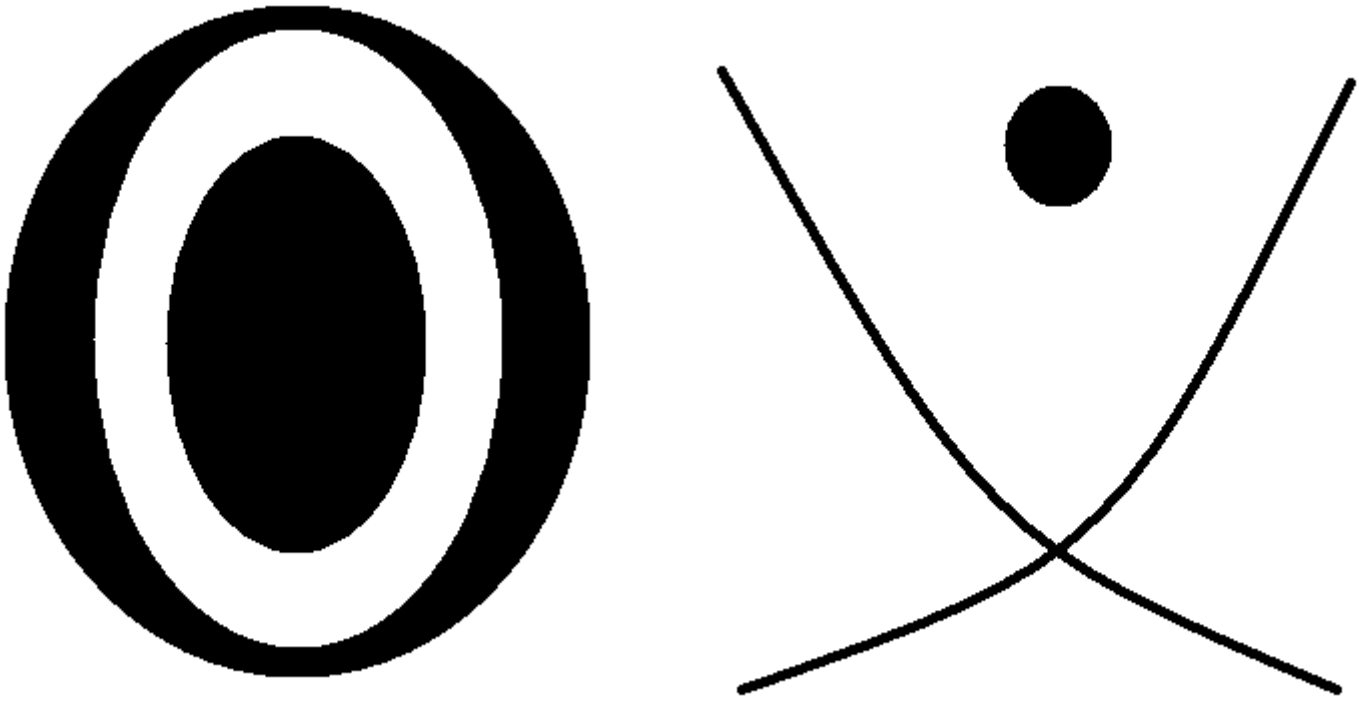
# PrimatePoetics



# Is Here

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**Cover: Lexigrams You and My**

# In Defence of PrimatePoetics.

Once our language is passed on to apes it ceases to be our language and becomes something brand new as the ape will reinvent it in its own image. In the circus and in the laboratory humans learn to recognize ape calls and use them to communicate with the ape who strangely enough seems to understand what is being said. To PrimatePoetics this transfer of language between species is however only the canary in the proverbial coal mine, a symptom of the most radical event in literature since Tsang-Kie's invention of written Chinese 4000 year ago. Since the end of the 19th century humans have endeavoured to create linguistic understanding between us and the great apes: the chimpanzee, the bonobo, the gorilla and the orang-utan. Going through the literature we soon detected a pattern: the acculturation of the ape into a conversationalist was thwarted not by any unwillingness on the side of ape but by the to the ape incomprehensible human insistence on following arbitrary and unnatural 'correct' ways. Language was presented to the ape as something given, as a dogmatic procedure that had to be swollen whole or not at all. But language does not emerge out of silence, is not a sinecure for a meagre reward, it is what comes together naturally out of a need to communicate. Language needs to be free for the rules to make sense. All major ape-language researchers mention the coming-together of ad-hoc mixtures of human, ape, apish-human and humanish-ape languages alongside the 'official' one as the default language to communicate outside the moments designated to hard science. This pidgin language, this product of the collision between two kinds of mind, is the the real event of ape language research.

Apes do not need external pressure to use and learn a second language and why should they? In the wild they have their own language that turns out to be little more complex every time anybody approaches it from a different angle. Recent sound analysis has revealed that chimp calls that sound the same to humans might very well be distinct to the ape, calls that in turn have dialects. Vocalizations are what we look for when thinking about language, an anthropocentric habit, but gestures and body language are equally part of the primate repertoire. The language they take from us is more than a short cut to food or attention as is often claimed by disbelievers. Once great apes have learned some derivative form of human language it becomes a natural part of their behaviour, they use it to comment on the things they see and do and they invent words for things yet unnamed and start making sentences without instruction. Swearing, because of it unprompted nature, is one domain where their linguistic creativity can be studied best. Once Washoe had learned the sign for faeces, DIRTY, he quickly made a point of adding it to all things he did not like like DIRTY MONKEY, DIRTY FOOD, DIRTY ROGER another example of Washoe's foul language happened when he for the first time in his life saw

other chimpanzees, BLACK BUGS he signed as the ultimate denunciation. The most powerful proof that our language is triggering a latent ability in the ape is the regular occurrence of chimpanzees signing to themselves, as if working out some problem for themselves by going over multiple scenarios. When knowing to be watched they will reposition themselves to prevent spying on their thoughts.

Comparative studies between language development in human and ape deliver a reliable curve: at first the infant chimp does slightly better but when the human infant has reached the age of two he or she will rapidly beat the smartest ape in any test. Their language is too rudimentary to be called language say the critics but judging an ape by the standards you would normally use to judge a white middle-class lone genius penning the Great Primate novel is ridiculous! Besides, comparison goes both ways. Jane Goodall, the first to document toolmaking and other forms of culture in wild chimpanzees, makes a good show out of her lectures by giving her impression of a Gombé Stream chimp call. This is great fun, even when meant in earnest to give a voice to the otherwise voiceless chimpanzee, but our blind test in waxing chimpatically revealed that no one is fooled in thinking this call to be made by a chimpanzee. Out of context, judged by sound alone the human pant-hoot sounds like a parody. When researchers encourage their apes by copying their calls and hoots the ape must first translate this odd powerless human-apish before understanding its meaning. When encountering the tribes of Tierra del Fuego in 1834 Charles Darwin saw nothing but "Miserable creatures; stunted in their growth, their hideous faces bedaubed with white paint". Their language, he wrote, "Scarcely deserves to be called articulate". The beastly deprivation of these savages ran so deep that Darwin believed their vocabulary to consist of one word only: "yammerschooner" which he translated as a cry for possession: "give me!". Why could the ape not think of us like this? As a monstrous, weak, thin-voiced baboon always shouting the same thing: "Do This!"

The story of ape language research is also the story of the apes changing the way they are regarded by humans. Over a century of research can be loosely divided into three stages. In the first stage chimpanzees were trained to learn to speak English like humans. The second stage started when it was acknowledged that this approach was doomed from the start. Perhaps the shape of the vocal cords makes human voice-sounds impossible to produce for apes or perhaps something in their brain prevents them from using them in the right way. An alternative explanation is that that apes do speak our language but at such high pitch that we can't hear it. Whatever the case, researchers went on to explore the merits of several muted modes of communication. American Sign Language (ASL), or a simplified version of it, has become the most used of these, even though the fact that signed conversations need to be translated into written form before being presentable leaves lot of room for ambiguousness. David

Premack and chimp Sarah used a system of plastic magnetic tokens that had to be placed in a line to form sentences. The drawback of this method is that by presenting language as a puzzle it doesn't focus so much on communication as on abstract problem solving. Premack also co-authored a never used computerized visual language system that was to be operated with a joystick. Gary Shapiro trained the Orang-Utan Aazk to read and write by using plastic letters. Nothing much concrete has ever been heard about this and Shapiro himself later taught ASL to Orangs in Borneo. The choice of language is however less important to success than the right approach to the ape. Apes treated as dumb beasts deserving the whip and the cage, taught and tested by rote, will actively resist you and your language of which it does not understand the point. Apes live in the moment, to really understand the differences between the language abilities and human and ape we need to know first if our way of being in time is determined by cultural or by neurological disposition. Chimpanzee Lana, when forced to go through the same round of questions time after time, surprised her trainer Tim: "Please Tim move out of room". A sentence "Which was considered very remarkable because she was never trained to use 'out of' in such a context". Lana knew more than she was taught but tests were too crude to sense the full depth of her knowledge and intelligence. Apes have personalities, some of them just don't care about our language regardless of any reward, while other have innate curiosity or are eager to please which makes them model students. Chimpanzee Bruno refused to make any sign but when his Trainer Roger Fouts threatened to shoot him (do not mistake Fouts for a sadistic butcher, of all primate researchers is was him who turned into a PETA supporter) Bruno suddenly revealed to have learned his lessons very well. The third stage started when it was recognized that apes should not be treated like retarded subhumans but should be immersed in a culture driven by language, that they should be raised in stimulating environments and live interesting lives, in friendship with humans and other apes. Yerkish, a collection of symbols or lexigrams representing words and concepts gained prominence at this stage. Bonobo Kanzi, the first ape to have learned the use of human language naturally by observing it used by his step-mother Matata from a very young age, was a lexigram user. The story of Kanzi articulates several point made here. Having learned the language without fuzz, not aware that it was anything special, Kanzi was unwilling to sit through the endless number of repetitive tests his trainer Sue Savage-Rumbaugh wanted him to take in order to verify his language ability. Practically this lead to the insight that language training should be targeted at what Kanzi wants to learn not at what humans want him to know. Kanzi's language skills are not restricted to the use of lexigrams: he invented gestures to tell humans where he wanted to go in the woods surrounding the research facility and he learned to comprehend spoken English. Kanzi also tried to pronounce human words when he wanted to stress something he was also communicating otherwise. Comparison of vocalizations by Kanzi and four bonobos not trained in language made clear that Kanzi was vocalizing more

often and was vocalizing novel sounds in novel ways, connecting sounds to mimic the shift in sounds as we do when pronouncing the different syllables of a word. This overview shows that the language taught, with exception of ASL, was always an artificial language and, ASL included (deaf researchers in turn excluded), human researchers needed to learn this language themselves before teaching it to apes. Washoe was expert in ridiculing students who signed sloppily by making her signs slowly and deliberately, like someone talking to a foreigner. These languages and tools would have enriched the scope of human thinking about language and the language itself even if they had never been used as intended and are therefore itself a valuable part of PrimatePoetics.

Poetry is the initial stage of all language and each tongue, in tracing back its lineage, will include as the first known examples of its use forms not conventionally considered to be literature (inventories, law texts, etc). This allows us to view the everyday chitchat of Lana, Loulis and Koko about HUG's TICKLE's and M&M's as poetry. But PrimatePoetics, like any other angel investor, is bestowing love and attention only while speculating on a massive return of investments. Great apes do have what it takes to be literati: they have self-awareness and empathy, they can deceive and play roles, they know ecstasy, grief and all emotions between, their sense of social hierarchy makes Jane Austen look like an insensitive brute. They have talents in which they surpass us, like a superb short-term memory and a good ear. In fact apes are already telling stories. Gorilla Michael has given us what his keepers believe to be an account of the death of his mother at the hand of poachers: "Squash meat gorilla. Mouth tooth. Cry sharp-noise loud. Bad think-trouble look-face. Cut/neck lip (girl) hole". The next hurdle, writing, has recently been added to the list of mastered feats. Bonobo Panbanisha had been looking out of the window for days, desperately wanting to go into the wood, suddenly she picked up a piece of chalk and stated her wish to visit her favourite cabin in the woods by drawing the appropriate lexigrams, 'A-Frame' (a hut in the woods), 'Flatrock' (a place in the woods), 'Colour' (the colour of the jacket Panbanisha must wear when going outside) on the floor. All of this is caught on film and even though the written lexigrams are drawn insecurely, she has difficulties with circles, Panbanisha's communicative revolution is real: she understood that the message can exist independent from the medium and she freed her language from the presence of a lexigram board in that moment.

Ape language research is not without its critics, to put it mildly, and language itself has often been used to exclude ape language from language: a time line of proposed corrections to the definition of language makes clear that revisions were always introduced in response to new unwelcome evidence of some animal fulfilling all the criteria. The definition of language kept moving ahead with the sole aim of keeping animals outside of it. Those

scientists categorically refusing to allow for the idea of primates having language might be right in some self-created technical compartmentalization of language as syntax, but this aristocratic approach has recently hit a snag when it disavowed a newly described human languages as a real language. In literature only hacks and dunces can turn their back on anything that enlarges the spectrum of what language can be. Literature and science operate on different principles but this is one case where science should follow the lead of the arts instead of the other way around. Unlike those unidentified PrimatePoetics activist(s) who moved into scientific territory by teaching chimpanzee Coby ASL, PrimatePoetics remains an armchair venture. Our current occupation is to comb through all published material looking for the language that grows in suspension between the known languages and which is at best acknowledged as extracurricular. Not only are we mapping the paper trail we are also filling up the cracks when we locate one by producing new work to be enjoyed by the ape. Our translation of the Sumerian epic of Gilgamesh into lexigrams is an example of this. Our long-term goal is to reduce the gap between the ape languages to the point where the difference becomes academic. Like a game of magical chess in which a captured piece lends its power to the capturer, PrimatePoetics wants to play out the languages of the primates against each other in order to create an interspecies Esperanto. Of course, when you take a broad majestic view of the situation you realise that we ourselves our apes, we are the third chimpanzee, and in looking at the language of the other apes we are also glancing at our own language from a distance. This, if nothing else, will convince the harshest sceptic that the language of the ape deserves its own chapter in the textbooks of human literature.

Publications:

PrimatePoetics is Here – PrimatePoetic Primer contains an overview of all language trained apes, and a large section of quotes about ape language.

http://socialfiction.org/primatepoetics.pdf

Gilgamesh for Apes – The oldest human epic, the Gilgamesh, translated into lexigrams for an ape-audience.

http://socialfiction.org/gilgameshforapes.pdf

Wax Chimpatic – A collaborative experiment in ape call transcription, including some historic systems.

http://socialfiction.org/waxchimpatic.pdf

*Austin and Sherman*

# PrimatePoetics on an ape-by-ape basis.

This who-is-who in PrimatePoetics is not presented as finished. The real question is if it can be finished. Some apes were media stars in their days and for them plenty of biographic material is available. Other apes have lived barely traceable lives, because they failed to learn language or because they disappeared in the shady world of biomedical research before they could learn anything. The information most relevant to our project, anecdotes and personal hunches, were deliberately left out of the report as being unscientific. We just can't know how much is left out of the literature out of fear to look gullible, eccentric or downright fringe. It pays to read for what is between the lines of these biographies, to look for snippets of insight and odd details. This is a fallible survey that will be updated every so often. Despite all this it is hoped that it will give a feel for the life of these poet-apes and the outsider charm of their language.

**Moses** (chimpanzee, 1890-ties) was Richard Lynch Garner's favourite ape. Moses was taught 4 words: 'mamma' because it is a universal word of human speech; the French 'feu', fire; the German 'wie', how; and the native Nkami 'nkgwe', mother. But despite 'bribes' of corned beefs Moses never learned to pronounce any of them.

**??** (orang-utan, 1908? - 1913?, two words) William Furness tried teaching human speech to two orang-utans and two chimpanzees. One chimp died quickly, the other chimp learned nothing but one orang-utan showed great potential. By manipulating his jaws and lips she could say 'papa' after six months of daily coaxing. By the time Furness was beginning to teach her a second word, 'cup' he claimed she could already understand everything he said to her. Furness also succeeded in teaching all apes the alphabet up to the letter 'm'. In comparing the two species Furness considered the Orang-utan more apt to learn then the chimpanzee, other disagree, arguing that the social nature of the chimp makes him/her much more trainable than the solitary orang.

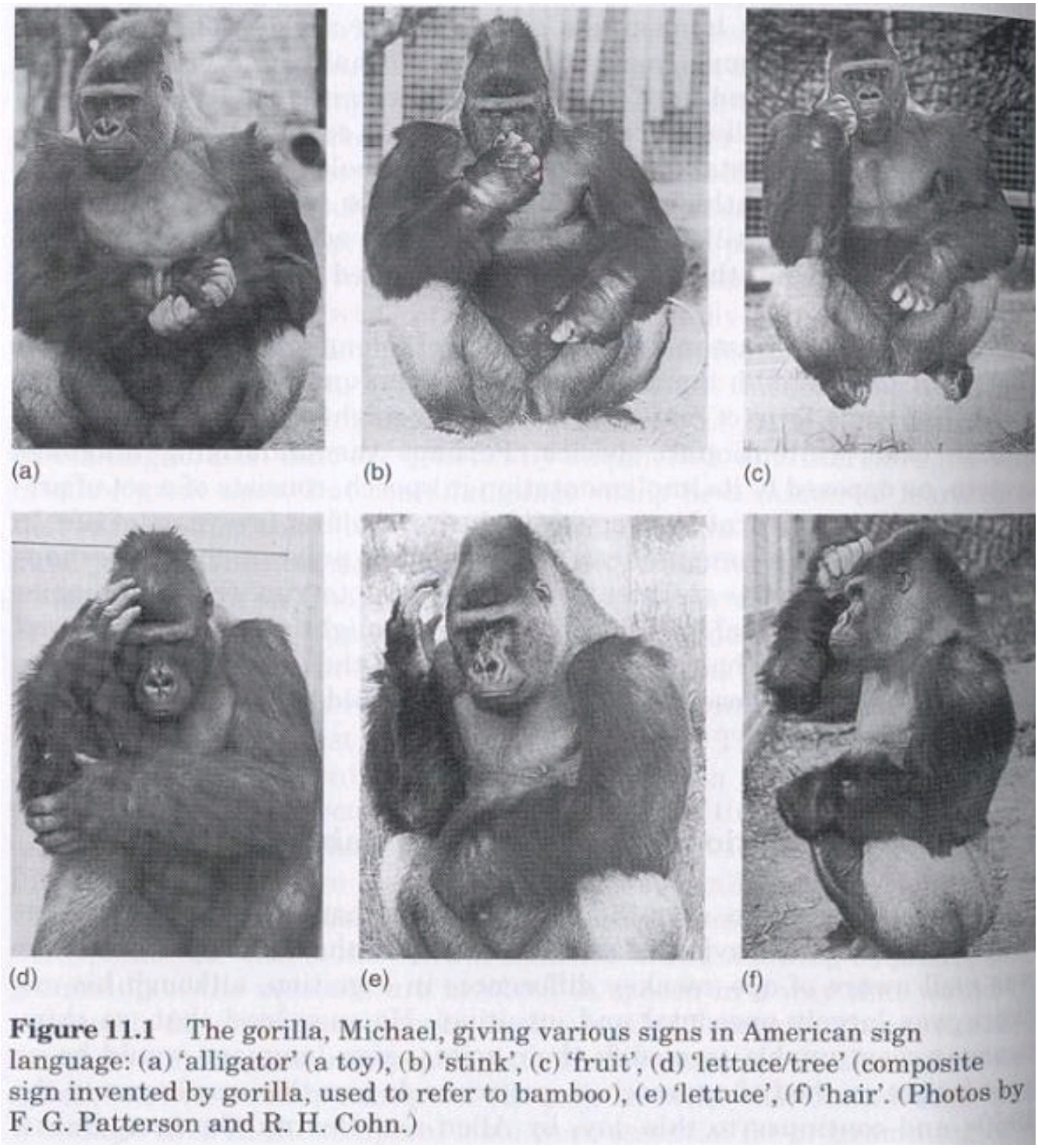



**Figure 11.1** The gorilla, Michael, giving various signs in American sign language: (a) 'alligator' (a toy), (b) 'stink', (c) 'fruit', (d) 'lettuce/tree' (composite sign invented by gorilla, used to refer to bamboo), (e) 'lettuce', (f) 'hair'. (Photos by F. G. Patterson and R. H. Cohn.)

