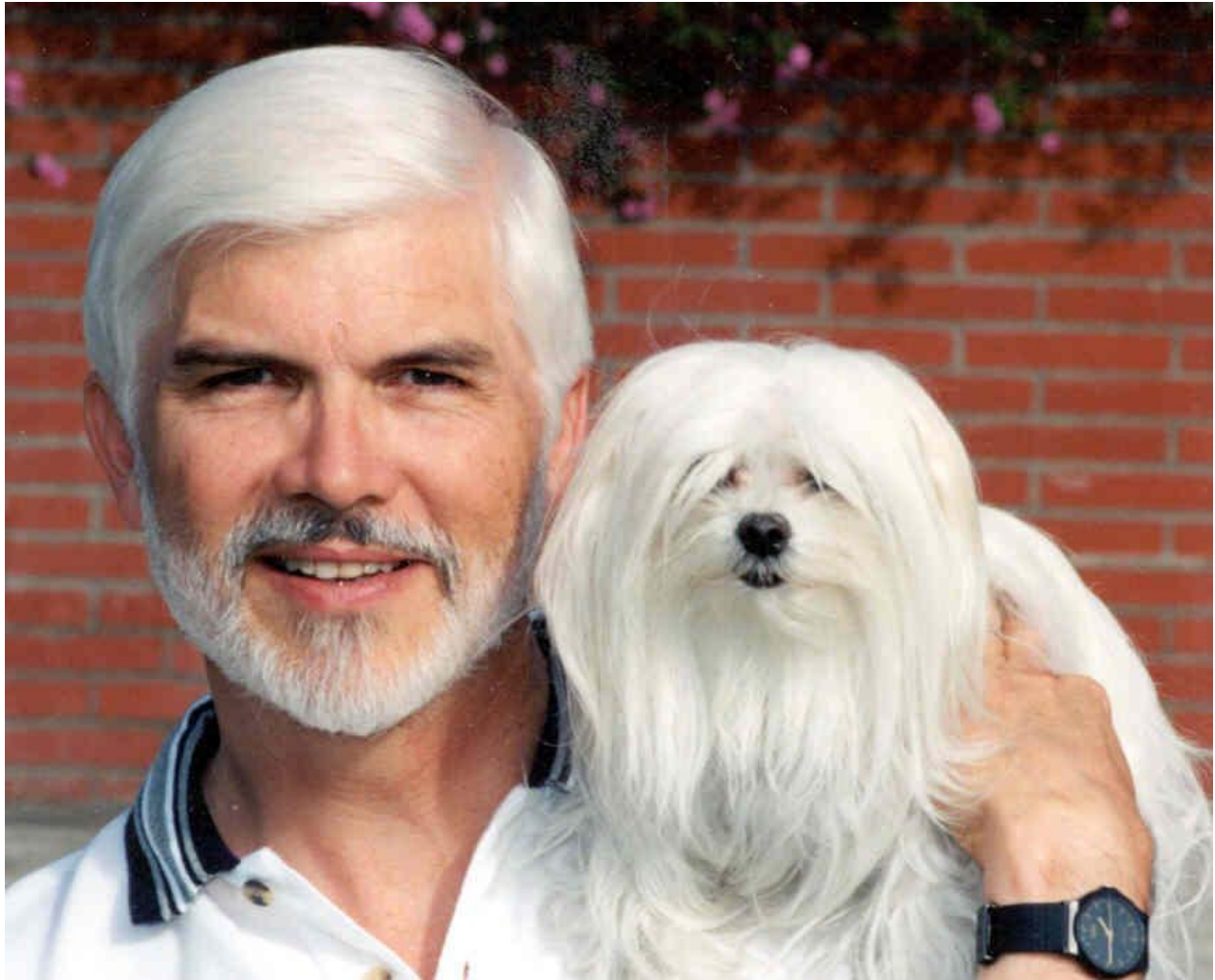


Created in Our Image



**- Dog, a True Reflection of the Very
Best of Humanity -**

Stuart R. Kerr III

Created in Our Image 1:

Dogs are a true reflection of the very best that humanity can be; they are the embodiment of our fondest hopes of what we ourselves strive for.



