

CPT 4.2: Animal Behaviour

Topic: Stereotyped behaviour

Ms. KAVERI K.R
DOSR IN ZOOLOGY
TUMKUR UNIVERSITY

Stereotyped behaviour

- When an individual repeats the same pattern of behaviour again and again.
- It is also called innate or inborn or inherent behaviour.

Characteristics

- They are complex in origin and are predictable.
- They are initially stimulus dependent.
- They do not results as a consequence of experience.

Fixed action pattern(FAPs)

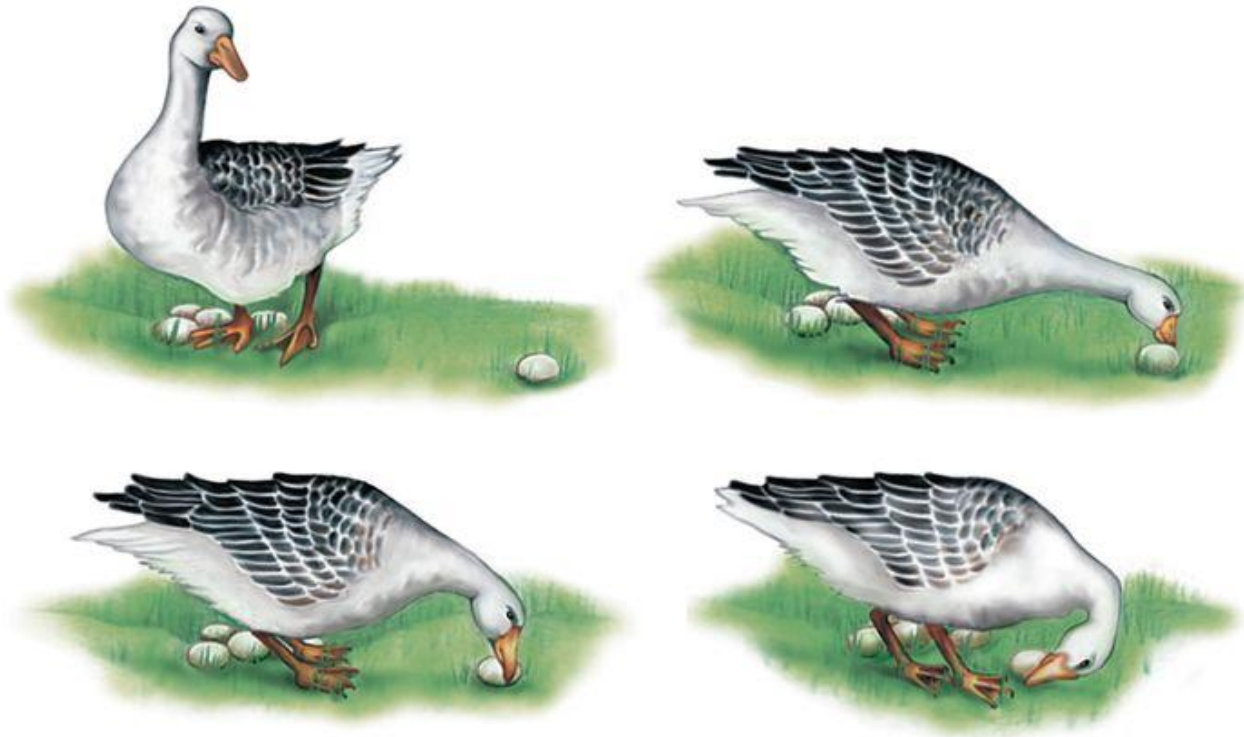
- Stereotyped act are considered to be fixed and the behaviour pattern are called FAP.
- First described by **K. Lorenz**.

Example –

- Lorenz and Tinbergen (1938) examined egg-rolling behaviour in the Greylag goose.
 - * If the egg slipped away, she continued the motion.
 - * Once started, the behaviour must be completed in a specific way.

