

Joe Joins the Circus (or Elephant Love): A Case Study in Learning Theory

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Part I—Elephant Love

Joe had wanted to join the circus ever since his mother took him to a Ringling Brothers show when he was four years old. This past year, he realized his dream. He quit college and joined the circus. He started in the circus where the need was greatest—cleaning up after the elephants. In his new job, he got to know Daisy, the young female elephant, and Simon, the male elephant.

Joe and the elephants had a rough time at first. Joe liked to whistle, and Simon couldn't stand whistling. Joe made it up to Simon when he learned that Simon loved plums. Both Simon and Joe were happy the day Joe found out that there was a spot on Simon's trunk that Simon loved to have scratched. Joe also discovered that Daisy and Simon enjoyed their bath time and that they hated to leave the ring in the big top where they performed.

Joe settled into elephant clean-up duty, hoping for a better job in the circus. Then came his big break. One January, the elephant trainer went on vacation and Joe was left in charge of Daisy and Simon. George, the owner of the circus, had an idea. For the month of February, he decided that the circus would do a special program on love, in honor of Valentine's Day. George told Joe he wanted the elephants to do something new. George proclaimed that before their usual elephant show Daisy would flirtatiously bat her eyes at Simon and Simon would bring her a big heart-shaped box as a Valentine's Day gift.

Now Joe had a problem. The elephant trainer hadn't known about this Valentine's Day special and had left Joe no instructions for training.

Joe went back to his trailer that night and tried to figure out what to do. If he wanted to get promoted from his job cleaning up after his four-ton friends, he would have to figure out how to train the elephants. At about 1 a.m., he suddenly remembered a lecture he had heard in a course his second year in college, the semester before he quit, and he knew what he would do to train the elephants.

The next morning he borrowed a long pipe and an air compressor. He positioned Daisy and the pipe and the air compressor. He blew a puff of air through the pipe near Daisy's eye. When the air hit her eye, Daisy blinked several times.

"Bingo!" thought Joe. The blinking was just what the circus owner wanted. It looked like the elephant version of a flirtatious batting of the eyes.

Joe couldn't bring a pipe and an air compressor into the center ring during a performance, so he enlisted help from one of the clowns in the clown band. The clown played the last few notes of "Can't Help Falling in Love" by Elvis Presley and then Joe sent a puff of air up the pipe to Daisy's eye. Daisy blinked.

Joe and the clown did this many times.

Joe asked the clown to play the last few notes of the song again, but this time he didn't send the puff of air up the pipe. Daisy blinked anyway! Joe and the clown cheered. Joe now had a flirtatious elephant.

The clown asked Joe how he came up with the idea. Joe described a psychology class he took in college. In that class, they had discussed learning theories.



In training Daisy, what kind of learning did Joe employ—classical conditioning or operant/instrumental conditioning? Explain your reasoning for your choice.

Once your group has decided which type of learning is described above, send a representative from your group to the front of the room to get instructions for the next step.

Part II—Classical Conditioning

If you said Joe employed classical conditioning, you are correct!

Classical conditioning occurs when a reflex, like an eye blink in response to a puff of air or salivation in response to food, is associated with something that previously was a neutral stimulus, like some notes from a song or a bell.

As a group, identify the following elements from the story:

- Unconditioned stimulus
- Unconditioned response
- Conditioned stimulus
- Conditioned response



Joe and his clown friend were excited to have trained Daisy, but Joe also needed to train Simon, the male elephant, to pick up a big heart-shaped box and bring it over to Daisy as a Valentine's Day gift.

Help Joe by designing a training program he might use to teach Simon. Use operant conditioning principles to help you. Be sure to identify the kind of operant learning that will occur, how Simon will learn (will you use shaping?), and the type of contingency schedule that will be used.

Consider the following when designing your plan:

- Will you use positive reinforcement, negative reinforcement, positive punishment, or negative punishment? Why would you choose that type/those types instead of another type?
- Will you use a continuous reinforcement schedule or some type of partial reinforcement schedule? How would strength of learning or time it takes the elephant to learn impact the type of schedule you chose?

