

Channels of communication:

1. Visual
2. Chemical
3. Auditory/acoustic
4. Tactile

Visual Communication

Signal sources:
1. Badges



Visual Communication

Signal sources:

1. Badges
2. Displays



Advantages:

1. Contains a lot of information that can be given quickly.
2. Display can be easily modified.
3. Signal travels very quickly.

Disadvantages:

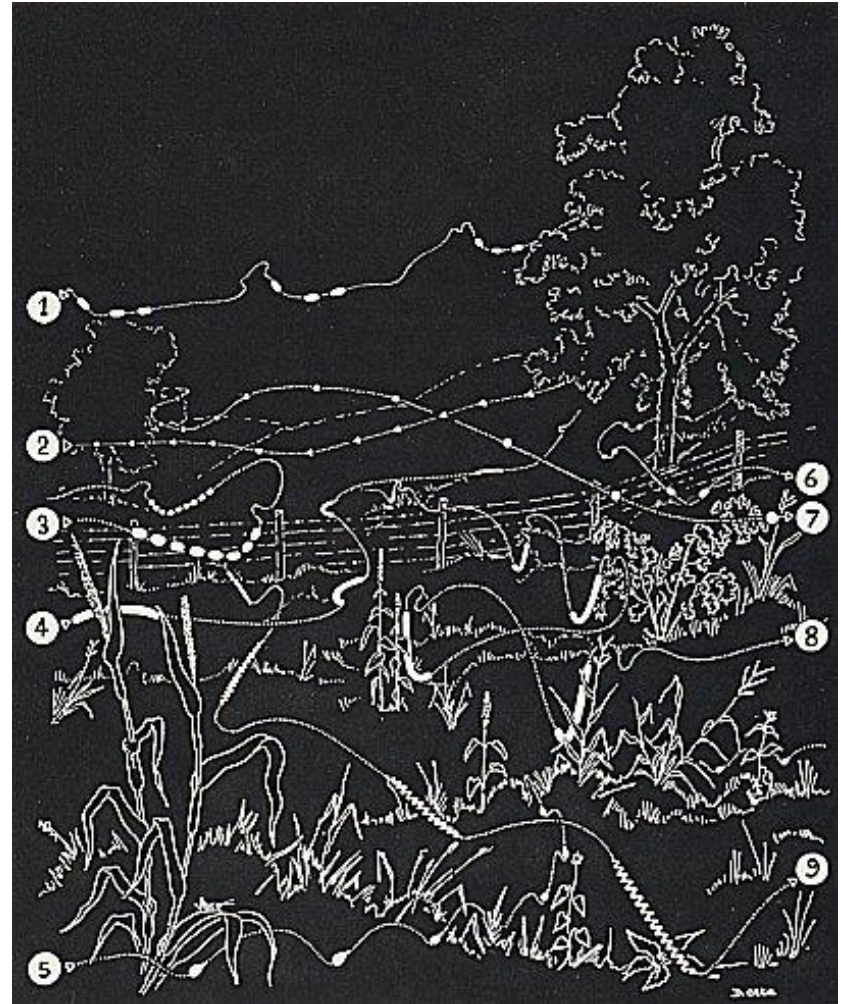
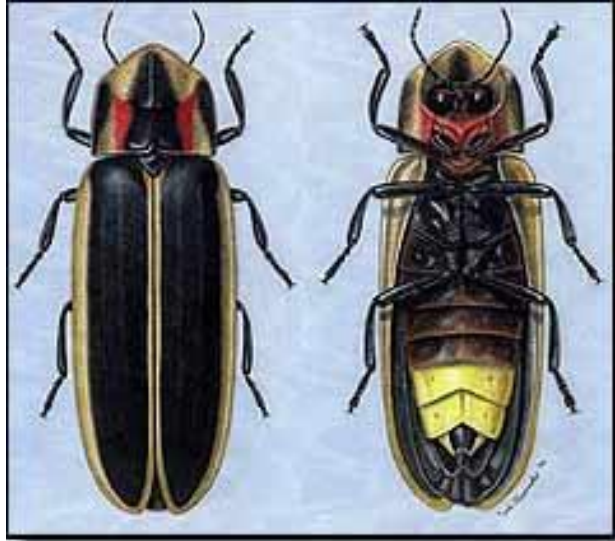
1. Good for short range communication only.
2. Signal cannot travel around objects.
3. Signal is very short lived.
4. May require a lot of energy to produce.

