box.
Rearing: frequency with which the animal stands on hind legs or leans against a wall of the box with its front paws.
Stretch attend postures: frequency with which the animal demonstrates forward elongation of head and shoulders followed by retraction to original position.
Grooming: grooming the body while stationary
Dark box duration: length of time the animal spent in the dark side of the box
Light box duration: length of time the animal spent in the light side of the box
Defecation: number of fecal boli produced

Urination: number of puddles or steaks of urine

References
