

Altruism:

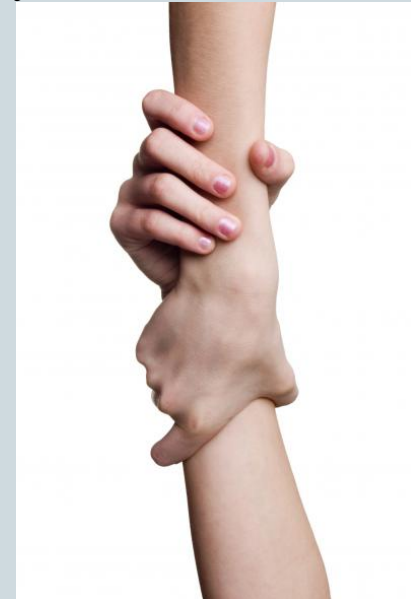
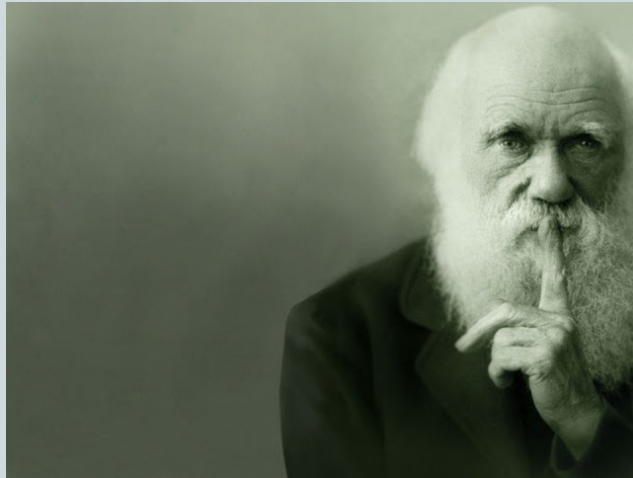
Not so selfless after all



Altruism: direct fitness loss, indirect fitness gain.



- Definition of altruism
- How could this be favored by natural selection?
- Hamilton & inclusive fitness theory



Kinship selection → altruism due to sharing of genes.



- **Kinship selection**
- Yellow jewelweed plants grow differently near related vs. unrelated plants.

Tall skinny plant

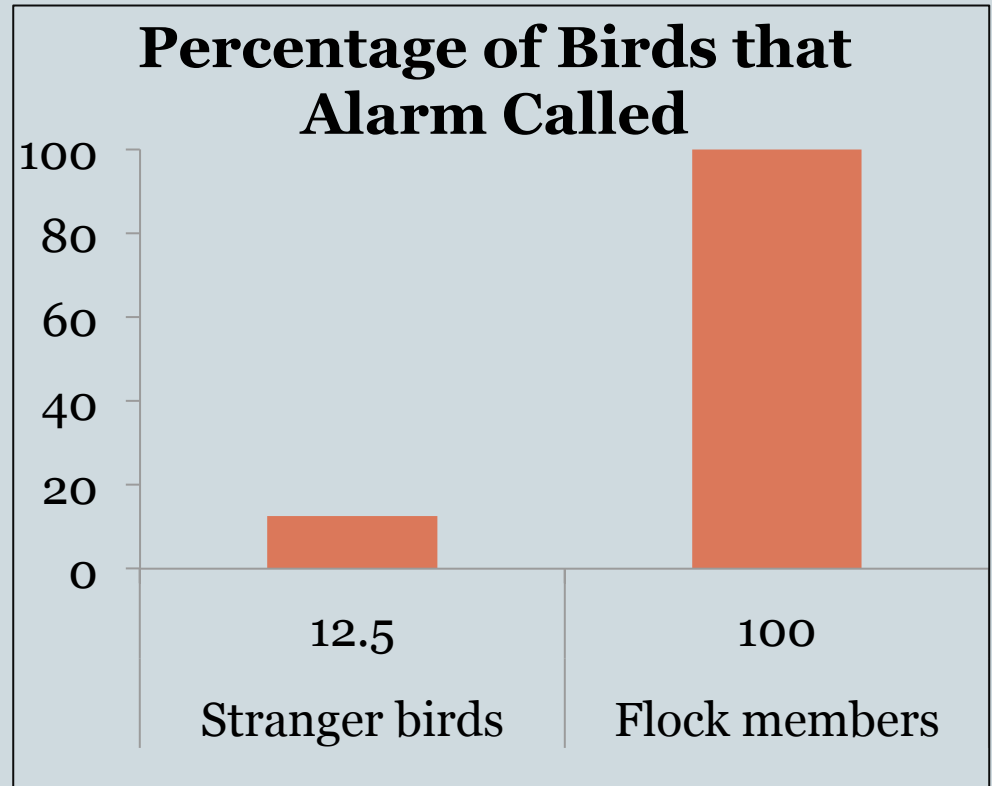


Thick bushy plant

Reciprocal altruism → altruism due to “tit for tat”



- **Reciprocal altruism**
- Warning calls in birds



Future Directions

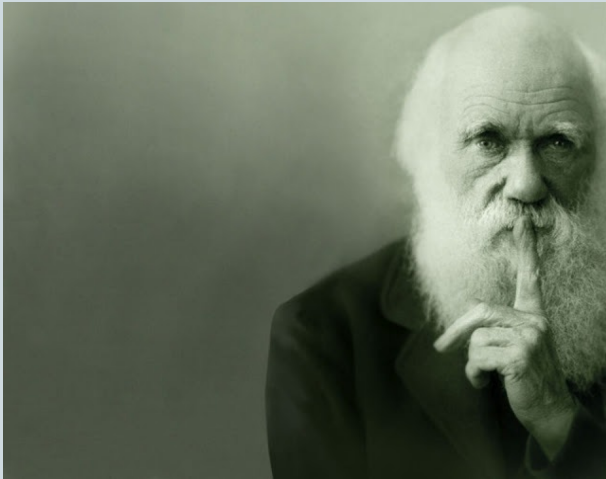


- What environmental factors tip the scale towards altruism?
- Are there other evolutionary processes that result in altruism?

Take-Home Message



- Altruism means short-term cost, but long-term benefits.
- Ultimately, altruism is a practical, biological adaptation.





Any Questions?