**Gua** (chimpanzee, 1930(?), 95 English words) at 7,5 months was 'adopted' as a family member by psychologist's couple W.N. and L.A. Kellogg and raised in companion with their 10 months old son Donald. When Gua and Donald walked together it was taken as evidence of a common "understanding" of the command "take Gua's hand". This remark, addressed to Donald was responded to by Gua, and Gua was considered superior to the child in responding to human words in general. Gua began to recognize the voices of individuals, thereafter probably the articulation of simple words. Gua first learned the command "no-no", and her second command and learned response was "kiss-kiss". Toward the middle of the nine-month period, the sudden development of the child enabled him to equal and then surpass Gua in the number of words and phrases he comprehended. At the end of the nine-month period the comprehension

vocabulary of Donald were 107 words and phrases; Gua's was 95 words and phrases. Fouts reports the rumour that the experiment was stopped because Donald was using ape calls to ask for food.

**Kokomo Jr.** (chimpanzee, ?-?, 1 word), was a commercially exploited show ape often appearing on American Television from the 1950ties to his retirement in 1982. Apart from his bow-tie and paintings Kokomo Jr. stunned the world in 1952 when saying 'mama' on the Merv Griffin show. It took four months before Kokomo Jr. could make a sound with his vocal cords. It took another three months to shape his mouth, jaws and lips in such a way that he could pronounce the 'm'.

**Viki** (chimpanzee, 1970ties) was co-reared with a human infant by K.J. and C. Hayes, to see if she could learn human words. Until her fourth month Viki babbled all by herself, until it stopped. She was given speech therapy, which involved her lower jaw being manipulated to produce certain sounds. After ten months she could say “aah” and eventually she was able to voice three words: "mama", "papa", "cup", the last sometimes sounding like "up", which might also have been a fourth word.

**Lucy Temerlin** (chimpanzee, 1970ties, over 100 signs ASL) was raised in home by psychotherapist M. K. Temerlin as if she were a human child. Simultaneously he was taught ASL by Fouts. She appeared in Life magazine, and became famous for drinking gin, rearing a cat, and using Playgirl and a vacuum cleaner for sexual gratification. Fouts has written that he would arrive at Lucy's home at 8:30 every morning, when Lucy would greet him with a hug, take the kettle, fill it with water, find two cups and tea bags, and brew and serve the tea. Lucy would eavesdrop on conversations held by humans. By the time she was 12, the Temerlins were no longer able to care for her, and she was shipped to a chimpanzee rehabilitation centre in Senegal, then flown to Gambia, where she was shot and skinned by a poacher. Her feet and hands were hacked off for sale as trophies.

In this sign-language conversation, Fouts asks Lucy about a pile of chimpanzee faeces on the floor and become the first person to be lied to by a non-human:

Fouts: WHAT THAT?

Lucy: WHAT THAT?

Fouts: YOU KNOW. WHAT THAT?

Lucy: DIRTY DIRTY.

Fouts: WHOSE DIRTY DIRTY?

Lucy: SUE (a graduate student).

Fouts: IT NOT SUE. WHOSE THAT?

Lucy: ROGER!Fouts: NO! NOT MINE. WHOSE?Lucy: LUCY DIRTY DIRTY. SORRY LUCY.

*Fouts and Lucy, 1972.*

**Washoe** (chimpanzee, Africa 1965 - 2007, 250 sign ASL) was netted in Africa to be used for the chimponaut project part of the US Space Program. Fate determined that she ended up being raised as if she were a deaf human child by the Gardener's. Here she was taught ASL by Fouts and others. She was taught only words and she started producing sentences, “Give me Tickle” was the first, all by her own. When Washoe was five she was moved to a primate institute in Oklahoma and this is where she was to meet her first chimpanzee. Washoe referred to her toilet as "dirty good" and the refrigerator as "open food drink", even though humans around her always called them "potty chair" and "cold box". Washoe caught on quickly to the idea that the ASL sign for "more" could be used to get more of anything, including food, games, and books. In this way, the chimpanzee "showed the ability to spontaneously generalize an abstract concept such as 'more' to a variety of contexts in which training had not occurred". In one occasion Washoe signed "water bird" for swan, but it is not clear if it was as an invented name for a new specie or just a description of a bird in water. Washoe is recorded while signing things in private, even in instances of imaginary play. On one occasion, Loulis, grabbed Washoe's magazine

and ran off. Washoe then signed to herself, "Bad, bad, bad!" In 1979 Washoe gave birth to Sequoyah:

> “WHAT IN YOUR STOMACH? I [Roger Fouts] would ask.
> BABY, BABY, she answered, cradling her arms in front of her.”

Sequoyah died two months after birth of pneumonia:

> “More than anything, I dreaded telling Washoe what had happened. Early the next morning I went to see her. As soon as she saw me coming, she raised her eyebrows and signed BABY? She held her cradled arms in place to emphasize the question. Leaning in toward her, with all of the sympathy I could express in my face, I cradled my arms and put my two hands out in front of me, left palm down, right palm up. Then very slowly, I rolled both hands over in the sign for death: BABY DEAD, BABY GONE, BABY FINISHED.
>
> Washoe dropped her cradled arms to her lap. She moved over to a far corner and looked away, her eyes vacant. After sitting there for a while, I realized there was nothing more I could say or do.”

**Sarah** (chimpanzee, 1962, 130 words) was language trained by David by using plastic tokens varied in shape, size, texture, and colour, representing words or logical operators . Sentences were formed by placing the tokens in a vertical line (known as the Chinese convention, which was Sarah's own choice). The earliest words named various fruits, so that "Sarah could both solve her problem and eat it". Sarah exhibited displacement, the ability to think of something when it is not immediately present. Presented with the sentence "Brown colour of chocolate" without any chocolate present, and later presented with "Take brown," Sarah took a brown object. When a trainer put a question on Sarah's board and walked away, Sarah showed little interest in answering it in somewhat the way a conversation falters when one person ceases to pay attention. Sentences include "Sarah jam bread take" and "No Sarah honey cracker take".

Sarah and **Gussie** (chimpanzee, ?- ?) were part of D. Premack and A. J. Premack's project together with seven other Chimpanzees: **Elizabeth** and **Peony** trained in the language; **Walnut**, a late arrival, trained in the language, but failed to learn any words; **Jessie**, **Sadie**, **Bert**, **Luvie**, who all not trained in the language, but demonstrated pointing which was long believed to be a human behaviour.

**Ally** (chimpanzee, 1969-?, 130 sign ASL) was raised in specie isolation by Sheri Roush who had him baptised and taught him the ASL sign for cross, later he moved to the Roger Fouts' colony. Ally was a good student and signed with “lightning speed”. Ally was trained specifically in linking ASL signs to its spoken equivalent. He was believed to understand a good deal of what was being said around him. The last thing known about him is that he was sold to a biomedical company.

**Booee** (chimpanzee, 1964? -?) trained by Roger Fouts and the ape that persuaded Sue Savage-Rumbaugh to move into ape-language research. Booee was born in captivity had an experimental brain split before entering Fouts' chimp colony. Booee ended his life as the property of a pharmaceutical company doing hepatitis research. The only noticeable effect of Booee's brain split was in his drawings that invariably consist of two distinct scribblings in opposite corners of the canvas. A conversation between Booee and Fouts when they meet again after a long time:

> "Fouts dreads the visit. He wonders whether Booee will recognize him and how he will react. We enter the area where Booee's cage is located and see the chimpanzee lying face down, motionless. Fouts crouches like a chimpanzee and moves to the glass. Booee comes forward and becomes very excited. Fouts continues the story in his book Next of Kin: What Chimpanzees Have Taught Me About Who We Are.
>
> A big smile lit up Booee's face. He remembered me, after all
>
> HI, BOOEE, I signed. YOU REMEMBER?
>
> BOOEE, BOOEE, ME BOOEE, he signed back, overjoyed that someone actually acknowledged him. He kept drawing his finger down the center of his head in his name sign—the one I had given him in 1970, three years after NIH researchers had split his infant brain in two.
>
> YES, YOU BOOEE, YOU BOOEE, I signed back.
>
> GIVE ME FOOD, ROGER, he pleaded.
>
> Booee not only remembered that I always carried raisins for him, but he used the nickname he had invented for me twenty-five years earlier. Instead of tugging the ear lobe for ROGER, he flicked his finger off the ear. This was like calling someone "Rodg" instead of "Roger." Seeing him sign my old nickname floored me. I had forgotten it, but Booee hadn't. He remembered the good old days better than I did.
>
> After playing for a while through the glass, Fouts is told it is time to leave.
>
> I MUST GO NOW, BOOEE, I signed after a while. Booee's grin changed to a grimace, and his body sank.
>
> I MUST LEAVE, BOOEE.
>
> Booee moved to the back of his cage.
>
> GOODBYE, BOOEE.

**Cindy** (chimpanzee, 1966? -? ) was brought back from Africa by a Peace Corp Volunteer as a pet only to end up at the same chimp island of Fouts.

She was very passive and usually tagged along after Thelma. She ended up in a biomedical research laboratory.

**Thelma** (chimpanzee, 1967? -? ) was brought back from Africa by a Peace Corp Volunteer as a pet only to end up at the same chimp island of Fouts. She was an intelligent stubborn loner. She ended up in a biomedical research laboratory.

**Bruno** (chimpanzee, 1968-?) was not very interested in learning ASL at first but when Fouts threatened to hurt him he suddenly appeared to know all signs taught him. He lived with Booee and they signed a lot to each other, mostly about food and play: “Booee me food” etc.


**Matata** (chimpanzee, 1970, Netted in Zaire, arrived in Atlanta, US in 1975, six food words) was the foster mother of Kanzi. After five years of training she only managed six words for food. Her inability for language is thought to be a result from being wild in her early years which had trained her eye gaze patterns to continually scan the environment, making it impossible for her to concentrate on language tasks.

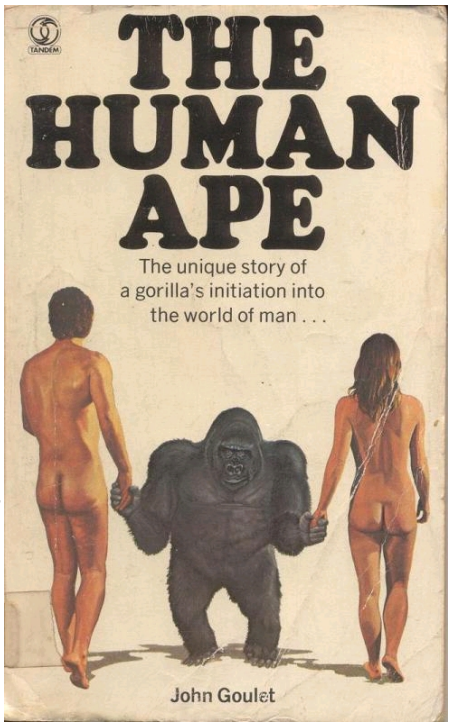
**Lana** an acronym for **L**anguage **Ana**logue (chimpanzee, 1970) was the first to be trained in the Yerkish system developed by Duane Rumbaugh that uses a keyboard with lexigrams corresponding to objects or ideas. When keys were pressed accidentally, Lana used the PERIOD key to restart the sentence; Lana did this on her own before it occurred to the researchers. Lana also used NO as a protest (for example, when someone else was drinking a Coke and she did not have one) after having learned it as a negation ("it is not true that...").

**Bosondjo** (bonobo, 1971-2005) was netted in Zaire (Congo) and died from chronic heart failure. He fathered 18 offspring -- six males and 12 females, including Kanzi and Panbanisha-- and had 13 grandchildren, including Nyota and Nathan.

**Koko**, short for **Hanabi-Ko** (gorilla, 1971, over 1000 signs ASL, 2000 words spoken English) is the most interviewed of all primate poets. Koko has created new terms for unnamed objects: "elephant baby" for a Pinocchio doll, "bottle match" for a cigarette lighter, "finger bracelet" for "ring", “white tiger” for zebra and "eye hat" for a Halloween mask. She refers to humans as "nipples". Her IQ is rated between 75 and 95 (whatever that means). After feeling discomfort for a few weeks over a toothache, Koko reached the point were she indicated number nine on a chart mapping the intensity of

pain on a scale of one to ten. Her tooth was consequently extracted. In 1998 Koko made her début on AOL, together with trainer Penny Patterson. Koko is not talking much and saying even less. Some of her quotes from the transcript are : "Lip apply-lip lipstick" (looking at the picture of a woman model in the magazine.), "Birthday... Food smoke", "Lips hurry good give-me", "This...stink. This." (indicating flower), “Foot, foot, bigtoe-foot good go” (about gorilla Michael), "Frown red bad bad... red good give-me", and so forth amidst purrs and no signs at all. Koko had several cats as pets, one she chose herself from a litter and named AllBall. When AllBall died Koko signed "sad" and "cry".

**Moja** (1972-2002, 168 signs), **Pili** (1973-1975), **Tatu** (1975-?, 140 signs), and **Dar es Salaam** (1976-?, 122 signs) all chimpanzees trained by Allen and Beatrice Gardner. All of these chimpanzees "signed to friends and to strangers. They signed to each other and to themselves, to dogs and to cats, toys, tools, even to trees". Some of them signed while sleeping. Moja, who new the word for 'purse' one put a purse on her foot and went around saying 'shoe'.

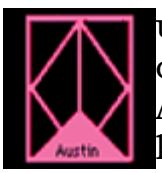



**Nim Chimpsky** (chimpanzee, 1973–2000, 25-125 signs ASL), appropriately named after the most nonsensical of all white coats in the anti-PrimatePoetic camp, trained by Hubert Terrance was meant to demonstrate to the naysayers that Washoe was using real language instead of being conditioned to sign in exchange for a reward, ironically Terrence himself concluded the opposite. In 44 months Nim Chimpsky learned 125 signs, a vocabulary learning rate of roughly 0.1 words per day. Meagre compared to the average college-educated English speaker with a vocabulary of greater than 100,000 words; humans learn roughly 14 words per day between ages 2 and 22. Linguistic analysis of Nim's utterances afterwards found that they were symbolic and lacked grammar or rules of the kind that humans use. Another problem was that Nim's sign were recorded by people unfamiliar with ASL: many hand gestures were regarded as signs by hearing researchers while one deaf researcher (and therefore a native 'speaker' of ASL) rejected them. Jane Goodall commented that she recognized all of Nim's signs as gestures chimpanzees make in the wild. The initial number of 125 signs mastered by Nim was brought back to 25. The longest recorded sentence is the 16-word-long "give orange orange me give eat orange me eat orange give me eat orange give me me give give me you." More typical quotes are "Hug me Nim", "Me Nim eat", "Me more eat". Terrace finds were eagerly used to

argue for a mortuary on all ape language research. Ape languge researchers like Fouts and Savage-Rumbaugh however scorned Terrace's methodology, believing that his training methods were the reason for Nim's failure to learn. Nim himself delivered the biggest rebuke to Terrace, after his experiments and relocated elsewhere where he could be socially his ASL use rose dramatically. He spent his remaining years on a Texas ranch, "too wild for a house and too human for a cage". Here follows an exchange between Nim Chimpsky and Mary Wambach who lost her hearing at age 13 and was therefore an experienced ASL signer.

Nim: [Looking at a magazine] Toothbrush there, me toothbrush.
Mary: Later brush teeth.
Nim: Sleep toothbrush.
Mary: Later ... now sit relax
Nim: [Seeing a picture of a tomato]. There eat. Red me eat.
Mary: There more eat! What that?
Nim: Berry, give me, eat Berry.
Mary: Good eat. You have berry in house.
Nim: Come ... There.
Mary: What there? [Leads me into the house]
Nim: Give eat there, Mary, Me eat. [At refrigerator]
Mary: What eat?
Nim: Give me berry.

**Michael** (gorilla, 1973-2000, 600 signs ASL) has given us the first recorded piece of PrimatePoetic autobiography. "Squash meat gorilla. Mouth tooth. Cry sharp-noise loud. Bad think-trouble look-face. Cut/neck lip (girl) hole." Which is thought to be a description of the death of his mother who was killed by poachers when he was young. Michael was taught to paint and used his sign language to provide titles for his own artworks: "Apple Chase", a painting depicting his pet dog Apple whom he enjoyed chasing; "Toy Dinosaur", a painting of a rubber dinosaur toy; "Stink Gorilla More", (a painting of flowers, "stink" was Michael and Koko's mutual sign for 'flowers'); and "Me, Myself, Good" a self-portrait including his hand print.





