

## What is Two-Way Causality?

We are used to thinking about cause and effect as one-way: one thing makes another thing happen. But it is not always this simple. Sometimes one event or relationship has two-way effects. The event has an effect in both directions. For instance, when a bee pollinates a flower, the bee and the flower are both affected. The bee gets the nectar it needs for food energy and the flower gets pollen picked up by the bee from other flowers. This enables it to reproduce.



Sometimes the effects are beneficial for both things, such as in the example above. However, sometimes the effect on one is negative and the other is positive, such as when a tapeworm attaches to the intestines of a dog. The tapeworm benefits by getting the energy that it needs, but the dog loses energy to the worm and may be weakened.

Often we think about one-way effects in the ecosystem, such as how a predator benefits from eating prey, but we don't always notice the effects on the prey. For the individual animal that gets eaten, it is a bad thing. But for the population of the prey, it might help to maintain the balance of the population.

Questions to Think About:

- How is Two-way Causality different from Domino Causality?
- What examples of Two-way Causality can you think of?