

# **Marian Breland Bailey: A Pioneer in the History of Applied Animal Psychology**

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## **Abstract**

*Spanning the five decades since WWII, Dr. Marian Breland Bailey, a pioneer in the history of applied animal psychology, has emerged as the foremost expert in the education and training of human and non-human animals. By exploring her multiple roles as psychologist, scholar, mentor, teacher, mother, scientist, and friend, I have endeavored to portray her as an exemplar of the consummate woman. Beginning with a brief historical sketch, I reveal a number of her greatest professional achievements, such as assisting the famous psychologist B. F. Skinner in his war efforts and opening the door to Animal Behavior Enterprises, the world's first scientific school for animal training. Specific to animal training, I then discuss her many years of behaviorally conditioning a variety of species for various military and commercial applications, as well as her work in teaching animal trainers how to apply principles of operant conditioning. In addition to her brilliant work with animals, I also present Dr. Bailey's exceptional work in the education of autistic, mentally retarded, and normal children. In the final section of my paper, I have proposed a multi-directional model of applied animal psychotherapy. I feel certain that a contemporary integration of Dr. Bailey's previous scholarly work with human and non-human animals is exemplified by dolphins who are currently aiding in therapeutic sessions with autistic and other special children. Today, Marian and Bob Bailey reside in Hot Springs, Arkansas, where they are currently generating documentaries on the history of behavioral analysis and continuing to produce scholarly works. She is an angel, and it is my pleasure to present to you this novel portrayal of a true heroine.*

## **Introduction**

Rats are considered to be a nuisance in our society, and many individuals kill the first one they see running across the hardwood floor. The majority of female individuals can not talk about rats and will not even consider handling the little rodents. To particular individuals,

however, rats can be fascinating and simply a symbol of everlasting love. In 1938, Marian Kruse was an undergraduate student at the University of Minnesota. One extraordinary day in the animal laboratory, Marian was conducting a research study using rats as her subjects of investigation. Rats are always hungry, and as is the case with humans, eating is one of their favorite pastimes. They have very sharp teeth, and sometimes tend to want to nibble on parts of the human anatomy. An anonymous rat in Marian's laboratory decided her finger would satisfy his craving for something salty and sweet. Unfortunately, blood, pain, throbbing, and panic often follow the bite of a rat. While Marian was running down the hallway to receive medical attention for her painful injury, she accidentally bumped into a tall, handsome psychology graduate student. Marian Kruse met Keller Breland thanks to the pesky and rowdy non-human animal we call rat.

After she completed her Bachelor of Arts in psychology and statistics, Marian and Keller were married on August 1, 1941. This dynamic duo decided to continue with their collegiate careers, and in so doing, they both became graduate students of the famous psychologist, B. F. Skinner (Bailey & Bailey, 1980, 1993a). The year of 1941 was not only a turning point for two aspiring animal psychologists but for people of the United States of America as well. On December 7, 1941, World War II began for America. The Brelands withdrew from college just short of completing their Ph.D. degrees to help assist Skinner with his project titled, "Project Pelican" (Bailey & Bailey, 1993a, 1996). Project Pelican involved the development of a novel pigeon-guided missile system for pinpoint bombing, with minimal loss of human life. While observing the power of behavioral analysis, the Brelands brainstormed and came up with the idea of starting Animal Behavior Enterprises.

After Project Pelican ended, Keller got a job working in a personnel department, and Marian stayed home to raise their first child. By 1945, Marian was shaping the behavior of many animals in her home-based laboratory (Bailey & Bailey, 1993a, 1993b, 1996). When Animal Behavior Enterprises opened in 1947, a fascinating era began for psychology and two animal behaviorists, ultimately leading to extended fame and recognition. Animal Behavior Enterprises' operations included behavioral engineering in three distinct areas: production, research, and consulting (Breland & Breland, n.d.). Fleeing from the colder climate of Minnesota, the Brelands packed their bags and headed South. Fortunately for us, Hot Springs, Arkansas, contained warm air and tourist potential. Among other pursuits, they opened the I. Q. Zoo in 1955 in Hot Springs. The zoo contained animals such as chickens, raccoons, rabbits, and cats that were scientifically trained to perform various behaviors. According to Bailey & Bailey (1993a) the new attraction was an instant success, continuing for thirty-five years and expanding internationally. Training dolphins was a new endeavor for Keller and Marian; however, using a modified version of Skinner's (1938) operant conditioning technique, nothing seemed impossible. The Brelands observed and trained a dolphin for the first time ever at Marineland of Florida (Bailey & Bailey, 1996). Regrettably, after laying the groundwork for a new field of applied animal psychology, Keller Breland passed away in 1965.

