

I am very teachable.

PIGS ARE EXTREMELY INTELLIGENT and are able to respond to verbal communication. Piglets living with humans learn their own names quickly and carry out simple voice commands. The research of Candace Croney, animal behavior bioethicist in the Department of Animal Sciences at Oregon State University, shows that not only can pigs identify and fetch objects upon request, they can understand and respond to commands that involve an action with an object, such as "Push the dumbbell onto the mat." They can even identify the same objects three years later!



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from Amy Hatkoff's The Unner World of Farm Animals

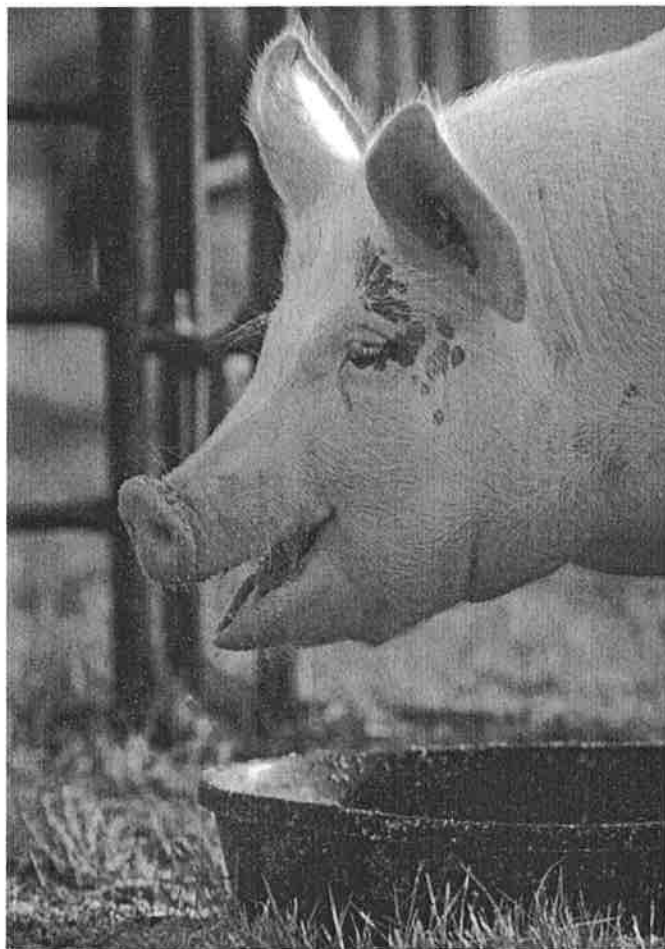
(Stewart, Tabori + Chang, 2009)

Crony showed that when presented with a variety of objects, pigs are able to make comparisons and grasp the relationship between those objects based on color, odor, or location. If there are five blue pots and one green pot, for example, a pig can pick out the green one as being different and could do the same based on odor. They can find the difference no matter where the objects are located and are able to disregard irrelevant information. Surprisingly, they can do all of this without being given any instruction, but simply by being told, "Figure out what you are supposed to do."

abstract

I can get it the first time.

PIGS ARE HIGHLY MOTIVATED and extremely persistent. According to Suzanne Held, research fellow at Farm Animal Science at Bristol University, "Pigs will have a go at something and work at it until they get a result. People had thought that only animals with a big cortex learn well and are capable of complex social behavior. But pigs have small brains, and are still fast at learning." Unlike some animals who require practice to learn a new task, pigs are capable of what is known as one-trial learning. If they push a lever to the right with their snout and are rewarded with food, for example, they understand in that one try that that particular behavior will have a favorable result and continue to repeat it.





“Pigs are arguably smarter than dogs.”

—Bernard E. Rollins, distinguished professor, Colorado State University

Believe it or not, I am high tech!

