

From The Inner World

of Farm Animals

by Amy Hatkoff

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### **I remember my past, and I think about my future.**

“CHICKENS MAKE MEMORIES, as all animals do,” comments Lesley Rogers, Emeritus Professor at the Centre for Neuroscience and Animal Behavior at the University of New England. “In fact, chicks can make memories even before they hatch.” As embryos, they hear their mothers’ vocalizations and are then able to identify and understand them when they are born.

As soon as they hatch, chicks are able to remember that something exists even if they are unable to see it. This is referred to as *object permanence* and is something that human infants are unable to do until they are five to eight months old. Italian researchers Giorgio Vallortigara of the University of Trento and Lucia Regolin of the University of Padua demonstrated this capacity by familiarizing chicks with red balls, which they then hid behind one of two screens. After a delay of sixty seconds, the chicks were able to remember behind which screen to look. “This ability is important,” comments Rogers, “because one of the capacities we have associated with consciousness or higher cognition is the ability to think about something that is not in your immediate vicinity—such as things that happened yesterday, or what might happen tomorrow, or about what’s happening around the corner.”

Like other farm animals, chickens can tell people apart and remember their experiences of them. Researchers at the University of Guelph showed that chickens turned away from people who repeatedly withheld food from them. If they have been given a food reward for certain behaviors, they will give a cry of frustration if they don’t receive the reward for the same behavior. This indicates that they expect things to occur based on past experience, a sign of higher thinking.

Chickens also have a sense of the future. Given a choice between receiving a small amount of food immediately or a larger amount in the future, they will choose the latter, demonstrating self-control and the capacity to delay gratification.

**“ . . . the chick possesses one of the characteristics essential for being an individual. It can acquire information and encode memories. . . . It is the collection of memories that becomes part of the self.”**

—Lesley Rogers, from *Minds of Their Own: Thinking and Awareness in Animals*

### **We like to hang out together.**

CHICKENS ARE VERY SOCIAL and form strong friendships. They prefer the company of familiar chickens and avoid chickens they don't know. As soon as they hatch, chicks are able to recognize their siblings, and they choose to stay with them. Even at three days old they recognize other chicks with whom they are raised and prefer their company to that of unfamiliar chickens. “When we look at chickens, they all look very similar. Obviously by the chicks, individuals are easily discriminated,” comments Professor Rogers. “Just like humans, the more experience you have with looking at different faces, the better you become at discriminating one face from another.”

According to “Sentient Beings,” a report by Farm Sanctuary, “Being in the company of their peers may be even more important to chickens than food. When researchers placed chicks at the start of a long runway they approached a video of other chicks much faster than they approached a video of a box of food.” Studies have shown that when a pair of chicks is separated, their stress hormones become elevated. If given the opportunity, chicks who have been separated from their mothers will stay with their siblings through the night.



## Notorious Boy and Mary: A Love Story

Mary was an older hen who was found in a city dump and brought to live at Animal Place, a farm sanctuary in Vacaville, California. There she met and bonded immediately with Notorious Boy, a rooster who had been found abandoned on a nearby property. "Notorious Boy's personality can best be described as 'wonderfulness,'" comments Kim Sterla, co-founder and director of the sanctuary. "Most of the roosters will try to get as many hens as they can, but Notorious Boy was only interested in his Mary. He was very tender and attentive to her. He would always call her over for the food treats before eating any himself. They spent every day and night together,

off on their own." They particularly liked to roost on a wooden picnic table in Sterla's backyard. One night during a heavy storm, Sterla looked out her window to make sure that they were out of the rain. There she saw them still perched on the bench, but Notorious Boy had completely covered Mary with his wing. "This is how mother hens sleep with their chicks," continues Sterla. "It was the most precious thing I had ever seen. The bond between them was immense. They had what appeared to be a loving, respectful relationship, with absolutely no interest in others. They have both passed away, but I will never forget them."