Marian Breland became President of Animal Behavior Enterprises, carrying on with the training of animals and animal trainers. Bob Bailey, first Director of Training for the U. S. Navy Marine Mammal Program (R. Bailey, 1965), assumed the position of General Manager for Animal Behavior Enterprises. Marian and Bob had the opportunity to work with the military on

the "Avian Ambush Detection System." Bailey & Bailey (1977, 1996) trained free flying birds for ambush detection systems and related military tactics at Fort Bragg, North Carolina, and later relocated the program to Hot Springs. As one of their largest commercial undertakings, Marian and Bob opened the gates to Animal Wonderland in 1972. Shows were performed daily for audiences of all ages, featuring live performances by dolphins, birds, and sea lions. Animal Wonderland was the first amusement park ever to display the largest avian show in the entire world (M. B. Bailey, personal communication, September 13, 1998). During this time Marian and Bob Bailey were united in holy matrimony in 1976. After thirty-seven years, Marian proved that hard work and patience paid off. She completed her doctorate in psychology at the University of Arkansas in 1978. Due to unfortunate circumstances, Animal Wonderland ceased operation in the early eighties (approximately, 1982). During the late eighties, the Baileys phased out the commercial subdivisions of Animal Behavior Enterprises, such as the I. Q. Zoo (Bailey & Bailey, 1998). In 1981, Dr. Marian Bailey began teaching advanced classes in psychology at Henderson State University, for seventeen years.

The Baileys are still quite active, currently generating a video documentary on the history of behavior analysis, conducting interspecies workshops in California, and writing scholarly works.

## **Animal Tales**

Having worked with over 140 species, and more than fifteen thousand individual animals (Bailey & Bailey, 1998), Marian has a clear understanding of many creatures great and small. Several people in our society believe that behaviorally conditioning an animal is inhumane and degrading to the animal itself (Bailey & Bailey, 1979). Marian adores animals and in no way would intentionally hurt them during the process of behavioral conditioning. All animals trained by Marian were, and are, trained without punishment of any kind (Bailey & Bailey, 1998; Breland & Breland, n.d.). Marian makes sure the animals receive balanced diets, expert veterinary care, and clean housing. Her approach on the psychological and physiological well-being of animals is best summarized as follows:

We think the animal training methods being used by the Brelands are a gratifying development. Wide application of the Breland theories and techniques could eliminate many vicious training methods. What Mr. and Mrs. Breland preach and practice is this: to train an animal, make the animal enjoy what you want it to do. In a single word: kindness. (National Humane Review, 1954).

I would like to share with you a few stories on some of the animals Marian has observed and trained throughout her incredible life. One animal that stands out in my mind is "Priscilla the Fastidious Pig." Marian trained Priscilla for General Mills commercials in the late forties. She trained Priscilla to vacuum floors and shop for groceries in the supermarket. America loved this pig and was overwhelmed by her capabilities. Who would have thought weanling pigs could vacuum a floor? In 1954, Marian conditioned a bunny rabbit for a Coast Federal Savings Bank commercial. "Buck Bunny" was taught to drop coins into a replica of the bank, illustrating the idea to people to open a savings account at Coast bank. Buck Bunny was the star of the Coast Federal Savings Commercial which set an all-time record for repeat performances, airing on

television for approximately twenty years (Bailey & Bailey, 1996; Breland & Breland, n.d.). Initially, Marian thought she could virtually condition any animal to do anything (Breland & Breland, 1951). If you ever had the opportunity to tour the I. Q. Zoo, I am sure you did not miss the raccoon shooting hoops or the chicken playing the piano. However, Breland & Breland (1961) observed breakdowns in the conditioned behaviors of many of their animals, coining the term "instinctive drift" to represent this phenomenon. They described instinctive drift as follows: "In a very boiled-down, simplified form, it might be stated as 'learned behavior drifts toward instinctive behavior'" (p. 684). All of Marian's students were talented, and thanks to her, they obtained a little bit of fortune and a whole lot of fame.