Created in Our Image 2:

Our creative efforts to benevolently mold the "dog genus" into our image is just a taste of our co-creative destinies collaborating with God in ascendant creative adventure!



Created in Our Image

"The world would be a nicer place if everyone had the ability to love as unconditionally as a dog."

—M.K. Clinton


How perfect are the people who love dogs?
How much more do they love people?
How much more do they love the world?

Cesar

Created in Our Image 3:


I sometimes wonder if homo-sapien human beings had not evolved to attain God-consciousness, if planetary events prevailed whereby the evolutionary progression of humanity had been prematurely terminated, would the "mammal" genus that produced the evolutionary predecessor of today's dog have prevailed in reaching God-consciousness?

Created in Our Image



"The only creatures that are evolved enough to convey pure love are dogs and infants."
—Johnny Depp

Here we follow a simple guide that is easy to see.
We are not perfect but we are not perfect either.
We are not perfect but we are not perfect either.



Created in Our Image 4:

I have always believed that one of the main contributors to my joy of living in this world is that there are dogs in it.

Created in Our Image



“Why does watching a dog be a dog fill one with happiness?”
—Jonathan Safran Foer

Created in Our Image 5:

Modern science tells us that the origin of the domestic dog is not clear. Whole genome sequencing indicates that the dog, the gray wolf, and the extinct Taymyr wolf diverged at around the same time 27,000–40,000 years before present. These dates imply that the earliest dogs arose in the time of human hunter-gatherers and not agriculturists. According to the Urantia Book, it is revealed that, dogs were around at the times of Adam and Eve nearly 38,000 years ago when their son Abel was a “herder”: UB 76:2.7 “The death of Abel became known to his parents when his dogs brought the flocks home without their master.”

Created in Our Image



“When an eighty-five pound mammal licks your tears away, then tries to sit on your lap, it’s hard to feel sad.”

—Kristan Higgins

Created in Our Image 6:

During the Oligocene Epoch 25,000,000 years ago, this was a period of global cooling creating the possibility for glaciers and ice ages. It was also a time that noted the appearance of the early ancestors to today’s dog family: UB 61:2.7 “In Europe the ancestor of the canine family evolved, soon giving rise to many species of small dogs.”

During the Miocene Epoch 15,000,000 years ago, this was a time of warmer global climates and the early ancestors of dogs began to differentiate: UB 61:3.13 “The dog family was represented by several groups, notably wolves and foxes”

Created in Our Image



“A dog can’t think that much about what he’s doing, he just does what feels right.”

—*Barbara Kingsolver*

Created in Our Image 7:

“The dog was the first animal to be domesticated, and the difficult experience of taming it began when a certain dog, after following a hunter around all day, actually went home with him. For ages dogs were used for food, hunting, transportation, and companionship. At first dogs only howled, but later on they learned to bark. The dog's keen sense of smell led to the notion it could see spirits, and thus arose the dog-fetish cults. The employment of watchdogs made it first possible for the whole clan to sleep at night. It then became the custom to employ watchdogs to protect the home against spirits as well as material enemies. When the dog barked, man or beast approached,

but when the dog howled, spirits were near. Even now many still believe that a dog's howling at night betokens death.“ [The Urantia Book 69:7.4]



Created in Our Image 8:

The domestic dog (*Canis lupus familiaris* or *Canis familiaris*) is a domesticated canid which has been selectively bred over millennia for various behaviours, sensory capabilities, and physical attributes.

Although initially thought to have originated as an artificial variant of an extant canid species (variously supposed as being the dhole, golden jackal, or gray wolf), extensive genetic studies undertaken during the 2010s indicate that dogs diverged from an extinct

wolf-like canid in Eurasia 40,000 years ago. Their long association with humans has led to dogs being uniquely attuned to human behavior and are able to thrive on a starch-rich diet which would be inadequate for other canid species. Dogs are also the oldest domesticated animal. Dogs vary widely in shape, size and colors.

