BEHAVIOUR

What is behavior?

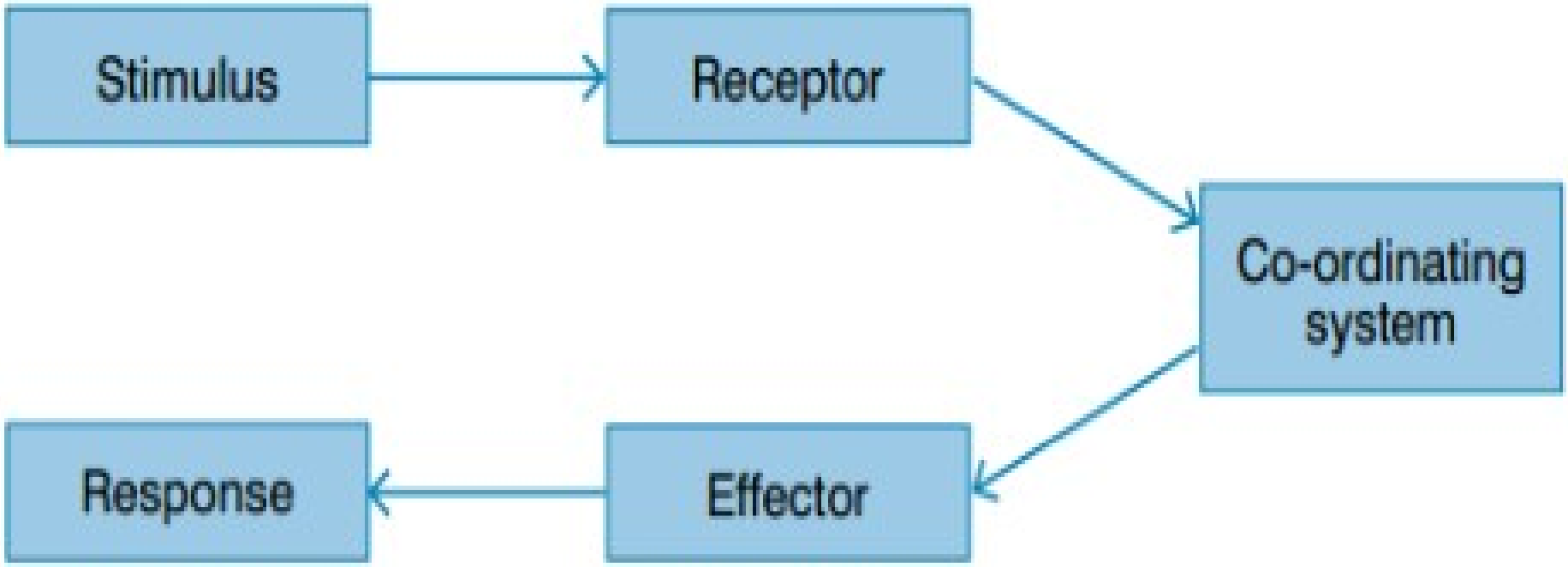
- The observable response a person to make.
- The manner of acting or conducting yourself.
- The way a person behave towards other people.