Training animals takes a great deal of patience and understanding (e. g., Pryor, 1985). Marian decided to teach her children this lesson at a young age. The majority of children today get an allowance for cleaning the house, mowing the yard, or folding clothes. Marian paid her children to socialize with animals (including the facilitation of imprinting). Her children had a keen interest in animals, and the more they had around the farm, the merrier. Chickens, crows, dogs, and ferrets were only a few of the pets lurking about the homestead. Most children engage themselves in a game of fetch with their pet dog; however, Marian's children would rather acquaint themselves with a black crow! Charlie, a crow, was a different kind of pet, but he liked the idea of socializing with the little rascals (Bailey & Bailey, 1996). I am grateful that Marian taught her children to respect animals. All animals are put here on earth for a reason, and we should all honor their existence. Children need to experience the great outdoors, whether it be playing in mud puddles, fishing for trout, or raising yellow baby ducks. Nature and animals are therapeutic to the soul and touch many lives that seem far from reach.

## **Field of Dreams**

In addition to her animal work with the military and commercial industries, Marian has contributed a vast amount of time to the education of mentally retarded as well as normal children. Marian is credited with being one of the pioneers in the field of teaching mentally retarded and autistic children (Bailey & Bailey, 1980). In 1965, Marian, along with other co-authors, wrote *Teaching the Mentally Retarded*, a manual designed for use by ward personnel in residential facilities for the mentally retarded. The authors believed the handbook would shed new light on how to better care for and educate mentally retarded individuals. Marian is well known for shaping behavior in human and non-human animals. In chapter seven of the manual, Marian describes how the application of operant principles can be used to educate mentally challenged children:

It is a reward for good behavior, the assurance of success for a task. It involves praise, success, accomplishment, and more physical things, such as food, toys "things" to enjoy. It is the way all children learn, in fact all living creatures, in contacts with others and with the world, with the exception of the learning which takes place through punishment or fear, whether stemming from a parent or the environment (M. Breland, 1965, p. 127).

Using positive reinforcement and operant techniques to control and condition the behavior of a mentally retarded child is nothing less than brilliant and exceptional. Mrs. Marian Breland Bailey is the parent of a retarded child, and once again she has proven to be an exemplar of the

consummate woman.

Marian believed in using operant conditioning to modify human and non-human animal behavior (Hothersall, 1995). Today, the effectiveness of her methods of training is demonstrated in such creatures as the marine mammals at Sea World theme parks. When killer whales jump high out of the water and receive herring for their behavior, they can definitely thank my friend for the delicious reward. Inspired by the Brelands' erudite work, Kent Burgess developed the first training manual for Sea World (personal communication, 1998). Does operant conditioning ring a bell? Autistic and mentally retarded children still feel her presence all around them. One of Marian's videotapes, *An Apple for the Student*, illustrates that using the method of shaping to educate normal and mentally challenged kids is effective and reliable (Bailey & Bailey, 1995). The dynamic interaction taking place between dolphins and mentally retarded children stems from Dr. Bailey's previous scholarly works. A contemporary integration of her work with human and non-human animals is exemplified by dolphins who are currently aiding in therapeutic sessions for autistic and mentally retarded children. According to a recent televised documentary (Kane & McQuillan, 1998), dolphins are truly touching the lives of special children. Based on my heroine's wisdom, hearts are healing and immense pieces of hope are being placed into the gentle hands of tomorrow.

