Dog People: A Tale of Two Species

L-R: The author's mother Rayetta, Aunt Dagmar, and Aunt Jo,

with dog "Linnie" – (Abraham Lincoln" – circa 1925 in Media, PA

Dog Whispering

We are often students as well as teachers, at various times in our lives. And what began as an occasional favor to my daughter evolved into an invaluable learning experience for me, with unexpected benefits.

My "home schooling" began about six months ago, when my daughter moved back from Florida, bringing with her, a two-year old dog named Shayla (pronounced, "Shy-la"). Shayla, a female American Pit Bull Terrier with a possible American Bull Dog mix, was still a puppy when my daughter adopted her from a local animal shelter. Shayla has Dalmatian-like spots under her short white fur, and exhibits pointing and tracking behavior. A bright, friendly, and personable dog, now three years old and nearly sixty pounds, her lean and muscular physique enables her to pull with the torque of a small tractor and run with the fleetness of a deer. And her puppy-like exuberance requires me to exert the strength and skill of a Roman charioteer.

Mostly white, Shayla has a grey patch over her left eye and cheek, giving her a slight resemblance to "Pete the Pup" – perhaps better known as "Petey" – the American Pit Bull Terrier of *Our Gang* (aka *The Little Rascals*) fame. Passers-by often mention that when I am walking her. Her intelligent face and thoughtful expression reminds one of "Nipper," the iconic dog used as a logo for RCA/Victor, JVC and others, who may also have been some type of terrier.

With a fondness for flowers like "Ferdinand the Bull" from the popular, eponymous children's book, Shayla's sweet and sunny disposition has disabused me of the stereotypes that abound about pit bulls. Contrary to popular belief, pit bulls are no more inherently aggressive than any other breed, and in the early part of the 20th century were popular with families with children, as playmates and babysitters, because of their gentle temperament and loyalty.

According to Cesar Millan – *New York Times* best-selling author and host of National Geographic Channel's *The Dog Whisperer* television series:

> "Pit bulls have been the latest victims of breed prejudice in this country. I define *breed prejudice* the same way I do racial prejudice – both are based on fear and ignorance…It's the same thing with dog breeds. In the seventies it was the German shepherds that were the vicious breed. In the eighties it was the Dobermans. In the nineties, everybody feared the Rottweiler, and since the nineties it's been the pit bulls that everyone blames. The more educated people become and the more owners of powerful breeds like pits and Rotties take their responsibilities seriously, the less likely we are going to blame the dogs."[i]

In fact, Millan's favorite dog was his beloved pit bill, Daddy, who often functioned as his partner in rehabilitating dogs with behavioral problems, or those mistreated by their owners. When Millan is hired to "train" – he prefers, *rehabilitate* – a problem dog, he nearly always finds the root of the dog's problem in the actions of the owner. He believes that since dogs are highly dependent on and deeply connected to humans, pressing personal problems and anxieties burdening the owner can influence the dog's behavior. Therefore, either positive or negative energy can be transmitted from owner to pet, just as they can between individuals. He advocates using "calm assertive energy," which promotes consonant, rather than dissonant, leadership among pets and people alike.

People often identify themselves as either "dog people" or "cat people." My family has owned dogs, going back at least 100 years; but our relationships with animals predate that time. Before the Civil War, my maternal great-great grandfather had been a carriage driver in his youth. And in later years, he drove a mule-team delivery wagon in the late 1800s for a local hardware store in Media, PA. My paternal great-grandfather was a farmer in Gloucester County, VA, and had a special knack for dealing with animals. Neighbors often brought ailing horses and cows to him for treatment. Strays that wandered onto his property allowed him to care for them until their owners could be located. According to family lore, he was a kind of *horse whisperer*.

We lived with my grandmother when I was a child in a large, extended family. My dog Spot was my best friend for the first seventeen years of my life. My grandmother loved dogs and

often said “love me, love my dog.” Near the end of his life Spot went blind but he always knew me when I walked through the door by the smell and touch of my hand. I miss him to this day.