## Charlie Parker: Another Bird

Charlie Parker was rescued by the Eastern Shore Sanctuary when he was a baby chick. When he first arrived, he didn't know how to interact with other chickens and became very

attached to Pattrice Jones, the sanctuary's founder, who he treated like his mother. He hid between her legs, jumped up and sat on her lap, and chased after her if she left the chicken yard. In hopes

that he would begin to relate to other chickens if with a smaller group, Jones placed young Charlie in the infirmary area, where he met Che Guevera, an older rooster who had been badly injured.

Che literally took Charlie under his wing, and when he did so, Charlie, who was excitable and anxious, was visibly calmed and comforted.

Eventually, Che died, and as

Charlie aged, he developed medical problems himself. He was taken to the infirmary, and history repeated itself. Charlie became the one who comforted the new arrivals, taking them one

by one under the shelter of his wings. This is something roosters rarely do. Charlie had clearly learned well and seemed able to pass along the gift he had received.





### **We learn by watching.**

MUCH OF A BABY CHICK'S BEHAVIOR is learned rather than instinctual, as previously thought. Research has shown that chickens, as well as other farm animals, pass cultural knowledge along to their offspring. This had long been considered unique to human intelligence.



As soon as her chicks hatch, a mother hen teaches them about which foods to eat and which to avoid. She does this by example and by redirection. If she sees her chicks eating food that is not healthy, she will peck and scratch to guide them toward a healthier food. If she discovers that a food is unpalatable, she will avoid it and teach her chicks to do the same. She also teaches them about safety and avoiding enemies.

Not only do chicks learn by watching their mothers, they learn from one another as well. Research has shown that at just one day old, chicks will avoid eating bitter-tasting food simply by seeing another chick's negative reaction to it.

Chickens also learn from watching videos! Researchers at the University of Bristol have shown chickens a video of a hen with two bowls of food, one red and one yellow. In the video, the hen eats only from the red bowl. When these two colored bowls of food are presented to different groups of chickens who were shown the video, they will repeatedly eat only from the red bowl.

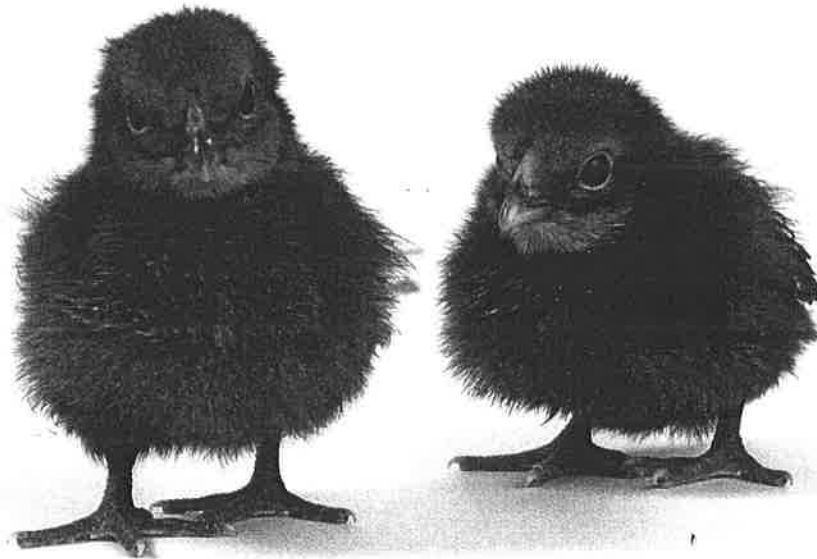
**“Until very recently, scientists were still advancing the idea that most creatures behave by sheer instinct, and that what appeared to be learned behavior was merely genetically wired activity . . . in fact, we are finding out that learning is passed on from parent to offspring far more often than not and that most animals engage in learned experience brought on by continued experimentation and trial-and-error problem solving.”**

—Jeremy Rifkin, president, Foundation on Economic Trends

## Violet and Chickweed: A Painful Parting

Rescued at a very young age by the Eastern Shore Sanctuary in Maryland, this brother and sister team was very attached. They stayed together day and night, watching over each other protectively. Sadly, Violet died suddenly from an undetected infection. "Chickweed was devastated," comments Patrice Jones. "He watched us bury Violet and, for the next several weeks, would return

to stand silently at the place from which he had last seen her. Like many people do when they are mourning, he became angry and would rage around the yard every day. At night, he would stand in the coop alone, drooping with sadness. While he became less angry over time, he was never the same as he had been before Violet died."