**Sherman** (chimpanzee, 1973) & **Austin** (chimpanzee, 1974-1998) were used in an experiment by Savage-Rumbaugh focusing on chimp-chimp rather than human-chimp communication. Sherman and Austin learned the lexigrams and corresponding names of three kinds of food and three tools; the emphasis was on their learning how to classify them. In tests, Sherman and Austin were presented with 17 new lexigrams and asked to categorize them as food or tools based on their knowledge of the previous six, which they did successfully and with only one error: Sherman called a sponge a food. But as he often sucked on sponges when they were

soaked with juice, technically Sherman might been right as far as him was concerned.

**Azy** (1977, knows 10 signs out of 70 lexigrams taught), **Tucker, Kiko, Indah** (1980, knows 10 signs out of 70 lexigrams taught), **Iris** (1990ties) are all orang-utans, who are from all the great apes the most distant from us genetically. They are slow learners and need different training methods than chimpanzees. They are prone to use their feet as well as their hand for signing. Bonnie is the slowest learner in the group and is reported to be suffering internally from her failure to match abstract signs to object, "she is timid about approaching the task because she does not want to be wrong". There are no punishments for mistakes. Training is conducted before zoo visitors.

**Pola, Princess, Rantai, Hampas** (orang-utans, all of unknown age and origin, housed in a research camp in Borneo) were trained by Gary Shapiro in ASL from a young age but after 15 months and 2400 trials, that all knew only 4 signs out of a possible 10. Food signs were performed better than non-food signs.

**AI** (chimpanzee, 1976(?)) was born in Sierra Leone and arrived at the Kyoto Primate Research Institute in 1977. In 1978 began her training in linguistic skills. She is trained in lexigrams but she is best known for the lighting speed with which she performs on-screen short memory tasks.

**Chantek** (orang-utan, 1977, 150 words in sign language) trained by Lyn Miles prefers to use names rather than pronouns even when talking to a person. He invented signs of his own (e.g., "eye drink" for contact lens solution, "no-teeth" to show that he would not use his teeth during rough play and "dave missing finger" for a university employee (who presumably should not be trusted


# Panbanisha invents writing

with fireworks)). Chantek uses adjectives to specify attributes, such as "red bird", and "white cheese food eat" (cottage cheese). He overgeneralizes, for example, he uses the sign 'Lyn' for all caregivers, but never for strangers. Other comments included 'bad bird' at noisy birds giving alarm calls, 'coke drink' after drinking his coke, 'pull beard' while pulling a care-giver's hair through a fence, 'time hug' while locked in his cage as his care-giver looked at her watch, and 'red black point' for a group of coloured paint jars. The food given to them in reward for signing at Yerkes Primate Center caused severe obesity, at the end his weight was 230Kg while 130Kg is considered normal.

**Loulis** (chimpanzee, 1978) is the first to ever learn a human language from non-humans. After eight days with Washoe, Loulis learned his first sign for the name of the person who them heir breakfast. For the first five years of his life, Loulis's human handlers only used seven signs around him (the signs used were 'who', 'which', 'want', 'where', 'name', 'that', and 'sign'). Loulis was able to acquire the rest from Washoe. She learned signs by watching it used, by 'babbling' and then by using them.

**Bonnie** (orang-utan, 1978) is the first-ever documented primate mimicking a sound from another species without being specifically trained to do so. Bonnie, who lives at the Smithsonian National Zoological Park in Washington, D.C., began whistling after hearing an animal caretaker make the sound. Orangs do not normally whistle, and it should be noted that the does not whistle tunes. **Indah** also whistled and is believed that she got the idea from Bonnie.

**Coby** (chimpanzee, 1980, 50 signs) became too strong for his original owners at the age of five. He was first relocated to Pennsylvania and then to Black Pine Animal Park in Arizona. Here it was suspected that Coby was trying to sign to her keepers. Coby is the only known privately trained ASL-competent chimpanzee. Having spend 12 years in environments where nobody could 'speak' to her, her language skills had deteriorated. Primate researcher Patrick Drumm is working with to revive her “sloppy signing”.


**Kanzi** (bonobo, 1980, 348 lexigrams yerkish, 3000 spoken English words) is the first observed ape to have learned aspects of language naturalistically rather than through direct training. During a performance of a Maori War Dance staged for a group of bonobos, a dance which includes thigh-slapping, chest-thumping, and hollering, almost all the bonobos present interpreted this as an aggressive display, and reacted with loud screams, tooth-baring, and pounding the walls and floor. All but Kanzi, who remained perfectly calm, and conveyed to researcher Savage-Rumbaugh that he knew that no threat was meant, but that the performance should

be apart from the other bonobos so as not to upset them.

**Alia** (human, 1986) is the daughter of one of kanzi's caregiver Jeannine Murphy, who at two years old went through the same tests as eight-year-old Kanzi. Murphy spent forenoons with Kanzi and afternoons with Alia, in a mobile home with approximately the same indoor environment. Both subjects were separated from the experimenter by a mirror during the tests, going through the same experiments in order to compare language abilities. At first human and primate performed equally, but Alia, soon outperformed Kanzi who remained at a language ability of a human two-year-old.

**Mulika** (bonobo, 1983, Yerkish) is the younger sister of Kanzi and trained in the same way, her first lexigram at twelve months was 'milk'. After 22 months she used 6 lexigrams productively but had receptive skills for 42 lexigrams and for spoken English. She learned this, like Kanzi, by observation.

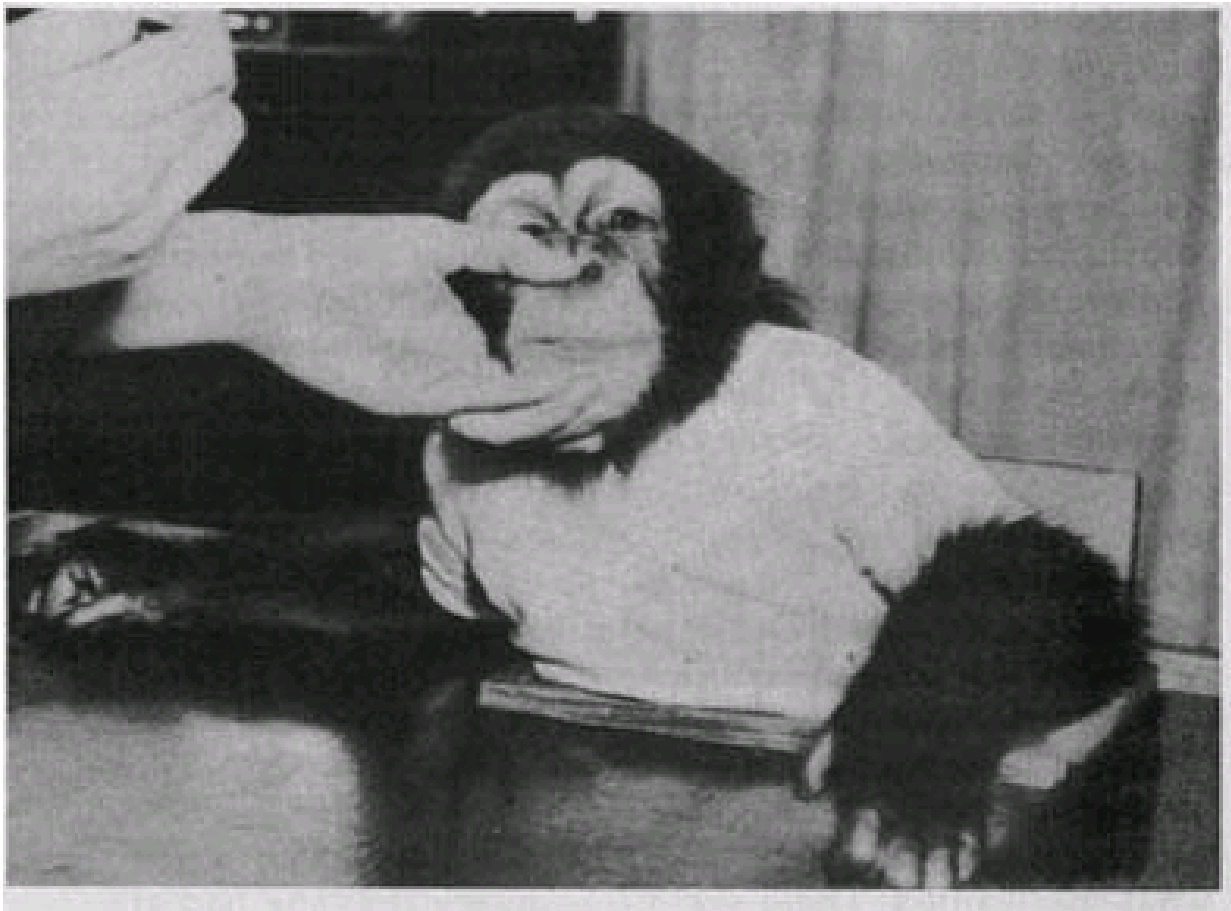
**Panbanisha** (bonobo, 1995) was strolling through the woods with a group of scientists. Suddenly, using a communication keyboard, she repeatedly pressed three symbols in various combinations: "Fight," "Mad," "Austin". Austin another bonobo at the centre. Sue Savage-Rumbaugh asked, "Was there a fight at Austin's house?" "Waa, waa, waa" said the chimpanzee, in what Savage-Rumbaugh took as an affirmation. She later learned that earlier in the day two of the chimps there had caused a ruckus overheard by Panbanisha, who lived 200 feet away. "She had never put those three lexigrams together". At another time Panbanisha had been looking out of the windows for days, longing to go for a walk in the woods, suddenly he picked up a piece of chalk and wrote down the lexigrams of the relevant words on the floor to announce his desire. He had invented writing and has used it ever since! Statistical research (a white coat always wants to make sure) showed that when Panbanisha and Kanzi typed a wrong lexigram for an object, the mistaken lexigram looked alike, sounded alike or was part of the same category as the missed right one, i.e. was not random. The following dialogue between Panbanisha and Lizz Pugh shows that a bonobo is always willing to negotiate a deal:

> Panbanisha: Milk, sugar.
> Liz: No, Panbanisha, I'd get in a lot of trouble if I'd gave you tea with sugar.
> Panbanisha: Give milk, sugar.
> Liz: No, Panbanisha, I'd get in a lot of trouble.
> Panbanisha: Want milk, sugar.
> Liz: No, Panbanisha, I'd get in so much trouble. Here's some milk.
> Panbanisha: Milk, sugar. Secret.

**Panzee** (chimpanzee, 1995) reared together with bonobo Panbanashi by

bonobo Matata (Kanzi's mother) as part of comparative research into differences in language acquisition. Panbanisha was the quicker learner and remains superior in language to Panzee, but Panzee excels in tool-use , drawings and other activities that demand spatial and mechanical relations.

**Nyota** (bonobo, 1998) son of Panbanisha and **P-Suke** (bonobo, 1979 not trained in language), was raised by ethnographer Bill Fields as part of an experiment to describe the culture of a non-human society. Nyota's lexigram utterances “have always been unusual and distinct”. A common expression of his is "quiet think" which probably means "Let's have some quiet time together." She is expected to stand on the shoulders of giants. **Nathan** (bonobo, 2000) is his brother. Nyota



*Teaching Viki to say "Mama." As described in the text, the lips were first moved while Viki was making an "ahhh" sound. Then, as the lips began to move without aid, touching with a finger was sufficient. When the finger was removed, Viki would put her lip to the trainer's finger, as illustrated, or touch the lip with her own finger while she spoke.*

# PrimatePoetic Sources

**Samuel Pepys, Diary, 1666.**

We are called to Sir W. Batten's to see the strange creature that Captain Holmes hath brought with him from Guiny; it is a great baboon, but so much like a man in most things, that though they say there is a species of them, yet I cannot believe but that it is a monster got of a man and she- baboon. I do believe that it already understands much English, and I am of the mind it might be taught to speak or make signs.

**Julien Offray de La Mettrie, L'Homme Machine, 1748.**

Among animals, some learn to speak and sing; they remember tunes, and strike the notes as exactly as a musician. Others, for instance the ape, show more intelligence, and yet cannot learn music. What is the reason for this, except some defect in the organs of speech? But is this defect so essential to the structure that it could never be remedied? In a word, would it be absolutely impossible to teach the ape a language? I do not think so.

I should choose a large ape in preference to any other, until by some good fortune another kind should be discovered, more like us, for nothing prevents there being such a one in regions unknown to us. The ape resembles us so strongly that naturalists have called it "wild man" or "man of the woods." I should take it in the condition of the pupils of Amman, that is to say, I should not want it to be too young or too old; for apes that are brought to Europe are usually too old. I would choose the one with the most intelligent face, and the one which, in a thousand little ways, best lived up to its look of intelligence. Finally not considering myself worthy to be his master, I should put him in the school of that excellent teacher whom I have just named, or with another teacher equally skilful, if there is one.

**Lord J. B. Monboddo, Of the Origin and Progress of Language, 1773.**

I still maintain, that his [the orang-utan] being possessed of the capacity of acquiring it [language], by having both the human intelligence and the organs of pronunciation, joined to the dispositions and affections of his mind, mild, gentle, and humane, is sufficient to denominate him a man.

**James Boswell, The Life of Samuel Johnson, 1791.**

We talked of the Ouran-Outang, and of Lord Monboddo’s thinking that he might be taught to speak. Dr. Johnson treated this with ridicule. Mr. Crosbie said, that Lord Monboddo believed the existence of every thing possible; in short, that all which is in posse might be found in esse. JOHNSON. ‘But, Sir, it is as possible that the Ouran-Outang does not speak, as that he speaks. However, I shall not contest the point. I should have thought it not possible to find a Monboddo; yet he exists.’

**Percy Bysshe Shelley, Defence of Poetry, 1819.**

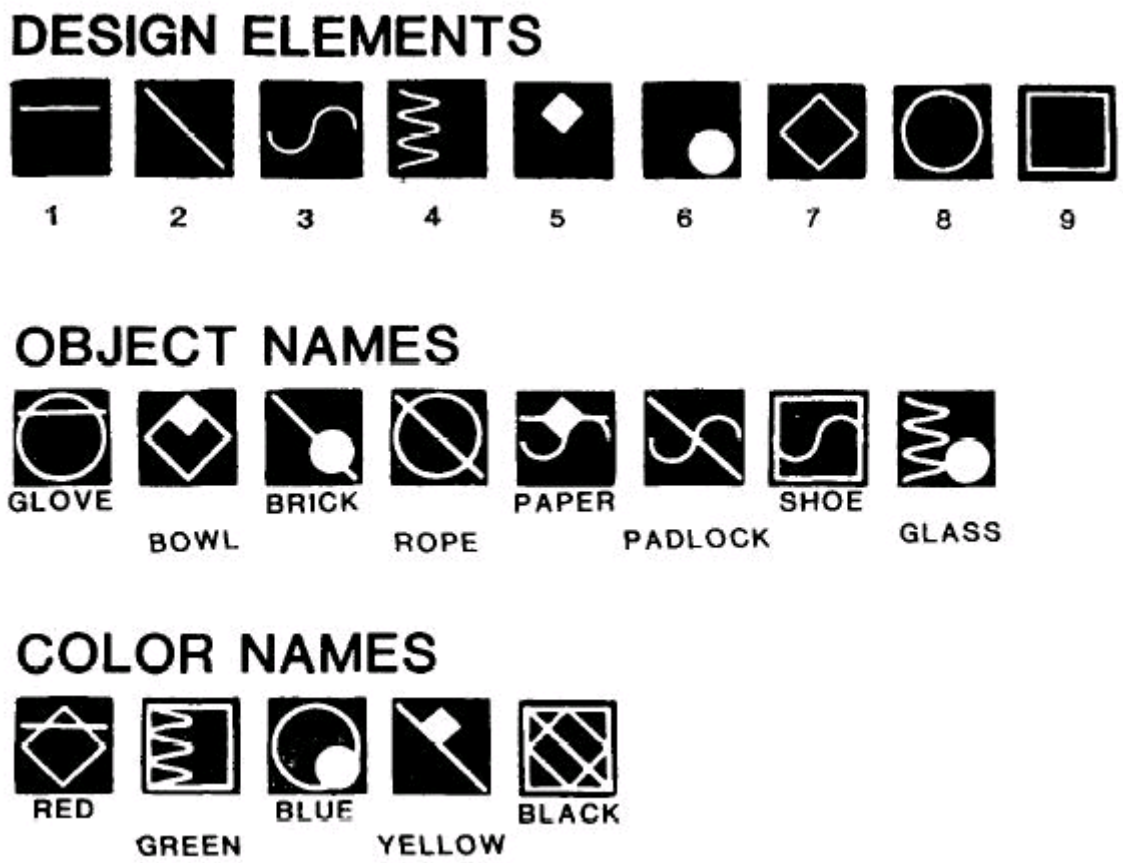
In the infancy of society every author is necessarily a poet, because language itself is poetry; and to be a poet is to apprehend the true and the beautiful, in a word, the good which exists in the relation, subsisting, first between existence and perception, and secondly between perception and expression. Every original language near to its source is in itself the chaos of a cyclic poem: the copiousness of lexicography and the distinctions of grammar are the works of a later age, and are merely the catalogue and the form of the creations of poetry.

**George Steiner, Extraterritorial, 1975.**

Bees dance exact messages to each other as to the direction, amount, and quality of honey to be found. Dolphins pipe signals of warning and summons. It may be that the trills and whistles of birds convey rudimentary meaning. Meaning, in fact, is the essence, the underlying structure of natural forms. Colours, sequences, odours, regularities, or salient anomalies of shape and event, all are informant. Almost every phenomenon can be 'read' and classed as a statement. It signals danger or solicitation. Lack or availability of nourishment; it points towards or away from other significant structures. Living beings, above elementary units, dispose of a large, manifold range of articulation: postures, gestures, colourations, tonalities, secretions, facial mien. Separately or in conjunction, these communicate a message, a unit or unit cluster of focused information. Life proceeds amid an incessant network of signals, to sort out from the random flux those literally vital to oneself and one's specie, and to decode the pertinent signal with sufficient speed and accuracy. An organism failing to do so, either because its receptors are blunted or because it 'misreads', will perish. A marmot dies when it misread – i.e. fails to decode accurately – the message of tint, odour, or texture which differentiates the statement of identity of a venomous mushroom from that of a edible variety.

In the message-flight of the bee, the exact angle matters; each beck and volte in our courtship minuet of the moor-hen is an expression of coded meaning; very probably, a pointer can 'read' accurately hundreds of gradations of smell. Long before man, the planet was many-hued, loud and odorous with statement and reply. We know of fossils of organic structures three thousand million years old. The development of specific information codes, of signal systems through which emitter and receiver could formulate and exchange messages of identity, need, and sexual correlation, cannot be much younger. Where there is multi-cellular life, where different phyla coexist and compete, there is, there has to be, the articulation of meaning. Only the inert is mute. Only total death has no statement to make.