Our dogs were part of our family and never mistreated. But we never pampered or tried to humanize them. “Spot” and “Tippy” were large, hardy, mixed-breed, well-behaved, primarily outdoor dogs that didn’t pester our guests or exhibit destructive or dysfunctional behavior. On the contrary, they seemed comfortable, confident, and valued, serving as great playmates and protectors. One of my fondest childhood memories is of using our dogs to pull us in makeshift “covered wagons” we made by bending pliable branches from our hedges into semi-circles, inserting them into our little red wagons and covering them with old sheets. It made quite a sight.

Dogs fulfill important social, emotional, cultural, and familial roles. The companionship, comfort, and joy a family dog can bring is only rivaled by the depth of sadness families feel when their pet is injured or passes away due to accident or natural lifespan. Dogs are not merely chattel or domestics; they are integral members of the family – or *pack* – to which they belong.

However, Cesar Millan advises that far too many dog owners do try to infantilize or over-indulge their pets, which is not in the best interest of the animal. As Millan states, “your dog is a dog – not a baby or a small furry person with a tail.”[ii] Misguided owners often address a dog’s needs from a human’s perspective. I don’t believe that pets truly enjoy being dressed in cute clothing or Halloween costumes, or forced to perform for visitors. Millan writes that dogs need the following, in the following order: exercise, discipline, and affection. But he argues that many Americans too often shower their pets with affection, without providing them with the exercise or the discipline they require; and that leads to behavioral problems.

Obesity, a critical health problem in America, is evidence that – in addition to over-eating – many Americans do not get adequate exercise. Consequently, such owners often fail to give their pets the exercise they need. And when pets are improperly or over-fed – the result is obesity among some dogs and cats. Although affection, without doubt, is an important aspect of pet ownership, hyperactivity, frustration, and aggression among many dogs can sometimes be due to a lack of discipline and adequate exercise – which constructively burns off excess energy.

But discipline does not equal punishment. Discipline means *order*, clear expectations, and guidance with positive reinforcement. Humans and canines are species with complex social systems, forms of communication, and types of interaction. The parallels between Millan’s approach to being a responsible dog owner – he uses the term, *pack leader* – and adults functioning as responsible leaders on our jobs, in our families, and communities are noteworthy. For example, although perhaps not in the same order of priority, it is difficult to argue that children do not require the same elements of exercise, discipline, and affection that dogs need.

My daughter quickly landed a busy job upon her return, sometimes working as many as six nights a week, so I began walking her dog for her. What began as my reluctantly doing a good deed once or twice, evolved to my looking forward to walking Shayla five times a week. Shayla

and I have benefited from the exercise and interaction. But being an academician and social scientist, this experience prompted a flurry of questions for me about canine intelligence, perception, and inter-species communication.

The findings from my search for the answers to those questions follow below. However, as a layman in these areas of research, my observations or interpretations are presented from the perspective of a casual observer, using layman's terms. Therefore, if I ascribe certain "abilities" to my canine companion that may not conform to current scientific knowledge, it is not intended to pass as "bad science" – it is simply because I do not know how to otherwise describe them.

Decoding Dogs

After watching a PBS/NOVA program entitled, "Dogs Decoded" (2010), which examined the evolution and intelligence of dogs, and the development of their relationships with humans, I wrote to one of the consultants on the program – Dr. James A. Serpell, the Marie A. Moore Professor of Humane Ethics & Animal Welfare and Director of the Center for the Interaction of Animals & Society, in the Department of Clinical Studies at the School of Veterinary Medicine, of the University of Pennsylvania.

I asked Dr. Serpell if Shayla understood that I was my daughter's father, either based on having similar scents or if the dog was merely picking up social or behavioral cues by observing the interactions between my daughter and me. He replied: "Probably both. Many dogs are supersensitive to human nonverbal signals that we are not even aware that we are giving."[iii]

My daughter's dog was originally purchased for a young boy in a Latino family in South Florida, who spoke to the dog in Spanish. However, the family soon moved into an apartment and could no longer keep the dog, donating it to a local animal shelter. My daughter – who is bilingual – continued speaking to Shayla in Spanish, because it appeared to her that her dog responded better to her commands in Spanish, than when she used English. My daughter now uses both languages when giving commands or encouragement to her dog. And when I do the same, her dog does seem to have a slight preference for Spanish.

This made me consider the possibility that if a dog was born in China, it would seem more likely to understand or respond to commands spoken in Chinese, rather than English, just as a human being would. So, I asked Dr. Serpell: "In addition to their excellent observation skills regarding humans, are some dogs bilingual or multilingual?"