Visual signals are favored:

1. When ambient light is present.
2. In open environments = objects do not block transmission.
3. When message needs to reach the receiver quickly.

Most adaptive functions for visual communication:

Recognition



Most adaptive functions for visual communication:

Courtship



Most adaptive functions for visual communication:

Social status



Chemical Communication

Signal sources:

1. Urine & feces
2. Glands on skin



Advantages:

1. Signal can be long lasting.
2. Signal can travel around objects.
3. Signal can travel short or long distances.
4. Information content can be very specific.

Disadvantages:

1. Signal is not easily modified.
2. Directionality of signal can be difficult to control.
3. Speed at which signal travels can be slow.

Chemical signals are favored:

1. In environments that may have low light or dense vegetation = objects block transmission.
2. When signal needs to travel far.
3. When the speed of message is unimportant.
4. When the signal needs to persist for a long time.

Most adaptive functions for chemical communication:
Recognition



Most adaptive functions for chemical communication:
Social status



Most adaptive functions for chemical communication:
Group spacing.



Most adaptive functions for chemical communication: Reproduction.

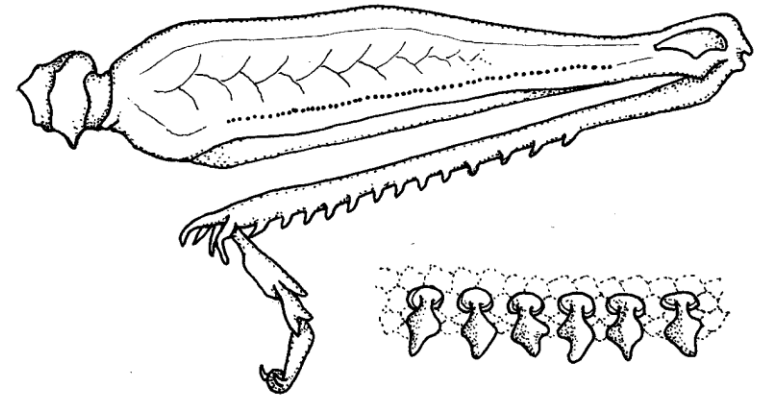
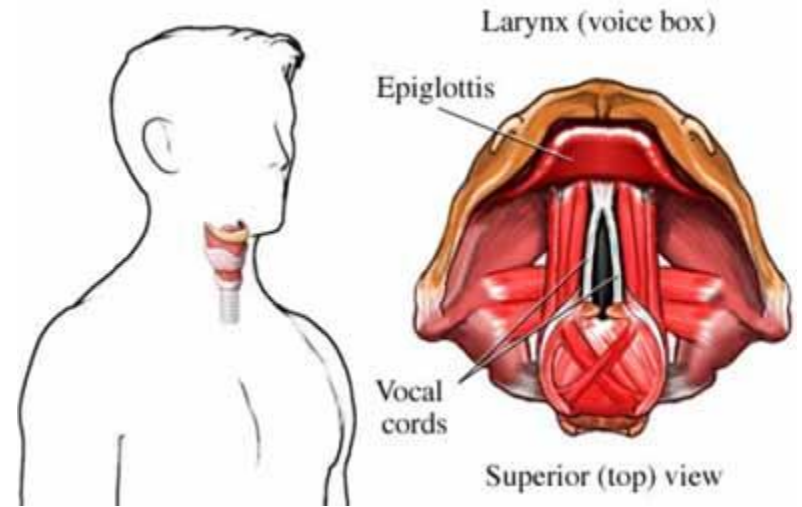
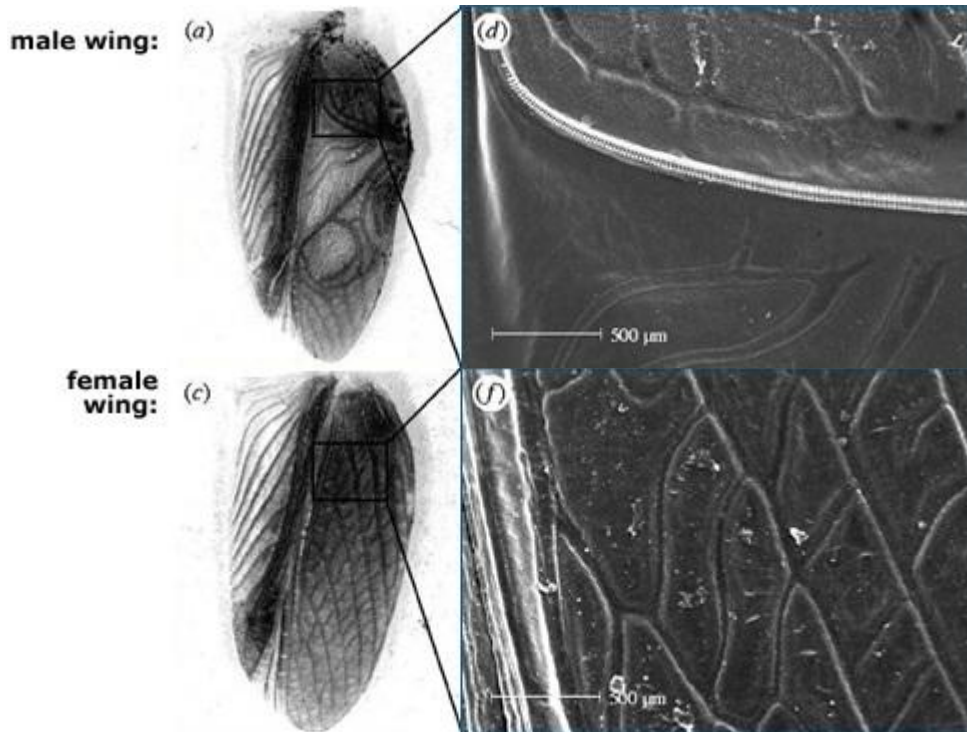
- Signal sexual receptivity by females.
- Influence the physiology of others.

Auditory/Acoustic Communication

Sound = series of waves of compressed air

Signal sources:

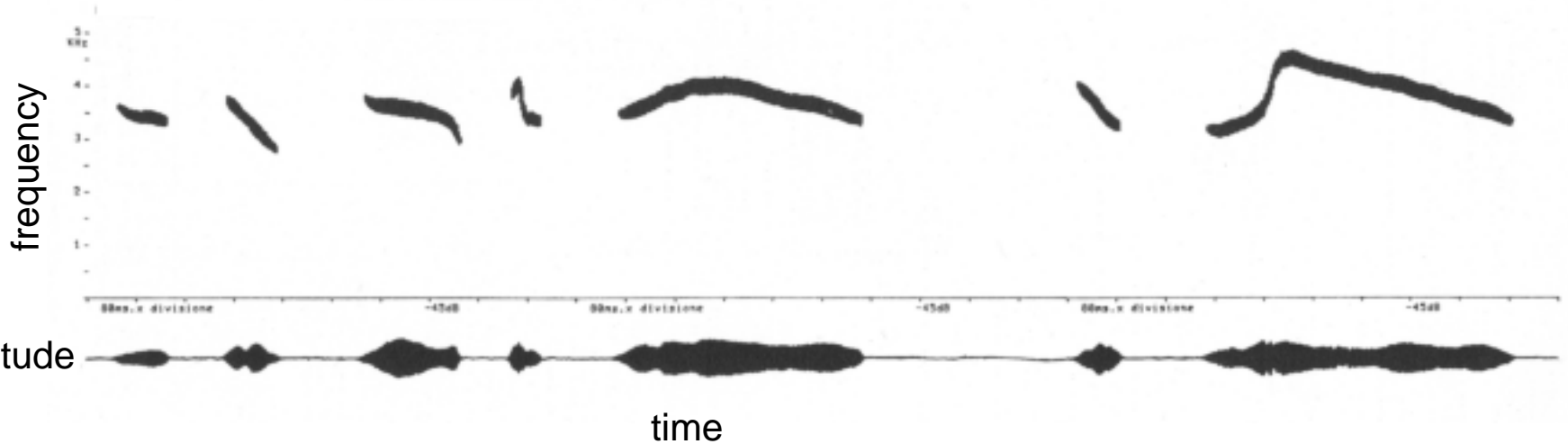
1. Vocal cords, syrinx
2. Rubbing body parts together