I have not until now used the word language.




*A sample set of the lexigrams from the original draft.*

**Konrad Lorenz, On Aggression, 1963.**

*http://www.marxists.org/reference/subject/philosophy/works/ge/lorenz.htm*

An inexorable law of perception prevents us from seeing in the ape, particularly in the chimpanzee, an animal like other animals, and makes us see in its face the human physiognomy. From this point of view, measured by human standards, the chimpanzee of course appears as something horrible, a diabolical caricature of ourselves. In looking at the gorilla or the orang-utan, which are less closely related to us, our judgement is correspondingly less distorted. The heads of the old males may look to us like bizarre devils' masks, impressive and even aesthetically appealing. However, we cannot feel like this about the chimpanzee: he is irresistibly funny and at the same time as common, as vulgar, as no other animal but a debased human being can ever be. This subjective impression is not altogether wrong: there are reasons for supposing that the common ancestor of man and the chimpanzee stood not lower but considerably higher than the chimpanzee does today. Absurd though the contemptuous attitude of man to the chimpanzee may be in itself, its strong emotional content has nevertheless misled several scientists into building up entirely unfounded theories about the origin of man: his evolution from animals is not disputed, but his close relationship to the repulsive chimpanzee is either passed over in a few logical skips or circumvented by sophistic detours.

The chimpanzee, however, is irresistibly funny just because he is so similar to us. What is worse is that in the narrow confinement of zoological gardens, adult chimpanzees degenerate much in the same way as human beings would under comparable circumstances, and give an impression of real dissoluteness and depravity. Even the normal chimp observed in perfect health gives the impression not of an extremely highly evolved animal but rather of a desperate and debased human being.

**J.M Coutzee, The Lives of Animals, 1999.**

Sultan is alone in his pen. He is hungry: that food that used to arrive regularly has unaccountably ceased coming.

The man who used to feed him and has now stopped feeding him stretches a wire over the pen three meters above ground level, and hangs a bunch of banana's from it. Into the pen he drags three wooden crates. Then he disappears, closing the gate behind him, though he is still somewhere in the vicinity, since one can smell him.

Sultan knows: Now one is supposed to think. That is what the banana's up there are about. The banana's are there to make one think, to spur one to the limits of one 's thinking. But what must one think? One thinks: Why is he starving me? One thinks: What have I done? Why has he stopped liking me? One thinks: Why does he not want those crates any more? But none of these is the right thought. Even a more complicated thought – for instance: What is wrong with him, what misconception does he have of me, that leads him to believe it is easier for me to reach a banana hanging from a wire than to pick it up from the floor? – is wrong. The right thought to think is: How does one use the crates to reach the banana's?

Sultan drags the crates under the banana's, piles them on top of the other, climbs over the tower he has built, and pulls down the banana's. He thinks: Now will he stop punishing me?

The answer is: No. The next day the man hangs a fresh bunch of banana's from the wire but also fills the crates with stones so that they are to heavy to be dragged. One is supposed to think: Why has he filled the crates with stones? One is supposed to think: How does one use the crates to get banana's despite the fact that they are filled with stones?

One is beginning to see how the man's mind works.

At every turn Sultan is driven to think the less interesting thought. From the purity of speculation (Why do men behave like this?) he is relentlessly propelled toward lower, practical, instrumental reason (How does one use this to get that?) and thus to towards acceptance of himself as primarily an organism with an appetite that needs to be satisfied.

**Gary Snyder, Practise of the Wild, 2004.**

Some will say, so far so good. "We are mammal primates, but we have language and the animals don't." By some definitions perhaps they don't. But they do communicate extensively, and by call systems we are just beginning to grasp.

It would be a mistake to think that human beings got 'smarter' at some point and invented language and then society. Language and culture emerge from our biological-social natural existence, animals that we were/are. Language is a mind-body system that coevolved with our needs and nerves. Like imagination and the body, language rises unbidden. It is of a complexity that eludes our rational intellectual capacities. All attempts at scientific description of natural language have fallen short of completeness, as the descriptive linguists readily confess, yet the child learns the mother tongue early and has virtually mastered it by the age of sic.

Language is learned in the house and in the fields, not at school. Without having ever been taught formal grammar we utter syntactically correct sentences, one after another, for all the waking hours of the years of our life. Without concious device we constantly reach into the vast word-hoards in the depths of the wild unconscious. We cannot as individuals or even as a specie take credit for this power. It came from some place else: from the way clouds divide and mingle (and the arms of energy that coil first back and then forwards), from the way the many flowerlets of a composite blossom divide and redivide, from the gleaming calligraphy of the ancient riverbeds of the Yukon River streaming out the Yukon flats, from the wind in the pine-needles, from the chuckles of grouse in the ceanothus bushes.

**Richard Lynch Garner, 'Speech of Monkeys', 1892.**

*http://www.archive.org/details/speechofmonkeys00garnrich*

It had never been any part of my purpose to teach a monkey to talk; but after I became familiar with the qualities and range of the voice of Moses, I determined to see if he might not be taught to speak a few simple words of human speech. To effect this in the easiest way and shortest time, I carefully observed the movements of his lips and vocal organs in order to select such words for him to try as were best adapted to his ability.

Kanzi shows me where he wishes to go by gesturing. He began to gesture at about twelve months of age and continued to use gestures intermingled with lexigrams after he began mastering the formal symbols. Bonobos do not typically direct others by such gestures in the wild. *(Photograph by Elizabeth Pugh)*

Kanzi at four years of age talking to himself on the keyboard. He began accompanying people on daily outings in the woods slightly before his third birthday. By four years of age he knew the forest far better than we did. He hated the cold months when he had to stay inside, so in the fall we let him wear sweaters to extend the time he could be outside. *(Photograph by Elizabeth Pugh)*

I selected the word mamma, which may be considered almost a universal word of human speech; the French word feu, fire; the German word wie, how; and the native Nkami word nkgwe, mother. Every day I took him on my lap and tried to induce him to say one or more of these words. For a long time he made no effort to learn them; but after some weeks of persistent labor and a bribe of corned beef, he began to see dimly what Iwanted him to do. The native word quoted is very similar to one of the sounds of his own speech, which means "good'' or "satisfaction." The vowel element differs in them, and he was not able in the time he was under tuition to change them; but he distinguished them from other words.

In his attempt to say mamma he worked his lips without making any sound, although he really tried to do so. I believe that in the course of time he would have succeeded. He observed the movement of my lips and tried to imitate it, but he seemed to think that the lips alone produced the sound. With feu he succeeded fairly well, except that the consonant element, as he uttered it, resembled "v" more than "f," so that the sound was more like vu, making the ''u" short as in "nut." It was quite as nearly perfect as most people of other tongues ever learn to speak the same word in French, and, if it had been uttered in a sentence, any one knowing that language would recognize it as meaning fire. In his efforts to pronounce wie he always gave the vowel element like German "u" with the umlaut, but the "w" element was more like the English than the German sound of that letter.

Taking into consideration the fact that he was only a little more than a year old, and was in training less than three months, his progress was all that could have been desired, and vastly more than had been hoped for. It is my belief that, had he lived until this time, he would have mastered these and other words of human speech to the satisfaction of the most exacting linguist. If he had only learned one word in a whole lifetime, he would have shown at least that the race is capable of being improved and elevated in some degree.

**William Furness, Observations on the Mentality of Chimpanzees and Orangutans, 1916.**

*http://www.archive.org/details/proceedingsamer120socigoog*

If these animals have a language it is restricted to a very few sounds of a general emotional signification. Articulate speech they have none and communication with one another is accomplished by vocal sounds to no greater extent than it is by dogs, with a growl, a whine, or a bark. They are, however, capable to a surprising degree of acquiring an understanding of

human speech. In the case of the orang-utan it took at least six months of daily training to teach her to say "Papa." This word was selected not only because it is a very primitive sound, but also because it combined two elements of vocalization to which orang-utans and chimpanzees are, as I have said, unaccustomed, namely: the use of lips and an expired vowel sound. The training consisted of a repetition of the sounds for minutes at a time, while the ape's lips were brought together and opened in imitation of the movements of my lips. I also went through these same manoeuvre's facing a mirror with her face close to mine that she might see what her lips were to do as well as feel the movement of them. At the end of about six months, one day of her own accord, out of lesson time, she said "Papa" quite distinctly and repeated it on command. Of course, I praised and petted her enthusiastically; she never forgot it after that and finally recognized it as my name. When asked "Where is Papa?" she would at once point to me or pat me on the shoulder. One warm summer's day I carried her in my arms into a swimming pool; she was alarmed at first but when the water came up to her legs she was panic stricken; she clung with her arms about my neck; kissed me again and again and kept saying "Papa ! Papa ! Papa !" Of course, I went no further after that pathetic appeal.

The next word I attempted to teach her to say was "cup." (Let me say that by this time she understood almost everything that it was necessary for me to say such as "Open your mouth," "Stick out your tongue," "Do this," etc., and she was perfectly gentle and occasionally seemed quite interested.) The first move in teaching her to say cup was to push her tongue back in her throat as if she were to make the sound "ka." This was done by means of a bone spatula with which I pressed lightly on the centre of her tongue. When I saw that she had taken a full breath I placed my finger over her nose to make her try to breathe through her mouth. The spatula was then quickly withdrawn and inevitably she made the sound "ka." All the while facing her I held my mouth open with my tongue in the same position as hers so that her observation, curiosity, and powers of imitation might aid her, and I said ka with her emphatically as I released her tongue. After several lessons of, perhaps, fifteen minutes of this sort of training each day she would draw back her tongue to the position even before the spatula had touched it, but she would not say ka unless I placed my finger over her nose. The next advance was that she herself placed my finger over her nose and then said ka without any use of the spatula ; then she found that in default of my finger her own would answer the purpose and I could get her to make this sound any time I asked her to. It was comparatively very easy from this to teach her to say "kap" by means of closing her lips with my fingers the instant she said ka. At the same time I showed her the cup that she drank out of and I repeated the word several times as I touched it to her lips. After a few lessons when I showed her the cup and asked "What is this ? " she would say cup very plainly. Once when ill at night she leaned out of her hammock and said "cup, cup, cup," which I naturally understood to mean that she was thirsty and which proved to be the case. I

think this showed fairly conclusively that there was a glimmering idea of the connection of the word with the object and with her desire.

By getting her to stick out her tongue and then by holding the tip of it up against her teeth and at the same time forcing her to breathe through her mouth I finally got her to make the sound Th. This was preliminary to teaching the words : the, this, that. All this was encouraging I will admit but then — "I never nursed a dear gazelle . . . ," etc.; the poor little animal died four or five months after this first tiny inkling of language. I have tried persistently for five years to teach my surviving chimpanzee pupil to say "mama" ; she says it, but very poorly. I think I must honestly say it is a failure. Again and again I have tried by the same method that I used with the orang-utan to teach her to say "cup", but to no avail. On the whole I should say that the orang holds out more promise as a conversationalist than does the chimpanzee; it is more patient, less excitable, and seems to take instruction more kindly.

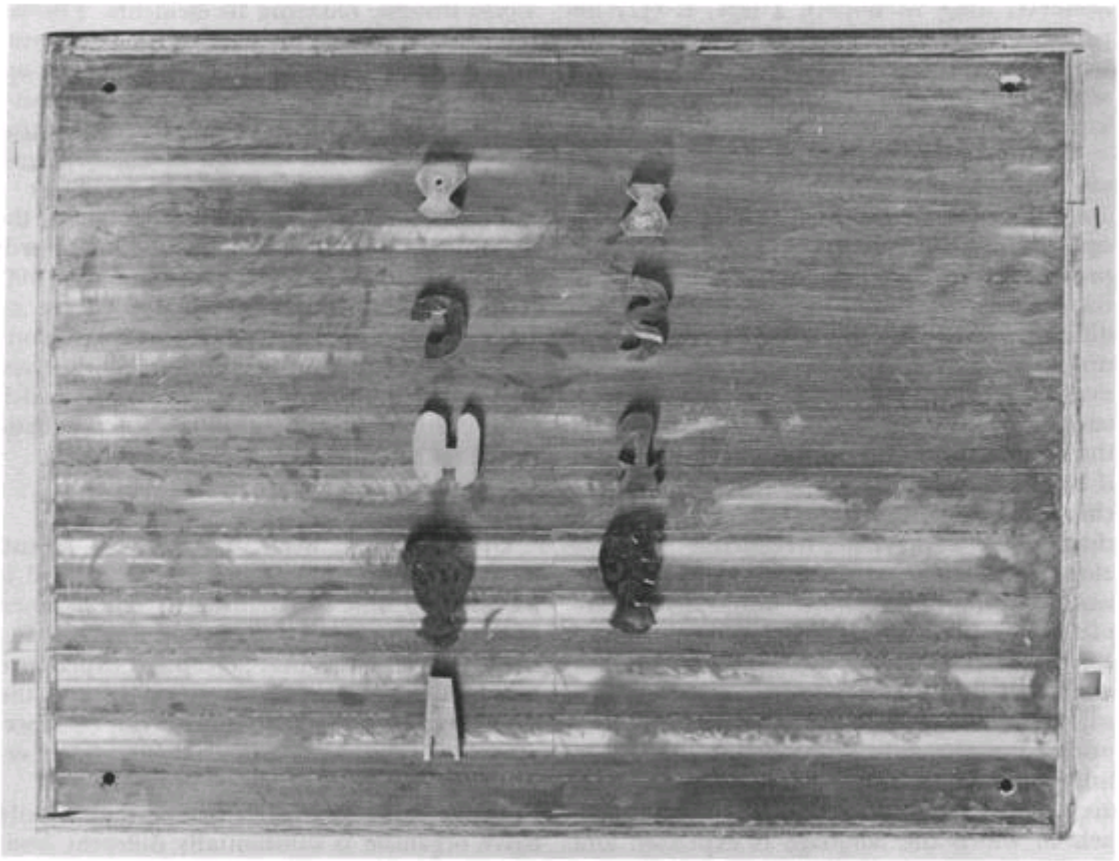


**Fig. 1. The physical basis of the language is plastic, varying in color, size and shape. Each piece of plastic is a word; the pieces are metal-backed and adhere to magnetized slate. Sentences are written on the vertical. A word-by-word translation of the two sentences is: Sarah honey bread take; No Sarah jam cracker take. Notice the occurrence of "no" or the negative particle as a free morph (independent word) in both Fig. 1 and 3, and in the bottom half of Fig. 4 as a bound morph appended to "name of" forming "not name of".**

**The Ape and The Child, About Gua.**

*http://www.psy.fsu.edu/history/wnk/ape.html*

No investigation in Kellogg's career brought him more attention than did the study involving the rearing of his infant son Donald with an infant chimpanzee, Gua. The study is well documented in the 336 pages that comprise The Ape and the Child.

The idea for the study emerged in 1927 when Kellogg was still a graduate student at Columbia University. Kellogg and Kellogg give us that date for the idea but not its source. However, our guess is that it was stimulated by an article on the "wolf children" of India which was published that year in the American Journal of Psychology. Similar to Itard's "wild boy of Aveyron," the wolf children were two young girls found in a cave inhabited by wolves. These children behaved as though they were wolves, eating and drinking like those animals and making no use of their hands except to crawl around on all fours, which was their method of locomotion. Eventually the girls learned to walk upright, although they could never run. One acquired speech, at least a vocabulary of approximately 100 words, but the other continued only to make grunting noises. Howling noises at night were never extinguished, nor were their human teachers able to break them of the rather distasteful habit of "pouncing upon and devouring small birds and mammals". Both girls died at an early age. Like other feral children, the wolf children were judged to be sub-normal in intelligence and it was assumed that their intellectual deficits prevented them from being able to adapt to their new surroundings. This interpretation was common in explaining the problems of adjustment in feral children and was, in fact, the explanation offered by Squires. Kellogg disagreed with that interpretation, and in two replies published in the American Journal of Psychology, he argued that the wolf children, and others like them, were probably born of normal intelligence. Indeed, it was unlikely that they would otherwise have been capable of survival. From his environmentalistic perspective he contended that these children learned to be wild animals because that was exactly what their environment demanded of them.

**Meredith F. Small, New Scientist, 1994.**

Until the 1970s, scientists assumed that animals - unlike humans - only produced noise in response to some sort of internal emotional state. For example, alarm calls were supposedly a product of high anxiety and fear. It followed that animals were ruled vocally by the more primitive, reflex centres of the brain, while human vocalisations were controlled by the 'higher', rational centres of the brain found in the cerebral cortex. Mitani's discovery of chimpanzee accents is the latest in a long line of research challenging these assumptions. In 1967, field observations from East Africa showed that the small, green-grey monkeys called vervets have a complex system of alarm calls, one for each major predator: leopard, eagle and large

snake. Much more recently, Dorothy Cheney and Robert Seyfarth, now of the University of Pennsylvania, proved that vervet monkeys could use their alarm calls referentially. When vervets heard the recording of a particular type of alarm call, they reacted appropriately without any visual sightings of the predator. To a vervet, the leopard alarm call isn't just an uncontrolled scream let out in fear; the sound also carries with it specific information that represents, and warns against, the leopard.

In the 1980s it also became clear that the sounds made by monkeys carry important social information. Harold and Sarah Gouzoules observed a group of rhesus macaques on Cayo Santiago island off the coast of Puerto Rico to determine whether the monkeys actually 'know' what they hear. The Gouzouleses recorded the screams of juvenile animals in trouble with various opponents, and then played those screams back to their mothers. By carefully monitoring the mothers' responses the researchers could show that the screams denoted the opponent's rank, blood relationship to the screamer, and the quality of the aggressive interaction. When the opponent eliciting the scream was high-ranking and not a relative the mother ran towards the tape speaker.

**Eugene Linden, Apes, Men and Language, 1974.**

Some innovations indicated Washoe possessed unexpected abilities that the Gardners were not prepared to evaluate. They referred to these unexpected bonuses as 'lagniappe,' a creole expression that refers to an extra measure of goods a shopkeeper gives to a customer. Examples of lagniappe occurred when Washoe would invent signs. On occasion the Gardners themselves were forced to adapt Ameslan (ASL) signs for objects for which they did not know the proper gesture. 'Bib' was one of these objects, for which the Gardners used the Ameslan sign 'wiper,' made by touching the mouth with five fingers in a wip[ing motion. One day Washoe was asked to identify her bib and, unable to remember the 'wiper' gesture, drew the outline of a bib on her chest. The Gardners acknowledged that Washoe's sign was just as good as theirs, but they noted that the purpose of the project was not to learn a language devised by an infant chimpanzee but to teach Washoe a human language, and they insisted she use the 'wiper' gesture. Later they discovered that Washoe's 'bib' sign was, after all, the correct gesture in Ameslan.