From biological view

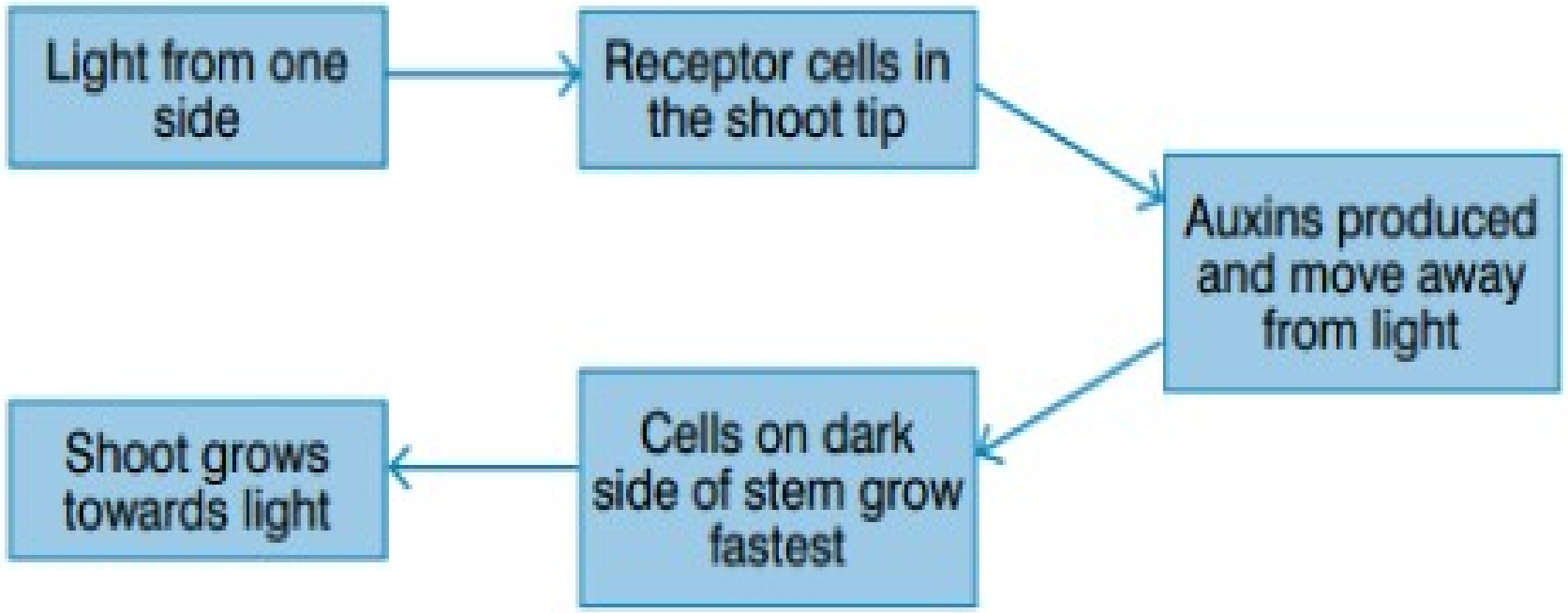
Behavior is the coordinated response of an organism to an internal or external stimulus.

Behavior must have the following component

- **a receptor**- detect stimulus
- **an effector**- produce the response
- **coordinating system**- linking system influenced by receptor and can influence effectors.

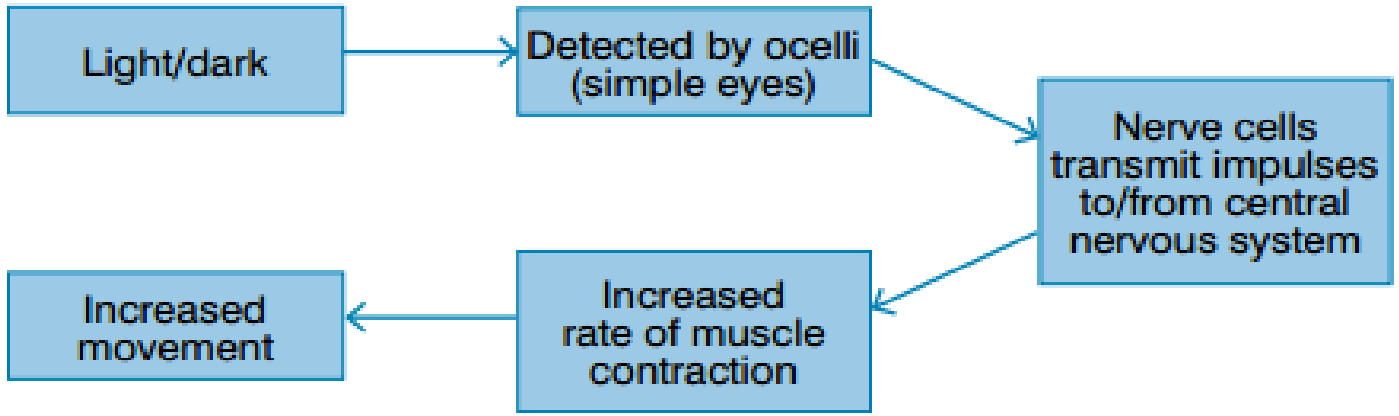


- Plants show behavior pattern that involve tropisms (growth response to unidirectional stimulus).
- **Phototropism** growth of plant shoot toward the grater light intensity. Plants shoot are positively phototropic.
- root grow more or less downward in response gravity positively gravitropic



- Simple animals respond to stimulus by **taxes** and **kineses**.
- **Taxes** in which the animals move along a gradient of intensity of a stimulus (directional response to directional stimulus).
    - **Positive taxis**- movement towards the greatest intensity of light.

