

The Soul of Martha, a Beast

Jason Hunt thanked him, breathed a deep inward sigh of relief, and called his next witness.

Dr. Alexander Belinsky, professor of animal psychology, was a short, rotund individual of brusque and businesslike manner. His initial testimony brought to light his excellent academic credentials, qualifying him as an expert witness in his field. That done, Hunt requested the court's permission to allow a demonstration of some complexity.

There was a brief discussion before the bench as to whether this should be allowed, but as Morrison had no objection, it was permitted in spite of Feinman's reservations, and the bailiff shortly escorted a pair of graduate assistants into the room, pushing before them a cart fitted with a variety of electronic equipment.

Because the taking of court records had been historically limited to verbal transcription, demonstrations of the sort planned here had not been permitted until recent years, when specialized laws designed to speed up courtroom procedure permitted a court reporter to videotape such demonstrations for the official record. But as Feinman watched one assistant set up electronic paraphernalia, while the other left momentarily and returned leading a chimpanzee, he began to regret the onset of modernization.

The animal appeared nervous and afraid of the crowd, holding itself

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close to its handler as it was escorted into the courtroom. Upon perceiving Dr. Belinsky, the creature jumped into the witness box with obvious displays of affection. Under Hunt's direction, he introduced her to the court as Martha, one of twenty experimental animals he used in his latest researches, the results of which had been recently published in book form. When asked by Hunt to describe these experiments, he proceeded as follows:

"For years it was assumed that animals had not developed a human-like language facility because their brains were deficient. But in the early sixties some animal psychologists proposed that the only reason chimpanzees couldn't talk was because their primitive vocalizing mechanisms prevented them from sounding words. They proceeded to test this theory by devising simple symbolic languages which didn't involve speech. They tried colored cards, pictures, magnetic slate boards, keyboard devices, and even the international sign language, all with some degree of success.

"Although these experiments proved that symbolic speech is not restricted to man, they seemed also to show that the language capacity of the most intelligent animal was severely limited. When a clever undergraduate student subsequently devised a computer program capable of duplicating every language achievement of the cleverest chimpanzees, interest in the animal speech experiments diminished significantly.

"Nonetheless, it seemed that these animals might be limited by the constraints of the previous experiments, just as they were limited earlier by poor vocal chords. Man has a speech center within his brain, a specialized area devoted to the interpretation and creation of human language forms. Chimpanzees do communicate with each other in their natural state, and also have a specialized brain area for their natural system of chattering and yowling.

"It occurred to me that, by their use of hand motions to bypass vocal chords, the previous language experiments had also bypassed the chimpanzee's natural speech centers. I decided to try to involve this natural speech center while still bypassing the animal's primitive vocal chords, and succeeded with the equipment you see before you.

"If you look closely at the left side of Martha's head here, you will observe a circular plastic cap. This covers an electrical connector permanently imbedded in her skull. To this are attached a number of electrodes which terminate within her brain. Our electronic equipment can be connected to Martha's head so as to monitor the neural activity of her speech center and translate it into English words.

"Martha is only a seven-electrode chimp, one of our slower experimental animals. She 'speaks' by stimulating certain of the implanted electrodes, although she doesn't realize that. The pattern of electrode

signals is decoded by a small computer that outputs her selected word on a voice synthesizer. This technique enabled her to develop a natural sort of feedback-response mechanism. Except for a deficient grammatical base and lack of inflection, when we connect up her transistorized vocal chords she will sound quite human.

"Don't expect too much, however, for as I mentioned, Martha is not one of our star pupils. Although her seven-electrode system can be decoded into one hundred twenty-eight distinct words, she has learned only fifty-three. Other animals have done much better. Our resident genius is a nine-electrode male with a vocabulary of four hundred seven words out of five hundred twelve possibilities. Nonetheless," he added as he reached for her connecting cable, "I believe you'll find her a pleasant conversationalist."

As Dr. Belinsky proceeded to connect her to the world of human language, the chimpanzee indicated delight and excitement. She jumped up and down and chattered as he reached for the cable handed him by one of his student assistants, then sat still while he removed the protective cap and mated the halves of the connector. As soon as they snapped together in positive lock she jumped up again, seemingly oblivious to the cable attached to her head, as she pointed to a small box the scientist held in one hand.

