REMEMBERING ROBERT BERRYMAN (1921-1982)

Berryman cast a spell upon some of us. Nearly everyone found him extraordinarily intelligent, a fascinator, a discerning scientist, a gadgeteer, mischievous, widely read, multilingual, internationally travelled, at times charming, at other times affected with exasperating lapses in sensibility. But some recognized him as he liked to be recognized—as not just a colleague, teacher, and friend, a source of seemingly unbounded insights, information, and ingenuity—but as a sorcerer of a kind. He was one among us who seemed to gain energy from the very demons that the rest of us denied—the metaphysics of scientific materialism and of radical behaviorism.

We met in 1955 when I was a graduate student at Columbia and he initiated the first of a series of research contracts and grants at Columbia which were to continue until 1964. Concurrently he was Assistant Professor at Adelphi until 1960 and Associate Professor at Hunter from February, 1961. He had graduated from Columbia as a philosophy major (1947), studied in Switzerland, returned to Columbia for an M.A. in psychology (1950), and received a Ph.D. from NYU (1954) while a fulltime instructor at Harpur College (1950-1954). Not far from Columbia, he and his late wife Leda shared an apartment whose visitors brought it the air of an Old World salon. (Leda operated the nearby Berryman Gallery which featured contemporary European painters.)

At Columbia, Berryman mixed equally with faculty and graduate students. He published with Cumming, Mechner, Nevin, and Wagman, but influenced and collaborated with many more, including Fred Keller. The government paid the bills for information on how operant performance was affected by vitamin E and anoxia, and later by various psychotropic agents. But a deeper interest foreshadowed today's focus on animal cognition and awareness. A first step was to highlight and measure the organism's discrimination of its own behavior—what it had done and what it had seen. From this setting came the papers on response-produced cues, matching, and interlocking schedules.

Berryman delighted in those aspects of animal behavior that were amusing precisely because they disturbed our distinctions between mechanism and teleology, between general laws and biological constraints, between affect and instrumentality. Few witnesses will forget his observations and reflections on the toucan and the sling chair, the sloth and the eucalyptus leaves, and the mynah bird who died of a broken heart. Some of his boyhood was spent in the South American jungle where his father worked as an engineer. He described a toucan who had learned to deceive the housekeeper by pecking at the door as if a human visitor was knocking. When the door was opened, the bird would dart by the baffled housekeeper, flutter to a perch on the highest corner of a canvas sling (butterfly) chair, and slide down the sloping wing into the bowl of the chair.

Attending its successful deception of the housekeeper and its slide down the chair the bird emitted shrill vocalizations which we were led to consider an expression of hilarity. We discussed access to the opportunity for play as a reinforcer, and the necessity or sufficiency of affect accompanying reinforcement. Berryman's account of the extinction of the bird's attempts at recreation comprised yet another engaging tale.

The sloth project was developed with Bill Cumming but never activated. They maintained that eucalyptus leaves were one sure reinforcer for the creature and envisioned a clothes-line type of apparatus over which the sloth made its inverted way as a pulley system moved a basket of eucalyptus leaves closer in a ratio-like manner, or away in a kind of carrot-on-a-stick omission schedule. Alternatively, versions of conjugate schedules were considered. These, with speculations on DRL and DRH with the sloth, were not entirely whimsical, but led us to question the generality of reinforcement processes with respect to species-typical behavior before the topic was fashionable.

Mowrer's paper on talking birds was discussed often at Columbia. Berryman's mynah bird was trained in a reciprocally triggered vocal exchange of "I am an organism" and "How do you do." It would respond with either phrase when cued by the other. When Fred Skinner visited he appeared exceptionally amused by his "conversation" with the bird. The bird received much attention from the denizens of the second floor of Schermerhorn Extension. Some wag tutored it in "Go man, go!" and the night watchman was responsible for its acquisition of some Gaelic invective. On its removal to Berryman's Hunter College laboratory, the bird, deprived of the attention of many graduate students, fell into a melancholy state wherein its vitality declined and it passed away. Knowing that transfer to a new vivarium may result in disease and death for an animal, nonetheless Berryman saw in these events the theme of extinction-induced (psychosomatic) vulnerability.