      Example Euglena
    - **Negative taxis-** movement away from greatest intensity.
- **Kineses** in which change in the intensity of stimulus brings about a change on rate of movement.
- Example woodlice increase rate of movement in bright light.



- Studying animal behavior is important because we can gain information that can be used in

  ■**Neuroscience** branch of science concerned with the brain and nervous system.

  ■the environment and resource management

  ■ animal welfare

  ■ science education

- **Innate behavior** is a behavior that is present(potentially) at birth or hatching and genetically pre-programmed in some way.

  Three types of innate behavior

1. Reflex action- single action is performed in response to a specific stimulus.

   Example withdrawal of your hand from hot object, blinking of eyes, knee jark, sneezing.

2. **Orientational-** complex behavior, most likely to move from unfavourable condition and remain in favourable condition.

Example kineses of woodlice

3. **Instinctive behavior-** most complex behavior, but there is fixed action pattern for each key stimulus.

Example nest-building, imprinting, weaving a web.

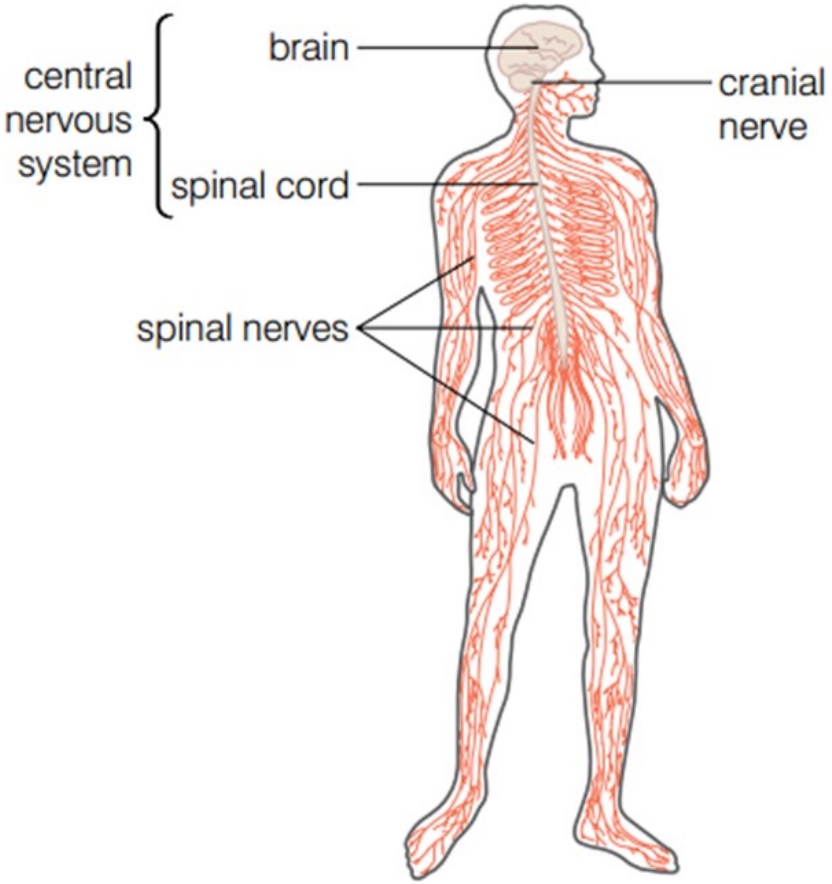
- **Reflex action** are brought about by reflex are comprising a sensory neuron, a relay neuron(inter-neuron) and a motor neurons.

The two main types of reflex action are **somatic reflex** and **autonomic reflexes.**

