Week 4: Animal Communication

Practice Problems

(1) When a dog bares its teeth, it indicates that it is ready to attack. Compare this with humans baring their teeth when they are smiling. What does it mean when we smile? Does it mean that we are ready to attack? Is it arbitrary or iconic? How do dogs probably interpret smiling in a person they don't know?

(2) A wolf is able to express subtle gradations of emotion by different positions of the ears, the lips, and the tail. There are eleven postures of the tail that express such emotions as self-confidence, confident threat, lack of tension, uncertain threat, depression, defensiveness, active submission and complete submission. This system seems to be complex. Suppose there were a thousand different emotions that the would could express in this way. Would you then say the wolf had a language similar to humans? Why or why not?
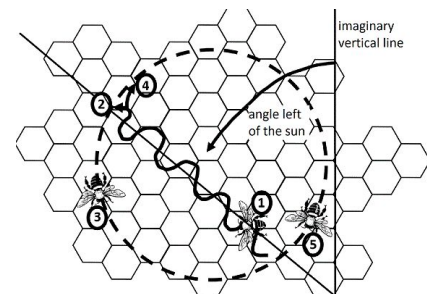
(3) Consider the honey bee communication system discussed in class and in the reading. For each feature below (a-g), say whether you think the bee communication system displays this feature and why you think so.
   (a) Mode
   (b) Meaning
   (c) Arbitrariness
   (d) Discreteness
   (e) Interchangeability
   (f) Cultural transmission
   (g) Unboundedness (productivity)

(4) The picture at the right is a schematic of the bee waggle dance, in which the bee moves through the numbered positions. Describe what the following elements of the dance communicate to the other bees:

   (a) The number of times per minute the bee dances a complete pattern (1-2-3-1-4-5)
   (b) The angle left of the sun
   (c) The vigor with which the bee dances

(5) AOL Live, in cooperation with the Gorilla Foundation, presented a truly unique interspecies chat with Koko the Gorilla, who speaks in sign language. Koko's caregiver, Dr. Penny Patterson, read members' questions to Koko and relayed Koko's signed responses. Here is an excerpt:

> **Dr. Penny Patterson:** Koko is going to the mirror with my brush to brush her hair. She's purring. She's happy. Looking in the mirror and brushing her hair makes her happy.
>
> **Koko:** Toilet.
>
> **Dr. Penny Patterson:** Honey? What? How about another question? What's your favorite color?
>
> **Koko:** Lips, fake hair.
>
> **Dr. Penny Patterson:** Oh, you're being funny!
>
> **Koko:** Polite nipple. Polite.
>
> **Dr. Penny Patterson:** Nipple means people. That's right.
>
> **Koko:** Gum, candy.
>
> **Dr. Penny Patterson**: That's your favorite food!
>
> **Koko:** Sip, sip, sip, sip, sip!
>
> **Dr. Penny Patterson:** Koko loves a special drink, and it will be in your Christmas catalog. Koko's special drink. She's kissing the picture. What is your favorite food to eat, Koko? Like -- do you like corn, apples, bananas, nuts?
>
> **Koko:** Drinks!

Based on the transcript and what you've learned in class so far, answer the following questions:
   (a) How relevant were Koko's utterances?
   (b) What are the main topics Koko talks about? What, if anything, does this reveal about her language use?
   (c) Does Koko ever seem to repeat or imitate Dr. Patterson's signs?
   (d) Do you think Koko can really use language? Justify your answer.

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(6) In class we learned that baby birds can be tricked into making the mobbing call — an alarm for nest predators — for milk bottles (and then passing this behavior along to their offspring). What does this tell us about the birds' calls?

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(7) In class we mentioned that Nim Chimsky's language ability was similar to Genie's. In what way was their language similar?