Have you ever done a good deed in life? Have you ever donated money to a beggar, or taught the poor for free, or helped a blind person to cross the street, or assisted a friend in need? Doing good gives sublime happiness and satisfaction. This enigmatic gladness and the desire or eagerness to perform a good deed is explained by a phenomenon known as Altruism.

The phenomenon of doing good and helping others in need is called Altruism. It consists of sacrificing something for someone other than self (time, energy, or possessions) with no expectation of any compensation or benefits, either direct or indirect. It is nature’s way of maintaining balance in the ecosystem. From the tiny salmonella bacteria to the giant elephant, numerous acts of delivering aid or assistance, either consciously or subconsciously, are well known.

For instance, the Salmonella is a tiny microorganism (bacteria) that normally resides in the digestive tract of human beings. When its population becomes too high to accommodate the entire colony, a part of the group of bacteria digs into the intestinal tissues and induces the human defence system to flood the digestive tract with antibodies. When the antibodies present in the fluid are used up for eliminating the attacking bacteria, the remaining Salmonella bacteria can colonize freely. Thus, Salmonella bacteria sacrifice themselves for the greater good.

An intriguing example of altruism is found in cellular slime moulds, Dictostelium mucoroides. Normally Dictostelium cells live individually, forming amoeboid structures. However, during scarcity of food, or when they are starved, individual cells aggregate into a slug i.e. a multicellular fruiting body. The cells present in the anterior part of the slug altruistically differentiate into a non-viable stalk. The other cells form spores which disperse. While the spores (which contain the living cells) have access to remaining food and water resources, the cells which form stalk lose water, become dry, and eventually die, enabling the spores to disperse and survive.

Altruism is seen in invertebrates and insects too. In social insect colonies like (ants, wasps, bees, termites, etc.) sterile workers devote their whole lives to care for the queen, construct and protect the nest, forage for food and tend to larvae, all in order to ensure the safety and progress of the next generation.

Some ants belonging to the Camponotus genus have adapted to using autothysis (suicidal defensive behavior) as an altruistic thwarting trait in order to better fight against arthropods and to possibly impede vertebrate predators for the benefit of the colony as a whole. The products of autothysis in ants are sticky and corrosive substances. These substances are released by the ants’ contractions of their gaster, leading to a burst at an interregnal fold as well as the mandibular glands.

The ants use this self-sacrifice to successfully kill one or more enemies by enmeshing themselves in this sticky substance. The worker ant has been witnessed to wrap itself around an opponent, placing its dorsal gaster onto the adversary’s face prior to the expulsion of sticky corrosive product from its mouth and gaster, perpetually sticking to the opponent while killing itself and any other foes that become stuck to the products. This self-sacrifice is most beneficial against arthropods because the sticky adhesives in the products work best against the bodies of other arthropods. The compounds used in autothysis also have some use in deterring vertebrate predators from devouring the ants, because the products are inedible.

Harpagifer bispinis species, guards are essential to ensure nest survival. The act is considered to be altruistic as some individuals sacrifice their lives for the progress of the future generations.
individuals guard the newly hatched eggs and protect them from predators. If this guard is removed, it is soon replaced by a conspecific, usually male. If the second guard is removed, a third replaces it. Guards are essential to ensure nest survival. The act is considered to be altruistic as some individuals sacrifice their lives for the progress of the future generations.

Mammals also show various forms of altruism. Vampire bats are known for their inclination to suck blood from other animals, especially cows, goats, etc. However, often when there is scarcity of blood sources, male vampire bats commonly regurgitate blood to share it with the females, so the reproduction process which creates future generation of vampires remains unhampered. They might also donate it to sick roost mates, who were unable to find a meal, often forming a buddy system.

African buffaloes are striking for their evident altruism. When chased by predators, their herd will stay close together and make it tough for the predators to pick off one member. Calves are gathered in the middle. A buffalo herd will react to the distress signal of a captured associate and try to save it. A calf’s distress call will get the focus of not only the mother, but also the herd. Buffaloes will engage in mobbing behaviour when combating predators.

Dolphins are decidedly communal animals, often residing in pods of up to a dozen individuals. Pods are formed by dolphins through fluid, temporary groups. In places with a high abundance of food, pods can amalgamate for the short term, forming a super pod. Pods offer benefits for the dolphin. It makes available for a compliant, public manner of existence and increases the chances for individual existence.

Small pods are well-organized means for feeding. Feeding in hefty groups is not proficient as it generates too much rivalry for the obtainable food source. Feeding unaided is wasteful and risky. Guarding the young is a strong inspiration for collaboration between females inside a pod. Dolphins, being societal species, need each other while hunting, shielding themselves and mating, in their pods. Dolphins will also dwell with wounded or sick individuals, even helping them to breathe by bringing them to the surface if needed.

In many cases, one animal is appointed to be on the lookout for predators and warn its fellow members to escape. For example, Vervet Monkeys, on spotting a predator, give an alarm call and warn their fellow beings to escape quickly. They don’t take into account that, in warning their pack members, they attract the attention of the predator, and thus increase their chance of being attacked.

Similarly, meerkats and baboons also warn their members, and intimate the predators, giving the others time to retreat. They don’t think about their own safety.

Most flesh-eating mammals like wild dogs, wolves, etc., do not hunt preys below a certain age. Recent studies have found that the desire of assistance to another living organism activates the mesolimbic reward pathway.