DR. STANLEY CURTIS, adjunct professor of animal science at the University of Illinois, Urbana, is one of the pioneers of pig cognition. He conducted research with Candace Croney at Pennsylvania State University that demonstrated that pigs can be taught to play video games on the computer! Using their snouts, the pigs learned to move a joystick that directed the cursor to hit targets on the screen. This meant that the pigs were able to grasp that what they were doing in one place had an impact somewhere else. This is a surprisingly complex concept for a non-human animal to understand.

The pigs were also able to retain what they had learned. Croney brought two of the “micro pigs” to the University of Maryland a year later and put them back on the tasks on the computer. “They were a little rusty for the first few minutes,” comments Croney. “However, despite being in a new location with the equipment set up somewhat differently from what they had been used to, within one thirty-minute session, they were performing the task as they had in the past.”

Croney confides that ten years ago, “if you told people that you were going to study cognition in the pig or the chicken, they looked at you as if you had lost your mind. When Stan talked about putting pigs on the computer, we all laughed at him. Stan put himself on the line as a scientist. He asked, ‘Can we use our scientific knowledge as it is to ask the animals how they feel and let them tell us what their experiences and feelings are?’ We thought he was crazy. Now it’s more acceptable. Working with Stan changed my perspective on pigs.”



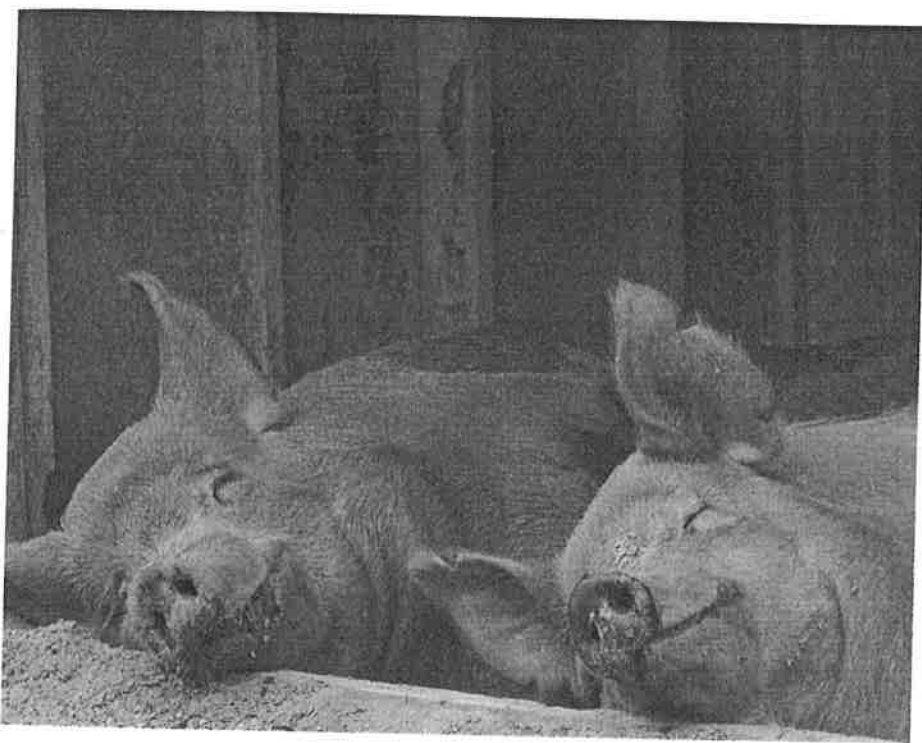
I can see what you see.

MIKE MENDEL, PROFESSOR of animal behavior and welfare at Bristol University, and Suzanne Held have been conducting research into a pig's capacity to understand another pig. They have found that pigs might be able to tell what other pigs are thinking. With their colleague Richard Byrne of St. Andrews University, they set up an experiment in which they blocked a subject pig's view of where food was being placed. On either side of the pig

were two companion pigs, one whose view was also blocked and one who had a clear view of the food. The subject pig was not able to see what the other pigs could see. When the researchers removed the barriers and the companion pigs were released, the subject pig did, in fact, follow the companion pig who had seen where the food was placed rather than the one who had not. The study suggests that it is possible that a pig can understand what another pig sees. This is referred to as *visual perspective taking* and is an indication of complex cognition.