He responded: "Yes, certainly. All that is necessary is for the dog to learn to associate a particular sound with a particular action or outcome. The fact that it may have to learn to associate two or more totally different sounds with the same thing shouldn't be a major obstacle for a reasonably clever dog." Dr. Serpell was also kind enough to send me some articles on the behavioral issues I had asked about.

As is often the case with research, the more information I received the more questions it generated for me. And I began to wonder not only about interspecies communication, but consciousness, thought processes, and memory, as well. Shayla always seems enthusiastic when I arrive at my daughter's house to walk her. But does Shayla think about me or miss me when I am not there? Dogs and their owners – or pack members – often develop strong emotional bonds. And there are countless documented stories of dogs demonstrating their love and loyalty to their families.

For example, in a recent article entitled "What our pets think of us" by Steve Dale, in *USA Weekend* magazine, he relates the story of a Bristol, Indiana, couple who believe their pit bull "Thor" saved their lives and the life of their three month old baby. Thor woke the couple in the middle of the night because their house was on fire. However, heavy smoke prevented the couple from reaching their child's room. As they stood outside screaming for help, Thor pulled the bassinet out of the house and away from the flames. Both baby and dog were unharmed.[iv]

But foundation of the bond of love or affection that exists between a dog and its owner may be based in part on chemistry, and not merely community or familiarity. The peptide hormone oxytocin is produced in the hypothalamus, a very old part of the brain; and serves as a powerful bonding agent when mothers breastfeed their newborns. Because such babies have only recently joined their families, in terms of length of time spent as a family member, they are still essentially little strangers. According to the PBS/NOVA program, *Dogs Decoded*: "Professor Uvnas-Moberg (of the Karolinska Institutet in Sweden) believes oxytocin plays a similar role in the bond between dogs and their owners. To test the theory, blood samples are taken from dogs and their owners before and during a petting session."[v]

Test results revealed that dogs as well as owners received a burst of oxytocin in their bloodstreams during these petting sessions, which resembled the spikes that occurred for breastfeeding mothers. "Oxytocin has a powerful physiological effect. It can lower the heart rate and blood pressure and may lead to reduced levels of stress. Research indicates that owning a dog could even extend your life."[vi] Dr. Kerstin Uvnas-Moberg stated: "If you have a dog, you are much less likely to have a heart attack, and if you have a heart attack, you are three to four times more likely to survive it if you have a dog than if you don't."[vii]

Dog sights man

I don't know if Shayla misses me, but I do miss *her* between visits. Our interactions have also made me wonder about social interaction and communication between canines and humans. As Dr. Serpell indicated, dogs are keen observers of humans, and not only have the ability to understand some spoken words, but body language as well. But how did these abilities develop and how do dogs rank in relationship to our closer relatives – great apes and chimpanzees?

According to a 2002 study entitled, "The Domestication of Social Cognition in Dogs," by

Brian Hare, Michelle Brown, Christina Williamson, and Michael Tomasello, they found:

> "that (i) domestic dogs are more skillful than chimpanzees (one of humans' two closest extant primate relatives) at using human social cues to find hidden food in the object choice paradigm; (ii) domestic dogs are also more skillful than wolves, their closest extant relative, at using human social cues to find hidden food in the object choice paradigm; and (iii) dog puppies' use of human social cues in the object choice paradigm is quite skillful and does not vary by age or by their rearing history with humans."[viii]

Surprisingly, dogs are more skilled than chimpanzees in following humans' social cues, such as pointing or gesturing, to find objects or food. But what was the critical perceptual difference that enabled dogs to make greater use of this information provided by humans? In another study in 2003 by the Comparative Ethology Research Group at Eotvos University in Budapest, Hungary, entitled, "A Simple Reason for a Big Difference: Wolves Do Not Look Back at Humans, but Dogs Do," by Adam Miklosi, Eniko Kubinyi, Jozsef Topai, Marta Gacsi, Zsofia Viranyi, and Vilmos Csanyi, the researchers found that,

> "Based on these observations, we suggest that the key difference between dog and wolf behavior is the dogs' ability to look at the human's face. Since looking behavior has an important function in initializing and maintaining communicative interaction in human communications systems, we supposed that by positive feedback processes (both evolutionary and ontogenetically) the readiness of dogs to look at the human face has led to complex forms of dog-human communication that cannot be achieved in wolves even after extended socialization."[ix]