Dogs perform many roles for people, such as hunting, herding, pulling loads, protection, assisting police and military, companionship and, more recently, aiding handicapped individuals. This influence on human society has given them the sobriquet, "man's best friend".

Created in Our Image



**“Once you have had a wonderful dog,
a life without one, is a life diminished.”**

—*Dean Koontz*

Created in Our Image 9:

The term "domestic dog" is generally used for both domesticated and feral varieties. The English word dog comes from Middle English dogge, from Old English docga, a "powerful dog breed". The term may possibly derive from Proto-Germanic *dukkōn, represented in Old English finger-docce ("finger-muscle").] The word also shows the familiar petname diminutive -ga also seen in frogga "frog", picga "pig", stagga "stag", wicga "beetle, worm", among others. The term dog may ultimately derive from the earliest layer of Proto-Indo-European vocabulary.

In 14th-century England, hound (from Old English: hund) was the general word for all domestic canines, and dog referred to a subtype of hound, a group including the mastiff. It is believed this "dog" type was so common, it eventually became the prototype of the category "hound". By the 16th century, dog had become the general word, and hound had begun to refer only to types used for hunting. The word "hound" is ultimately derived from the Proto-Indo-European word *kwon-, "dog". This semantic shift may be compared to in German, where the corresponding words Dogge and Hund kept their original meanings.

A male canine is referred to as a dog, while a female is called a bitch. The father of a litter is called the sire, and the mother is called the dam. (Middle English bicche, from Old English bice, ultimately from Old Norse bikkja) The process of birth is whelping, from the Old English word hwelp; the modern English word "whelp" is an alternate term for puppy. A litter refers to the multiple offspring at one birth which are called puppies or pups from the French poupée, "doll", which has mostly replaced the older term "whelp".

Created in Our Image



“Dogs don’t rationalize. They don’t hold anything against a person. They don’t see the outside of a human but the inside of a human.”

—Cesar Millan

Created in Our Image 10: Anatomy

Domestic dogs have been selectively bred for millennia for various behaviors, sensory capabilities, and physical attributes. Modern dog breeds show more variation in size, appearance, and behavior than any other domestic animal. Dogs are predators and scavengers, and like many other predatory mammals, the dog has powerful muscles, fused wrist bones, a cardiovascular system that supports both sprinting and endurance, and teeth for catching and tearing.

Size and weight

Dogs are highly variable in height and weight. The smallest known adult dog was a Yorkshire Terrier, that stood only 6.3 cm (2.5 in) at the shoulder, 9.5 cm (3.7 in) in length along the head-and-body, and weighed only 113 grams (4.0 oz). The largest known dog was an English Mastiff which weighed 155.6 kg (343 lb) and was 250 cm (98 in) from the snout to the tail. The tallest dog is a Great Dane that stands 106.7 cm (42.0 in) at the shoulder.

Senses

The dog's senses include vision, hearing, sense of smell, sense of taste, touch and sensitivity to the earth's magnetic field.

Coat

A heavy winter coat with countershading in a mixed-breed dog

The coats of domestic dogs are of two varieties: "double" being common with dogs (as well as wolves) originating from colder climates, made up of a coarse guard hair and a soft down hair, or "single", with the topcoat only.

Domestic dogs often display the remnants of countershading, a common natural camouflage pattern. A countershaded animal will have dark coloring on its upper surfaces and light coloring below, which reduces its general visibility. Thus, many breeds will have an occasional "blaze", stripe, or "star" of white fur on their chest or underside.

Tail

There are many different shapes for dog tails: straight, straight up, sickle, curled, or cork-screw. As with many canids, one of the primary functions of a dog's tail is to communicate their emotional state, which can be important in getting along with others. In some hunting dogs, however, the tail is traditionally docked to avoid injuries. In some

breeds, such as the Braque du Bourbonnais, puppies can be born with a short tail or no tail at all.