We know where we stand.

PIGS MIGHT ALSO HAVE the capacity to assess another pig's competitive abilities, recognize who is the more dominant, and adjust their behavior accordingly. Suzanne Held discovered that one pig might be able to recognize when another pig has knowledge of where food is located. The "informed" pig, upon realizing that it's been "found out," will attempt to safeguard the food from the other pig. It might avoid going to the food site when the other pig is near, or eat only if it knows it is alone. Held and Mendl are not certain whether these behaviors represent a pig's ability to deliberately mislead or deceive another pig and conceal knowledge or if they are based on their quickly learning that they will yield rewards. "It is possible that the subordinate pigs actually understood what the dominants could and could not see and adjusted their behavior accordingly, which would show the pig's understanding of the behavior and intentions of others to be a lot more complex than previously assumed," comments Mendl. It has been observed by Mendl and others that pigs, who wear collars that indicate how much food they should receive from an automatic feeder, will pick up collars that have fallen off other pigs and use them to receive another portion of food for themselves. Jonathan Balcolombe describes this as "a pig's way of hacking into someone else's computer system."



We are at our best when with our friends.

PIGS, LIKE OTHER FARM ANIMALS, are extremely social and form close bonds with one another. They are thought to recognize and remember up to twenty to thirty other pigs. They are very affectionate and greet one another enthusiastically, often grunting and rubbing snouts. Given the opportunity, they seek out and enjoy touch and close physical contact and like to sleep together, often doing so snout to snout.

It is important for pigs to be with others pigs with whom they are familiar. Research shows that they are less stressed by unexpected or challenging events when they are with a "friend." For example, if pigs don't receive a food reward that they were expecting, they become less frustrated if they are with a pig they know. If they are with an unfamiliar pig, however, they often behave more aggressively.

Researchers agree that it is important not to isolate pigs and have found that they suffer when they are alone. "If you are trying to teach pigs something," says Suzanne Held, "you would never take them away from their group abruptly. You have to wean them away if you are going to expose them to a new situation." Pigs who have been raised alone tend to be less playful and more avoidant of new experiences than pigs who have been raised with other pigs. Research by Francoise Wemelsfelder, Ed Pajor, and others has shown that if pigs are isolated or kept from playing with their friends, they behave in ways that indicate depression.

Being with friends also affects pigs' ability to learn, as does their environment. Ian Sneddon, senior lecturer at Queen's University Belfast, and his colleagues found that pigs who are raised with other pigs and in pens that have straw flooring will learn better than those raised alone and in a barren environment. Held points out that, just as with human infants, growing up in a stimulating environment enhances pigs' brain development and enables them, if given the opportunity, to better cope with challenges.