"For Martha," he explained, "speech is an almost ceaseless activity, for her electronic vocal chords never tire. In order to get a word in I use this control to literally shut her off.

"All right, Martha, go ahead," the psychologist said as he switched her sound on.

Immediately a small loudspeaker on the equipment cart burst into noisy life. "Hello! Hello! I Martha Martha Happy Chimp. Hello Hello—"

The beast was cut off with a soft electrical click as the courtroom sat in dumb amazement. The sight of the animal opening and closing her mouth in mimicry of the sexy female voice pouring from the speaker was rather difficult to assimilate.

Her teacher continued. "How old is Martha?"

"Three Three Martha Three—"

"Very good. Now relax, Martha, quiet down. Who am I?" he asked, pointing to himself.

"Belinsky Man Nice Belins—"

"And what are those?" he asked, his hand sweeping the packed courtroom.

"Man Man People Nice People—"

The researcher cut her off again and turned to the defense attorney, indicating that he was ready to proceed.

Hunt stood and addressed his first question. "In your opinion is this animal intelligent?"

"Within the broad definition of 'intelligence' I would say yes, she is."

"Is she intelligent in the human sense?" Hunt asked.

"I believe so, but to form such an opinion of her yourself, you would really have to treat her like a human, talk to her, play with her. To that end I brought along a box of her favorite playthings. She will devote her limited attention either to me, or whoever has custody of her treasures. I suggest you examine her yourself."

From the corner of his eye Morrison observed the judge watching him in anticipation of an objection, which he dutifully provided. "Objection, your Honor. I should at least like to hear Mr. Hunt assure us this testimony will be relevant."

"Well, Mr. Hunt?" Feinman asked.

"It is relevant, as will become clear."

"And if it is not," Feinman promised, "rest assured it will be stricken from the record. Proceed."

Hunt opened Martha's box, an oversized jewelry box painted in bright red and silver, and after looking over its contents, he reached in and retrieved a cellophane-wrapped cigar. As he held it up the chimpanzee piped, "Cigar Belinsky Bad Bad Cigar," to which she added her normal chattering and some flamboyant nose-holding for emphasis.

"What's an old cigar doing in your toy box, Martha?" Hunt asked.

"What? What? Wha—" she returned before Belinsky cut her off.

"The question is a bit complicated for her. Try simplifying it to key words and short verbs," he suggested.

Hunt did. "Does Martha eat cigar?"

This time she responded, "No Eat No Eat Cigar. Eat Food Food Smoke Cigar."

"Rather impressive, Doctor," Hunt complimented the scientist. Then he turned to Morrison. "Perhaps the prosecution would like an opportunity to examine the witness?"

Morrison hesitated before agreeing, then took the box holding the animal's playthings. With undisguised discomfort he picked out a stuffed teddy bear and asked the chimp to identify it. Immediately the beast began to jump in agitation as her artificial voice tried to keep up with her.

"Man Bad Bad No Take Bear Martha Bear Help Belinsky Help Martha Take Bear Hel—"

As soon as she was cut off, she reverted to her natural chattering,

while the researcher explained her paranoia. "She detects a level of hostility in you, sir. Frankly, I sympathize with you, and assure you that many people besides yourself are uncomfortable with the notion that an animal might speak intelligibly. But she is becoming somewhat agitated. Perhaps if someone else could interview her—"

"I would like to try," Judge Feinman interjected. The participants readily agreed, and as Morrison brought the box to the bench, Martha subsided, unoffended by the prosecutor's scowl.

"Is Martha hungry?" Feinman asked, perceiving several ripe bananas and candies within the container.

"Martha Eat Now Martha Eat—"

"What would Martha like to eat?"

"Martha Eat Now—"

"Would Martha like candy?"

"Candy Candy Yes Can—"

He reached in and handed her a banana, which the animal adroitly grasped, peeled, and stuck into her mouth. Once while she was eating, Belinsky turned her on for a moment, catching part of an endless "Happy Martha" readout that appeared to startle the chimp slightly. When done, she faced the judge again, opening and closing her mouth soundlessly until her handler switched on the audio. "Good Banana Good Banana Thank You Man Candy Now Candy Now."