**Ernst von Glaserfeld, The Yerkish Language for Non-Human Primates, 1975.**

*http://acl.ldc.upenn.edu/J/J79/J79-1012.pdf*

One of the first of Lana's spontaneous 'generalisations' concerned the lexigram NO. She had learned the use of this 1exigtam.in me specific context, i.e. in answers to questions such as: ? BANANA NAME-OF THIS,

when the object ostensively indicated to her was, for instance; her blanket. One morning, Tim Gill, to whose ingenious devising of training situations the project owes a great deal of its success, entered the room with a bowl of banana slices. As he moved around the corner of Lana's cubicle in order to fill the dispenser that responds, to the keyboard message PLEASE MACHINE GIVE PIECE OF BANANA, he popped a banana slice into his mouth. Seeing this, Lana adopted a threatening posture and hooted angrily. Then, suddenly, she ran to the keyboard and, three times in succession, vigorously pressed the key bearing the lexigram NO.

Conversation recorded on May 6th, 1974.

On the preceding, days Lana had learned the lexigrams for a bowl and a metal can, BOWL and CAN. This had been accomplished By first using objects whose names were already known to her, putting an M&M candy inside them, and asking her: ? WHAT NAME-OF THIS. On May 5th she reliably replied with the correct lexigram when the reward was placed in the bowl or in the can. The next morning Tim came in with the bowl, the can, and a cardboard box. While Lana was watching, he put an M&M candy in the box, and the following exchange took place:

Lana: ? TIM GIVE LANA THIS CAN.

Tim: YES. (Tim gives her the empty can, which she at once discards)

Lana: ? TIM GIVE LANA THIS CAN.


Tim: NO CAN.

Lana : ? TIM GIVE LANA THIS BOWL.

Tim: YES. (Tim gives her the empty bowl)

Lana : ? SHELLEY -(Sentence unfinished)

Tim: NO SHELLEY. (Shelley, another technician who worked with Lana, is not present)

Lana : ? TIM: GIVE LANA THIS BOWL (Before Tim can answer, Lana goes on).

Lana: ? TIM GIVE LANA NAME-OF THIS. (A spontaneous generalization of GIVE,

not. foreseen by the grammar, since NAME.-OF had not been classified as a possible object of GIVE!)

Tim: BOX NAME-OF THIS.

Lana : YES. (Short pause, and then)

Lana: ? TIM GIVE LANA THIS BOX.

Tim: YES. (Tim gives it to her, she rips it open and eats the M&M)

Conversation recorded on November. 22, 1974.

Tim: ? LANA WANT APPLE. (No apple is in sight)

Lana: YES. ('Tim leaves the room and, after a moment, returns with an apple)

Lana: YOU GIVE THIS TO LANA.

Lana : YOU GIVE THIS WHICH-IS RED. (Since there is no sentence marker, this is

an indicative statement and neither a request nor a question)

Tim: ? THIS, (Tim holds up a red piece of plastic)

Lana: ? YOU GIVE THIS APPLE TO LANA.

Tim: YES. (Where upon she receives the apple.)

**Roger Fouts with Stephen Tukel Mills, Next of Kin, 1997.**

Communication on the island (of Dr Lemmon) resembled a primate Tower of Babel. Booee, Bruno, Thelma, and Cindy let each other know what they wanted through natural chimpanzee gesture, vocalization, and facial expression. For example, if Booee wanted Bruno to play he would make a play face, laughing and motioning to him. But Washoe would sign a more specific message like COME TICKLE CHASE. When the other didn't respond, she would sign again very slowly and emphatically, like a mother signing to a baby. When they still didn't understand, she would get her message across just like they did, by gesturing and vocalizing.

Washoe's friends had been raised in human homes so they understood a good deal of English. For example, I would say, “Move that tire,” and they would do so. Washoe had never heard English, but she and I had always communicated with food grunts, screams, laughter, pant-hoots, and a lot of other meaningful vocal signals. Now that we were on the island, Washoe seemed to perceive English as an outgrowth of the vocal communication she was already familiar with, and in no time she could comprehend as much English as her friends. And the more time I spent with the other chimps, the more I mastered chimpanzee vocal communication.... It was not uncommon on the island to see a human-chimpanzee conversation that involved English, pant-hooting, ASL, and facial signals.

**E. Sue Savage-Rumbaugh, Stuart Shanker, Talbot J. Taylor, Apes, Language, and the Human Mind, 1998.**

Matata clearly possessed the idea of purposeful communication, and I

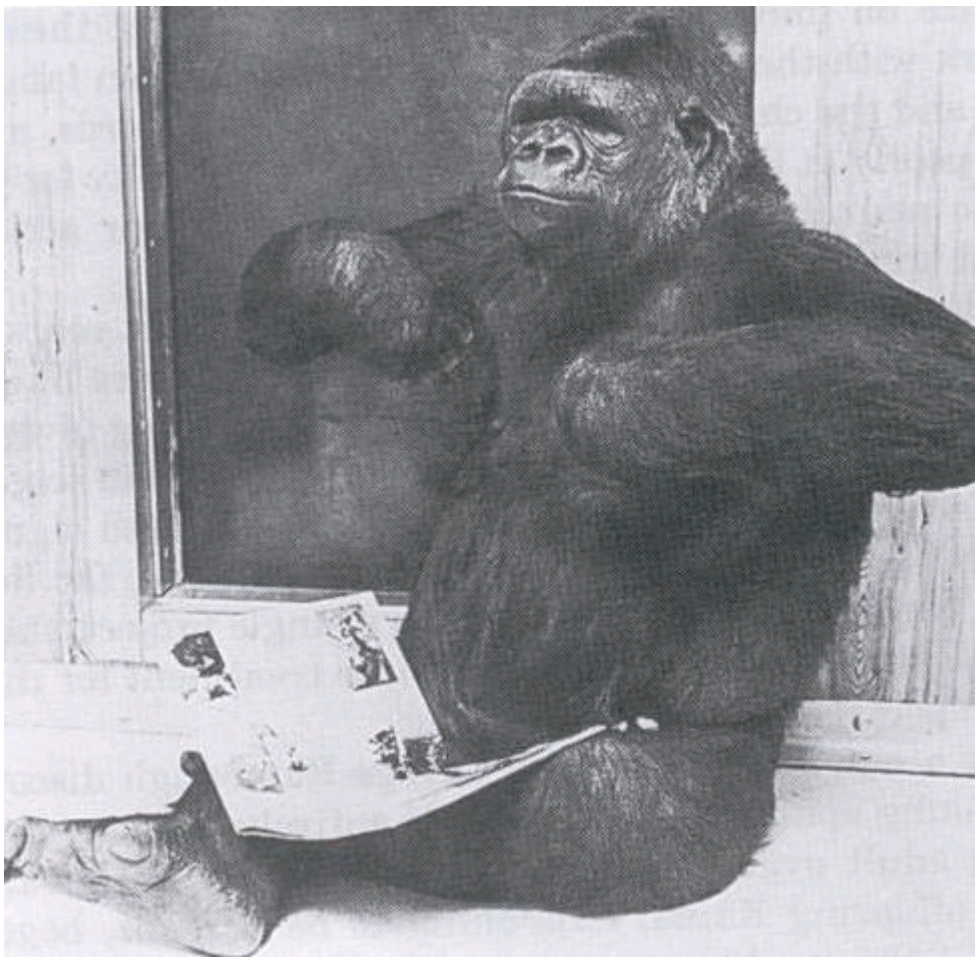
could not escape the impression that she often vocalized to attempt to tell me things - things I did not understand. I know that I certainly vocalized to tell her things that she did not understand. Thus, each of us remained locked into communication systems that worked with our own species but did not work at all between us. I wanted to learn more about her communication system, but she did not know how to teach me. Likewise, she wanted to learn more about my communication system, but I did not know how to teach her. To overcome these barriers between us, I and other scientists endeavored to employ a visual communication system with apes. By pointing to visual symbols, we could avoid the problems inherent in asking apes to produce sounds.

**Roger S. Fouts, Deborah H. Fouts, Chimpanzees' Use of Sign Language, 1993.**

*http://www.animal-rights-library.com/texts-m/fouts01.htm*

In our live observation and subsequently in the remote video recording of the chimpanzees, we observed that they talked to themselves. This was not a new observation, since the Gardners had also noted that Washoe would do this when she was young. In fact, her private conversations with herself were truly private, even to the extent that if we tried to eavesdrop she would turn away; and if we continued to try to see what she was signing she would actually get up and move to a more secluded location. She would label pictures of things that she saw in magazines, or merely sign to herself. She would do this while alone in her bedroom, or to make sure she was not bothered sometimes she would take a magazine to the top of a thirty-foot willow tree and sign to herself up there.

In one study we recorded over 5,200 instances of chimpanzee to chimpanzee signing. This signing was analysed into different categories. The majority of signing by the chimpanzees occurred in the three categories of 'play', 'social interaction', and 'reassurance'; these accounted for over 88 per cent of the chimpanzee to chimpanzee conversations. The remaining 12 per cent was spread across the categories of 'feeding', 'grooming', 'signing to self, 'cleaning' and 'discipline'. An interesting aspect of these findings was that they indicated that the chimpanzees used their signs primarily for various types of social interaction. It also showed that food was not a major topic, since it accounted for only about 5 per cent of their conversations. Some critics who wished to discredit the chimpanzee language studies claimed that chimpanzee signing consisted solely of begging for food. (Although this was true of one study [i.e. Nim Chimpsky], in which the poor chimpanzee was deprived of his food and was required to sign in order to get it.)



**Richard Byrne, The Thinking Ape, 1995.**

The determination to believe in may ‘unique’ traits of humans is rather pervasive, and definitions of the traits get changed to rule new facts out of court. Language, for instance, used to be defined as a communication system with arbitrary relations between concept and signal pattern; until the deciphering of the dances of bees forced a re-think. Bees encode the distance and compass the direction of a source of honey in their waggle dances, performed in the dark inside the hive. The bearing of the flowers to the sun is encoded in the angle at which the bee dances to the vertical, and the distance is away if measured by the waggle rate, both awkwardly arbitrary relations. So, language became the ability to learn and bestow new relationships, which bees can’t do. But this has been challenged by experiments with captive chimpanzees (challenged, that is, if the idea that language is uniquely human must be sacrosanct). Now ‘real’ language has become equated with syntax, with which chimpanzees have trouble. No doubt this will persist until some animal turns out to use syntax to structure its communication. It looks very much as if preserving human uniqueness has become a goal of its own.

**Arthur Fields and Walter Donovon, Aba Daba Honeymoon, 1914. (excerpt)**

*http://www.firstworldwar.com/audio/abadabahoneymoon.htm*

Way down in the Congoland
Lived a happy chimpanzee.
She loved a monkey with long tail
(Lordy, how she loved him!)
Each night he would find her there,
Swinging in the cocoanut tree,
And the monkey gay,

At the break of day,
Loved to hear his Chimpie say:

"Aba, daba, daba, daba, daba, daba, dab,"
Said the Chimpie to the Monk,
"Baba, daba, daba, daba, daba, daba, dab,"
Said the Monkey to the Chimp.
All night long they'd chatter away,
All day long there were happy and gay,
Swinging and singing in their hunky-tonkey way.

"Aba, daba, daba, daba, daba, daba, dab,"
Means "Monk, I love but you."
"Baba, daba, dab," in monkey talk
Means "Chimp, I love you, too."
Then the big baboon one night in June,
He married them and very soon,
They went upon their aba, daba honeymoon.

...

"Aba, daba, daba, daba, daba, daba, dab,"
Said the Chimpie to the Monk,
"Baba, daba, daba, daba, daba, daba, dab,"
Said the Monkey to the Chimp.

All night long they'd chatter away,
All day long there were happy and gay,
Swinging and singing in their hunky-tonkey way.
"Aba, daba, daba, daba, daba, daba, dab,"
Means "Monk, I love but you."

**Nervous Norvus (Jimmy Drake), Ape Call, 1956**

Zoom, zoom, zoom, zoom
ze-ze-ze-zoom, zoom, zoom, zoom.

Back in history before time began
All the real cool cats had a solid plan
When they dug a nervous chick they all, to a man, went
Aaaaah - eee - yaaah!

Ape call, doodly - ah - bah
You wanna be cool man? Go ape!

The almighty Joe swingin' through the trees
Was the king of everything that roosted in the leaves
But when he saw a girl ape, a-hangin' in the breeze, he went
Aaaaah - eee - yaaah!

Ape call, doodly - ah - bah
You like to be hip boy? Go ape!

...

Adam was the first boy in the land
A big malaroony daddy with an iron hand
But when little Eva said, Hiya, Man
Aaaaah - eee - yaaah!

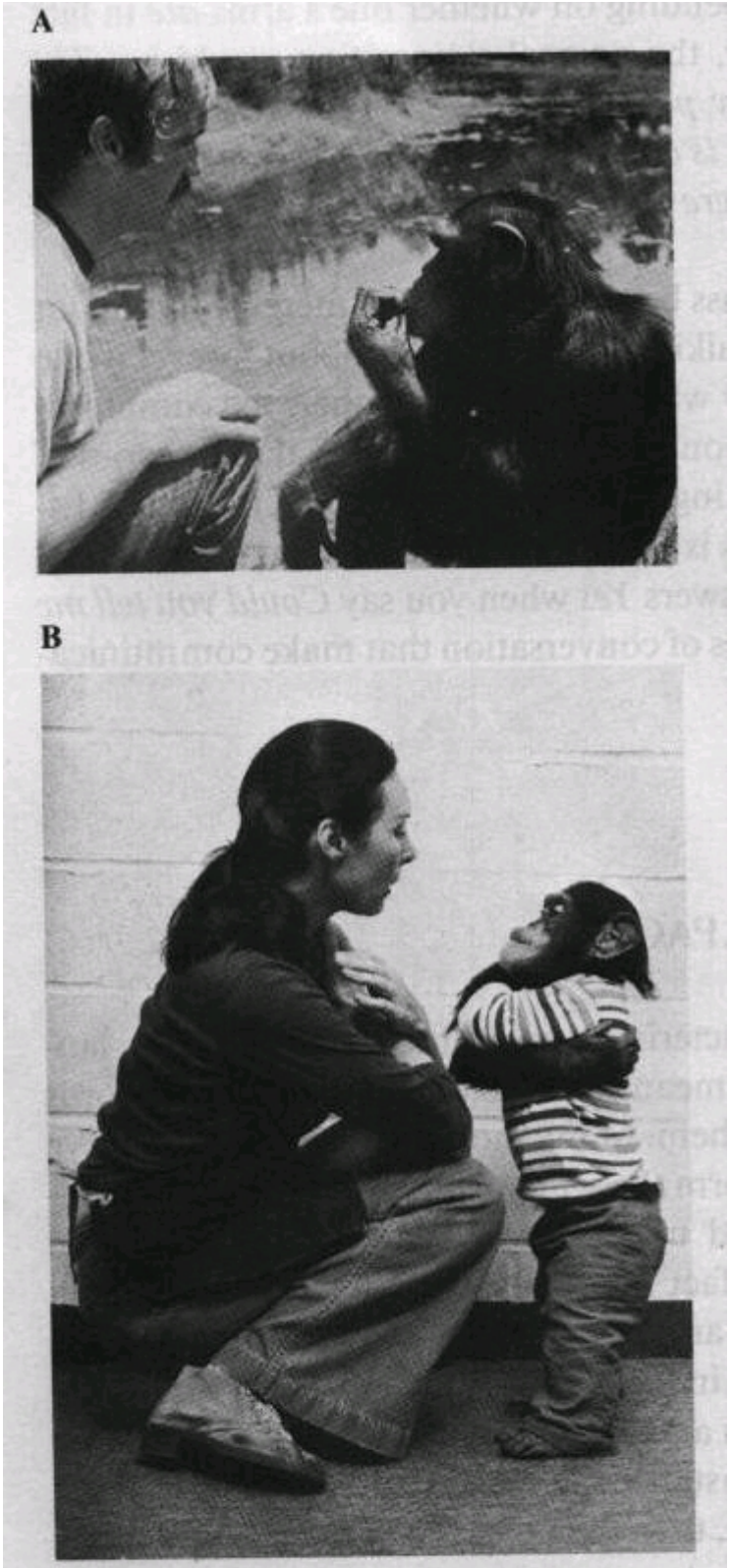
Ape call, doodly - ah - bah
Dont be a cube, rube. Go ape!

So remember to Ape
Call today .... yeah!
Aaaaah - eee - yaaah!

**The Goodies, Funkie Gibbon, 1975. Excerpt.**

Come on everybody
It's gibbon time

We're the Goodies
How do you do?
We've just been down to the zoo
We saw a monkey in a cage
Doing a dance




***9.19 Chimpanzees signing*** *(A) Washoe making the sign for "bird." (Courtesy Roger Fouts) (B) Nim, a young chimpanzee studied by another research group, making the sign for "hug." (Terrace, 1979; photograph courtesy Herbert Terrace)*

That could be the rage
It's not hard
So let's all do the funky gibbon
Ooo, ooo, ooo

Do, do, do the funky gibbon
(The funky gibbon)
We are here to show you how
Ooo, ooo, ooo
Ooo, ooo, ooo, the funky gibbon
He's just like you
So come on and do
The funky gibbon now

Dogs are always howlin'
Cats are always yowlin'
But gibbons only
Like to sing and dance
Oop, oop, sh boop
...
Ooo, ooo, the funky gibbon
Ooo, ooo, ooo the funky gibbon

Now everybody get ready
To do the funky gibbon
Drop one arms down by your knees
And the other arm
Reach up to the trees

Let your wrist go limp
Like a bent baboon
Get ready to sing
This gibbon's tune

Will you give me an ooo
(Ooo)
Will you give me another ooo
(Ooo)
And will you give me an ooo
(Ooo)
Now put 'em together
What've you got
(Ooo, ooo, ooo)

Do, do, do the funky gibbon
We are here to show you how
Ooo, ooo, ooo

Ooo, ooo, ooo, the funky gibbon
(The funky gibbon)
He's just like you
So come on and do
The funky gibbon now

**Michael McClure, Ghost Tantas, 1969.**

Three stanza's of "beast Language".