Geese

- Fixed Action Patterns in a goose



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Modes of stereotyped behavioural pattern:

1. Spatial orientation (Kinesis & Taxis)
2. Reflexes
3. Instincts
4. Motivation

1.Orientation

- Related to orient & direction.
- Animal changes position for specific direction in response to some stimuli.
- **Types:-**
 - a)Taxis
 - b)Kinesis

Taxis

- directional movement toward / away from the stimuli.
- If the response is movement toward the stimulus(+ve taxis)
- Away from the stimulus(-ve taxis)

With respect to the types of stimulus, taxis can be classified as following types:

-**Photo taxis**- response to light .

-**Chemotaxis**-response to chemical.

-**Thermotaxis**-response to heat.

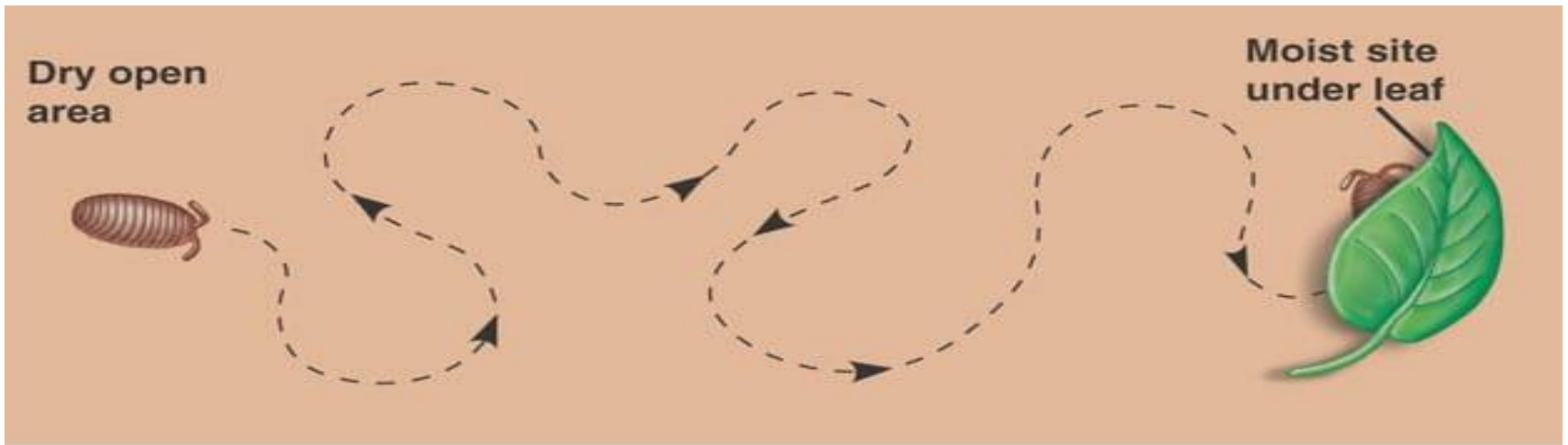
-**Thigmo taxis**- response to contact.

-**Hydrotaxis**- response to moisture.

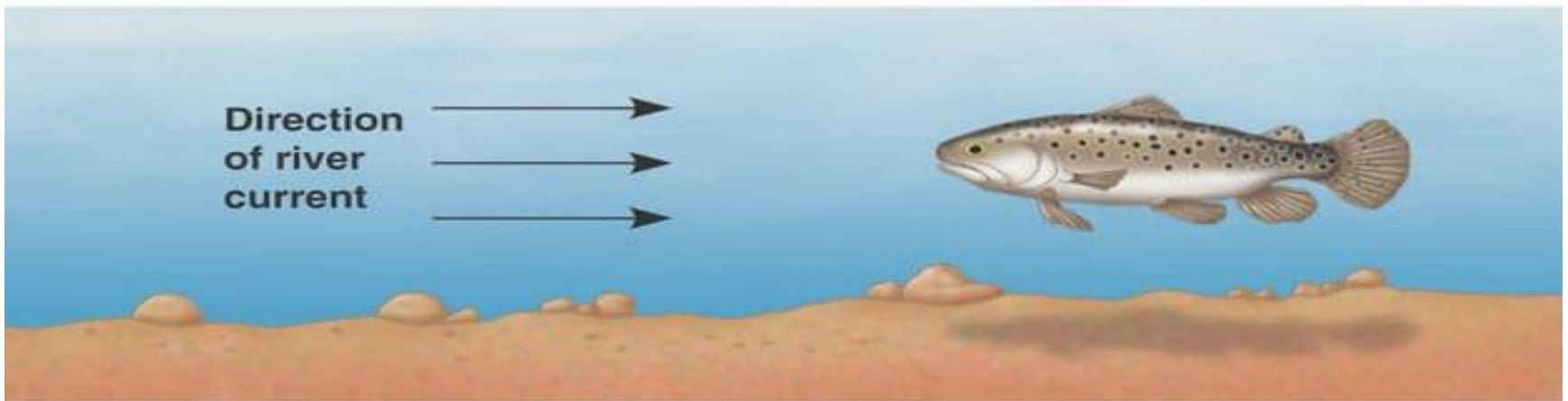
-**Rheotaxis**-response to currents of air/ water.