Pleased with his results, Feinman reached into the box and offered the requested treat. She took it, but instead of eating it immediately, Martha again pointed to Belinsky's switch box, indicating that she wanted to be heard.

"Cigar Cigar Martha Want Cigar—"

The judge found the cigar and held it out. She took it, sniffed at it a moment, then handed it back. "Nice Nice Man Eat Belinsky Cigar Thank You Thank You Man—"

The judge was both fascinated with the creature's intelligence and charmed by her childlike simplicity. The animal sensed his affection and returned it, to the delight and entertainment of the court. But Hunt did not want to prolong this, and after a few minutes of interspecies conversation, he interrupted.

"Perhaps I should proceed with the testimony, your Honor?"

"Yes, of course," the judge agreed, reluctantly handing over the animal, who had by this time joined him on the bench.

"Doctor Belinsky," Hunt continued after Martha had settled down, "could you briefly state your scientific conclusions regarding the intelligence of this animal?"

"Her mind differs from ours," the scientist said, "but only in degree. Our brains are larger and our bodies are more adaptable; consequently we are superior. But the differences between us may yet prove to be embarrassingly slight. I believe that Martha, deficient as she is, still possesses humanlike intelligence."

"Could you draw some clear dividing line between the mentality of her species and ours?"

"No. Clearly she is inferior to the normal human. Yet Martha is unquestionably superior to deficient humans at the idiot level, and a peer to most imbeciles. She has an added advantage in that she is cleaner and can care for herself and offspring, which idiots and imbeciles cannot do. I would not wish to make clear-cut distinctions between her intelligence and ours."

Hunt did not ask his next question immediately. He had, of course, planned this experiment with the researcher beforehand. To complete the testimony he was to request one more demonstration, which by its nature could not have been practiced. But he was not sure that Belinsky would go through with it as planned. In fact he was not entirely sure he himself wanted the demonstration performed. Yet, there was a job to do.

"Doctor Belinsky, does the humanlike intelligence of this creature merit corresponding humanlike treatment?"

"No. We treat all laboratory animals decently, of course, but their value lies only in their experimental potential. Martha, for example, has already outlived her usefulness and is scheduled to be destroyed shortly, for the cost of her upkeep is greater than her experimental value."

"How do you go about eliminating such an animal?" Hunt asked.

"There are a variety of quick and painless methods. I prefer an orally administered poison contained in a favorite food and given unexpectedly. Although that may seem a cruel trick, it prevents the animal from anticipating its fate. The fact of death is inevitable for all of us, but for these simple creatures at least, the fear of it need never reach them." As he spoke, Belinsky extracted a small piece of candy from his coat pocket.

"Would you demonstrate this procedure before the court?" Hunt asked.

As the scientist offered the candy to the chimpanzee, Feinman finally realized what was being done. He voiced an order to halt the deadly experiment, but too late.

The researcher had never personally destroyed one of his animals before, always leaving the task to assistants. As the unsuspecting chimpanzee placed the poisoned gift into her mouth and bit, Belinsky conceived of an experiment he had never before considered. He turned on

the switch. "Candy Candy Thank You Belinsky Happy Happy Martha."

Then her voice stopped of its own accord. She stiffened, then relaxed in her master's arms, dead.

But brain death is not immediate. The final sensory discharge of some circuit within her inert body triggered a brief burst of neural pulsations decoded as "Hurt Martha Hurt Martha."

Nothing happened for another two seconds. Then randomly triggered neural discharges no longer having anything to do with the animal's lifeless body sent one last pulsating signal to the world of men.

"Why Why Why Why—"

A soft electrical click stopped the testimony.

Reflections

At the office in the morning and did business. By and by we are called to Sir W. Battens to see the strange creature that Captain Holmes hath brought with him from Guiny; it is a great baboone, 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-baboone. I do believe it already understands much english; and I am of the mind it might be tought to speak or make signs.