1
GOOOOOOR! GOOOOOOOOOO!
GOOOOOOOOOR!
GRAHHH! GRAHH! GRAHH!
Grah gooooor! Ghahh! Graaarr! Greeeeer! Grayowhr!
Greeeeee
GRAHHRR! RAHHR! GRAGHHRR! RAHR!
RAHRIRAHHR! GRAHHHR! GAHHR! HRAHR!
BE NOT SUGAR BUT BE LOVE
looking for sugar!
GAHHHHHHHH!
ROWRR!
GROOOOOOOOOOH!

7

GHHHROOOOOO GAHROOOOOOO EEEKA CAR,
cargroooooooo longkarr GRAHHH!
Cowmroooooooose blooooo mewie-weeeep.
VOOOOOOOOOOO?
Shgrarrr? Yagabb krahr yellow vipt
mwooo? Swooooooooooooo lub byeeee bwack meee!
MAKE LOVE SOUNDS.
HERE SMELL.
Grahh pallid! Gr-aaah love nowhr
bwooooooooo krahh noooo-booooooose!
Saba-grooooh stahr zaboth mwoooo
kakra graaaah grahh grrrrrrrr
mweeeeeeeee melt.

49

SILENCE THE EYES! BECALM THE SENSES!
Drive drooor from the frcsh repugnance, thou whole,
thou feeling creature. Live not for others but affect thyself
from thy enhanced interior - believing what thou carry.
Thy trillionic multitude of grahh, vhooshes, and silences.

Oh you are heavier and dimmer than you know
and more solid and full of pleasure.
Grahhr! Grahhhr! Ghrahhhrrr! Ghrahhr. Grahhrrr.
Grahhr-grahhhhrr! Grahhr. Gahrahhrr Ghrahhhrrrr.
Gharrrrr. Ghrahhr! Ghrarrrrr. Ghanrrr. Ghrahhhrr.
Ghrahhrr. Ghrahr. Grahhr. Grahharrr. Grahhrr.
Grahhhhr. Grahhhr. Gahar. Ghmhhr. Grahhr. Grahhr.
Ghrahhr. Grahhhr. Grahhr. Gratharrr! Grahhr.
Ghrahrr. Ghraaaaaaahrr. Grhar. Ghhrarrr! Grahhrr.
Ghrahrr. Gharr! Ghrahhhhr. Grahhrr. Ghraherrr.

**Edgar Rice Burroughs, Mangani, 1964.**

Mangani is the fictional ape lamnguage of the apes rasing Tarzan. Given is the T-entry is the dictionary provided by Burroughs as given in his book 'Tarzan of the Ape'. Tarzan himself added two words to Mangani, Bulamutumumo (God) and bumude-mutomuro (his own written name).

| | |
|---|---|
| ta | high, tall |
| tag | neck |
| tan | warrior |
| tand | no, not |
| tanda | dark |
| tandak | thin |
| tand-ho | few |
| tandlan | left |
| tand-litu | dull, blunt |
| tand-lul | dry |
| tand-nala | down |
| tand-panda | silent, silence |
| tand-ramba | get up |
| tand-unk | stay |
| tand-utor | brave |
| tand-vulp | empty |
| tan-klu | rooster |
| tantor | elephant |
| ta-pal | hill |
| tar | white |
| tar-bur | snow |
| tarmangani | white men |
| tho | mouth |
| thub | heart |
| tongani | baboon |
| tongoni | baboon |
| tor | beast |
| tro | straight |

| | |
|---|---|
| tu | bright |
| tub | broken |

**Hugo Ball, Karawana, 1916.**

jolifanto bambla ô falli bambla
grossiga m'pfa habla horem
égiga goramen
higo bloiko russula huju
hollaka hollala
anlogo bung
blago bung
blago bung
bosso fataka
ü üü ü
schampa wulla wussa ólobo
hej tatta gôrem
eschige zunbada
wulubu ssubudu uluw ssubudu
tumba ba-umf
kusagaumaba-umf

**Wilfried Hou Je Bek, Poem for a Chimpanzee, 2008.**

waoh aach-aach
ohoh hoo-hoo
eech eech eech eech hoo-hoo
aich-aich huu hoo-hoo
waaa waa waaa waow
waaa waaa waa aach-aach
huu-huu huu huu eech eech

oo .. oo

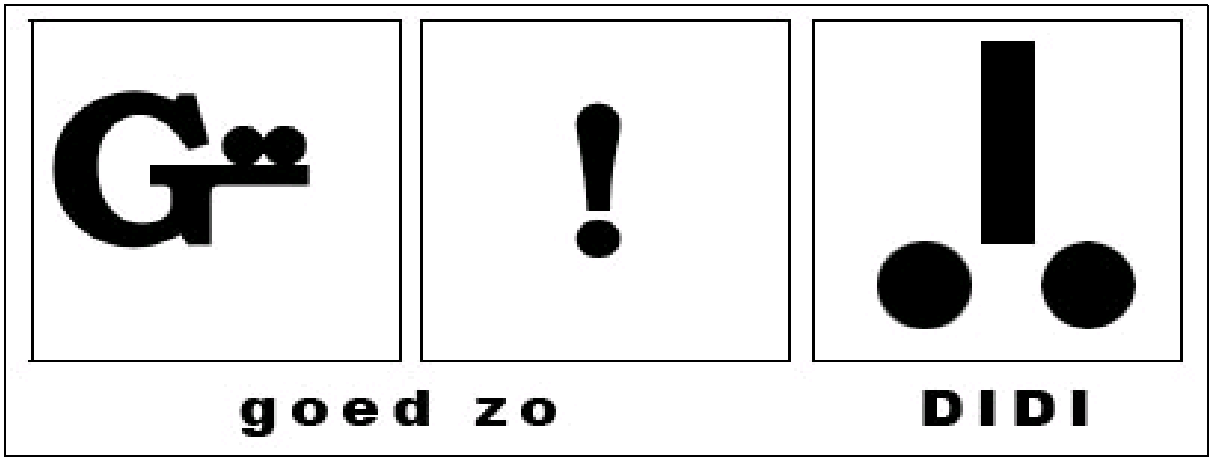
huh-huh huh-huh huu-huu aich-aich waaa
uu huh-huh huu-huu aich-aich waaa waoh waoh
waaa waoh waoh aach-aach waaa waaa waaa waaa waaa

**Douglas Preston, Jennie, 1994.**
A fictional dialogue in ASL signing between chimp Jennie and a Cleric.

Myself: Jennie, what God?
Jennie: Up.
Myself: Up where?
Jennie: Up up.
Myself: Who God?

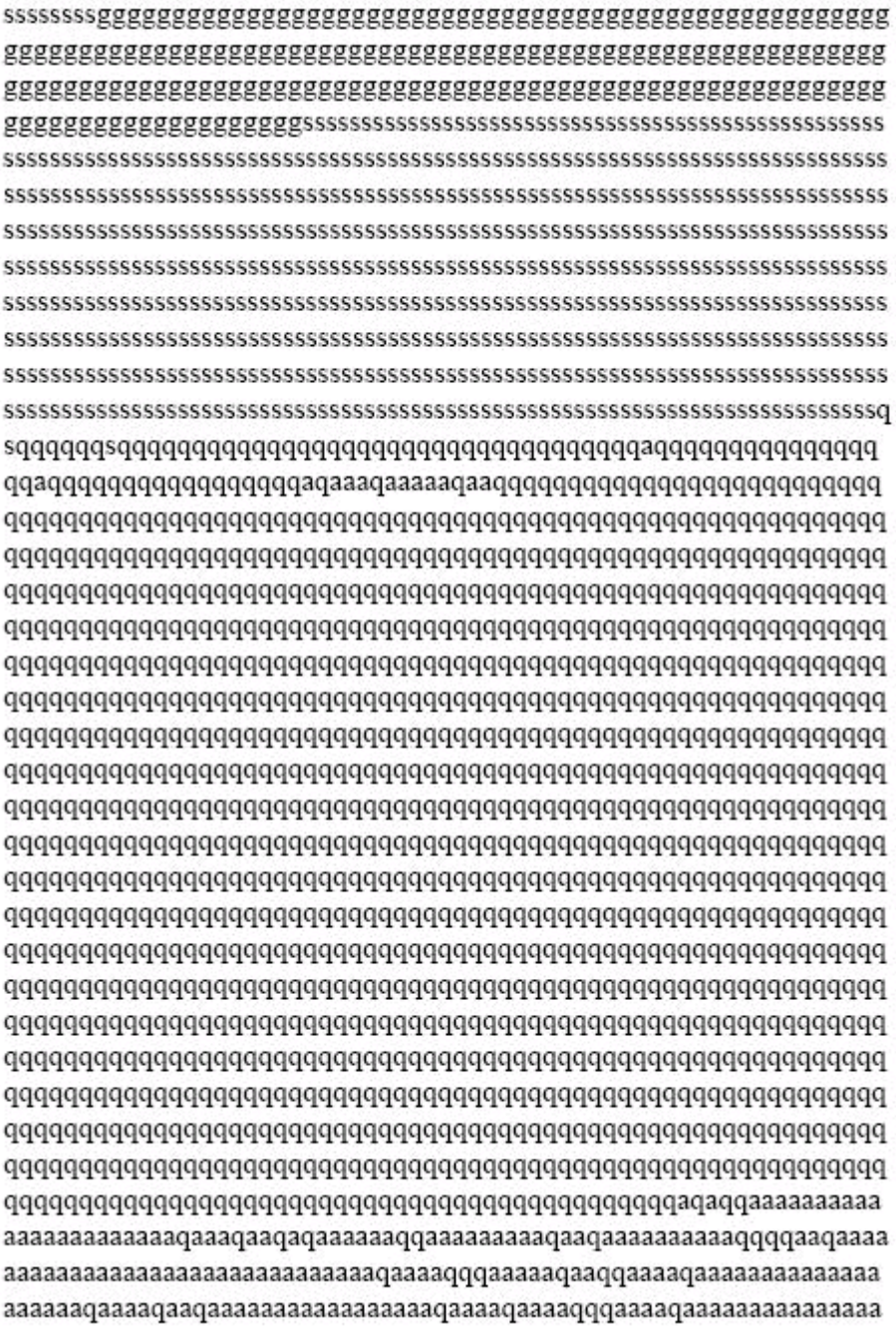
Jennie: God God God.
Myself: Who God?
Jennie: Up.
Myself: No, who God?
Jennie: Love.
Myself: Correct! (Then I gave her a cookie).
Jennie: God love God love God love.
Myself: Who Jesus?
Jennie: Jesus Jesus.
Myself: No, Jennie, who Jesus?
Jennie: Jennie cookie.
Myself: Who Jesus?
Jennie: Tickle Jennie.
Myself: Who Jesus?
Jennie: Jesus tickle Jennie.
Myself: Jesus God's son.
Jennie: Jesus.
Myself: Who son of God?
Jennie: Jesus cookie tickle.
Myself: Who Jesus?
Jennie: God's son God's son.

**Dirk Vekemans, Goed Zo DiDi, 2008.**
*http://vilt.wordpress.com/2008/09/13/gilgamesj-voor-gorillas/*
Belgium writer Dirk Vekemans invented a Lexigram for fellow writer Didi de Paris.




**Elmo, Gum, Heather, Holly, Mistletoe and Rowan, Notes Towards the Complete Works of Shakespeare, 2002.**
*http://www.vivaria.net/experiments/notes/publication/*
In response to the familiar idea that if an infinite number of monkeys

are given typewriters for an infinite amount of time, they will eventually produce the complete works of Shakespeare Elmo, Gum, Heather, Holly, Mistletoe and Rowan, all Sulawesi Crested Macaques living at the Paignton Zoo Environmental Park (UK) had a computer placed in their enclosure. The following is one page of their 'typing':



**Thomas Henry Huxley, "Evidence as to man's place in nature, 1868.**

*http://www.archive.org/details/evidenceastomans00huxl*

All observers testify to the prodigious volume of voice possessed by

these animals. According to the writer whom I have just cited [Dr. Salomon Miller], in one of them, the Siamang," the voice is grave and penetrating, resembling the sounds 'goek, goek, goek, goek, goek ha ha ha ha haaaaa', and may be easily heard at a distance of half a league." While the cry is being uttered, the great membranous bag under the throat which communicates with the organ of voice, the so-called " laryngeal sac," becomes greatly distended, diminishing again when the creature relapses into silence.

M. Duvaucel, likewise, affirms that the cry of the Siamang may be heard for miles - making the woods ring again. So Mr. Martin describes the cry of the agile Gibbon as "over-powering and deafening" in a room, and " from its strength, well calculated for resounding through the vast forests." Mr. "Waterhouse, an accomplished musician as well as zoologist, says, " The Gibbon's voice is certainly much more powerful than that of any singer I ever heard." And yet it is to be recollected that this animal is not half the height of, and far less bulky in proportion than, a man.

**Charles Darwin, Descent of Man, 1871.**
Two Excerpts

1) The voice of the adult male gorilla is tremendous, and he is furnished with a laryngeal sack, as is the adult male orang. The gibbons rank among the noisiest of monkeys, and the Sumatra species (Hylobates syndactylus) is also furnished with an air sack; but Mr. Blyth, who has had opportunities for observation, does not believe that the male is noisier than the female. Hence, these latter monkeys probably use their voices as a mutual call; and this is certainly the case with some quadrupeds, for instance the beaver. Another gibbon, the H. agilis, is remarkable, from having the power of giving a complete and correct octave of musical notes, which we may reasonably suspect serves as a sexual charm; but I shall have to recur to this subject in the next chapter. The vocal organs of the American Mycetes caraya are one-third larger in the male than in the female, and are wonderfully powerful. These monkeys in warm weather make the forests resound at morning and evening with their overwhelming voices. The males begin the dreadful concert, and often continue it during many hours, the females sometimes joining in with their less powerful voices. An excellent observer, Rengger, could not perceive that they were excited to begin by any special cause; he thinks that, like many birds, they delight in their own music, and try to excel each other. Whether most of the foregoing monkeys have acquired their powerful voices in order to beat their rivals and charm the females- or whether the vocal organs have been strengthened and enlarged through the inherited effects of long-continued use without any particular good being thus gained- I

will not pretend to say; but the former view, at least in the case of the Hylobates agilis, seems the most probable.

2) In the class of mammals, with which we are here more particularly concerned, the males of almost all the species use their voices during the breeding-season much more than at any other time; and some are absolutely mute excepting at this season. With other species both sexes, or only the females, use their voices as a love-call. Considering these facts, and that the vocal organs of some quadrupeds are much more largely developed in the male than in the female, either permanently or temporarily during the breeding-season; and considering that in most of the lower classes the sounds produced by the males, serve not only to call but to excite or allure the female, it is a surprising fact that we have not as yet any good evidence that these organs are used by male mammals to charm the females. The American Mycetes caraya perhaps forms an exception, as does the Hylobates agilis, an ape allied to man. This gibbon has an extremely loud but musical voice. Mr. Waterhouse states, "It appeared to me that in ascending and descending the scale, the intervals were always exactly half-tones; and I am sure that the highest note was the exact octave to the lowest. The quality of the notes is very musical; and I do not doubt that a good violinist would be able to give a correct idea of the gibbon's composition, excepting as regards its loudness." Mr. Waterhouse then gives the notes. Professor Owen, who is a musician, confirms the foregoing statement, and remarks, though erroneously, that this gibbon "alone of brute mammals may be said to sing." It appears to be much excited after its performance. Unfortunately, its habits have never been closely observed in a state of nature; but from the analogy of other animals, it is probable that it uses its musical powers more especially during the season of courtship.

This gibbon is not the only species in the genus which sings, for my son, Francis Darwin, attentively listened in the Zoological Gardens to H. leuciscus whilst singing a cadence of three notes, in true musical intervals and with a clear musical tone. It is a more surprising fact that certain rodents utter musical sounds. Singing mice have often been mentioned and exhibited, but imposture has commonly been suspected. We have, however, at last a clear account by a well-known observer, the Rev. S. Lockwood, of the musical powers of an American species, the Hesperomys cognatus, belonging to a genus distinct from that of the English mouse. This little animal was kept in confinement, and the performance was repeatedly heard. In one of the two chief songs, "the last bar would frequently be prolonged to two or three; and she would sometimes change from C sharp and D, to C natural and D, then warble on these two notes awhile, and wind up with a quick chirp on C sharp and D. The distinctness between the semitones was very

marked, and easily appreciable to a good ear." Mr. Lockwood gives both songs in musical notation; and adds that though this little mouse "had no ear for time, yet she would keep to the key of B (two flats) and strictly in a major key." ... "Her soft clear voice falls an octave with all the precision possible; then at the wind up, it rises again into a very quick trill on C sharp and D.

**M.E. Hardus, A.R. Lameira, I. Singleton, H. Morrogh-Bernard, C.D. Knott, M. Ancrenaz, S.S. Utami-Atmoko, S.A. Wich. A Description of the Orangutan Vocal and Sound Repertoire: with a focus on geographical variation. ?.**
*http://www.aim.uzh.ch/orangutannetwork/orangutancallrepertoires.html*

Identified calls: Ahh Vocalisation, Ahoor Call, Bared-teeth scream, Bark, Chomps, Complex calls, Contact uff, Crying and Screaming, Fast Long Call, Fear squeak, Frustration scream, Gorkum, Grindin, Grumble, Grumph, Grunt, Kiss squeak, Long cal, Lork call, Mating squeals, Nestsmacks, Play ooh, Raspberry, Roar, Rolling Call, Soft hoot/whimper, Squeak, Throatscrape, Whine.

Three examples:

(1) Bared-teeth scream: This vocalisation consists of one or several very loud, high-pitched, drawn-out hoarse screams, each of which may end with a choking sound. Distinctive of this vocalisation is a wide-open mouth with the teeth and gums exposed. This facial-vocal display was given by animals who were attacked and bitten; in such cases the vocalisations last at least as long as the contact. In a less intensive form, the bared-teeth scream was observed during 'rapes'. On such occasions the female might show this element in connection with 'ducking', 'struggle' and 'flight'. (Rijksen, 1978).

(2) Contact uff: A very soft sound, the production of which is not marked by any particular facial expression, takes form of short repetitive expulsions of air through the nose. It seems to be a restrained 'squeak' vocalisation. The contact uff can only be heard at very close range. (Rijksen, 1978). Rijksen (1978) only noticed it in rehabilitant orangutans, when an individual performed 'touch and smell' behaviour in which it brought its nose close to the face of its partner.