I understand that the key difference for dogs is their ability to look into our faces and apparently evaluate, interpret, or act on what they see. But when did this ability develop in dogs? And what are the implications for human development? Supporting the findings of his earlier work, in a 2005 study entitled "Human-like social skills in dogs?" at the Max Planck Institute for Evolutionary Anthropology, Brian Hare and Michael Tomsello found that:

> "Domestic dogs are unusually skilled at reading human social and communicative behavior – even more so than our nearest primate relatives. For example, they use human social and communicative behavior (e.g. a pointing gesture) to find hidden food, and they know what the human can and cannot see in various situations. Recent comparisons between canid species suggest that these unusual social skills have a heritable component and initially evolved during domestication as a result of selection on systems mediating fear and aggression towards humans. Differences in chimpanzee and human temperament suggest that a similar process may have been an important catalyst leading to the evolution of unusual social skills in our own species."[x]

In prehistoric times, wolves and humans ostensibly "realized" that hunting could be done more efficiently when quarry was trapped between the two groups. As a result, a symbiotic relationship – a *working* relationship, not a *personal* relationship – began to develop between the two species. Wolves also learned that humans could be a good source of cast-off food and waste.

Consequently, humans began a process of selecting wolves that appeared less aggressive and fearful of humans in this evolving partnership. But something unexpected happened during this process of selection. Scientists still debate the effects of the processes of selection, artificial breeding, and domestication.

Dr. Pamela J. Reid, an animal learning and behavioral psychologist who serves as Vice President of the Animal Behavior Center, of the ASPCA in Urbana, IL writes:

> "Four basic hypotheses have been put forth to account for the findings. One assertion is that dogs, by way of their interactions with humans, learn to be responsive to human social cues through basic conditioning processes (Udell andWynne, 2008). A second proposal is that by undergoing domestication, dogs not only reduced their fear of humans but also applied all-purpose problem-solving skills to their interactions with people. This largely innate gift for reading human social gestures was inadvertently selected for via domestication (Hare, 2007; Hare and Tomasello, 2005a). Still others favour the suggestion that dogs' co-evolution with humans equipped them with the cognitive machinery to not only respond to human social cues but to understand our mental states; a so-called theory of mind (Miklosi et al., 2000, 2004). Lastly, the more cautious explanation, which I favour, is that dogs are adaptively predisposed to learn about human communicative gestures. In essence they come with a built in "head start" to learn the significance of people's gestures…"[xi]

Dr. Reid offers yet another explanation regarding canine learning – or the processing of human cues – which touches upon their ability to understand human language.

> "The simplest explanation for dogs' responsiveness to human social cues is that dogs are frequently exposed to these stimuli, and they learn their significance in precisely the same fashion that they learn a host of other meaningful stimuli. Trained dogs can acquire an astonishing set of auditory, visual, and olfactory cues through respondent and operant conditioning procedures. [Rico, the border collie that possesses a vocabulary of over 200 words for specific toys is a noteworthy example (Kaminski et al., 2004).] Even without explicit training, pet dogs learn a vast array of stimuli signifying such important events as feeding, walks, and the dreaded bath time. There is no question that we humans attempt to communicate with dogs in much the same way as we do with each other, so it is certainly in dogs' best interest to learn to respond in accordance with our communicative gestures."[xii]

However, dogs are not the only species with which humans have tried to communicate on a more sophisticated level. A number of attempts to teach primates to communicate with humans were conducted, as in the case of Koko the gorilla (born July 4, 1971 at the San Francisco Zoo). Developmental psychologist Dr. Francine Patterson, who serves as President and Research Director at The Gorilla Foundation, claims that Koko understands 1,000 words in modified American Sign Language and 2,000 words of spoken English. But these claims remain controversial. Washoe (1965-2007) a chimpanzee, originally obtained for the U.S. space program, but later transferred to the Institute for Primate Studies at the University of Oklahoma, reportedly learned 350 words in American Sign Language. This research appears to be widely accepted by the scientific community. A recent *New York Times* article and upcoming documentary feature the

study of another chimpanzee, "Nim Chimpsky" (1973-2000), which resulted in a failed attempt to replicate the Washoe Experiment.