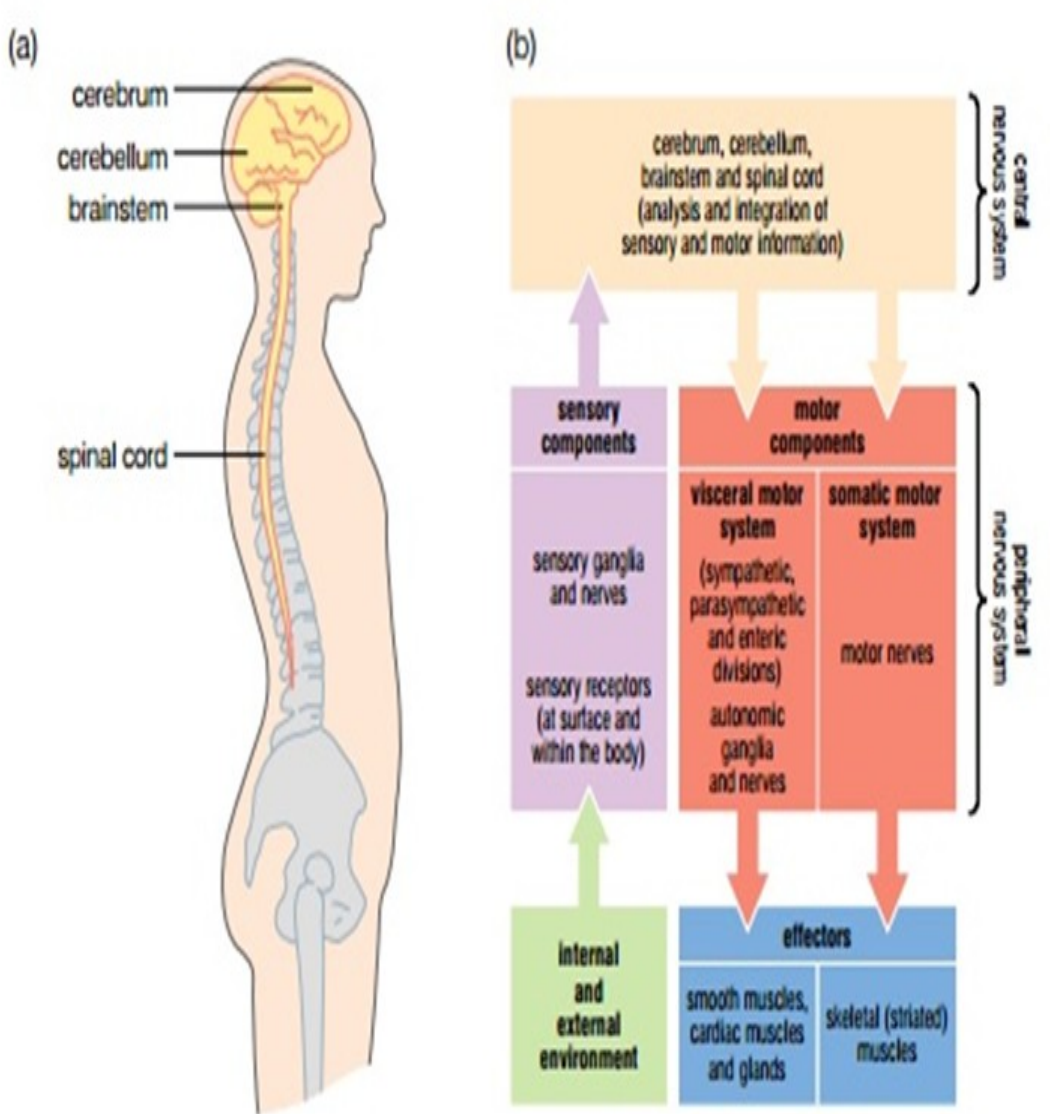
- **Somatic reflex**- involves our special sense(eyes, ears, pressure detectors) are usually protective, where as **Autonomic reflex** involves sensor of internal organ produce response on internal organ.

Nervous system physically divided into two major component

- 1. central nervous system- brain and spinal cord
- 2. peripheral nervous system- cranial and spiral nerves.



- Nervous system functionally divided into
- 1. Somatic nervous system- produce response in skeletal system
- 2. Autonomic nerv ternal organ
- Sensory division
- Sympathetic
- Parasympathetic



- **Biological clocks** is an internal regulatory mechanism that controls a cyclical process in an organism.

  * They are genetically programed, it may be

- Cricadian (controls a daily cycle)

  Example sleep and weak cycle

- Lunar (controls monthly cycle)

  Example moon light shape, how animal move, grow and even sing

- Circannual (controls a yearly cycle)

Example- changes is the light-dark ratio control reproductive behavior in animals

- Migration(for example swallows)
- Hibernation(for example hedgehogs)
- Coat growth(for example arctic foxes)
- Common flage coloring(example arctic foxes)

- Characteristics of instinctive behavior are

●Pre-programed pattern behavior and complex sequence of action

●Common to all member

●Fully functional the first time they are performed.

●There is a key stimulus that triggers the behavior.