Created in Our Image



**“If there are no
dogs in Heaven,
then when I die I
want to go where
they went.”
—*Will Rogers***

Created in Our Image 11: Lifespan

Mixed-breed dogs have been found to run faster and live longer than their pure-bred parents. In 2013, a study found that mixed breeds live on average 1.2 years longer than pure breeds, and that increasing body-weight was negatively correlated with longevity (i.e. the heavier the dog the shorter its lifespan).

The typical lifespan of dogs varies widely among breeds, but for most the median longevity, the age at which half the dogs in a population have died and half are still alive, ranges from 10 to 13 years. Individual dogs may live well beyond the median of their breed.

The breed with the shortest lifespan (among breeds for which there is a questionnaire survey with a reasonable sample size) is the Dogue de Bordeaux, with a median longevity of about 5.2 years, but several breeds, including Miniature Bull Terriers, Bloodhounds, and Irish Wolfhounds are nearly as short-lived, with median longevity of 6 to 7 years.

The longest-lived breeds, including Toy Poodles, Japanese Spitz, Border Terriers, and Tibetan Spaniels, have median longevity of 14 to 15 years. The median longevity of mixed-breed dogs, taken as an average of all sizes, is one or more years longer than that of purebred dogs when all breeds are averaged. The dog widely reported to be the longest-lived is "Bluey", who died in 1939 and was claimed to be 29.5 years old at the time of his death. On 5 December 2011, Pusuke, the world's oldest living dog recognized by Guinness Book of World Records, died aged 26 years and 9 months.



Created in Our Image

**“If you think dogs can’t
count, try putting three
dog biscuits in your
pocket and then give him
only two of them.”**

—*Phil Pastoret*

Created in Our Image 12: Intelligence

Dog intelligence is the ability of the dog to perceive information and retain it as knowledge for applying to solve problems. Dogs have been shown to learn by inference. A study with Rico showed that he knew the labels of over 200 different items. He inferred the names of novel items by exclusion learning and correctly retrieved those novel items immediately and also 4 weeks after the initial exposure. Dogs have advanced memory skills. A study documented the learning and memory capabilities of a border collie, "Chaser", who had learned the names and could associate by verbal command over 1,000 words. Dogs are able to read and react appropriately to human body language such as gesturing and pointing, and to understand human voice commands. Dogs demonstrate a theory of mind by engaging in deception. An experimental study showed compelling evidence that Australian dingos can outperform domestic dogs in non-social problem-solving, indicating that domestic dogs may have lost much of their original problem-solving abilities once they joined humans. Another study indicated that after undergoing training to solve a simple manipulation task, dogs that are faced with an insoluble version of the same problem look at the human, while socialized wolves do not. Modern domestic dogs use humans to solve their problems for them.

Created in Our Image



"No one appreciates the very special genius of your conversation as the dog does."

—*Christopher Morley*

Created in Our Image 13: Behavior

Dog behavior is the internally coordinated responses (actions or inactions) of the domestic dog (individuals or groups) to internal and/or external stimuli. As the oldest domesticated species, with estimates ranging from 9,000–30,000 years BCE, the minds of dogs inevitably have been shaped by millennia of contact with humans. As a result of this physical and social evolution, dogs, more than any other species, have acquired the ability to understand and communicate with humans and they are uniquely attuned to our behaviors. Behavioral scientists have uncovered a surprising set of social-cognitive abilities in the otherwise humble domestic dog. These abilities are not possessed by the dog's closest canine relatives nor by other highly intelligent mammals such as great apes. Rather, these skills parallel some of the social-cognitive skills of human children.