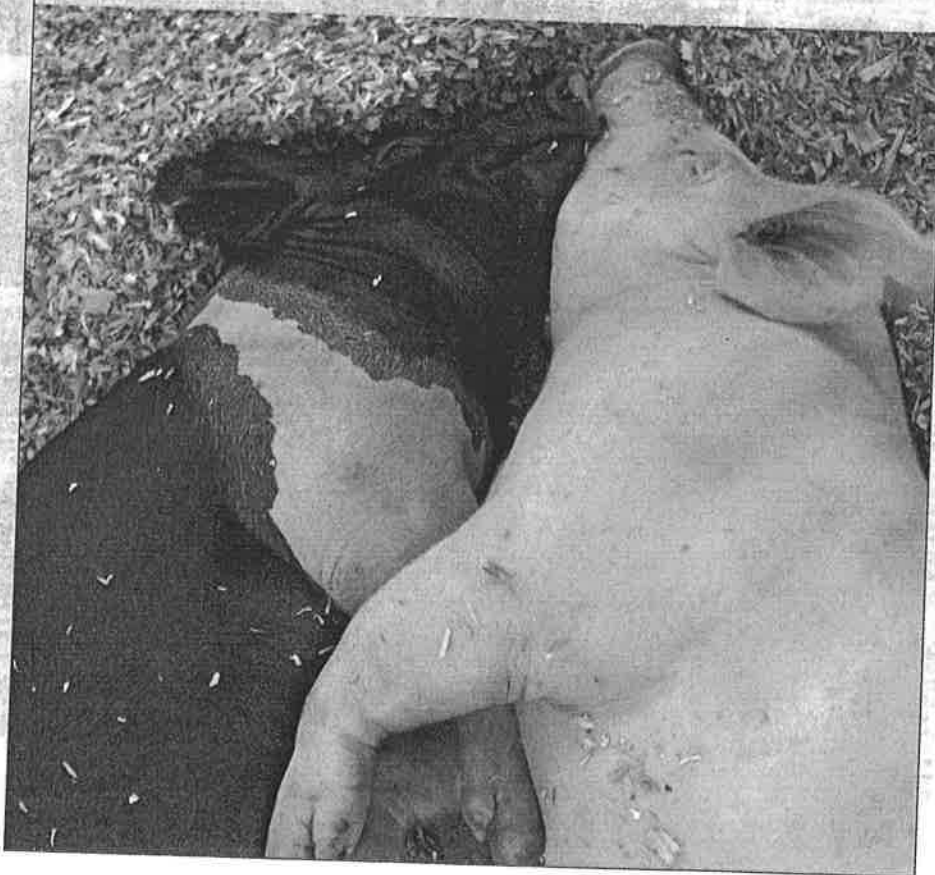
"Pigs develop close relationships, particularly if they have grown up together. If they have the opportunity to mature together, the bond pretty much lasts a lifetime. They will make choices to be with one another—to sleep together, take mud baths together, and roam together. They become partners."

—Kim Sterla, co-founder, Animal Place

Hope and Johnny: Loyal and Loving

Hope and Johnny, two pigs who lived at Farm Sanctuary in Orland, California, had an extremely close friendship. Hope had an injured leg and was unable to walk. Johnny, who was much younger, would stay by her when she ate to keep other pigs from bothering her and would

remain by her side throughout the day. He would also sleep with her at night, keeping her warm. Hope died of old age, and Johnny, who was healthy at the time, appeared devastated. He died several weeks later of no known cause.



I am very sensitive.

PIGS ARE EXTREMELY SENSITIVE to what goes on around them as well as to their environment. They are easily stressed and just being weighed can be a source of great anxiety. Being placed with unfamiliar pigs can cause extreme tension and fear. Rough handling is also stressful and can affect a pig's behavior, growth, and reproduction. Paul Hemsworth, professor of animal welfare and behavior at University of Melbourne, has shown that if pigs are mistreated, they are two and a half times less likely to become pregnant. As with humans, stress also affects a pig's cognitive ability. Mike Mendl demonstrated that if pigs are exposed to stressful situations, they make more errors or take longer to perform a task.

“Careful scientific research is validating what we intuitively understand: that animals feel, and their emotions are as important to them as ours are to us. Animals’ emotions are . . . raw and uncontrolled. Their joy is the purest and most contagious of joys, and their grief the deepest and most devastating.”

When animals express their feelings they pour out like water from a spout. Indeed, when we pay attention, animals display a mindful presence, unfiltered emotions, and a zest for life. . . . Their passions bring us to our knees in delight and sorrow.”

—Marc Bekoff, from *The Emotional Lives of Animals*

Pigs are able to communicate their anxiety. In a study conducted in London, researchers taught pigs to press one lever when they felt normal and another when they felt anxious. Not only could the pigs distinguish their emotional states, they were also able to retain what they had learned. In response to a stressful event at a later date, they were able to again press the appropriate lever to convey their anxiety.

✓ **We are easy to read.**

FRANCOISE WEMELSFELDER and her colleagues demonstrated that people could accurately judge animals' emotions through observation.

