

## **Chimpanzee signing: Darwinian Realities and Cartesian Delusions**

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### **Darwinian Realities**

Truly discontinuous, all-or-non phenomena must be rare in nature. Historically, the great discontinuities have turned out to be conceptual barriers rather than natural phenomena. They have been passed by and abandoned rather than broken through in the course of scientific progress. The sign language studies in chimpanzees ... have neither sought nor discovered a means of breathing humanity into the soul of a beast. They have assumed instead that there is no discontinuity between verbal behavior and the rest of human behavior or between human behavior and the rest of animal behavior -- no barrier to be broken, no chasm to be bridged, only unknown territory to be explored. (R. Gardner et al. 1989, p. xvii)

### **Cross-fostering**

While chimpanzees have great difficulty adapting their vocalizations to human speech (Hayes and Hayes 1951; Hayes and Nissen 1971), chimpanzees can freely move their hands meaning that a gestural language is well suited to their abilities. R. A. and B.T. Gardner recognized this in their sign language studies with young chimpanzees. In 1966, the Gardners brought 10-month-old Washoe to the University of Nevada-Reno when they began their cross-fostering study. The Gardners described this approach as follows:

Cross-fostering a chimpanzee is very different from keeping one in a home as a pet. Many people keep pets in their homes. They may treat their pets very well, and they may love them dearly, but they do not treat them like children. True cross-fostering -- treating the chimpanzee infant like a human child in all respects, in all living arrangements, 24 hours a day every day of the year -- requires a rigorous experimental regime that has rarely been attempted. (R. Gardner and Gardner 1998, p. 292)

The Gardners and students on the cross-fostering project used only American Sign Language (ASL) in Washoe's presence (B. Gardner and Gardner 1971, 1974, 1989; R. Gardner and Gardner 1969).

In teaching sign language to Washoe ... [and other later cross-fosterlings] we imitated human parents teaching young children in a human home. We called attention to everyday events and objects that might interest the young chimpanzees, for example, THAT CHAIR, SEE PRETTY BIRD, MY HAT. We asked probing questions to check on communication, and we always tried to answer questions and to comply with requests. We expanded on fragmentary utterances using the fragments to teach and to probe. We also followed the parents of deaf children by using an especially simple and repetitious register of ASL and by making signs on the youngsters' bodies to capture their attention. (R. Gardner and Gardner 1998, p. 297)

In 1970 Washoe left Reno with companions Roger and Deborah Fouts for the Institute of Primate Studies (IPS) at the University of Oklahoma. The Gardners began a second cross-fostering project with four other infant chimpanzees. Moja, Pili, Tatu, and Dar were born in American laboratories and each arrived in Reno within a few days of birth. Moja arrived in November 1972 and cross-fostering continued for her until winter 1979 when she left for IPS. In 1980, Washoe and Moja moved with the Fouts to the Chimpanzee and Human Communication Institute (CHCI) on the campus of Central Washington University in Ellensburg. Tatu arrived in Reno in January, 1976 and Dar in August, 1976. Cross-fostering continued for Tatu and Dar until May, 1981 when they left to join Washoe and Moja in Ellensburg. Pili arrived in Reno in November, 1973 and he died of leukemia in October, 1975.

Size of vocabulary, responses to *Wh*-questions, number of utterances, proportion of