On a related personal note, in July of 1996, I had a most enlightening experience. swimming with dolphins at Dolphin Plus, A Marine Mammal Research Center located in Key Largo, Florida. I was quite depressed at the time, but after a saltwater bath with a dolphin, one tends to feel rejuvenated. The happy-go-lucky marine mammals touched me the same way Marian did the day we met. I believe dolphins are unique animals and have a lot of love to offer if we let them. Dolphin swim programs are evolving daily across the nation, healing autistic and mentally challenged children in emotional and social ways. For example, *Dolphin Plus* (1999) has developed a procedure in acclimating dolphins to humans and facilitating interspecies interaction. This unique program along with others developing across America such as the newly proposed Marineland of Florida program are collecting valuable data on the use of Animal Assisted Therapy with mentally and physically disabled or disadvantaged individuals ("Marine park's, 1999). A human and non-human animal are bonding, hopefully revealing to everyone the simple truth that each is put here on earth to protect the other from harm and destruction. Observing the graceful dolphin has influenced several autistic children to speak and laugh for the first time ever (Kane & McQuillan, 1998).

## **Conclusions**

Any war is a traumatic experience for all involved, leaving behind many desolate souls and broken hearts. The resultant destruction and chaos are physically and emotionally overwhelming to every creature that breathes the breath of life. The war soon ends, and we begin to clean up its aftermath, deleting the tragic memory from our minds and hoping tomorrow brings forth clear skies and sunshine. Negative effects from a war are quite evident, but the positive effects are rarely seen. We read about wars in history textbooks describing horrible details like death, despair, and defeat. Where is the positive script written in bold print about my heroine?

During World War II, Marian Breland Bailey left behind her education and came to the

forefront by offering her skills to a secret project, hoping to aid in war efforts. Because the atomic bomb was nearing completion, Skinner and the Brelands soon realized that pigeon guided missiles were no longer relevant by comparison. Project Pelican ceased, but the end was nowhere near for Marian. The journey for this incredible woman had just begun, leading her all the way to the moon, the stars, and Hot Springs, Arkansas. Marian's kinship with animals led her to explore their intelligence and behavior. Although women have long felt a bond with animals, they have seldom experienced the scientific study of them (Hogan, Metzger, & Peterson, 1998). Marian Breland Bailey, a pioneer in the history of applied animal psychology, has opened the door for many aspiring women by giving them an opportunity to make animals their subjects of investigation. As a young aspiring comparative psychologist, I am grateful to note that important ideas are emerging from the minds of women, based on the premise that animals are respected co-sharers of the earth (Boysen & Berntson, 1989; Goodall, 1986; Pepperberg, 1990; Pryor, 1975).

I have become one with nature and the marine mammal called dolphin. The bond I have formed with this creature is very meaningful and fulfilling. The dolphin has so much to offer to the human species. I was overwhelmed when I found out that Marian also is an admirer of the dolphin. In the 1960s, she had her first encounter with this rather large marine mammal, and I feel secure in saying that she too developed a bond with the sea's most mysterious creature. Moreover, based upon some of the contemporary dolphin work, I was very excited when I embarked upon a new finding. I believe a synthesis of various applications of operant conditioning principles has spawned a multi-directional model of applied animal psychotherapy (see Figure 1). I am proposing this theoretical model with hope that one day Dr. Bailey will be honored for this incredible discovery.

As a mother, she prepared her children for the fast and ever changing world. Moreover, as a surrogate mother, she embraced baby chicks with open arms, providing them with a feeling of peace and contentment.

"In short, there is a bold new world awaiting the animal psychologist of the future. It has been there all the time-all we need to do is look at it." (Breland & Breland, 1966, p. 118)

## References

Bailey, M. B., & Bailey, R. E. (1979, May). "Animal exhibits as revenue producers."

Paper presented at the meeting of the American Association of Zoological Parks and Aquariums Regional Workshop, Little Rock, AR.

Bailey, M. B., & Bailey, R. E. (1993a). *History, principles and practices of applied behavior analysis for animal trainers*. Unpublished manuscript.

Bailey, M. B., & Bailey, R. E. (1993b). "Misbehavior": A case history. *American Psychologist*, 48, 1157-1158.

