# Ap biology animal behavior

ethologystudy of animal behavior and its relationship to its evolutionary origins - what an animal does and howproximate causesimmediate, genetic, physiological, neurological, and developmental mechanisms that determine how an individual behaves ONAP BIOLOGY ANIMAL BEHAVIOR SPECIFICALLY FOR YOUFOR ONLY$13. 90/PAGEOrder Nowultimate causesevolutionary pressures that have fashioned an animal's behaviorKarl von Frischstudied communication in honeybees and described the waggle danceKonrad Lorenzstudied imprinting in goslingsNiko Tinbergenfixed action pattern studiesinherited behaviorinnate, developmentally fixed, " built in", triggered by stimulus, reflexes/instincts, automatic from birthlearned behavioracquired, modified by experience, variable, triggered by stimulus, habits/reasoning, some genetic predispositiontypes of animal behaviorinstinct

fixed action patterns (FAPs)

imprinting

associative learning

trial-and-error learning (operant conditioning)

spatial learning

habituation

observational learning

insighttypes of innate behaviorinstinct, fixed action pattern, imprintinginsinctinclination towards a behavior

example: newly hatched turtles walk towards the ocean; human babies exhibit many instinctual reflexes; in mammals, offspring care is innatefixed action patterns (FAPs)initiated by a sign stimulus; follows a regular, unvarying pattern that will be carried out to completion even if the original

intent can no longer be fulfilled

example: graylag goose will roll eggs back to nest; even if it loses " grip" on the egg, it will complete the rolling motion

example: male stickleback fish will attack anything with a red undersideimprintinginnate and learned; specific behavior is acquired when the stimulus is experienced during the critical period. once acquired, the behavior is irreversible

example: graylag goslings will accept any moving object as their mother on the first day of life

example: salmon imprint the odor of their birthplace so they can return to breedcritical perioda limited time interval during the life of an animal where it is sensitive to optimal imprintingexamples of learned behaviorassociative learning, trial-and-error learning, spatial learning, habituation, observational learning, insight/critical thinkingassociative learningclassical conditioning; an animal recognizes that two or more events are connecting

example: Pavlov's dogs salivate in response to a ringing bell, B. F. Skinner ratstrial-and-error learningoperant conditioning; basis of punishment and reward systems; animal connects its own behavior with a particular environmental response

example: BF Skinner and the rats in the shockboxextinctionloss of an acquired behavior; the behavior no longer elicits the expected responsespatial learningoccurs when the animal associates attributes of a location (landmarks) with the reward it gains by being able to identify and return to that location

example: wasps use pinecones or other landmarks to remember the location of the nesthabituationanimal learns to disregard meaningless stimuli; " cry-

wolf" effect

example: sea anemones and food OR you don't feel your clothesobservational learninganimals copy the behavior of another animal without having experienced any prior positive reinforcement with the behavior

example: octopus grabs red ball after watching a trained octopus grab a red ballinsightan animal, exposed to a new situation and without prior relevant experience, performs a behavior that generates a desirable outcomematurationsome behaviors appear to be learned but are actually innate, they just require a specific age to be attainable

example: birds can fly on their first try as long as their wings and feathers are formed enough to sustain flightsurvival responsesoccur when animals encounter dangerous situations:

1. fight-or-flight response
2. avoidance response
3. alarm responseparental careinnate behavior in response to producing offspring; fitness of an individual depends on successful rearing of offspringforaging behaviorsoften require responses to visual and chemical stimuli:

1. flower color and scent
2. fruit color
3. body scents
4. herds, flocks, schools, packs
5. search imagesanimal movementanimals move to seek food or shelter, avoid danger, or seek mates. they use kinesis, taxis, migrationkinesisundirected change of speed of movement in response to a

stimulus - the animal slows down or speeds up to remain in favorable environments for a longer period of timetaxisdirected movement in response to a stimulus, either toward or away from the stimulusphototaxisresponse to lightchemotaxisresponse to chemicalsmigrationlong-distance, seasonal movement of animals, usually in response to seasonal availability of food or degradation of environmental conditionscircadian rhythmbiological clock; pattern of physiological or behavioral activity aligned with a 24-hour cycle in a daydiurnal animalsactive during the day and sleep at nightnocturnal animalsactive at night and sleep during the daymelatoninproduced by the pineal gland in response to darkness; regulates biological clock in humanshibernationextended period of sleep, dormancy, or other torpid state to avoid hostile environmental conditions. reduce energy by lowering body temperatures and minimizing metabolic maintenance activitiesestivationdormancy during summers or hot/dry weather; protection from desiccation (drying out) by burrowing into mud or retreating underground. courtship and matingoften occur during spring season, when warmer weather and an abundance of food arriveanimal communication occurs by which mechanisms? chemical, visual, auditory, tactilechemical communicationpheromones - some elicit response when smelled, others when they are eaten. alarm and sex pheromones are included. visual communicationmany visual displays are observed during acts of aggression or during courtshipauditory communicationbird song, insect song - used for mating, species identification, genetically codedtactile communicationcommon in social bonding, infant care, grooming, matingsocial behavior includes... agonistic behavior, dominance hierarchies, pecking order, territoriality, eusocial societies, altruistic behavioragonistic

behaviorinvolves aggression and submission, and originates from competition for food, mates, or territorydominance hierarchiesindicate power and status relationships among individuals in a group; minimize fighting for food and matespecking orderlinear order of status often used to describe dominance hierarchies in chickensterritorialityactive possession and defense of territory in which an animal or group of animals lives; ensure inhabitants adequate food and a place to mate and rear their youngeusocial societyconsists of members divided into castes; individual castes have different jobs - foraging, feed/care for young, protection of colony, etc. altrustic behaviorseemingly unselfish behavior that appears to reduce the fitness of an individual; increases inclusive fitness; occurs by kin selection - a form of natural selection that increases inclusive fitnessinclusive fitnessfitness of an individual plus the fitness of relatives, who share a percentage of identical genes with the altruistsexual selectionselection of mates by particular traits; usually females choose malesPolyandrousFemale mates with more than one malePolygynousMale mates with more than one female