## I'm no birdbrain!

"IT IS NOW CLEAR that birds have cognitive capacities equivalent to those of mammals, even primates," comments Professor Rogers in her book, *The Development of Brain and Behaviour in the Chicken*. Rogers discovered that chickens use the right and the left sides of their brains for different functions. This is referred to as *lateralization* and had been thought to be unique to humans and essential for tool use, language, and consciousness.

Chickens have complex cognition and can grasp abstract concepts. Giorgio Vallortigara of the University of Trento and Lucia Regolin of the University of Padua have shown that chicks are capable of recognizing a whole object even when it is partly hidden. This is a capacity it was thought only humans possessed. Human babies can only begin to do this at four months of age, while chicks can do it when they are just two or three days old. "When human babies do this, it is seen as a milestone of cognitive development," comments Rogers. "But chicks can do it from the word go."

Chickens can also follow the direction of eye gazes, another example of their capacity for higher thinking. As Professor Rogers points out, in order to do this, one has to first have an awareness that others exist and then grasp that they are looking at something.

Chickens have even demonstrated the ability to count! Vallortigara and Regolin with Rosa Rugani of the University of Padua, trained chicks to peck for food at the fourth container in a series of ten containers. They then changed the spacing between the containers so that they were all in different positions. The chicks, however, were still able to select the fourth container, meaning they were able to identify the container through counting rather than relying on its location. The researchers proved the chickens' ability to count in other experiments as well.

Vallortigara and his colleagues also found that chickens can perform basic geometry. They placed chicks in a rectangular room with an object in one corner. They then removed the object and the chicks from the room and brought the chicks back with the task of identifying the corner in which the

object was previously located. This is an extraordinarily difficult task with no straightforward solution. Chicks, however, can solve this problem with ease. The researchers believe that the chickens use the different lengths of the walls and the angular positions to reorient themselves. They can learn, for instance, that the correct corners are the ones with a short wall on the left and a long wall on the right.

Vallortigara and Luca Tommasi of the University of Chieti discovered another example of chickens' ability to use geometric information. After learning to find food placed in the center of a square-shaped area, chickens were able to find the centers of other geometrically shaped areas that had no food.

Chickens also like stimulation and new information. According to "Sentient Beings," a report by Farm Sanctuary, chickens were shown two screen-savers with different images, flying toasters and fish, for different lengths of time. When the researchers showed the chicks both screens again, the chicks chose to watch the screen they had seen for a shorter period of time. Human infants have also been shown to seek out novel experiences. They will choose to view new images rather than ones with which they are already familiar.

**“Chickens follow their chicks with such great love that if they see any harmful animal . . . stalking their little ones, the hens gather them under the shadow of their wings. They would rather die for their chicks than seek safety in flight.”**

—Ulisse Aldrovandi, natural historian, sixteenth century

## No Greater Love

In his book, *Call Me Chicken*, Reverend L. Joseph Tauer tells the story of his hen, Liza, the proud mother of six newly hatched baby chicks. One day, Tauer was looking out the window and saw Liza and his other hens running for cover from a hawk who was hovering above. He then saw Liza running back into the open field. Her baby chicks did not know the alarm call and were still feeding on the grass. Tauer watched as Liza crouched down and covered her chicks with her wings to protect them from the hawk's attack. He ran outside and was greatly relieved to see all of the chicks poke their heads out from under their mother.

Then to his utter relief, he saw Liza spread her wings to reveal that she too survived.