They assembled groups of people with no previous experience interpreting animal expressions and asked them to observe a number of animals, mostly pigs, interact with a human. They then asked them to write down adjectives that best described the pigs' expressions.

"Whether observers were students, scientists, pig farmers, veterinarians, or animal rights activists," noted Wemelsfelder, "we persistently found high levels of agreement in how they judged the pigs. In their own words, observers created coherent and meaningful descriptive language that they could use to characterize the expression of individual pigs in precise and repeatable ways."



More recently, Professor Wemelsfelder has asked people to observe pigs in different housing environments. When the pigs are housed in healthy, stimulating environments, some words used to describe the pigs are “friendly, curious, lively, content, playful, confident.” When they are kept in small, dark, barren pens, the pigs are perceived as “timid, anxious, bored, frustrated, or helpless.”

We know what we want and need . . . and can tell you!

PIGS CAN LEARN TO PERFORM BEHAVIORS that communicate what their preferences are, such as how much heat or light they would like to have in their environment. Researchers are working to see things from a pig’s point of view to best understand their needs and make recommendations as to how to meet them. They are asking, for example, whether it is more important to be with other pigs or to build a nest, or whether food is more important than socializing. One way of finding out is by giving pigs options and observing their choices. “We can learn a lot about animals by what animals have to tell us,” comments Ed Pajor. “The fact that they have preferences and can demonstrate them to us represents the idea that animals are capable of making choices. Paying attention to their vocalizations, to their behavior, the way they move, the way they turn their heads, the way they approach us or avoid us are all important in terms of understanding them.” Professor Stan Curtis of the University of Illinois, Urbana, is actually hoping to teach pigs a crude language in order to learn more about what they feel and enable them to communicate their needs.



**“This is the larger lesson of animal cognition research: It humbles us.
We are not alone in our ability to invent or plan.”**

—Virginia Morell in *National Geographic*

We need to play.

PLAY IS THOUGHT TO BE extremely important to an animal's development and an indication of their complex capacities. According to Compassion in World Farming, "play develops cognitive skills necessary for behavioral adaptability, flexibility, inventiveness, and versatility." Being able to explore and play with toys is essential to pigs. Young pigs love to play fight, nip and chase one another, and play in water. When pigs are provided with pens that are roomy and have peat flooring with straw, they play ten times as long as when they are in pens that are barren. Researchers at Bristol University showed that piglets who have had no toys to play with are extremely timid, and if a new person enters their space, they huddle in a corner and freeze. In contrast, pigs who have had things to play with are less timid and will approach the person.

Researchers are concluding that play feels good and provides pigs and other animals with a sense of pleasure. When animals are playing, researchers have found that the chemicals in the brain that indicate pleasure and excitement are released. Without the opportunity to play, pigs can become bored, lethargic, and even depressed.