Bailey, R. E. (1965). *Training and open ocean release of an Atlantic bottlenose*

*porpoise* *Tursiops truncatus* (Montagu). China Lake, CA: U. S. Naval Ordnance Test Station. (NOTS No. 3838)

Bailey, R. E., & Bailey, M. B. (1977, March). "The uses of animal sensory systems and response capabilities in security systems." Paper presented at the second annual meeting of The Role of Behavioral Science in Physical Security Symposium, Washington, D.C.

Bailey, R. E., & Bailey, M. B. (1980). "A view from outside the Skinner box." *American Psychologist*, 35, 942-946.

Bailey, R. E., & Bailey, M. B. (1995). *An apple for the student* [Videotape]. (Available from Eclectic Science Productions, 714 Arkridge Circle, Hot Springs, AR 71913)

Bailey, R. E., & Bailey, M. B. (1996). *Patient like the chipmunks* [Videotape].

(Available from Eclectic Science Productions, 714 Arkridge Circle, Hot Springs, AR 71913)

Bailey, R. E., & Bailey, M. B. (1998). Animal Behavior Enterprises web site, <http://www.hsnp.com/home/behavior> .

Boysen, S. T., & Berntson, G. G. (1989). "Numerical competence in a chimpanzee (*Pan troglodytes*)." *Journal of Comparative Psychology* , 103 (1), 23-31.

Breland, K., & Breland, M. (1951). A field of applied animal psychology. *American Psychologist*, 6, 202-204.

Breland, K., & Breland, M. (1961). The misbehavior of organisms. *American Psychologist*, 16, 681-684.

Breland, K., & Breland, M. (1966). *Animal behavior*. New York: The Macmillan Company.

Breland, K., & Breland, M. (n.d.). *Animal Behavior Enterprises, Inc.* [Brochure]. Hot Springs, AR.

Breland, M. (1965). Foundation of teaching by positive reinforcement. In G. J. Bensberg (Ed.), *Teaching the mentally retarded: A handbook for ward personnel*. Atlanta, GA: Southern Regional Education Board.

Dolphin Plus: A Marine Mammal Research & Education Center. (1999). "*Pioneers in Dolphin-Human Interaction*" [Brochure].

Dutton, G. (1999, September 23). Marine Park's manager resigns. *Daytona Beach News-Journal*,

pp. A1.

Goodall, J. (1986). *The chimpanzees of Gombe: Patterns of behavior*. Cambridge, MA: Harvard University Press.

Hogan, L., Metzger, D., & Peterson, B. (Eds.). (1998). *Intimate nature: The bond between women and animals*. New York: The Ballantine Publishing Group.

Hothersall, D. (1995). *History of psychology* (3rd ed.). New York: McGraw-Hill, Inc.

Kane, D. B., & McQuillan, J. (Executive Producers). (1997). *Touched by a dolphin* [Film]. (Available from ABC/Kane Productions International, Inc., 350 South Buena Vista St., Burbank, CA 91521-6424)

National Humane Review. (1954). Editorial (no title). In Breland & Breland (n.d.), *Animal Behavior Enterprises, Inc.* [Brochure] Hot Springs, AR.

Pepperberg, I. M. (1990). Cognition in an African Gray Parrot (*Psittacus erithacus*): Further evidence for comprehension of categories and labels. *Journal of Comparative Psychology*, 104 (1), 41-52.

Pryor, K. (1975). *Lads before the wind: The diary of a dolphin trainer*. North Bend, Washington: Sunshine Books.

Pryor, K. (1985). *Don't shoot the dog! The new art of teaching and training*. New York: Bantam Books.

Skinner, B. F. (1938). *The behavior of organisms*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

## **Author Notes**

I would like to thank my heroine, Dr. Marian Breland Bailey, for allowing me to share with you her life story.

## **Biographical Sketch**

Brandy Lea Cook-Hasley, a native of Arkadelphia, will graduate in December 1999 with a Bachelor of Arts degree in Psychology. She plans to attend veterinarian school earning her



Doctorate of Veterinarian Medicine.

Dr. Todd Wiebers, Chair of Psychology, received his Ph.D. from The Ohio State University in 1992 where he studied animal behavior and cognitive abilities of hooded rats. His teaching and research interests include comparative, experimental, physiological, and historical psychology.

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