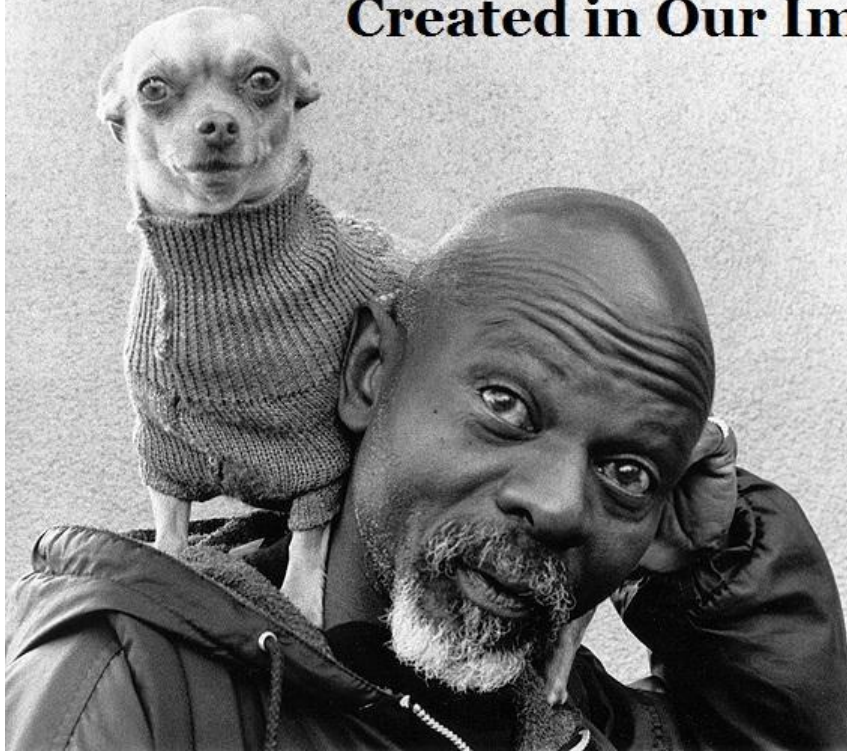
Created in Our Image 14: Dog-human communication

Both humans and dogs are characterized by complex social lives with rich communication systems, but it is also possible that dogs, perhaps because of their reliance on humans for food, have evolved specialized skills for recognizing and interpreting human social-communicative signals. Four basic hypotheses have been put forward to account for the findings.

1. Dogs, by way of their interactions with humans, learn to be responsive to human social cues through basic conditioning processes.
2. 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.
3. Dogs' co-evolution with humans equipped them with the cognitive machinery to not only respond to human social cues but to understand human mental states; a so-called theory of mind.
4. 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, in much the same way that white-crowned sparrows acquire their species-typical song and ducklings imprint on their own kind.

The pointing gesture is a human-specific signal, is referential in its nature, and is a foundational building block of human communication. Human infants acquire it weeks before the first spoken word. In 2009, a study compared the responses to a range of pointing gestures by dogs and human infants. The study showed little difference in the performance of 2-year-old children and dogs, while 3-year-old children's performance was higher. The results also showed that all subjects were able to generalize from their previous experience to respond to relatively novel pointing gestures. These findings suggest that dogs demonstrate a similar level of performance as 2-year-old children that can be explained as a joint outcome of their evolutionary history as well as their socialization in a human environment.