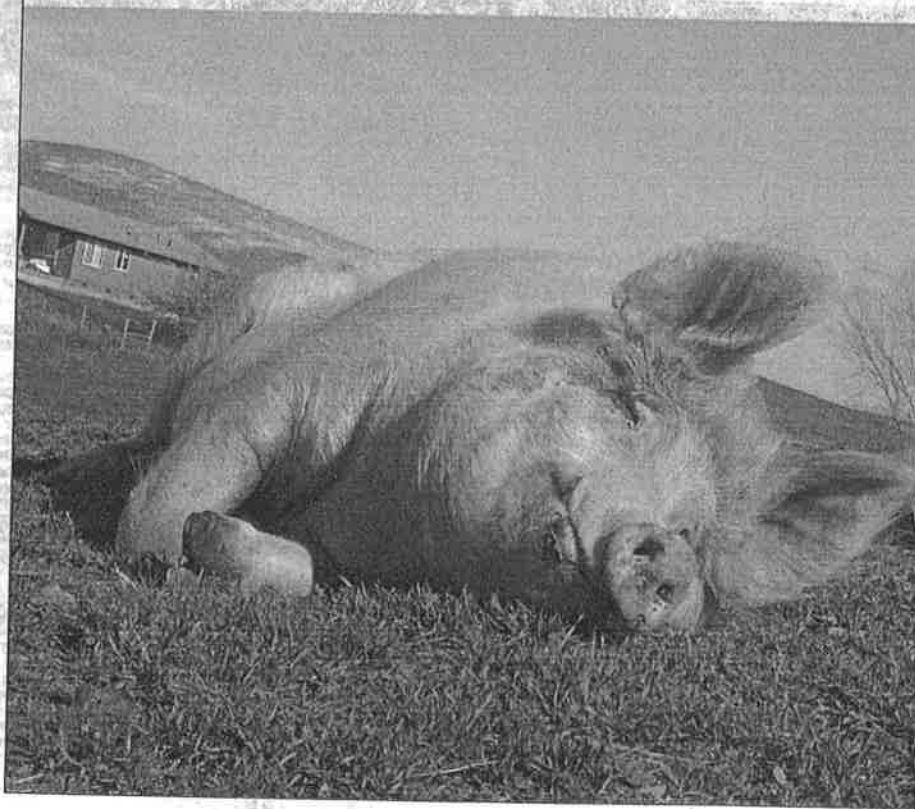
"I think all animals are sentient in different ways, with different types of experience. One type isn't better than another type. We all fit into the web of life in our own way. As a society, I think we are ready to accept animals as fellow sentient beings. Talking about animals as sentient is compatible with and can be perfectly good science."

—Francoise Wemelsfelder, behavioral scientist, Scottish Agricultural College

She's Not Heavy, She's My Sister

In Jenny Campbell's book *Animals are Smarter than Jack*, Lesley Franklin tells the story of her two pet pigs, sisters Bacon and Eggs. One day Bacon disappeared. Franklin searched for her but was unable to find her. Eggs, however, still showed up for dinner every evening. Franklin

continued to search for Bacon and eventually found her not far from home. She was pinned under the branch of a tree. Surrounding Bacon was a nest of fresh grass for her to eat. Franklin believes that the grass had been placed there by Eggs, whose efforts saved Bacon's life.



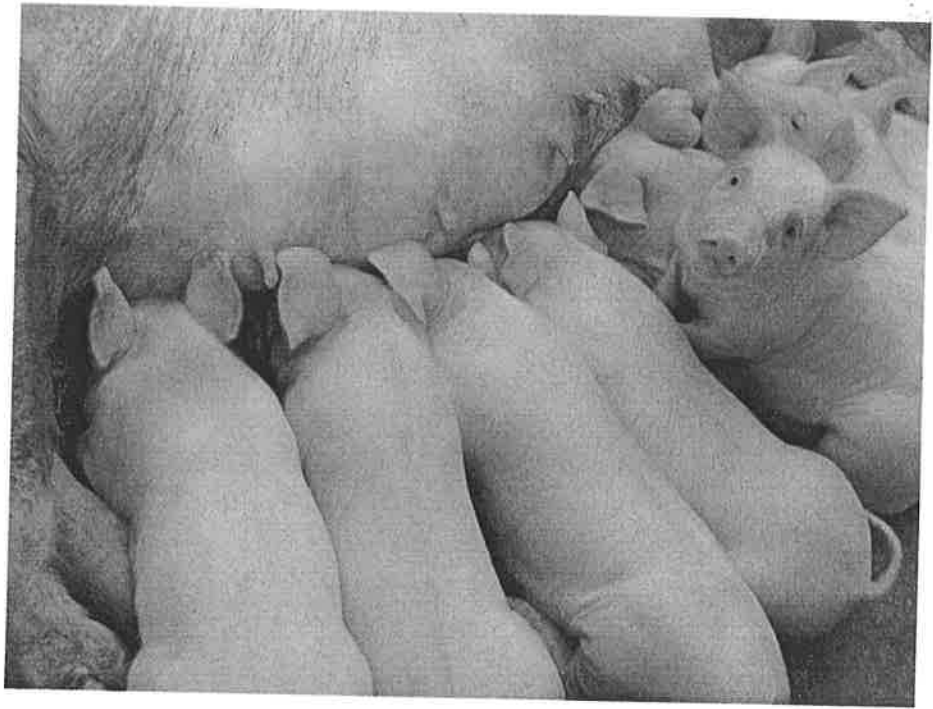
“The more we learn about farm animals, the more we are understanding how similar humans are to other animals. We are all shaped by our experiences and memories, both good and bad, communicate through various means, and develop complex relationships with others in a social system.”