-**Galvanotaxis**-response to constant electric current.

-**Geotaxis**-response to gravity



(a) Kinesis increases the chance that a sow bug will encounter and stay in a moist environment.



(b) Positive rheotaxis keeps trout facing into the current, the direction from which most food comes.

Kinesis

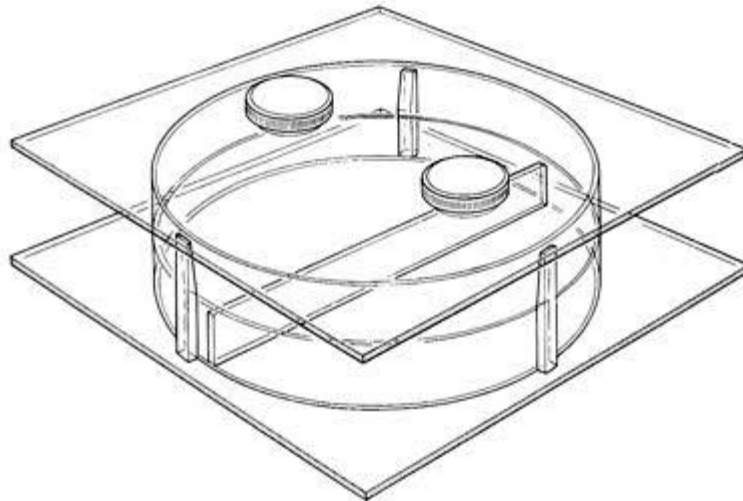
- Animal response is proportional to the intensity of the stimulus.
- Movement is non-directional way.(speeding up/slowing down)

Types –

1. Orthokinesis
2. Klinokinesis

Orthokinesis

- Animals alters its rate of movement (fast/slow) according to the intensity of the stimulus.
- Ex:-Locomotion of a wood louse in relation to humidity with increased humidity there is an increase in the percentage of time, that the woodlice



Klinokinesis

- When the rate of change of direction of the animal increase as the intensity of a stimulus increases.

Ex: Behaviour of flatworms which turns more frequently in response to increasing light thus ensuring that it spends more time in dark areas.

Reflexes

- Reflex behaviour is the simplest form of reaction to stimulation.
- Automatic response to body/ part of body to a simple stimulus.

Characteristics

- It is the simplest unit of complex behaviour.
- They are normally involuntary, automatic and stereotyped.
- Unlike taxes, reflexes usually involve the movement of a part of body.
- They are not necessarily guided by the stimulus.
- Reflexes are the outcome of the neural mechanism.
- A reflex action is directly proportional to the stimulus strength; stronger the stimulus shorter the latent period, weaker the stimulus longer the latent period.

Types of Reflexes

1. Tonic reflexes

2. Phasic Reflexes

Tonic reflexes- These are slow, i.e., long lasting responses. They are involved in maintenance of the muscular tone, posture and equilibrium adjustment.

Phasic reflexes- these are fast, i.e., short lived responses. They occur during flexion response of the body.

Example of Reflexes

The reflexes action can be easily understood by a simple knee jerk reflex.

Examples of each of these are:

a. Knee jerk response (simple/spinal cord only)

