

Observations vs Inferences
Workshop presented at Animal Behavior Society, Burlington VT, July-07.
Michael Noonan, Canisius College

Video clips available at <http://www3.canisius.edu/~noonan/abs.htm>

Lesson Plan

Step One

- Present dolphin birth video, without warning and without coaching.
- Students' assignment is to immediately write down what they saw.
- Teacher then discusses examples selected from student passages.
- About 10% will miss the birth completely. Start with these. Praise the effort and no fault assigned. Just goes to show how challenging observations can be.
- Then introduce main lesson: The difference between observations and inferences. What one knows and can verify vs what one merely thinks one knows because one has concluded it. Point out that inferences are not bad things. But when unlabeled as such, and when passed off as observations, they are huge mistakes.
- Announce that this first exercise will not actually count. Just a cost-free learning exercise. Using overhead projection, "grade" examples with the class. Red ink each unlabeled inference. You can see and verify that dolphin broke surface; you can only infer that it took a breath. You can see a dark fluid cloud; you can only infer that it is blood. You can see that the mother's head contacted the baby's belly; you can only infer a deliberate push. Etc.

Step Two

- Present video in which mother dolphin temporarily holds baby on bottom
- Same student assignment. This one really counts.
- Collect papers for actual grading.
- Select examples to immediately go over with class. Project on overhead.
- Again, usually 10% miss the essence of the scene. Provide encouragement.
- Point out continuing problem with unlabeled inferences. Often they are more subtle this time, but still common. For example, seeing a large dolphin with a small dolphin does not always mean mother-baby, and treating that conclusion as an observation closes one's mind to other possibilities (the role of siblings?, the role of fathers? Etc.)
- Conclude by pointing out that most students missed many other important elements of the scene. Was it captive- or wild-based, and how do you know? How long did it last? Were there other individuals present, and what did they do? Distribute outline/guidelines for completing such exercises in the future.

Step Three

- Present video of lion attacking tethered goat in the Gir Forest of India.
- Same student assignment.
- Allow students open access to outline/guidelines presented last time.
- Collect papers for actual grading.
- Select examples to go over with class. Unlabeled inferences are now very rare. But many assume scene took place in Africa. Most are surprised to learn of the existence of Asiatic Lions. This really cements the importance of not jumping to conclusions.
- Mostly share good examples of well chosen words, good descriptions pertaining to the timing of events, etc.

Step Four

- Present video of Serengeti lion “hipping” other lion and struggling for prey item
- Same assignment.
- Students not allowed free access to outline/guidelines.
- Collect for actual grading.
- Select examples to go over with class. Most are excellent by this time.

Optional Step Five-A

- Present video of wolf pup “encounter” with caribou.
- Same student assignment.
- No need to collect papers. This is just an exercise to show how they can be fooled by “editing.”
- Ask select students to read their descriptions. Invariably, they say the wolf looked at the caribou, and the caribou snorted at the wolf, etc. Point out that both animals were directing their responses to a human with a camera, and that the sequence was entirely artificial. A very eye-opening experience for the students.

Optional Step Five-B

- Present badger-bear video
- Same student assignment.
- No need to collect papers. This is just an exercise to sensitize them to camera movements and what they mean.
- The scene depicts a badger harassing a bear, which retreated in response. But was this real or artificial? Camera angles and camera movements make it clear that these were two tame animals.