With help from NSF, Berryman established a graduate laboratory at Hunter that was well equipped for research in operant conditioning and psychophysics. There were items of his own fabrication plus a collection of parts of bombsights, periscopes, and devices defying classification that combined his catch from the surplus equipment market with memorabilia from his service in the Navy Air Corps (1942-46). His "Physical Model for the Experiment" proved useful for teaching the formal aspects of experimental method. A tour de force was his $5 \times 4 \times 4$ cm cockroach box whose operandum was fashioned from a meter movement.

Berryman left Hunter for Brazil in 1964. After Leda's death he met and married Salomé, an artist who wove extraordinary tapestries. Fleeing political upheaval, he worked at the University of Mississippi in the early 1970s and, with his wife Salomé, operated a gallery in

New Orleans. During his visits to New York, we continued work on the problem of a contingency metric which had begun with John Gibbon at Columbia. Ill health depressed him. He accepted a post in Egypt at the University of Cairo, later returned to New Orleans, then to Brazil where he died on August 5, 1982.

Unlike an obituary, a memorial is less embarrassed if sentimentality colors some facts. Robert Berryman

modeled a restless intellectual and scientific life. Those with whom he shared some of its breadth and depth, some of his wit and sadness, were uniquely privileged.

ROBERT L. THOMPSON
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At Columbia in the 1960's, Bob Berryman was a frequent companion. His impish wit and his love of a well turned phrase endeared him to many in my generation of graduate students—none more than myself. He and Bill Cumming set a standard for style of thought and experimentation that was often difficult to meet, particularly in the case of equipment modification, for Bob was a master apparatus man. I had always admired this gift, and in the course of some pilot work for my dissertation, I attempted to emulate it. The experiment involved widely separated CER trials with rats responding for water on a VI schedule. Very long sessions were needed to collect data from a sufficient number of trials, and this required more water than the reservoir would hold. Treading, as I thought, in the master's steps, I devised a solution. A milk carton with one side cut away, placed on a stack of JEABs, provided an additional reservoir. A siphon was effected with a long length of spaghetti.

I was so taken with my device that I decided to run a subject overnight. Proudly carrying reams of cumulative recorder paper documenting much nocturnal drinking, I showed the apparatus to Bob the next day.

He congratulated me on my ingenuity, and especially praised my brilliant use of spaghetti. Swelled, I asked if he ever had occasion to devise a siphon for overnight runs. He said not exactly, but that he had devised a somewhat different solution to the same problem. He inverted a large, full water bottle in the dipper reservoir, and taped it in place with its mouth just below the water level. He sponged out water to demonstrate how it worked. As the water in the reservoir was depleted, a limniscus formed around the mouth of the bottle, until finally—with a GLUB—a bubble of air entered the bottle and the water in the reservoir returned to its original level. Overwhelmed by the elegance of his invention, I asked if it had a name. "I call it the Ever-Level Glubber," he said.

Those of us who knew and loved him carry many such memories of his wit and style. For me the Ever-Level Glubber is one example of a minor touch of genius in Bob Berryman that should not go unmarked.

JOHN GIBBON
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In my first year of graduate school, Bob Berryman hired me to build and wire apparatus. I had no interest in operant behavior at the time, having gone to Columbia to study color vision, but Clarence Graham had no vacant assistantships. Bob's office workshop was a litter of surplus contraptions from Canal Street, partially completed Rube Goldberg inspirations, papers, books, cumulative records, cigarette ashes, and junk. Within a week or two, he extinguished my fussy attempts at tidiness and exact adjustment ("Anything that is infinitely adjustable is always out of adjustment," he would say) and replaced them with a marvellous sense of adventure and fun in the laboratory. We would often pause from the routine of building equipment to pursue some of his apparatus fantasies: To study operant behavior in the vulture, for example, he insisted that a natural reinforcer was essential, and we contemplated various ways of presenting, for 3 sec, the rotting carcass of an ox.

After a month or two, he suggested that I wire up an interlocking-schedule circuit based on a nifty device of his own design, and run a few rats "just for fun." Before I knew it, I was a full partner in a parametric experiment; and when the time came to present the results, he let me give the talk to the Columbia research seminar and then work with him, sentence by sentence, on the article for JEAB. He never said that I had to do these things, or that they would be good for my career; he just provided the opportunities and a setting in which the behavior was natural and enjoyable. Needless to say, by this time I was hooked. He had shaped me into the practice of behavior analysis, and given me his love of research. In that sense he was the most significant of my teachers as well as a special friend. I miss him.

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