—The Diary of Samuel Pepys
August 24, 1661

The pathetic noncomprehending cry of the dying chimp evokes in us powerful sympathy—we can identify so easily with this innocent and enchanting creature. What, though, is the plausibility of this scenario? Chimp language has been a controversial area for over a decade now. While it appears that these and other primates can absorb numerous vocabulary items—up to several hundred, in fact—and even on occasion come up with ingenious compound words, it is far less well substantiated that they can absorb a grammar by which they can combine words into complex meaning-carrying propositions. It seems that chimps may simply use arbitrary juxtapositions of words rather than syntactic structures. Is this a severe limitation? In the eyes of some it is, for it puts a strict upper bound to the complexity of ideas that can be expressed thereby. Noam Chomsky and others maintain that that which is essentially human is our

innate linguistic ability, a sort of "primal grammar" that all languages would share at a sufficiently deep level. Thus chimps and other primates not sharing our primal grammar would be essentially different from us.

Others have argued that the primates who—or do I mean "that"?—give the appearance of using language are doing something very different from what we do when we use language. Rather than communicating—that is, converting private ideas into the common currency of signs in patterns—they are manipulating symbols that to them have no meaning, but whose manipulation can achieve desired goals for them. To a strict behaviorist, this idea of distinguishing between external behaviors on the basis of hypothetical mental qualities such as "meaning" is absurd. And yet such an experiment was once carried out with high-school students instead of primates as the subjects. The students were given colored plastic chips of various shapes and were "conditioned" to manipulate them in certain ways in order to obtain certain rewards. Now, the sequences in which they learned to arrange the chips in order to get the desired objects could in fact be decoded into simple English requests for the objects—and yet most of the students claimed to have never thought of matters this way. They said that they detected patterns that worked and patterns that didn't work, and that was as far as it went. To them it felt like an exercise in meaningless symbol-manipulation! This astonishing result may convince many people that the chimp-language claims are all wishful thinking on the part of anthropomorphic animal lovers. But the debate is far from settled.

However, whatever the realism of our excerpt, many moral and philosophical issues are well posed. What is the difference between having a mind—intellect—and having a soul—emotionality? Can one exist without the other? The justification given for killing Martha is that she is not as "valuable" as a human being. Somehow this must be a code word for the idea that she has "less of a soul" than a human does. But is degree of intellect a true indicator of degree of soul? Do retarded or senile people have "smaller souls" than normal people? The critic James Huneker, writing of Chopin's Etude opus 25 no. 11, said, "Small-souled men, no matter how agile their fingers, should avoid it." What an incredible pronouncement! Yet it has a certain truth to it, snobbish and elitist though it might be to say so. But who will provide the soul meter?

Is the Turing test not such a meter? Can we measure the soul through language? Needless to say, some qualities of Martha's soul come through loud and clear in her utterances. She is very appealing, partly through her physical appearance (actually, how do we know this?), partly

through the fact of our identifying with her, partly through her charmingly simple-minded syntax. We feel protective of her as we would of a baby or small child.

Well, all these devices and more will be exploited—even more insidiously!—in the following passage, another selection from *The Soul of Anna Klane*.

D.R.H.

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TERREL MIEDANER

The Soul of the Mark III Beast

“Anatol’s attitude is straightforward enough,” Hunt said. “He considers biological life as a complex form of machinery.”

She shrugged, but not indifferently. “I admit being fascinated by the man, but I can’t accept *that* philosophy.”

“Think about it,” Hunt suggested. “You know that according to neoevolution theory, animal bodies are formed by a completely mechanistic process. Each cell is a microscopic machine, a tiny component part integrated into a larger, more complex device.”

Dirksen shook her head. “But animal and human bodies are more than machines. The reproductive act itself makes them different.”

“Why,” Hunt asked, “is it so wonderful that a biological machine should beget another biological machine? It requires no more creative thought for a female mammal to conceive and give birth than for an automatic mill to spew forth engine blocks.”

Dirksen’s eyes flashed. “Do you think the automatic mill feels anything when it gives birth?” she challenged.

“Its metal is severely stressed, and eventually the mill wears out.”

“I don’t think that’s what I mean by ‘feeling.’”

“Nor I,” Hunt agreed. “But it isn’t always easy to know who or what