●Mediated by an innate releasing mechanism and a fixed action pattern.

●Adaptive- they have been retained in the species by natural selection because they confer a survival advantage.

Example of instinctive behavior

- Feeding behavior of herring gulls
- Aggression in stickle backs (fish) to defending their territory
- Love birds with different nesting behavior
- Female fishers lovebirds cut long strip female peach faced cut short strip
- **Imprinting** newly born/hatched. organism imprint on first object they see.
- Formation of strong emotional bond between human infant and primary caregiver.
- 0-2 month pre attachment- not discriminate b/n different people.
- 2-7 month in discriminate attachment- preference for familiar people.
- 7 months onward- true emotional attachment to one person.

- **Learned behavior-** involve the strengthening of existing response or the formation of new responses to existing stimuli that occur because of practice or repetition.
- Kinds of learned behavior
    - habituation
    - sensitisation
    - classical conditioning
    - oparent conditioning
    - latent learning
    - insight learning

● **habituation is a process which results in a decrease response to a**

stimulus after repeated exposure to that stimulus over a period of time.

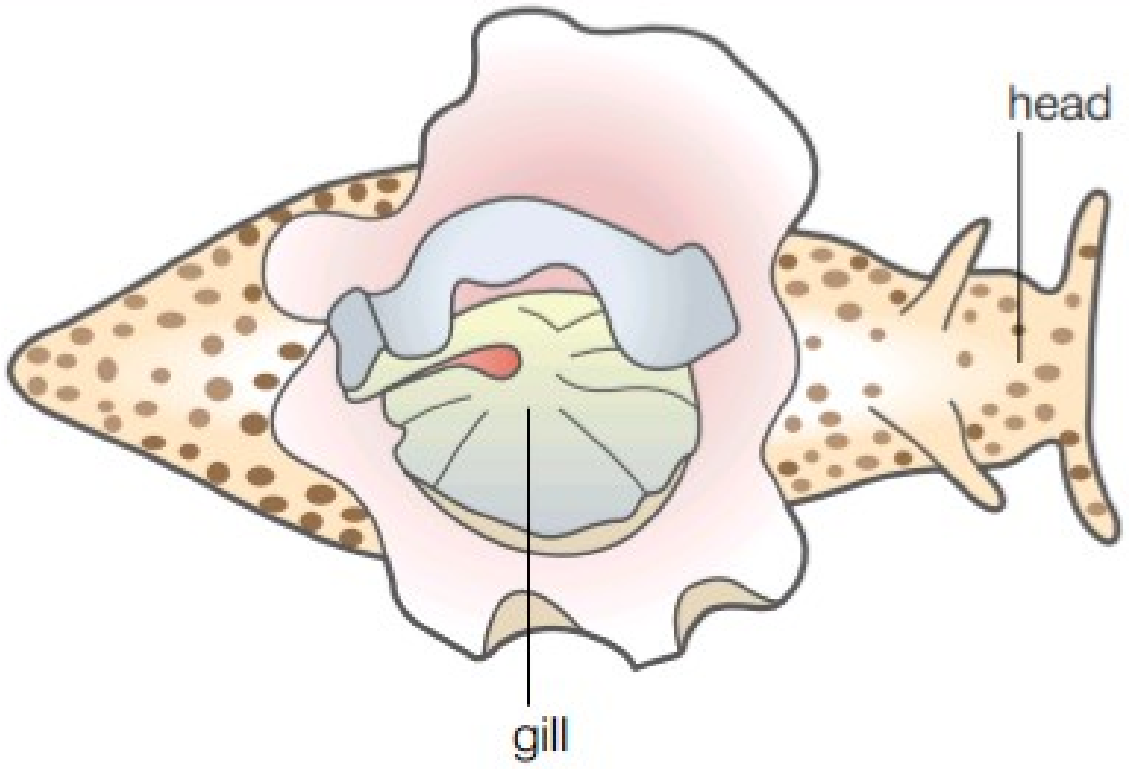
Example ■ sense of smell to odur even though it still present.

- habituation to humans occur in prairie dog.