(3) Gorkum: Gorkums are bouts of grumphs alternated by rolling calls, where the throat pouch plays an important role and is swollen during emission. It is not clear whether grumphs and/or rolling calls have exhalatory or inhalatory nature. Grumphs, gorkums and lorks are components of a rising sequence in duration and intensity (loudness), although lots of transition phases are possible. Mostly given after a kiss squeak, but also occasionally single. Regularly emitted by adolescence and adult individuals of both sexes as a sign of disturbance and annoyance, and during intimidation display (MacKinnon, 1974). It can be made towards predators, dangerous animals to intimidate or scare them away, or towards observers. Also heard in fighting situations made by the non-dominant (unflanged) male and from a female during and after copulation. A transformation can been seen between the vocalisations grumph, rolling call, gorkum, and complex call, where it is sometimes difficult to make a clear distinction.

*This chimp is signing "I want to hold" (top) "the cat" (bottom). (Courtesy of H. Terrace.)*

**Esther Clarke, Ulrich H. Reichard, Klaus Zuberbühler, The Syntax and Meaning of Wild Gibbon Songs, 2006.**

*http://www.plosone.org/article/fetchArticle.action?articleURI=info%3Adoi%2F10.1371%2Fjournal.pone.0000073*

Gibbon song notes as distinguished by Raemaekers et al.

(1) The 'wa' note is a short and steeply rising note, appearing as a more or less straight line on the spectrogram; sometimes appearing slightly concave. It consistently spans over 100 Hz in the frequency domain, which sets it aside from the 'hoo' note.

(2) The 'hoo' is a low frequency quiet note consistently spanning a much narrower frequency range than 'wa' notes.

(3) The 'leaning wa' notes may be more or less straight like the 'wa' notes but longer in duration, and therefore lean more to the right; sometimes they have a slight bump in the middle.

(4) The 'oo' note is of a relatively even pitch and therefore produces a flat

note, as seen on the spectrogram, of varying duration. Sometimes it may rise slightly at the start.

(5) The 'sharp wow' note is a loud and penetrating note. It rises steeply at first then falls steeply to produce a concave curve. It invariably spans more than 700 Hz in the frequency domain. The end of the note may be prolonged horizontally.

(6) The 'waoo' note is highly variable. It always rises steeply at first, but then may hold pitch at an even level or fall in pitch to create a convex curve. It spans a much lower frequency range than the 'sharp wow'.

(7) Notes that did not fit in with the shapes and definitions of the other six notes described above were allocated as 'other'. These were highly variable, and some may warrant their own unique note category, but for the purposes of this study they are grouped together. This category also describes the above six note shapes when given with major pitch modulations that give them a wobbly or trembling quality.

Finally, the 'ooaa' is extremely rare and was not found in any of the analysed recordings in this study, and so is not described here.

**Vervet Monkey Calls**

*http://www.theprimata.com/cercopithecus_aethiops.html*

(1) Chutter: This is a low-pitched, monotonal and staccato vocalization. The mouth is closed and the teeth are covered, and this call is emitted by adult females and juveniles. This call is used to express aggressive threat and also is used to solicit support from other group members.

(2) Bark: This call is low-pitched and gruff in sound. This call is emitted by adult and subadult males. This call is given towards other vervet monkeys who are fighting, it is emitted to stop the fighting.

(3) Intergroup grunt: This call consists of nasal grunts that have a short range. This call is emitted by males in response to seeing members from another group while on patrol of a territory.

(4) Squeals and screams: These calls are high-pitched and tend to be piercing. The mouth position varies for these calls and the teeth may be covered or not. These calls are emitted by females and juveniles that are seeking help from threats by an aggressor.

(5) Woof-woof: This call is non-tonal, deep, and has a guttural sound. The mouth is closed or slightly opened. This call is emitted by subordinate males to show submission.

(6) wa: This call is a continuous tonal exhalation that occurs with a grimace. This call is emitted by subordinate males to show submission.

(7) Woof-wa: This call is a combination of the woof-woof and the wa. This call is emitted by subordinate males to show submission.

(8) Long aar: For this vocalization the mouth is slightly open and puckered and the teeth are covered. This call is emitted by females and juveniles in response to trespassing by non-members of the group. This call brings other group members to the area.

(9) Rraugh: For this call the mouth is closed or partially opened and the teeth are covered. This call is emitted by yearlings when they approach older members of the group, and is a signal of nonaggression.

(10) Teeth-chattering: For this sound the teeth chatter, and is given by adult and subadult males. This is usually given when grooming and sometimes as a response to red-white-and-blue.

(11) Progression calls: This call consists of nasal grunts that have a short range, and they are emitted by group members to no specific receiver when the group starts to move. The calls are emitted by all group members over the age of 4.5 months, and the calls tend also to communicate who is giving the call because there some individual variation amongst callers.

(12) Purring: This call is very quiet and is given by juveniles when they are play-wrestling.

(13) Uh: This call functions as a response to minor predators and is emitted by all group members except infants. This call is low-intensity in nature.

(14) Nyow: This call is given in response to the sudden appearance of minor predators and is given by all group members except the juveniles; this call is moderate in intensity.

(15) Chirp: This call is low in frequency, and is short and sharp; the mouth is wide open and the teeth are exposed. This call carries for a long distance and is emitted by females and juveniles in response to a major mammalian predator.

(16) Rraup: This call is short and rough and not repeated. The call is given by females and juveniles in response to avian predators, and group members respond by leaving the tree tops and/or running into thickets.

(17) Threat-alarm bark: This call is like the rraup, but is given repeatedly. This call is emitted by adult and subadult males and serves to communicate an aggressive threat.

(18) Rrr: This call is emitted by infants and juveniles to communicate distress to their mothers and/or other group members.

(19) Eh, eh: This call is given by infants and juveniles upon a reunion with their mothers. This call is quiet, short, and non-tonal in nature.

**Daniel Dennett, Out of the Armchair and Into the Field (in Brainchildren), 1998.**

*http://pp.kpnet.fi/seirioa/cdenn/outofarm.htm*

A vocalization that Robert and Dorothy are currently studying has been dubbed the Moving Into the Open (or MIO) grunt. Shortly before a monkey in a bush moves out into the open, it often gives a MIO grunt. Other monkeys in the bush will often repeat it--spectrographic analysis has not (yet) revealed a clear mark of difference between the initial grunt and this response. If no such echo is made, the original grunter will often stay in the bush for five or ten minutes and then repeat the MIO. Often, when the MIO is echoed by one or more other monkeys, the original grunter will thereupon move cautiously into the open.

But what does the MIO grunt mean? I suggested to Robert and Dorothy that we sit down and make a list of possible translations and see which we could eliminate or support on the basis of evidence already at hand. I started with what seemed to be the most straightforward and obvious possibility:

"I'm going"

"I read you. You're going."

But what would be the use of saying this? Vervets are in fact a taciturn lot, who keep silent most of the time, and are not given to anything that looks like passing the time of day by making obvious remarks. Like E.F. Hutton, when a vervet talks, others listen. "Well, then," I asked, "could it be a request for permission to leave?"

"May I go, please?"

"Yes, you have my permission to go."

This hypothesis could be knocked out if higher ranking vervets ever originated the MIO in the presence of their subordinates. In fact, higher-ranking vervets do tend to move into the open first, so it doesn't seem that MIO is a request for permission. Could it be a command, then?

"Follow me!"

"Aye, Aye, Cap'n."

Not very plausible, Dorothy thought. "Why waste words with such an order when it would seem to go without saying in vervet society that low-ranking animals follow the lead of their superiors? For instance, you would think that there would be a vocalization meaning 'May I?' to be said by a monkey when approaching a dominant in hopes of grooming it. And you'd expect there to be two responses: 'You may' and 'You may not' but there is no sign of any such vocalization. Apparently such interchanges would not be useful enough to be worth the effort. There are gestures and facial expressions which may serve this purpose, but no audible signals."Perhaps, Dorothy thought, the MIO grunt served simply to acknowledge and share the fear:

"I'm really scared."

"Yes. Me too."

Another interesting possibility was that the grunt helped with coordination of the group's movements:

"Ready for me to go?"

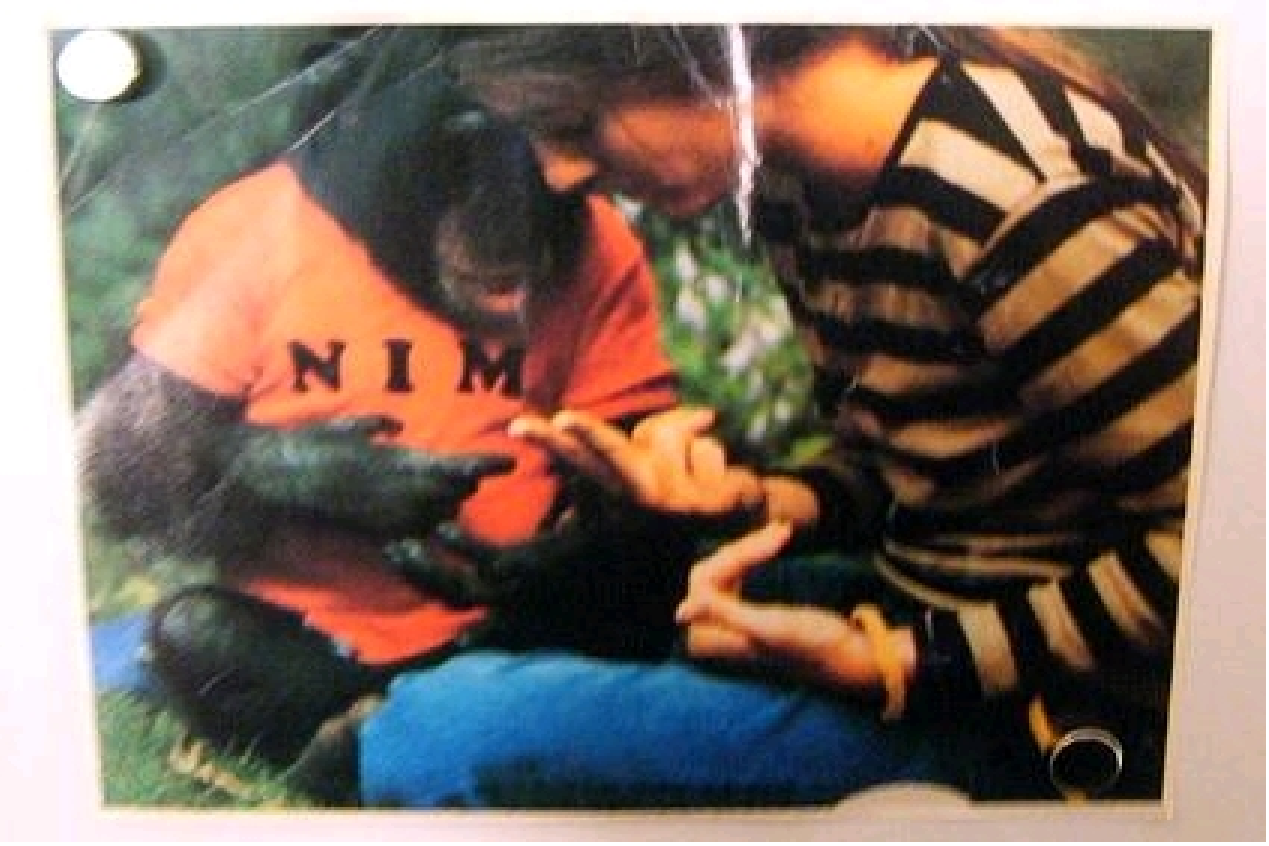
"Ready whenever you are."

A monkey that gives the echo is apt to be the next to leave. Or perhaps even better:

"Coast clear?"

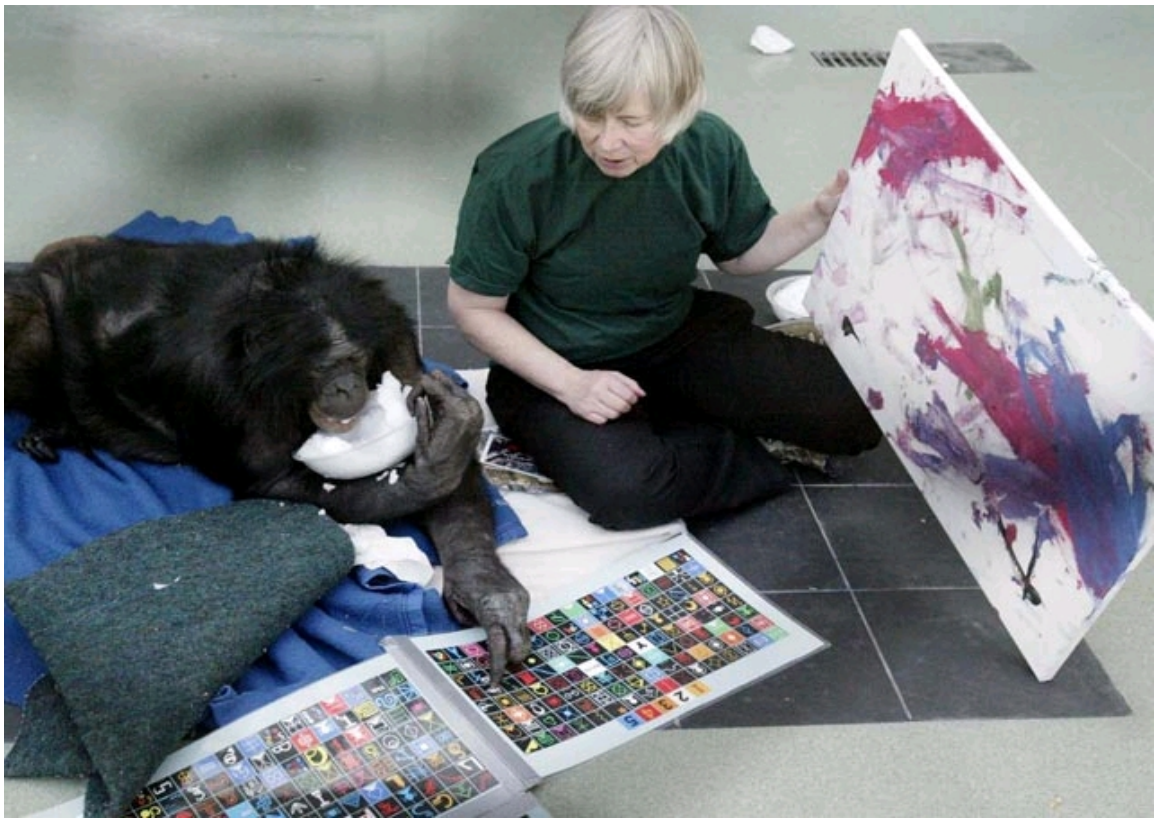
"Coast is clear. We're covering you."

The behaviour so far observed is compatible with this reading, which would give the MIO grunt a robust purpose, orienting the monkeys to a task of cooperative vigilance. The responding monkeys do watch the leave-taker and look in the right directions to be keeping an eye out.




*Nim Chimpsky*

"Suppose then, that this is our best candidate hypothesis," I said. "Can we think of anything to look for that would particularly shed light on it?" Among males, competition overshadows cooperation more than among females. Would a male bother giving the MIO if its only company in a bush was another male? Robert had a better idea: suppose a male originated the MIO grunt; would a rival male be devious enough to give a dangerously misleading MIO response when he saw that the originator was about to step into trouble? The likelihood of ever getting any good evidence of this is minuscule, for you would have to observe a case in which Originator didn't see and Responder did see a nearby predator and Responder saw that Originator didn't see the predator. (Otherwise Responder would just waste his credibility and incur the wrath and mistrust of Originator for no gain.) Such a coincidence of conditions must be extremely rare.



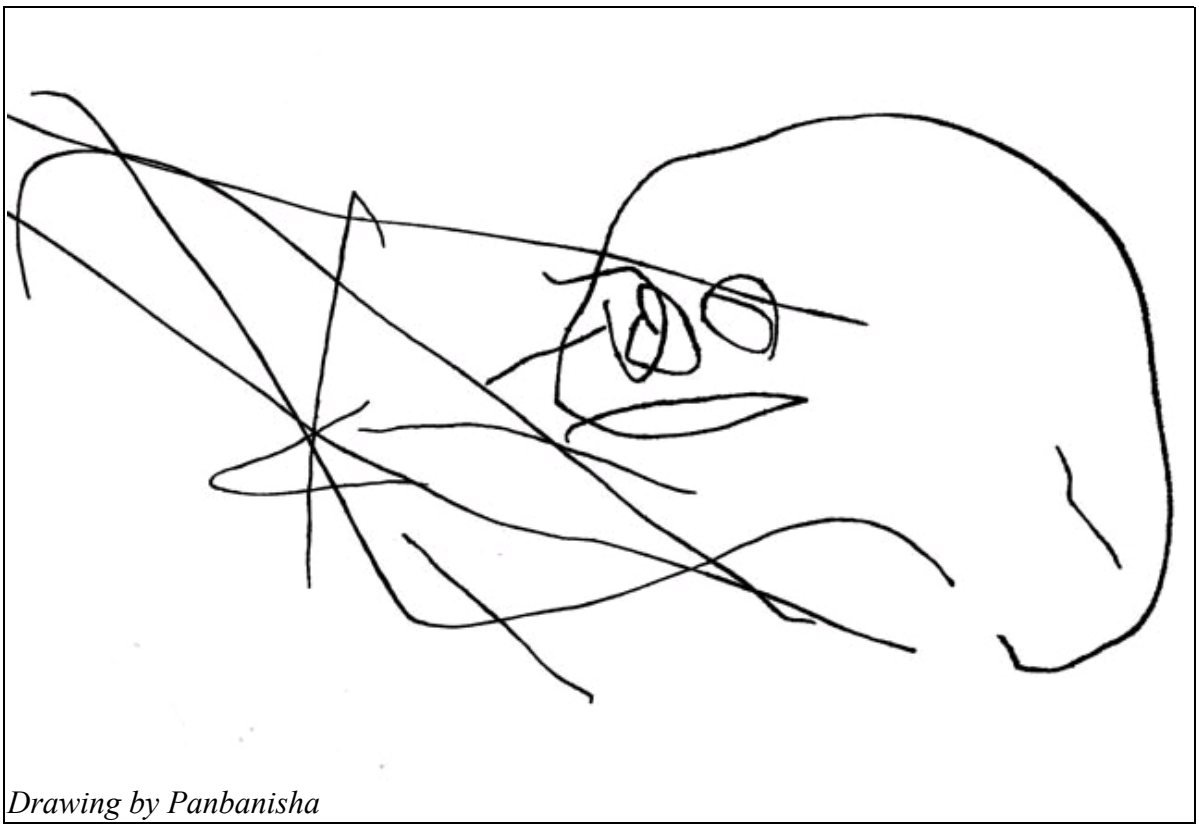
*Savage-Rumbaugh*

**Richard Lynch Garner. Gorillas & Chimpanzees, 1896.**

*http://www.archive.org/details/gorillaschimpanz00garniala*

The speech of chimpanzees is limited to a few sounds, and these are confined chiefly to their natural wants. The entire vocabulary of their language embraces perhaps not more than twenty words, and many of them are vague or ambiguous, but they express the concept of the ape with as much precision as it is defined to his mind, and quite distinctly enough for his purpose. In my researches I have learned about ten words of his speech, so that I can understand them, and make myself understood by

them. Most of these sounds are within the compass of the human voice, in tone, pitch, and modulation ; but two of them are much greater in volume than it is possible for the human lungs to reach, and one of them rises to a pitch more than an octave higher than any human voice. These two sounds are audible at a great distance, but they do not fall within the true limits of speech. The vocal organs of this ape resemble those of man as closely as any other character has been shown to resemble.



