

EEB 4260: Visual Communication

Class Business

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Reading for this lecture

Required. Gill: pgs 344-359

1. Introduction

A) DEFINITIONS

- Communication involves the transmission of signals between a **sender** and a **receiver**.
- Signal** – a behavior that has evolved to influence the behavior of the receiver in a way that benefits the sender.
- Display** – a ritualized signal that conveys a specific message.
- Something to think about: Is camouflage a signal? Is a camouflaged bird communicating?

B) TYPES OF COMMUNICATION

- Communication can be either passive (e.g., plumage patterns) or active (e.g., movements, song).
- Birds are very visual animals, hence their extensive use of bright colorful plumage.
- But, sound is an equally important form of communication (more on this next lecture).

2. How do birds communicate visually?

- Colors – feathers (plumage patterns), color of bare parts (legs, skin around the face, beaks).
- Position – of feathers or of their entire body. By altering their position, birds can expose or hide certain color patterns (e.g., bright colors that might be useful during courtship or aggressive displays, but that also run the risk of making the bird more visible to predators).
- Posture – birds can change their posture to convey information. For example, they can alter their posture so that they either look bigger than they are (e.g., by fluffing up feathers, holding wings out, etc.) or smaller.
- Movement – Often birds will also incorporate movement into their displays. Lots of examples of this in the video.

3. Why do birds communicate?

Lots of reasons, but always to provide some other individual with some sort of information. The point of communication is also typically to improve one's own situation. Some examples of major reasons why birds engage in communication are listed below. While watching the video in class look for examples of each of these (if you skip class and don't see the video you may pay later!).

- Territory defense.
- Mate attraction, courtship.
- Group cohesion (e.g., keeping a flock or a family group together).
- Warning against predators.
- Providing information on your status (i.e., your species, whether male or female, your age, your quality). Most of these should be pretty obvious to you, but quality may not be. An example can be found in house finches, in which most males are red, but some are yellow (I described this when I talked about carotenoids). Females use male color to determine which are the highest quality males (i.e., a red house finch is one that has no trouble finding lots of good food whereas a yellow one clearly has some problems).
- Signals can provide information about your location (assuming you want to be found).
- etc., etc., etc.

4. Video on visual displays

Much of this lecture will be taken up with some video showing the wide diversity of displays found in birds. You will be expected to provide examples from this video, so don't view this as a class that can easily be skipped!