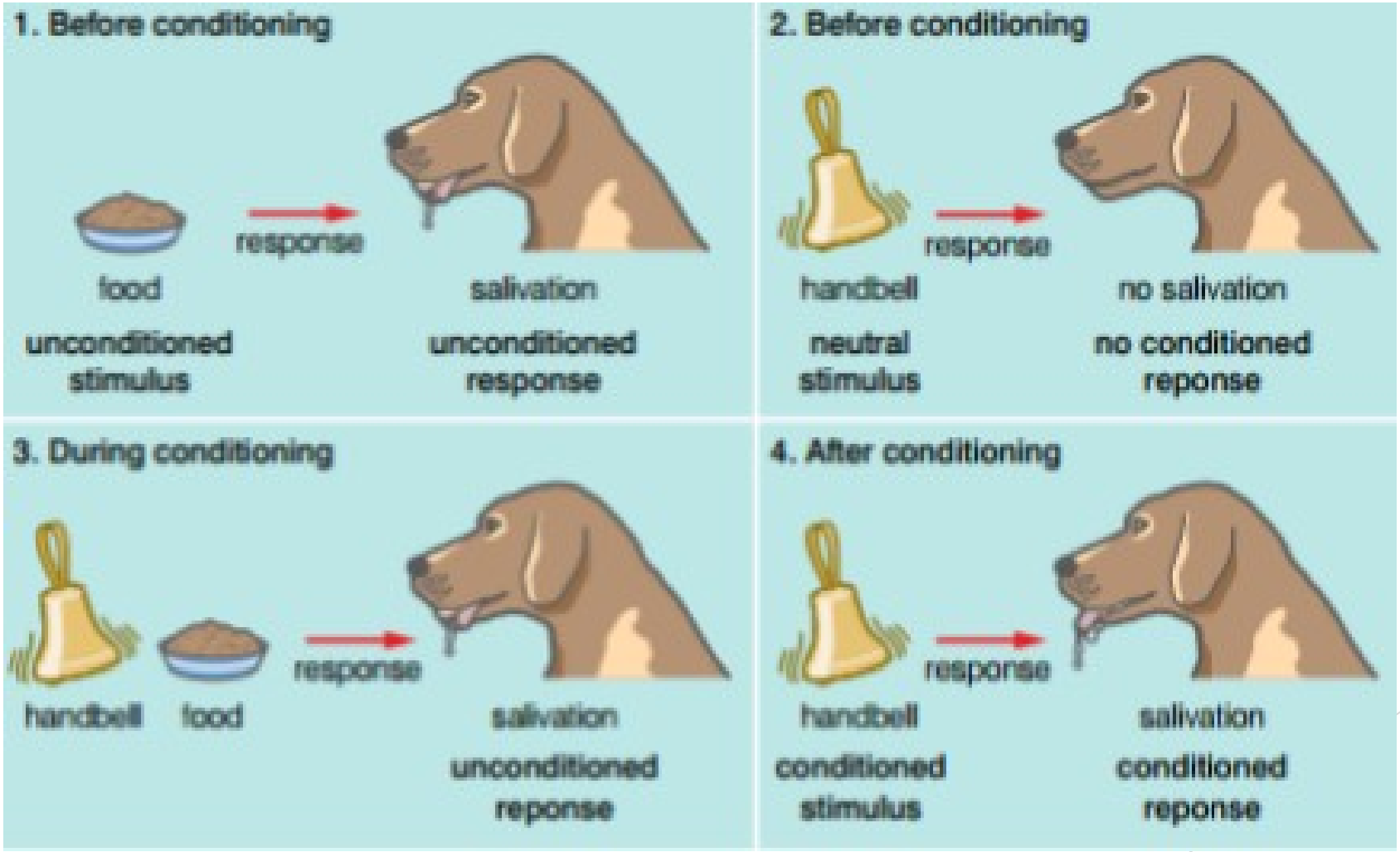
■ sensetisation in which these is an increase in the respons to a

harmless stimulus occurs after harmful stimulus.