—Gene Baur, president and co-founder, Farm Sanctuary

We need our mothers.

IN NATURE, weaning is a gradual process. Piglets remain with or close to their mothers until they are ready to be on their own. Today, on most farms, piglets are removed from their mothers as early as three to four weeks of age, and sometimes earlier, at a time when they are still dependent on and attached to her. This abrupt weaning is extremely challenging for the piglets and has many negative affects. Dan Weary and David Fraser of University of British Columbia have found that piglets begin to cry out immediately upon separation. The younger they are when they are weaned, the more frequently they will cry and the higher the pitch will be. Pigs that are weaned abruptly usually eat less and begin to lose weight. They also tend to demonstrate more aggression, recklessness, and abnormal behavior. Adroaldo Zanella of Norway has shown that piglets that are weaned at an early age perform worse on memory tests. It appears that if piglets are mixed with other piglets prior to being weaned, they have a better response to separation. They fight less, seem less stressed, and learn social skills more quickly.

Abrupt weaning is also stressful for the sow. Ed Pajor and his colleagues have demonstrated that separation is more upsetting if the sow has been removed from her nest. They recorded and played back the vocalizations of a sow's piglets, and found that her response was more intense when outside the nest. According to Pajor, when hearing their cries, "the sow got up and ran toward the speaker and started vocalizing loudly to call her piglets and let them know where she was." When she was allowed to stay in her nest, she appeared less distressed. Sows recognize the calls of their own piglets and can identify and respond rapidly to a cry of need.



“Even if pigs are kept from each other, they will sleep nose to nose through a fence, because they are so upset about not being able to be with each other. They are much more aware than we think. We don’t take animals to the vet without another animal because they are absolutely devastated. Pigs mourn themselves to death; all these animals do.”

—Susie Coston, national shelter director, Farm Sanctuary

Sending Out an SOS

When JoAnn Altsman suffered a heart attack, her dog, Bear, barked, and her pig, Lulu, squeezed her body under a dog door. Scraped and bleeding, Lulu laid herself in the middle of traffic until she attracted help. Intermittently, she ran into the house,

apparently to check on Mrs. Altsman. Lulu's efforts led to recovery for Mrs. Altsman and fame for herself. Her heroism is included in the book *Beasts: True Stories of Animals Who Choose to Do Good*.





“We haven’t even begun to examine the capabilities of pigs. We will find that they are much more complex and clever than we have previously given them credit for. I think that is probably true for lots of animals.” ↙

—Ed Pajor, PhD, associate professor,
Animal Behavior and Welfare, Purdue University

Forkie and Pinkie: Pigs in the House

Helen Bransford, a pig enthusiast and the illustrator of and inspiration for Jimmy Buffett's book *Swine Not?*, has two beloved pigs she considers part of the family. Forkie and Pinkie, thirteen and one respectively, sleep on the living room sofa and spend a lot of time cuddling. In contrast to their reputation, like all pigs, when given the choice, they are extremely clean creatures.



"They are shockingly intelligent and have a natural affinity for humans," beams Bransford. "As piglets, their favorite thing is to curl up next to you for a warm nap. Well, no, their favorite thing would be food—then human affection. They're very similar to us. Remember, the first transplanted heart was a pig's. And cloned pigs have been designated the best source of multiple organs for transplants in the future.

