


Research Activity Report
Supported by “Leading Graduate Program in Primatology and Wildlife Science”
(Please be sure to submit this report after the trip that supported by PWS.)

2014. 09. 08

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1. Country/location of visit
Primate Research Institute, Inuyama, Aichi
2. Research project
Cognitive Comparative Science Course
3. Date (departing from/returning to Japan)
2014.08.25 – 2014. 08. 28 (04 days)
4. Main host researcher and affiliation
Prof. Masaki Tomonaga, Language and Intelligence Section, Primate Research Institute
5. Progress and results of your research/activity (You can attach extra pages if needed)
Please insert one or more pictures (to be publicly released). Below each picture, please provide a brief description.
As part of PWS curriculum, I joined the cognitive experiments with chimpanzees at the Primate Research Institute and I visited Kagamigahara ranch to see cognitive experiments in Ponies.
During 4 days, we observed different ongoing studies on chimpanzee cognition: primate picture as cue to a faster response, face perception, behavioral synchrony, shape distinction, perception of time, among others. As a student of the department of ecology and social behavior, I have had little experience on those studies, but I always find them very interesting, especially when I come across debates on human evolution and theory of mind.
In one experiment, the subject needs to simply touch the blue circle on the screen whenever it appears. The position of the blue circle is randomly placed under a puzzle picture or a chimpanzee picture (Figure 1). The aim of this task is to show that the chimpanzee picture attracts the subject's attention unconsciously. Thus, the time to do the task would be shorter when the circle is under the chimpanzee picture rather than the puzzled figure. I did notice that difference, though quite small, in all the sessions I observed.

Figure 1. Pendesa doing a congruency task.

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Another experiment involved the subjects' perception to human faces (more specifically, the eyes). In this task, chimps must pick one figure out of three that shows a normal human face. The other two faces have eyes modified on paint program (blue color on both eyes). At first, none of the chimpanzees were able to do this task, so the first step of the training was to display only images of single eyes augmented, in order to give the subjects a clear perception of the differences. One of the chimpanzees (Pendesa) succeeded (100% correct), so the next stage was to display images of two eyes in a normal size of a 3x4 photo. She again succeeded with 91% of the answers correct, so she was able to try the normal (full-face) task again, and got 52% correct answers (Figure 2).



Figure 2. Pendesa doing a face perception task.

In Prof. Adachi's lab, I observed two tasks: image matching task and color/time dependent task. The latter was particularly interesting for me. The chimpanzee was patiently waiting for the circle to change colors, so she could touch it to get the reward. By doing this several times, the subject did not need to stare at the monitor to know when the color would change, so she had in fact a perception of time in this experiment.

The last lab I visited in PRI was run by Prof. Hattori. She is conducting a study on behavioral synchrony, in which the chimpanzee ought to touch two keys from an electric keyboard, alternatively, to complete the task. The subject is tested under several playback tempos, in order to find whether chimpanzees have the ability to synchronize their own tempo unconsciously with the playback.

Finally, Prof. Tomonaga took us to a ranch in Kagamigahara to see the ponies. There were 3 of them (2 females and 1 male). After cleaning the cages and brushing the ponies (Figure 3), we set up a monitor in front of them, and played a simple task in which the subjects had to touch the circles on the screen to receive reward (Figure 4). We tested 2 females, and they both succeeded at this task. By the end of the afternoon, we were able to mount one of the ponies (Figure 5).

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Figure 3. Sayuri brushing the pony.



Figure 4. Pony doing a touch-panel task.

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Figure 5. Sayuri mounting the pony.

In general, this course was informative. I learned about the ongoing studies on primate cognition at the Primate Research Institute, I saw the laboratories, the equipment and the apparatus used for this kind of study. It was funny to see that some chimpanzees refuse to do the task by lying on the floor and trying to get better rewards in exchange for their time in front of the monitors. Although I learned a lot about experimental psychology, I found the timing and length of the course a bit difficult to handle. The timing was problematic because I wanted to focus on my PWS interim symposium presentation, but had little time to prepare because the course was scheduled for the week before the symposium. I also thought that the initial exposure was very educational, but the repeated exposure did not teach me a lot more. I believe that we would have obtained the same amount of information in 1 or 2 days. The ranch visit was interesting and gave me good comparative perspective on mammal cognition and it was fun to mount the pony, but nobody explained how cleaning the stables was either productive or useful for a career after a graduate education in primatology & wildlife science. I have absolutely no problem in collecting fecal samples because that is part of my research, but the approach taken in the course was very different. The information I received on the announcement of this course included observe chimpanzees, horses, and ride a horse. One other problem that was encountered was that the schedule and details of the course were not circulated in advance, leaving little time for preparation for the course or for working on my PWS interim symposium presentation. In my opinion, a shorter more condensed course that emphasizes comparative cognition, and allows students to see experiments with chimpanzees and horses would be very productive.

6. Others