

Altruistic behaviour

Altruism

Harms the donor but benefits the recipient in unrelated individuals.

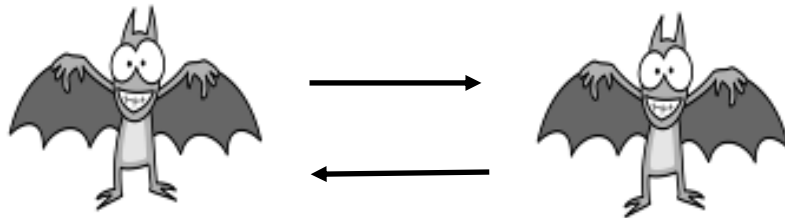
Reciprocal Altruism

Occurs in social animals.

Donor and recipient roles later reverse.

Bat Example—reciprocal altruism

Vampire bats who have hunted successfully may share food with those who have not with the hope that they would return the favour in the future.



Prisoner's Dilemma

The prisoner's dilemma is an example of altruism

One prisoner stays silent (donor) and gets a longer prison sentence

One prisoner other goes free (recipient).

THE PRISONER'S DILEMMA

	B stays silent (cooperates)	B betrays A (defects)
A stays silent (cooperates)	Both serve 1 year	A serves 3 years, B goes free
A betrays B (defects)	A goes free, B serves 3 years	Both serve 2 years

Kin Selection

Altruistic behavior between a donor and recipient if they are related.

Donor harmed & recipient benefits.

Advantage of Kin Selection

Increased chance of survival of shared genes in the recipients offspring/next generation.

Types of social insects

1. Bees
2. Wasps
3. Termites
4. Ants

Structure of Colony

Organism	Sex	Role
Single Queen	Female	Reproduction—produce eggs
Few Drones	Male	Reproduction -fertilise egg
Many Workers	Female	1. Defend the hive 2. Collect pollen 3. Carry out waggle dance to show direction of food (bees). 4. Raise relatives (sisters)

Worker bees

Raise relatives (kin selection)

To increase survival of shared genes in next generation.