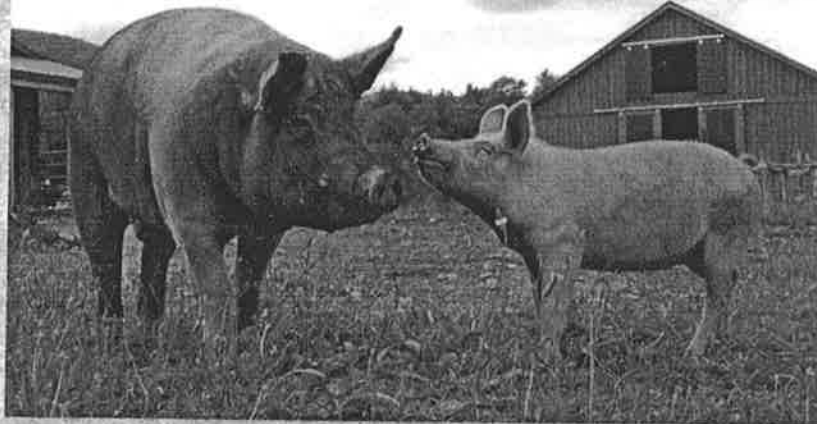
"Just watch a pig's eyes if you can," continues Bransford, "They know exactly what's going on.

Forkie will come when called, sit, kiss, kneel, play the toy piano, and open the fridge if she gets half a chance. You can teach them just about anything they're physically capable of doing. Forkie's a bit of a diva. She'll sometimes refuse to give

visitors her place on the sofa—and if they somehow take it while she's away, she'll remove them with her snout. A snout, by the way, that

can smell six feet below ground as well as a single Tic Tac in the bottom of your suitcase.

"With their level of intelligence, pigs can get bored easily, so they need to have toys and things or places to explore—at the very least a rooting box. They love their toys. And I swear, you can see a pig smile—a happy pig just radiates contentment. They're considered the most intelligent animal after primates and dolphins, but pigs as a species have barely been studied at all. I bet that's going to change."



Bruce and Aloha: Into the Sunset

Bruce, an older pig who had been badly abused and neglected, was rescued by Animal Place, a farm sanctuary in Vacaville, California. Severely malnourished, he was skin and bones, and for the first month, the staff kept him in the barn just to feed him and help him learn that he could count on being fed every day.

Over time, Bruce gained more than one hundred pounds. He also gained the ability to trust. "It took time before I could pet him," comments Kim Sterla, the co-founder of the sanctuary. "It was more than a year before I could give him a belly rub. But today he is no longer fearful of the people he knows." Bruce also

gained a partner, a pig named Aloha. According to Sterla, Bruce and Aloha are very close and sleep together every night. Bruce lies down and is ready for sleep right away. Aloha is very fussy and gets up and down for forty-five minutes or so before she gets comfortable. "It is so precious to watch their relationship evolve," beams Sterla. "They have a routine where they nap under one part of the barn, and then, as the sun sets, waddle off together for the evening. Often Aloha stops to do her business. Bruce always waits for her to catch up. It doesn't get much better than seeing Bruce fat, warm, free, happy, and grazing in peace."

Winnie and Buster: A Story of Loss and Recovery

Winnie and Buster were rescued by Farm Sanctuary in Watkins Glen, New York, when they were piglets. After five years of being together constantly, Buster was injured and eventually had to be put to sleep. Afterward, Winnie kept to herself, sleeping alone rolled up in a little ball. She didn't want to be touched and made no attempt to make new friends. The staff was very concerned, as Winnie seemed to have given up. She lost a great deal of weight, but tests revealed that nothing was wrong physically.

Two years later, the sanctuary adopted a new group of piglets and, according to national shelter director Susie Coston, "Winnie became a whole new pig. Now she's the boss of the herd, running around with the piglets, playing games, and spinning. She is finally letting herself care about another animal again." Winnie is attached to the piglets, staying with them during the day and sleeping with them at night. "This group woke Winnie up and brought her back to life," comments Coston. "She's like she was with Buster."

