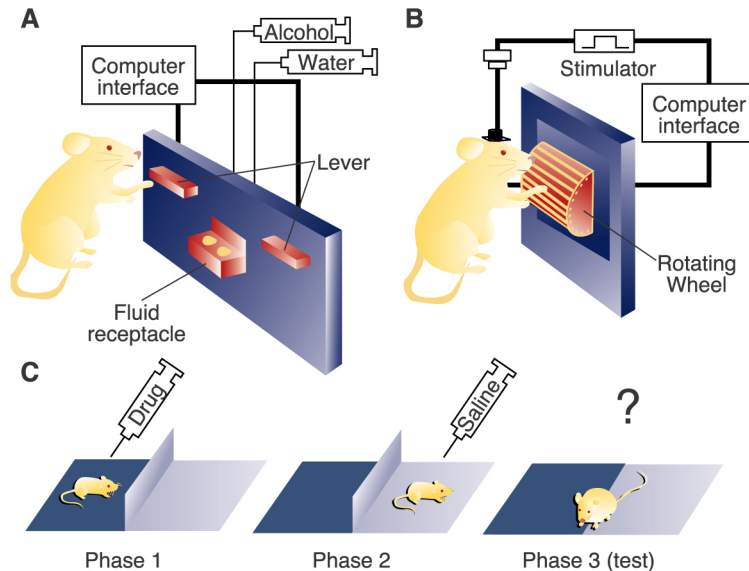


Animal behavioral paradigms used to explore the positive and negative reinforcing actions of alcohol and other drugs



Animal behavioral paradigms used to explore the positive and negative reinforcing actions of alcohol and other drugs. (A) Oral alcohol self-administration paradigm, in which the animal is trained to press a lever to obtain alcohol instead of water. Rats will readily self-administer enough alcohol in daily 30-minute sessions to become mildly intoxicated. (B) Intracranial self-stimulation paradigm, in which the animal is trained to spin a wheel to receive a current through electrodes implanted in the brain. (C) Place-conditioning paradigm, in which injection of a drug is paired repeatedly with one environment and injection of a nondrug control solution (e.g., saline) is paired repeatedly with a different environment. The animal subsequently is allowed access to both environments in the drug-free state, and the amount of time spent in each environment is recorded. A greater amount of time spent in the drug-paired environment indicates a positively reinforcing drug effect.

Source: Roberts, A.J., and Koob, G.F. The neurobiology of addiction: An overview. *Alcohol Health & Research World* 21(2):101–106, 1997.

Updated: October 2000