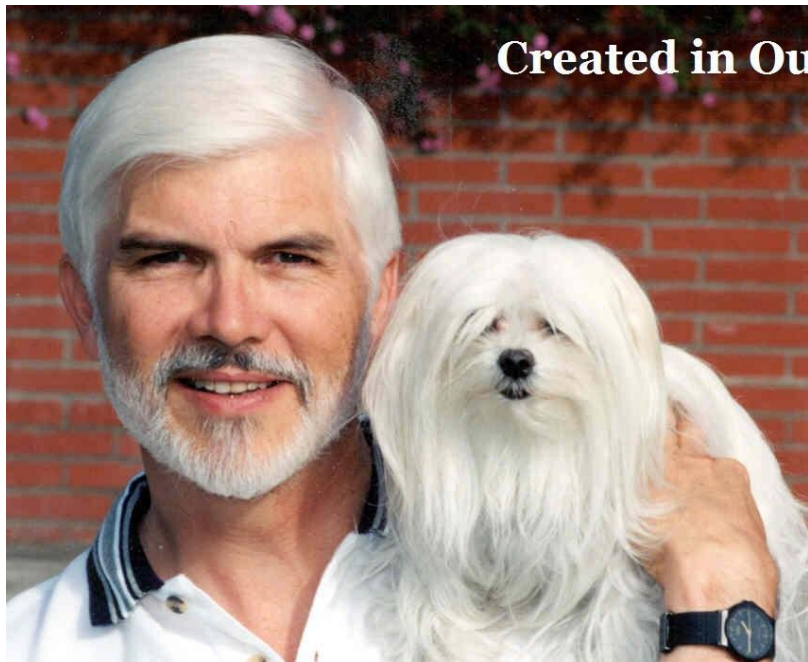
Created in Our Image



**“Heaven goes by
favor. If it went
by merit, you
would stay out
and your dog
would go in.”
—Mark Twain**

Created in Our Image 15: Olfactory Sense

Dogs have an olfactory sense 40 times more sensitive than a human's and they commence their lives operating almost exclusively on smell and touch. The special scents that dogs use for communication are called pheromones. Different hormones are secreted when a dog is angry, fearful or confident, and some chemical signatures identify the sex and age of the dog, and if a female is in the estrus cycle, pregnant or recently given birth. Many of the pheromone chemicals can be found dissolved in a dog's urine, and sniffing where another dog has urinated gives the dog a great deal of information about that dog. Male dogs prefer to mark vertical surfaces with urine and having the scent higher allows the air to carry it further. The height of the marking tells other dogs about the size of the dog, as among canines size is an important factor in dominance. Dogs (and wolves) not only use urine but also their stools to mark their territories. The anal gland of canines gives a particular signature to fecal deposits and identifies the marker as well as the place where the dung is left. A small degree of elevation may be sought, such as a rock or fallen branch, to aid scent dispersal. Scratching the ground after defecating is a visual sign pointing to the scent marking.



Created in Our Image

"A dog will teach you unconditional love. If you can have that in your life, things won't be too bad."

— Robert Wagner



Created in Our Image 16: Barks

By the age of four weeks, the dog has developed the majority of its vocalizations. The dog is the most vocal canid and is unique in its tendency to bark in a myriad of situations. Barking appears to have little more communication functions than excitement, fighting, the presence of a human, or simply because other dogs are barking.

- Barking in rapid strings of 3 or 4 with pauses in between, midrange pitch – alerting call, the dog senses something but not yet defined as a threat.
- Rapid barking, midrange pitch – basic alarm bark.
- Barking still continuously but a bit slower and lower pitch – imminent threat, prepare to defend.
- A prolonged string of barks, with moderate to long intervals between each one – lonely, in need of companionship, often exhibited when confined.
- One or two sharp, short barks of high or midrange pitch – typical greeting sound, usually replaces the alarm bark when visitor is identified as friendly.
- Single sharp short bark, lower midrange pitch – annoyance, used by a mother dog disciplining her puppies or by a dog disturbed from its sleep.
- Single short bark, higher midrange pitch – surprised or startled.
- Stutter bark, midrange pitch – used to initiate play.
- Rising bark – indicates having fun, used during play-fighting or when the owner is about to throw an object.



Created in Our Image

One reason a dog can be
such a comfort when
you're feeling blue is that
he doesn't try to find out
why.

—*Unknown*

Created in Our Image 17: Breeds

Most breeds of dog are at most a few hundred years old, having been artificially selected for particular morphologies and behaviors by people for specific functional roles. Through this selective breeding, the dog has developed into hundreds of varied breeds, and shows more behavioral and morphological variation than any other land mammal. For example, height measured to the withers ranges from 15.2 centimetres (6.0 in) in the Chihuahua to about 76 cm (30 in) in the Irish Wolfhound; color varies from white through grays (usually called "blue") to black, and browns from light (tan) to dark ("red" or "chocolate") in a wide variation of patterns; coats can be short or long, coarse-haired to wool-like, straight, curly, or smooth. It is common for most breeds to shed this coat.

While all dogs are genetically very similar, natural selection and selective breeding have reinforced certain characteristics in certain populations of dogs, giving rise to dog types and dog breeds. Dog types are broad categories based on function, genetics, or characteristics. Dog breeds are groups of animals that possess a set of inherited characteristics that distinguishes them from other animals within the same species. Modern dog breeds are non-scientific classifications of dogs kept by modern kennel clubs.