Rico, the pet border collie from Germany mentioned above, appears to be a remarkable example of canine intelligence and social interaction. Not only could this dog retrieve a large number of objects when named, it was able to retrieve new objects without names, based on the process of elimination. According to Julia Fischer, a biologist at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, who assisted in the testing of Rico, "Maybe this is the Albert Einstein of dogs. Or maybe this is something that other dogs can do, too. We just don't know. We need to find out."[xiii] (Another border collie, named "Betsy," currently being studied at the Max Planck Institute appears to have a vocabulary of over 300 words.)

As Dr. Pamela Reid indicated earlier, the enhanced observation, communication, and cooperation abilities that dogs exhibit may have been a lagniappe – a serendipitous and unexpected benefit of selective breeding efforts of wolves on the part of humans. She states:

> "Domestic dogs differ from wolves and nonhuman primates in that they have been subjected to artificial selection for domestic traits. Dogs have undergone two phases of domestication. First, they evolved as a species distinct from their wild ancestral form. Second, they diverged into the various breeds with their characteristic behavioural and morphological traits. Hare and Tomasello (2005a,b) have offered the hypothesis that dogs outperform other species in their ability to respond to human social cues as a result of traits selected for during domestication. They do not propose that humans selected directly for dogs' abilities to read human communicative gestures. Rather, the selection pressures placed on the species for tameness and other desirable domestic traits, such as dogs' willingness to eat in the presence of humans and perhaps even dogs' acceptance of restraint by humans, may have provided the driving force for a specialized set of social skills. Thus, dogs emerge as expert readers of human social cues as a by-product of their domestic status."[xiv]

Reid also makes reference to a fascinating experiment in selective breeding by Russian scientist Dmitry Konstantinovich Belyaev (1917-1985) that sheds light on the results of such processes.

> "Belyaev and co-workers (1979; Trut, 1999) experimentally domesticated silver foxes on a fur farm in Russia and revealed that the process of selective breeding for tame behaviour produced unanticipated changes in physiology, morphology, and behaviour. Successive generations of foxes began behaving more like dogs: they approached people instead of running away and they barked and wagged their tails. The sensitive period for socialization with humans lengthened (Belyaev et al., 1985). These tame foxes also started to look a bit like dogs: many were born with floppy ears, curly tails, shortened tails, spotted and speckled coats, or lighter bone structure. Like dogs, female foxes came into estrus biannually. Importantly, none of these changes were purposefully selected for but rather, came part and parcel with specific selection for low levels of fear and aggression."[xv]

Man sights dog

If one behavioral feature that makes dogs different from wolves, or other species, is their ability to look at the human face, what do we see when we look at our dog's face? During my childhood and adolescence, my family owned dogs but I don't recall intentionally looking into the animals' faces very often. However, after conducting this research and spending a good deal of time with my daughter's dog, I have begun to do just that. And here is what I have seen…

I've noticed that Shayla seems to have a number of different facial expressions – although, *appearances* may be a more accurate and less anthropomorphic term to use here.

Shortly after she arrived with my daughter, Shayla was attacked and bitten by a much smaller dog owned by a neighbor. Fortunately, Shayla did not kill or maim the tiny aggressor, apparently using enormous restraint in not responding in kind. Almost invariably, I have found the smallest dogs are the most aggressive when we encounter them on our walks, and they will often pursue us. I witnessed a case in point this morning, getting into my car to drive to work.

[Across the street, a neighbor was sitting on his open porch with his dog, which appeared to be a small Pomeranian that was not on a leash. A woman walking a sizeable male pit bull approached and without warning, the Pomeranian left the porch and suddenly attacked. The woman was knocked to the ground as her pit bull reflexively pulled forward to meet the attack – however, her dog remained under control and appeared dumbfounded as to why another dog five times smaller in size, would attack it. Cursing as she picked herself up off the ground, the woman yelled at the neighbor to restrain his Pomeranian, because her dog would savagely bite back if bitten. The lackadaisical neighbor did not seem to grasp the imminent danger to his Pomeranian, which would have been crushed and killed by a single snap, had the pit bull lost control.]

