Discussion questions for *The First Signs of Washoe*

1. Why did the Gardners and others choose American Sign Languages as an appropriate language for experiments in communicating with apes?

- Apes are physiologically incapable of producing the sounds of human language.
- Apes are dextrous with their hands.
- Ameslan is a true human language, with all the general and specific features of spoken language.

2. What sorts of evidence does Washoe give that she uses signs as representations of general concepts rather than as simple responses to particular stimuli?

- **extension of signs to new situations**: "open" applied to doors, briefcase, boxes; "red" in reference to red items other than the one the sign was learned with
- **expressing state of mind though signs**: "hug" used to express emotional state (on seeing trainer "crying"); "dirty" used as an insult
- "**mistakes" showing that sign signals a concept**: referring to a brush with the sign for "comb"

3. What sorts of "utterances" longer than one word does Washoe produce? Can we call these sentences?"

- "more" + various other signs ("drink", "tickle", etc.)
- "open hurry" (standing outside door)
- "gimme sweet"
- **Trainer:** "Where?"--**Washoe:** "Out, go there."
- claimed meaningful order: "baby in shoe", "baby in my drink" (with what the video claimed is the "creative" addition of "my")

But, are these sentences? Some are not obviously anything more than random signing more or less appropriate to the situation ("open hurry"); others are not convincing sentences, such as "baby in my drink", which was started several times with signs repeated several times, and another string, "baby in hat", which was finally aborted. Who knows how many random strings that could not be called sentences were *not* presented on the film for every one that looked convincing which appeared in the film? Nothing more than about 3 signs is ever presented.

4. What new information did Rumbaugh hope to get about how apes can structure utterance by teaching Lana "Yerkish" (the computerized language using series of buttons which activate a computer)

In Rumbaugh's view, it is not clear that Washoe mastered syntax-there is too much possibility in Ameslan for random combinability of signs interpretable (with a little good will on the part of the trainer) as a sentence. Rumbaugh wanted to

1. objectify the data (remove the human element of interpretation applied to the moment of signing);
2. give a complete and accurate record of apes "signing" activity (recorded fully and flawlessly by a computer);
3. require that the ape learn strict rules of "syntax" in order to be "understood".

But, one of Rumbaugh's colleagues, Ernst von Glasersfeld, diagrams the "rules" the ape must follow to produce correct "utterances", but the flow chart he uses is not a hierarchical syntactic tree of the type used to characterize human language sentence structure despite the superficial similarity. It is a diagram of a Markov finite state machine. It is easy to demonstrate that such a process cannot characterize even simple language structures, such as subject-verb agreement. Moreover, animals much less intelligent than chimpanzees (pigeons, for example) can be taught to perform a series of acts characterizable in this way in order to receive a reward.

5. The narrator of the film says, "Either we must change our ideas about language or we must change our ideas about chimpanzees." Is this true? (Recall the quotes at the beginning of the film from Chomsky, Bronowski, Lenneberg [film incorrectly says *Lennenberg*], and Dobzhansky stating language is unique to humans.)

I don't think so, other than to say that chimpanzees may be smarter that we gave them credit for, but this may be true for other animals. Dogs, cats, rats, and cockatoos can be taught to perform complex acts prompted strictly by voice commands, as the animal show at Universal Studio Tours amply demonstrates. Apes can certainly use non-iconic symbols to represent objects, concrete actions, and even more abstract concepts such as emotional states, but there is no unequivocal evidence that apes can learn and use a communication system which incorporates most of the significant features of human Language. There is no evidence of *duality of patterning* in any of the ape-and-language experiments-all the communication systems use holistic symbols for objects or ideas. *Morphological productivity* is almost surely absent-the data are equivocal at best, and always involve putting a human interpretation on what the ape has done, with no independent verification: is "water bird" referring to a duck that Washoe saw swimming really a compound noun or a random combination of two signs appropriate to the situation? would Washoe use this combination in reference to a duck flying? Apes having any concept of *grammatcial structure* is the area most devastatingly discredited by Terrace with Nim, i.e. structures longer that two or three signs turn out to have meaningful sentential properties on no more than a chance basis. There is no evidence for *displacement of concepts in time, space, or reality* in any of the ape experiments-all uses of communication refer to the here and now. Apes cannot express pastness or futurity, negativity, irreality (*if I were a chimpanzee*), and many other concepts that are universal to human language and built into its structure.