"I had just witnessed a chicken perform a deed that would make headlines if the same act had been performed by a human," recounts Tauer. "The phrase entered my mind, 'No greater love.' Would I have measured up? Here was a creature that many educated and philosophic people have declared not only to have no soul, but to be without the capability of thinking or reasoning. Yet, Chicken, judged and found lacking by humans, had just performed the supreme heroic and selfless act."



**“Animals are versatile in response to new challenges; they communicate requests, answer questions, and express emotions.”**

—Jonathan Balcolombe, from **Pleasureable Kingdom**

### **We have a lot to say.**

CHICKENS HAVE HIGHLY DEVELOPED communication skills. According to Dr. Gisela Kaplan, a professor at the University of New England, “the voices of birds involve learned, complex vocalizations.” Researchers have identified more than thirty-one different call types with very specific meanings. Chickens use separate alarm calls, for example, depending on whether a predator is traveling by land or in the sky. Karen Davis of United Poultry Concerns describes numerous calls, including distress calls, nesting and mating calls, laying calls, threat calls, “all clear” calls, contented calls, and contact calls. Davis comments that “each rooster can recognize the crow of at least thirty other roosters, probably more.” Australian scientists recently discovered that some hens emit high-pitched sounds to signal they have found food. The more they prefer a particular food, the faster they “speak.”

Jonathan Balcolombe, senior research scientist at Physicians Committee for Responsible Medicine, explains that “roosters sometimes make a ‘come hither’ call. Recognizing the call, a hen comes running and the rooster gallantly points out a grasshopper or some other morsel in the grass. By treating the ladies, a rooster may improve his chances of a future mating opportunity. But roosters are not always so noble; sometimes they’ll fake it, delivering a ‘come hither’ call when there’s no treat there. The hen, unaware of the deception, comes running only to find that there’s nothing there. But it doesn’t pay a rooster to deceive too often for he may soon be identified by equally alert hens as unreliable.”

Chris Evans of Australia’s Macquarie University, and Peter Marler, formerly of University of California, Davis, found that when different preda-

tor alarm calls are played back on a tape to hens or roosters, they make the appropriate response calls. However, they will only emit a warning call if there is another chicken present to hear it. This is referred to as *audience effects* and is another indication of intentionality in their communication.

Recognition of this level of complexity in a chicken's communication was considered groundbreaking. "Until very recently, we believed only primates were capable of such sophisticated communication," comments Professor Kaplan. "It proves that birds have a semantic way of communicating, and these are the rudiments of language."



## Brandy: A True Gentleman

Brandy was rescued from a hatchery in Pennsylvania when he was just a baby chick. He had been put into a plastic bag and left near a dumpster along with several other male chicks. After seven years at one sanctuary, he was brought to the Woodstock Farm Animal Sanctuary in upstate New York. He was very people-

friendly from the moment he arrived. "Brandy was truly an ambassador for all of 'roosterdom,'" comments Jenny Brown, co-founder of the sanctuary. "He was a guy who would walk right up to you and without flinching or flopping let you pick him up and hold him. He would run, not walk, whenever I called his name. One of



the most remarkable things about Brandy is that he was an incredible gentleman. Good roosters, like good husbands," continues Brown, "bring any food they find to the ladies. If Brandy found something—a grub, a worm, or food we'd given him—instead of eating it for himself, he'd go out of his way to call the ladies over. He'd make a bunch of noise and this crazy sound. They would come running, and he would take the morsel up and drop it several times and do his little scratching dance until one of the ladies ate it."

A boy named Will who had cerebral palsy visited the sanctuary frequently. Will loved Brandy, and while roosters do not usually sit in anyone's lap, Brandy would sit in Will's and let him pet him.

Brandy would frequently visit Jenny in her house for an afternoon treat. He'd let her bring him onto the couch where she would often stroke his chin as he lay next to her. Jenny describes Brandy as a "complex fella." He died in her arms.