Sitting in her large cage after her attack, Shayla's eyes looked desolate, untamed, and vacant. Her affect was somber, no doubt in part, because she had recently left her comfortable home over a thousand miles away. The trip had involved a number of substantial changes for her in addition to the distance. She had left Florida, balmy even in November, for a frosty fall in Pennsylvania. (She would see her first snow just a few weeks later – which she loved.) She had also lost her pack – no small emotional experience, since dogs are by nature social, pack animals. In the home where she had previously lived, she had a fellow pit bull as her constant playmate and companion, and she often spent her days running at full speed along an Atlantic beach. But in the course of a three-day drive, this two year old "puppy" had lost her home, family, and friends, with only my daughter, her owner, as the constant in her young life. Because my daughter and her mother have jobs, Shayla had to assume the life of a latch-key pup for periods of time. I live just a few blocks away and visit her often, but I also work and do not live there.

But as time wore on Shayla seemed to adapt to the major changes in her life. Each time I saw her and took her for a walk, or when my daughter would bring her to my house for a visit, she appeared to grow increasingly fond of me. Almost imperceptively, a strong bond developed between us. Now when I arrive at the house to walk her, she responds excitedly.

I don't chatter away mindlessly during our walks together. According to Cesar Millan, this may be cathartic for the pet owner but it does nothing for the dog, and may in fact be distracting or confusing. As with people, sometimes when one speaks less it carries greater impact. I give her

only periodic vocal feedback, usually in the form of "good girl," when she periodically looks up at me. My job is to be calm and vigilant. When she instinctively starts to chase a cat or squirrel prompting a tug-of-war with me, I firmly respond "no;" and pull her away.

Sometimes on our walks I sing a verse or two from a song. When I do, she tilts her head sideways and seems to smile at me. After returning home, I always have two nugget-sized dog treats for her. I now point to the closed fist that happens to hold her treat and she follows my cue, as research attests. After she waits patiently to receive them, I pet her lovingly. She then looks up at me, making sustained eye contact, and her look appears to be one of affection and happiness.

I try to schedule our walks so that someone is home when we return. As I explained to my daughter, I can't abide that sad little face looking at me through the window as I walk away, when I have to leave her home alone. That is difficult for me. On one occasion when I merely stopped by to see my daughter, Shayla seemed to suspect that we were all going out without her, and wore the traditional "hang dog look" that was even sadder than when she watches me leave.

My daughter constructed a swing for her dog, at the end of which is a small rubber tire and length of sturdy rope. Shayla loves to leap up, clench the tire or rope firmly in her jaws and swing back and forth. When I see them playing together, or Shayla racing around the yard being chased by my daughter, her dog face appears as happy and excited as any human child's at play.

According to animal learning and behavioral psychologist Dr. Pamela J. Reid:

> "The upshot of all this research on dog social cognition is that we really have no idea why they are so good at responding to human communicative gestures. It may be a reflection of general process learning that results from an extensive exposure to reinforcement contingencies during the lifetime of the individual. It may be that dogs' superiority arises as a by-product of domestication and is now an innate skill that emerges spontaneously. Alternatively, dogs, through the selective pressures placed on them during their co-evolution with humans, may have evolved specialized cognitive abilities for interpreting the meaning of human communicative gestures and engaging in intentional exchanges of information with people. None of these explanations is wholly satisfying. Dogs are too skilled for it to be pure trial-and-error learning. Yet it is improbable that a versatile behaviour like this would be largely innate. And support for dogs having theory of mind is nonexistent (Penn and Povinelli, 2007)."[xvi]

Science and Spirituality

I don't know what to make of the "theory of mind" concept in canines; i.e. whether they have a concept of self-awareness, the ability to learn and understand, to comprehend the difference between intentional and accidental acts; the ability to think, think in abstract terms, and employ other complex mental processes. As Shakespeare wrote, "There are more things in Heaven and Earth, Horatio, than are dreamt of in your philosophy."[xvii] The only thing I'm certain of is how much there is in the universe that I don't know. It is essential to keep an open mind.