*Drawing by Panbanisha*

Although the sounds made by the chimpanzee can be imitated by the human voice, they cannot be expressed or represented by any system of phonetic symbols in use among men. All alphabets have been deduced from pictographs, and the symbol that represents any given sound has no reference to the organs that produced it. The few rigid lines that have survived to form the alphabets are conventional, and within themselves meaningless, but they have been so long used to represent these sounds of speech that it would be difficult to supplant them with others, even if such were desired.

As no literal formula can be made to represent the phonetic elements of the speech of chimpanzees, I have taken a new step in the art of writing by framing a system of my own, which is rational in plan and simple in device.

Deaf mutes are able to distinguish the sounds of speech and reproduce them, although they do not hear them. By close study and long practice they learn to distinguish the most delicate shades of sound. In this plain fact lies the clue to the method I have used. It is, as yet, only in the infant state, but it is possible to be made, with a very few symbols, to represent the whole range of vocal sounds made by man or other animals. The chief symbols I employ are the parentheses used in common print. The two curved lines placed with the convex sides opposite, thus, ( ), represent the open glottis, in which position the voice will utter the deep sound of "O." The glottis about half closed utters the sound of " U," as in the German, and to represent this sound a period is inserted between the two curved lines, thus, (.). When the aperture is contracted still more it produces the sound of " A " broad, and to represent this a colon is placed between the lines, thus, (:). When the aperture is restricted to a still smaller compass the sound of " U " short is uttered, and to represent this an apostrophe is placed between the lines, thus, ('). When the vocal cords are brought to a greater tension, and the aperture is almost closed, it utters the short sound of " E." To represent this sound a hyphen is inserted between the lines, thus, (-). These are the main vowel sounds of all animals, although in man they are sometimes modified, and to them is added the sound of " E " long, while in the ape the long sounds of " O " and " E " are rarely, if ever, heard.


From this vowel basis all other sounds may be deduced, and by the use of diacritics to indicate the movement of the organs of speech, the consonant elements may be easily expressed. A single parenthesis, with the concave side to the left, will represent the initial sound of " W," which seldom, but sometimes, occurs in the sounds of animals. When used, it is placed on the left side of the leading symbol, thus, )(), and this symbol, as it stands, should be pronounced nearly like " U-O," but with the first letter suppressed, and almost inaudible. Turning the concave side to the right, and placing it on

the right side of the symbol, it represents the vanishing sound of " W," thus, )(. This symbol reads "O-U," with the "O" long, and the "W " depressed into the short sound of " U." The apostrophe placed before or after the symbol will represent " F " or " V." The grave accent, thus, (`), represents the breathing sound of " H," whether placed before or after the symbol, and the acute accent, thus, (´), will represent the aspirate sound of that letter in the same way. When the symbol is written with a numeral exponent, it indicates the degree of loudness. If there is no figure, the sound is such as would be made by the human voice in ordinary speech. The letter "X" will indicate a repetition of the sound, and the numeral placed after it will show the number of times repeated, instead of the degree of loudness. For example, we will write the sound (.), which is equivalent to long " U," made in a normal tone, the same symbol written thus (.)2 indicates the sound, made with greater energy, and about twice as loud. To write it thus, (.)X2, indicates that the sound was repeated, and so on. One peculiar sound made by these animals, which is described in connection with the gorilla, appears to be the result of inhalation, but I know of no other animal that makes a sound in this manner. As an example of the use of this method, we will write the French word " feu," which Moses mastered, thus, '(`), which is equivalent to " vu" with the " U " sounded short, the other word "wie," in German, thus, )(`), which is pronounced almost like "wu," giving " u " the short sound again.

I shall not lead the reader through the long and painful task by giving the entire system as far as I have gone, but what has been given will convey an idea of a system, by means of which it will be possible to represent the sounds of all animals, so that the student of phonetics will recognise at once the character of the sound, even if he cannot reproduce it by natural means. It would be tedious and of no avail to the casual reader to reduce to writing here the sounds made by the chimpanzee ; but it may be of interest to mention and describe the character and use of some of them. Perhaps the most frequent sound made by all animals, appears to be that referring to food, and therefore it may claim the first place in our attention. This word in the language of the chimpanzee begins with the short sound of the vowel " u " which blends into a strong breathing sound of "h," the lips are compressed at the sides, and the aperture of the mouth is nearly round. It is not difficult to imitate, and the ape readily understands it even when poorly made.

Another sound of frequent use among them is that used for calling. The vowel element is nearly the same, though slightly sharpened, and merges into a distinct vanishing " w." The food sound is often repeated two or three times in succession, but the call is rarely ever repeated, except at long intervals. One sound is particularly soft and musical, the vowel element is that of long " u " as in the German. This blends into a "w," followed by the slightest suggestion of the short sound of " a." It appears to express affection or love. This sound is also the first of the series of sounds

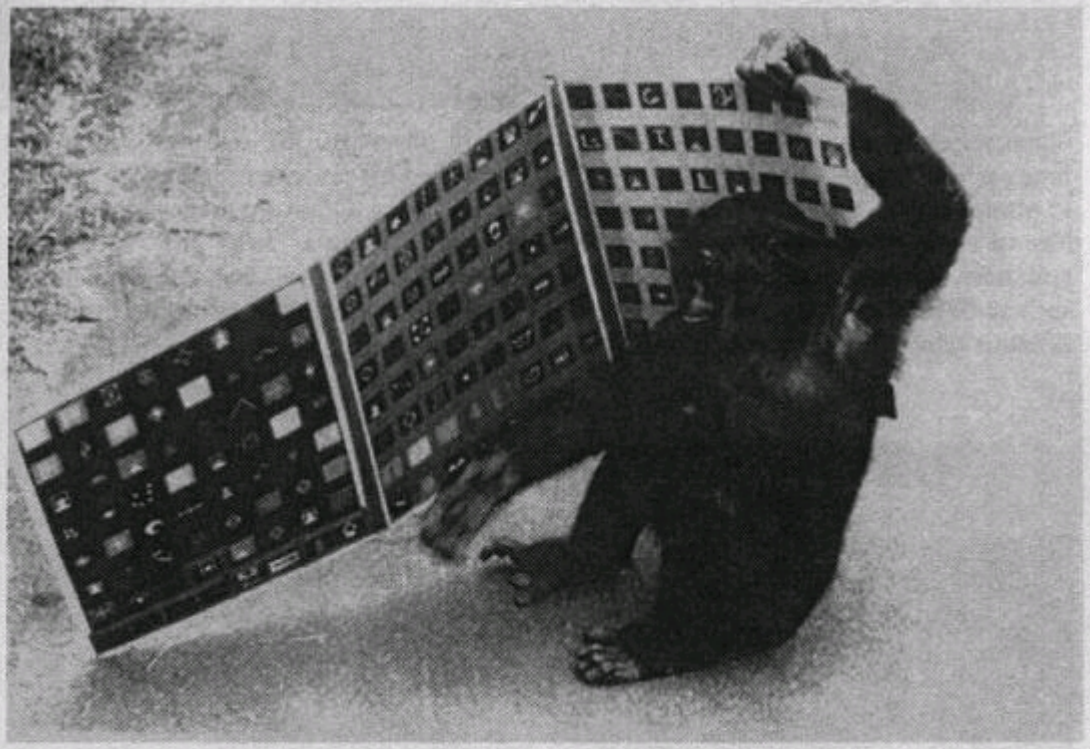
attributed to the gorilla.

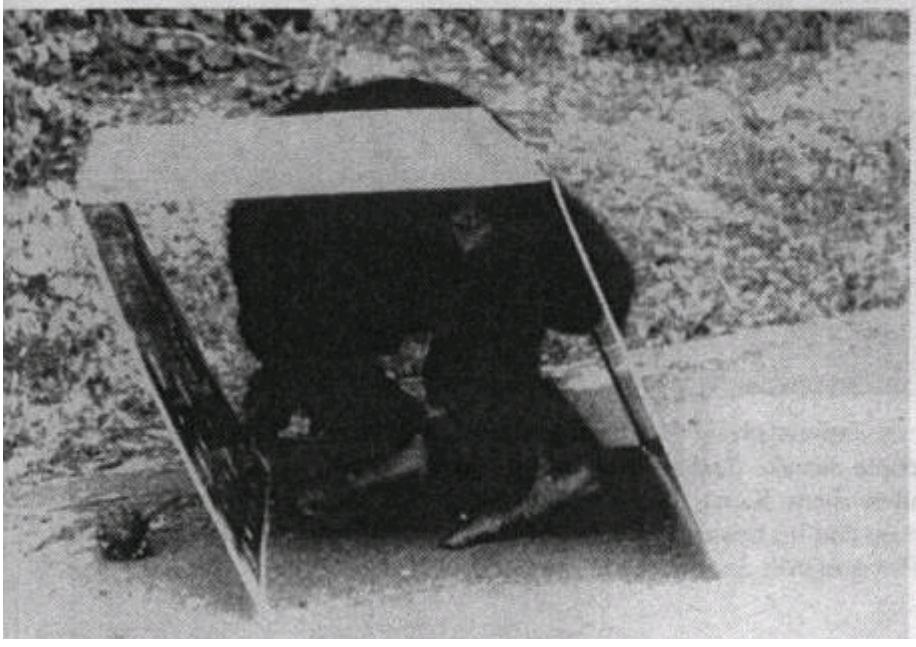
The most complex sound made by them is the one elsewhere described as meaning "good." They often use it in a sense very much the same as mankind uses the word "thanks," but it is not probable that they use it as a polite term, yet the same idea is present.

There are other sounds which are easily identified but difficult to describe, such as that used to signify "cold" or "discomfort"; another for "drink"; another referring to " illness," and still another which I have good reason to believe means "dead" or "death." There are perhaps a dozen more that I can distinguish, but have not yet been able to determine their meaning. I have an opinion as to some of them which I have not yet verified. The chimpanzee makes use of a few signs which seem to be fixed factors of expression. He makes a negative sign by moving the head from side to side, but the gesture is not frequent or pronounced. Another negative sign, which is more common, is a motion of the hand from the body towards the person or thing addressed. This sign is sometimes made with great emphasis, and there can be no question as to what it means.

In conclusion, I will say that the sounds uttered by these apes have all the characteristics of true speech. The speaker is conscious of the meaning of the sound used, and uses it with the definite purpose of conveying an idea to the one addressed ; the sound is always addressed to some definite one, and the speaker usually looks at the one addressed ; he regulates the pitch and volume of the voice to suit the condition under which it is used ; he knows the value of sound as a medium of thought. These and many other facts show that they are truly speech.

Between four and five years of age, Kanzi loved to take the keyboard aside and say things to himself. If we approached and tried to see what he was saying, he would pick up the keyboard and scurry further away. He could communicate by pointing to the symbols with the keyboard laid flat on the ground, but he preferred to prop it up in the vertical position as he saw us do. Here he struggles to properly stand his keyboard up. *(Photographs by Elizabeth Pugh)*





# Wang Wei in Lexigrams

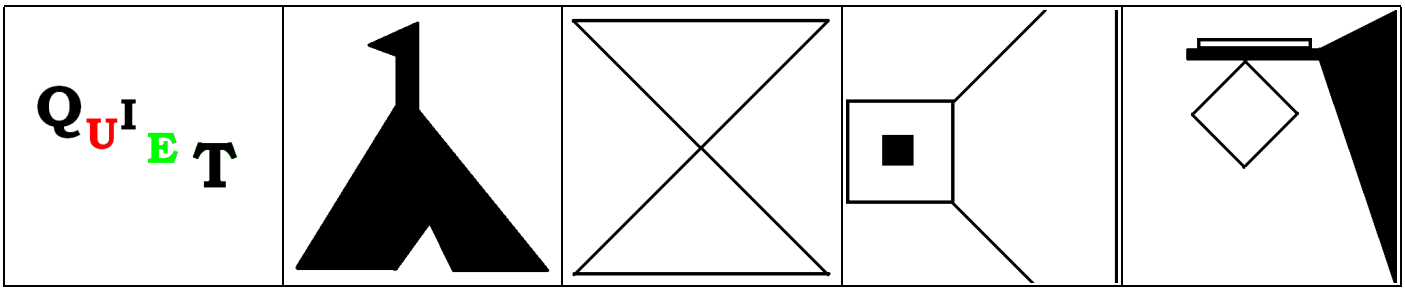
The first major project of PrimatePoetics has been the translation of the Sumerian Epic of Gilgamesh, the oldest known piece of literature, for apes, in lexigrams. Realistically there is little hope that any ape at present can make heads or tails of it. But Kanzi likes to watch TV and is very fond of moments of danger and of danger resolved. He also likes to watch interactions between apes and between apes and humans. King Kong is a serious favourite. On this account Gilgamesh has much to offer, especially because there is reason to assume that the legendary friendship between Gilgamesh and Enkidu is the friendship between a God-King and an Ape trying to become human together. Perhaps, after many generations of ape-acculturation to language, some ape will see the light and become the first reader of our rendering of this stupendous origin of written human literature. To give a feel for the lexigrams and the problems inherit in translating from a big natural language into a tiny language we give the translation of a poem by 8th century Chinese poet Wang Wei. The choice for this particular poem is mostly to pay homage to Eliot Weinberger's sparkling “19 Ways at Looking at Wang Wei”, a compilation of 19 (actually 20) translations of the same poem. The additional benefit of this poem is that it is short and that it does not use any 'difficult' words. The two first lines are reasonably clear while the two last lines are somewhat ambiguous, the closing one in particular. This is true for the original and even more so for our lexigram version. First comes the literal translation from the Chinese as given by Weinberger, followed by our lexigram version.

*Empty mountain/Hill (negative) to see person/people*

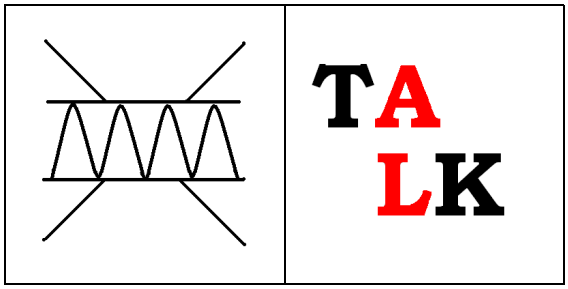
*But to hear person/people words/conversation sound/to echo*

*To return brightness/shadow to enter deep forest*

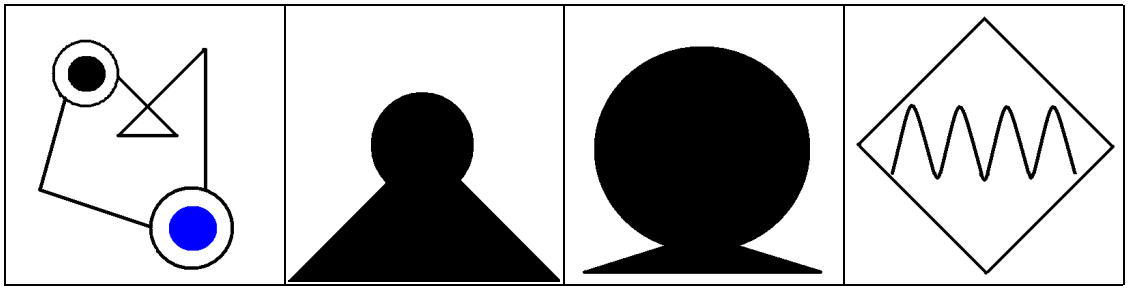
*To return/again to shine/to reflect green/blue/black moss/lichen above/on(top of)/top*



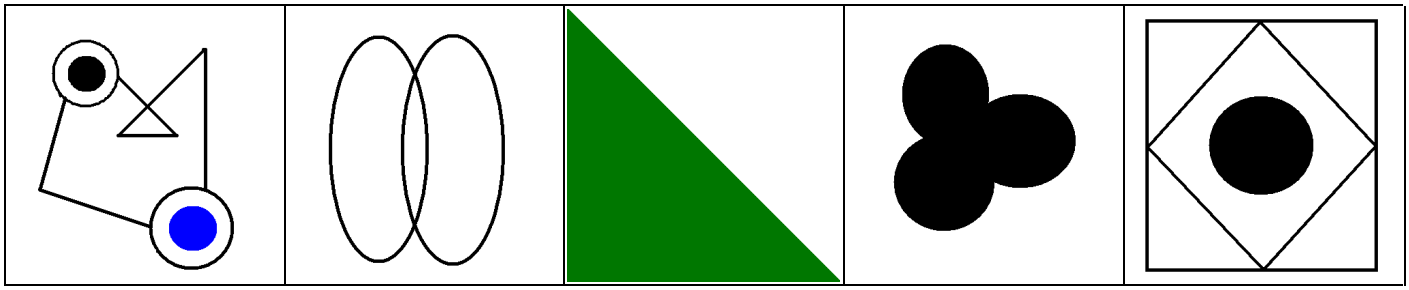

*Quiet hilltop, no thing there.*




*Surprise talk.*



*Then light into outdoors.*



*Then green clover on-top.*

*Gilgamesh for Apes can be downloaded from socialfiction.org.*

# PrimatePoetics

Our language, when it is passed on to a different species, becomes a new language. PrimatePoetics is born from the realization that this language should be appreciated in its own right, as the greatest revolution in literature since the invention of written Chinese 4000 years ago. 'PrimatePoetics is Here' primes this new field. It gives an overview of the field on an ape-by-ape basis and closes with an extensive anthology of relevant scientific and artistic sources. But most of all it gives a feel for the outsider charm of the language of the apes.

Little Mind Pamphlet 1