Purebred dogs of one breed are genetically distinguishable from purebred dogs of other breeds, but the means by which kennel clubs classify dogs is unsystematic. DNA microsatellite analyses of 85 dog breeds showed they fell into four major types of dogs that were statistically distinct. These include the "old world dogs" (e.g., Malamute and Shar Pei), "Mastiff"-type (e.g., English Mastiff), "herding"-type (e.g., Border Collie), and "all others" (also called "modern"- or "hunting"-type).

Created in Our Image



“Dogs are our link to paradise. They don’t know evil or jealousy or discontent. To sit with a dog on a hillside on a glorious afternoon is to be back in Eden, where doing nothing was not boring—it was peace.”

—*Milan Kundera*

Created in Our Image 18: Behavioral differences

Unlike other domestic species which were primarily selected for production-related traits, dogs were initially selected for their behaviors. In 2016, a study found that there were only 11 fixed genes that showed variation between wolves and dogs. These gene variations were unlikely to have been the result of natural evolution, and indicate selection on both morphology and behavior during dog domestication. These genes have been shown to affect the catecholamine synthesis pathway, with the majority of the genes affecting the fight-or-flight response (i.e. selection for tameness), and emotional processing. Dogs generally show reduced fear and aggression compared to wolves. Some of these genes have been associated with aggression in some dog breeds, indicating their importance in both the initial domestication and then later in breed formation.

Created in Our Image



**“There is nothing truer in this world than
the love of a good dog.”**

—Mira Grant



Created in Our Image 19: Early roles

Wolves, and their dog descendants, would have derived significant benefits from living in human camps—more safety, more reliable food, lesser caloric needs, and more chance to breed. They would have benefited from humans' upright gait that gives them larger range over which to see potential predators and prey, as well as color vision that, at least by day, gives humans better visual discrimination. Camp dogs would also have benefited from human tool use, as in bringing down larger prey and controlling fire for a range of purposes.

Humans would also have derived enormous benefit from the dogs associated with their camps. For instance, dogs would have improved sanitation by cleaning up food scraps. Dogs may have provided warmth, as referred to in the Australian Aboriginal expression "three dog night" (an exceptionally cold night), and they would have alerted the camp to the presence of predators or strangers, using their acute hearing to provide an early warning.

Anthropologists believe the most significant benefit would have been the use of dogs' robust sense of smell to assist with the hunt. The relationship between the presence of a dog and success in the hunt is often mentioned as a primary reason for the domestication of the wolf, and a 2004 study of hunter groups with and without a dog gives quantitative support to the hypothesis that the benefits of cooperative hunting was an important factor in wolf domestication.

The cohabitation of dogs and humans would have greatly improved the chances of survival for early human groups, and the domestication of dogs may have been one of the key forces that led to human success.

Created in Our Image



“The greatest pleasure of a dog is that you may make a fool of yourself with him and not only will he not scold you, but he will make a fool of himself too.”

—*Samuel Butler*

Created in Our Image 20: As pets (part 1)

It is estimated that three-quarters of the world's dog population lives in the developing world as feral, village, or community dogs, with pet dogs uncommon.

"The most widespread form of interspecies bonding occurs between humans and dogs" and the keeping of dogs as companions, particularly by elites, has a long history. (As a possible example, at the Natufian culture site of Ain Mallaha in Israel, dated to 12,000 BC, the remains of an elderly human and a four-to-five-month-old puppy were found buried together). However, pet dog populations grew significantly after World War II as suburbanization increased. In the 1950s and 1960s, dogs were kept outside more often than they tend to be today (using the expression "in the doghouse" to describe exclusion from the group signifies the distance between the doghouse and the home) and were still primarily functional, acting as a guard, children's playmate, or walking companion. From the 1980s, there have been changes in the role of the pet dog, such as the increased role of dogs in the emotional support of their human guardians. People and dogs have become increasingly integrated and implicated in each other's lives, to the point where pet dogs actively shape the way a family and home are experienced.

