

Chapter 4 Infancy: Early Learning, Motor Skills and Perceptual Capacities

Vocabulary:

Affordances: The action possibilities that a situation offers an organism with certain motor capabilities. Discovery of affordances plays a vital role in perceptual differentiation.

Amodal sensory properties: Information that is not specific to a single modality but that overlaps two or more sensory systems, such as rate, rhythm, duration, intensity, temporal synchrony and texture and shape.

Classical conditioning: a form of learning that involves associating a neutral stimulus with a stimulus that leads to a reflexive response. Once the nervous system makes the connection between the two stimuli, the new stimulus will produce the behavior by itself.

Conditioned response: in classical conditioning, a new response produced by a conditioned stimulus that is similar to the unconditioned, reflexive response.

Conditioned stimulus: in classical conditioning, a neutral stimulus that through pairing with an unconditioned stimulus, leads to a conditioned response.

Contrast sensitivity: a general principle accounting for early pattern preferences, which states that if babies can detect a difference in contrast between two or more patterns, they will prefer the one with more contrast.

Differentiation theory: the view that perceptual development involves the detection of increasingly fine-grained, invariant features of the environment.

Dynamic systems theory of motor development: a theory that views new motor skills as reorganizations of previously mastered skills, which lead to more effective ways of exploring and controlling the environment. Each new skill is a joint product of central nervous system development, the body's movement possibilities, the child's goals, and environmental supports for the skill.

Extinction: in classical conditioning, decline of the conditioned response as a result of presenting the conditioned stimulus enough times, without being paired with the unconditioned stimulus.

Habituation: a gradual reduction in the strength of a response due to repetitive stimulation.

Imitation: learning by copying the behavior of another person. Also known as modeling or observational learning.

Intermodal perception: perception that combines simultaneous input from more than one modality, or sensory system, resulting in an integrated whole.

Invariant features: features that remain stable in a constantly changing perceptual world.

Mirror neurons: specialized cells in many areas of the cerebral cortex in primates that underlie the ability to imitate by firing identically when a primate hears or sees an action and when it carries out that action on its own.

Neonatal Behavioral Assessment Scale (NBAS): a test developed to assess a newborn infant's behavioral status by evaluation of the baby's reflexes, muscle tone, state changes, and responsiveness to physical and social stimuli.

Non-rapid-eye-movement (NREM) Sleep: A "regular" sleep state in which the body is almost motionless and heart rate, breathing, and brain wave activity are slow and even. Distinguished from REM sleep.

Operant conditioning: a form of learning in which a spontaneous behavior is followed by a stimulus that changes the probability that the behavior will occur again.

Perceptual Narrowing Effect: perceptual sensitivity that becomes increasingly attuned with age to information most often encountered.

Pincer Grasp: the well-coordinated grasp that emerges at the end of the first year, involving thumb and index finger opposition.

Pre Reaching: the poorly coordinated, primitive reaching movements of newborn babies.

Punishment: in operant conditioning, removal of a desirable stimulus or presentation of an unpleasant stimulus, either of which decreases the occurrence of a response.

Rapid-eye-movement Sleep (REM): an "irregular" sleep state in which electrical brain-wave activity is similar to that of the waking state: eyes dart beneath the lids; heart rate, blood pressure, and breathing are uneven; and slight body movements occur. Distinguished from NREM sleep.

Recovery: following habituation, an increase in responsiveness to a new stimulus.

Reflex: an inborn, automatic response to a particular form of stimulation

Reinforcer: in operant conditioning, a stimulus that increases the occurrence of a response.

Shape constancy: perception of an object's shape as stable, despite changes in the shape projected on the retina.

Size constancy: perception of an object's size as stable, despite changes in the size of its retinal image.

States of arousal: different stages of sleep and wakefulness.

Statistical learning capacity: the capacity to analyze the speech stream for repeatedly occurring sound sequences, through which infants acquire a stock of speech structures for which they will later learn meanings.

Sudden infant death syndrome: the unexpected death, usually during the night, of an infant under 1 year of age that remains unexplained after thorough investigation.

Ulnar grasp: the clumsy grasp of the young, infant, in which the fingers close against the palm.

Unconditioned response: in classical conditioning, a reflexive response that is produced by an unconditioned stimulus.

Unconditioned stimulus: in classical conditioning, a stimulus that consistently produces a reflexive, or unconditioned response.

Visual acuity: fineness of visual discrimination

Visual cliff: an apparatus used to study depth perception in infants, consisting of a plexi-glass covered table with a central platform, from which babies are encouraged to crawl. Checkerboard patterns placed at different distances beneath the glass create the appearance of a shallow and deep side.