9/11/99

Physical properties of sound:

1. Frequency = pitch
2. Duration = how long the sound lasts
3. Amplitude = volume



Advantages:

1. Signal carries a lot of information.
2. Message can be easily modified.
3. Signal can travel around objects.
4. Signal can be used over short or long distances.
5. Signal travels quickly.

Disadvantages:

1. Signal is short lived.
2. Can require a lot of energy to produce.

Acoustic signals are favored:

1. In environments that may have low light or dense vegetation = objects block transmission.
2. When signal needs to travel far.
3. When signal needs to be transmitted quickly.

Most adaptive functions for acoustic communication:

- Recognition
- Alarm calls
- Group spacing
- Reproduction
- Social status





Tactile Communication

Signal sources:

- anything that can stimulate a mechanoreceptor



Advantages:

1. Rapid transmission of information.
2. Easy to control direction.
3. Signal can be used in low or no light environments.
4. Does not require air or water currents to carry information.
5. Signal can be easily modified.

Disadvantages:

1. Signal is short lived.
2. Signal is good for short range communication.

Tactile signals are favored:

1. In environments that have little to no light, air or water circulation.
2. When animals are in very close contact.

Most adaptive functions for tactile communication:
Social bonding

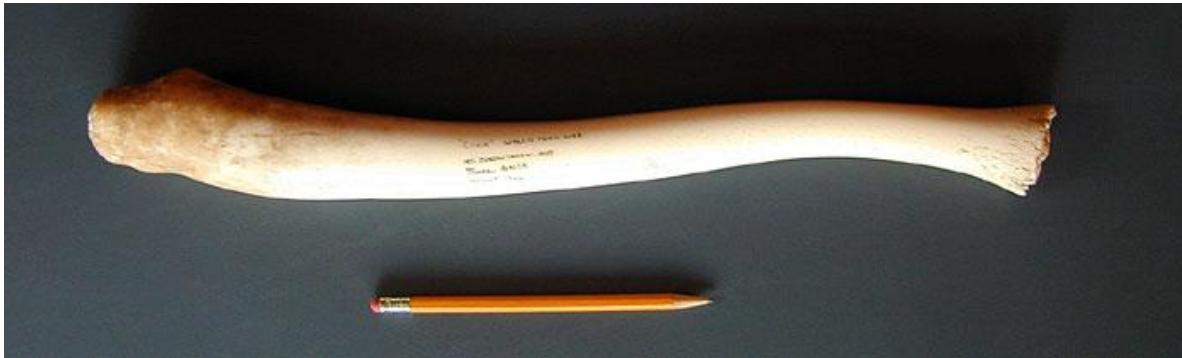


Most adaptive functions for tactile communication:

Reproduction

- Induced ovulation

Baculum = penis bone



Walrus



Sea otter



Arctic Fox