When you are finished developing your plan, ask for the next section of the case study.

Part II—Operant Conditioning

The type of learning described in this elephant training story is not operant conditioning, it is classical conditioning.

In operant conditioning, an animal/human performs a behavior and is rewarded or punished, increasing or decreasing the later likelihood of that behavior. In Joe’s training, Daisy was not being rewarded or punished for her action. Classical conditioning involves the pairing of a neutral stimulus with a stimulus that evokes a response—such as a reflex. As a group, discuss why classical conditioning better describes Daisy’s training than operant conditioning.

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Part III—Training Simon

Joe decided to use positive reinforcement to train Simon. He brought Simon into the ring and let him wander around. When Simon approached the big heart-shaped box, Joe gave him a plum. Joe did this three times before he quit giving Simon a plum simply for approaching the box. Simon started to investigate the box and Joe gave him another plum. Joe then gave Simon a plum anytime he picked up the box. Eventually Joe provided plums to Simon only when he picked up the box and brought it over to Daisy.

Simon, Daisy, and Joe ran through the rest of the elephant's program, but now Joe had a problem. Joe wanted Simon to wait until the song played, prompting Daisy to bat her eyes. Simon was then supposed to pick up the box and bring it over to Daisy, but Simon ignored what Daisy was doing and would pick up the box and bring it over to her as soon as he saw it. Joe didn't want him to forget this new learning, so he would give Simon a plum every time he brought the box to Daisy.

Joe was frustrated, so he quit for the day and asked his clown friend for help. The clown suggested they run through the entire program. The next day, Joe, the elephants, and the clown band gathered in the big top. The clown played "Can't Help Falling in Love" and at the end Daisy began batting her eyes, blinking rapidly as she had been trained to do. Simon walked over to the heart-shaped box, picked it up, and brought it over to Daisy. They then continued through the rest of the routine.

They kept practicing. Whenever Simon broke out of the routine to get the heart box and Daisy was not batting her eyes, Joe did not reinforce him for that behavior. They ran through the introduction several times, with Daisy batting her eyes, and only then did Joe reward Simon with a plum.

The next day Simon brought the elephants into the ring. The circus had not received its shipment of fruit yet, so Simon was running out of plums. He spaced out the plum reward every third time the elephants went through the sequence. The elephants did their routine and George, the owner of the circus, came to watch. He complimented Joe on a job well done and proclaimed that the elephants would do their new routine in the next show.



In your group discuss the following:

1. Why is Joe's training described as using positive reinforcement? In other words what makes it positive reinforcement and not negative reinforcement, positive punishment, or negative punishment?
2. In training Simon, Joe used shaping. Describe the specific steps he took in this process and how he arrived at the final result.
3. At first Joe rewarded Simon every time he did the trained behavior (moved the box), even when it was in the middle of another routine. What did Joe do differently the next day? What learning theory term could be associated with this?
4. Did Joe use continuous reinforcement when he began training Simon? What effect does continuous reinforcement have on speed and potential for extinction of a learned response?
5. As he ran out of plums Simon started using a partial reinforcement schedule. What effect does partial reinforcement have on speed and potential for extinction of a learned response?

On Valentine’s Day, the elephants performed before a packed crowd. Daisy batted her eyes flirtatiously, Simon brought her a big pink heart-shaped box, and the crowd sighed in appreciation of elephant love. Joe was promoted.



Be sure each person in your group can differentiate between classical and operant conditioning, can identify unconditioned and conditioned stimuli and responses, knows the difference between positive and negative reinforcement and punishment, knows the difference between partial and continuous reinforcement schedules, and can identify a discriminative stimulus. If everyone in your group is comfortable with these terms, come and get a quiz for each member. If anyone in your group does not answer all the questions on the quiz correctly, your group will be asked to discuss these terms again and take another quiz.



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