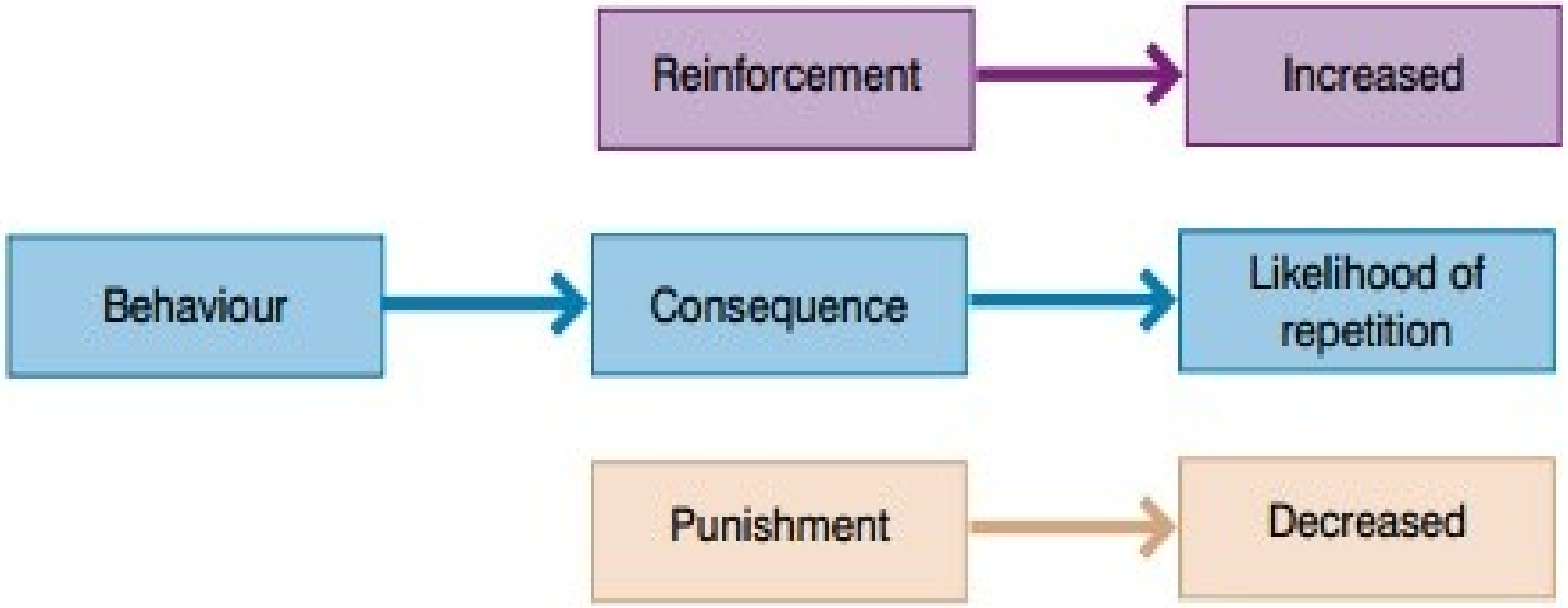
Example gentle touch on the siphon of aplysia is preceded by an electric shock.



- **Classical conditioning** in which, during the conditioning process, a naturally occurring stimulus became associated with a different stimulus, which now also produces the same response.



- **Oparent conditioning** is a classical conditioning involves modifying an innate response by paring with preivous natural stimulus.
- Strengthened or weakened as a result of consequence (parent) of that behavior: reward with strengthen (reinforce)the behavior; punishment will weaken(extinct) the behavior.



- **Latent learning** in which knowledge of some kind is acquired without reinforcement and is only used later, when the need arise.

example one teacher drives another to school everyday then one day the driver is ill other teacher drives himself to school without getting lost.

- **Insight learning** in which problems are solved by mental processing, rather than by trial or error.
- Th ned s ent).





- Courtship behavior is an activity that precedes and results in mating and reproduction and allows members of a species to recognize each other whilst preventing attempts at interbreeding between different species.
- Courtship behavior may involve
  - Secretion of sex pheromones
  - Courtship vocalization
  - Touch
  - Complex displays involving a series of fixed action patterns
- Territorial behavior is any behavior that is used to defend an area that gives access to:
  - Good foraging
  - Increased mating chance
  - A den or similar

- Territorial behavior can involve
  - Marking the area
  - Threatening vocalization
  - Threat displays(exaggerating size or displaying weapons)
  - Ritual fighting
- **Social behavior** is a behavior that may allow animals to:
  - Form stable groups and reduce intra-specific aggression
  - Improve the effectiveness of reproduction
  - Forage more efficiently- especially if sources of food are localized
  - Protect themselves against attack more effectively
  - Increase the chance of surviving migration and extreme conditions
  - Communicate across long distance.

- The honeybee is a social insect that has a caste system.
- Three types or castes of bees in nest
- **The queen**-reproductively active female
- **Drones**-reproductively active males
- **Worker**-non-reproductively active female
- The queen maintains the social structure of the colony by secreting pheromones and by aggressive attacks on maturing **worker bees**.