Dog owners will willingly regale any listener with tales of their pet's extraordinary powers of perception, asserting that they possess the ability to perceive their thoughts, feelings, moods, and even their physical conditions. And some will tell you that their dogs appear to have dreams. According to psychologist Dr. Stanley Coren, in an article entitled "Do Dogs Dream?" published in *Psychology Today* (October 28, 2010), there is evidence to support this theory. Equally surprising, Cohen mentions that "Matthew Wilson and Kenway Louie of the Massachusetts Institute of Technology have evidence that the brains of sleeping rats are functioning in a way that irresistibly suggests dreaming." [xviii]

Research on animal intelligence and the functioning of animal brains is intriguing and amazing, and in all likelihood will be vigorously debated by scientists for decades to come. However, it is indisputable that dogs are highly intelligent and exceptional observers of human beings, and can interact with people in complex ways. They hold a special place in the human condition. Dogs have played important therapeutic and rehabilitative roles in the recovery of patients, prisoners, and veterans, in addition to heroic search and rescue efforts. But there appears to be a great deal more possible regarding the connections, communication, and interaction between humans and canines that remain to be researched and documented.

I am astonished by the richness and variety of facial expressions – or *appearances* – that Shayla has, and the thoughtful, intelligent depth of her eyes. At various times she connotes playfulness, shyness, curiousness, slyness, friskiness, disinterest, and thoughtfulness. She can also appear resolute and protective, and occasionally misbehave. But I have never witnessed her acting wolf-like or aggressive. To the contrary, she has a decidedly pacific and cooperative disposition. As I am with my daughter, I am grateful to be an important part of Shayla's life and equally grateful that she is now a part of mine. And for that, I thank my daughter, Noelle.

Years ago when she was a child, like most children, my daughter desperately wanted a dog. But knowing full well the enormous amount of time and responsibility it required – and that parents quickly become the primary caretakers when children lose interest – her mother and I could not afford her one. We each worked long hours and I attended graduate school at night, for years, to earn two degrees. My daughter now understands that the significant commitment of dog ownership is akin to having a child; and her hectic work schedule makes juggling her multiple responsibilities quite challenging. I hope that by demonstrating my love and devotion to her and Shayla, I have redeemed myself for not giving her a dog earlier in life. And this former shelter dog, who once faced a potentially bleak and uncertain future, has found a loving home.

I have learned a great deal from my daughter and Shayla, in addition to Dr. James Serpell, Cesar Millan, and the many other experts, researchers, and scientists mentioned in this paper. My experience with Shayla has reminded me to consider not just *her* canine intelligence and communication skills, but that we live in a world of multiple intelligences and life forms, each with a right to the natural resources of our planet. It's been said that trees can communicate chemically, when a predator insect invades a forest; and that plants can tell the difference between their roots and "not their roots," so that they do not compete against themselves. Aside from numerous examples in the animal kingdom such as birds, mammals, and others mentioned in this article, even invertebrates – cephalopods, like the squid and octopus – appear to have intelligence and seem capable of learning. The thought is at once staggering and humbling.

In the Franciscan tradition, we are not the rulers or owners of this planet – we are merely its stewards. And we have a great responsibility to use our intelligence, skills, and science to protect and preserve the Earth for the future generations of all species. In his book, *Be the Pack Leader*, Cesar Millan provides a sage quote from astronomer and astrophysicist Carl Sagan: "Science is not only compatible with spirituality; it is a profound source of spirituality." (p.3)

Millan himself offers an eloquent ending for this article. He writes: "Spirituality takes many forms, but one thing is known – it is a deeply ingrained part of being human that has existed since early civilization. Whether one believes in an unseen, all-knowing force, or the wonder of science and the universe, or simply the beauty of the human spirit, nearly every one of us feels an inner longing to feel part of something bigger than ourselves." [xix] Because we are.

[End]

ENDNOTES

[i] *Be the Pack Leader*, Cesar Millan with Melissa Jo Peltier, Three Rivers Press (2007), 165.
[ii] Ibid., 30.
[iii] E-mail correspondence, between Samuel M. Lemon, Ed.D., and James A. Serpell, Ph.D., January 10, 2011.
[iv] "What our pets think of us," Steve Dale, USA Weekend, July 1 – 3, 2011, 6-7.
[v] *Dogs Decoded*, PBS/NOVA (2010)
[vi] Ibid.
[vii] Ibid.
[viii] "The Domestication of Social Cognition in Dogs," Brian Hare, Michelle Brown, Christina Williamson, Michael Tomasello, in: 22 November 2002 Vol. 298 SCIENCE www.sciencemag.org,,1634-1636.
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