There have been two major trends in the changing status of pet dogs. The first has been the 'commodification' of the dog, shaping it to conform to human expectations of personality and behavior. The second has been the broadening of the concept of the family and the home to include dogs-as-dogs within everyday routines and practices.

There are a vast range of commodity forms available to transform a pet dog into an ideal companion. The list of goods, services and places available is enormous: from dog perfumes, couture, furniture and housing, to dog groomers, therapists, trainers and caretakers, dog cafes, spas, parks and beaches, and dog hotels, airlines and cemeteries. While dog training as an organized activity can be traced back to the 18th century, in the last decades of the 20th century it became a high-profile issue as many normal dog behaviors such as barking, jumping up, digging, rolling in dung, fighting, and urine marking (which dogs do to establish territory through scent), became increasingly incompatible with the new role of a pet dog. Dog training books, classes and television programs proliferated as the process of commodifying the pet dog continued.

Created in Our Image



**“Thorns may hurt you, men desert you, sunlight
turn to fog; but you’re never friendless ever, if you
have a dog.”**

—*Douglas Mallock*

Created in Our Image 21: As pets (part 2)

The majority of contemporary people with dogs describe their pet as part of the family, although some ambivalence about the relationship is evident in the popular reconceptualization of the dog–human family as a pack. A dominance model of dog–human relationships has been promoted by some dog trainers, such as on the television program Dog Whisperer. However it has been disputed that "trying to achieve status" is characteristic of dog–human interactions. Pet dogs play an active role in family life; for example, a study of conversations in dog–human families showed how family members use the dog as a resource, talking to the dog, or talking through the dog, to mediate their interactions with each other.

Increasingly, human family members are engaging in activities centered on the perceived needs and interests of the dog, or in which the dog is an integral partner, such as dog dancing and dog yoga.

According to statistics published by the American Pet Products Manufacturers Association in the National Pet Owner Survey in 2009–2010, it is estimated there are 77.5 million people with pet dogs in the United States. The same survey shows nearly 40% of American households own at least one dog, of which 67% own just one dog, 25% two dogs and nearly 9% more than two dogs. There does not seem to be any gender preference among dogs as pets, as the statistical data reveal an equal number of female and male dog pets. Yet, although several programs are ongoing to promote pet adoption, less than a fifth of the owned dogs come from a shelter.

The latest study using magnetic resonance imaging (MRI) comparing humans and dogs showed that dogs have same response to voices and use the same parts of the brain as humans do. This gives dogs the ability to recognize emotional human sounds, making them friendly social pets to humans.



Created in Our Image

“It is scarcely possible
to doubt that the love of
man has become
instinctive in the dog.”

—*Charles Darwin*

Created in Our Image 22: Work

Dogs have lived and worked with humans in so many roles that they have earned the unique nickname, "man's best friend", a phrase used in other languages as well. They have been bred for herding livestock, hunting (e.g. pointers and hounds), rodent control, guarding, helping fishermen with nets, detection dogs, and pulling loads, in addition to their roles as companions. In 1957, a husky-terrier mix named Laika became the first animal to orbit the Earth.

Service dogs such as guide dogs, utility dogs, assistance dogs, hearing dogs, and psychological therapy dogs provide assistance to individuals with physical or mental disabilities. Some dogs owned by epileptics have been shown to alert their handler when the handler shows signs of an impending seizure, sometimes well in advance of onset, allowing the guardian to seek safety, medication, or medical care.

Dogs included in human activities in terms of helping out humans are usually called working dogs.

Created in Our Image



“One of the happiest sights in the world comes when a lost dog is reunited with a master he loves. You just haven’t seen joy till you have seen that.”

—Eldon Roark

Created in Our Image 23: Dog Breeds

Dogs have been selectively bred for thousands of years, sometimes by inbreeding dogs from the same ancestral lines, sometimes by mixing dogs from very different lines. The process continues today, resulting in a wide variety of breeds, crossbreeds, hybrids, and types of dogs. As such, dogs are the only animal with such a wide variation in appearance without speciation, "from the Chihuahua to the Great Dane."

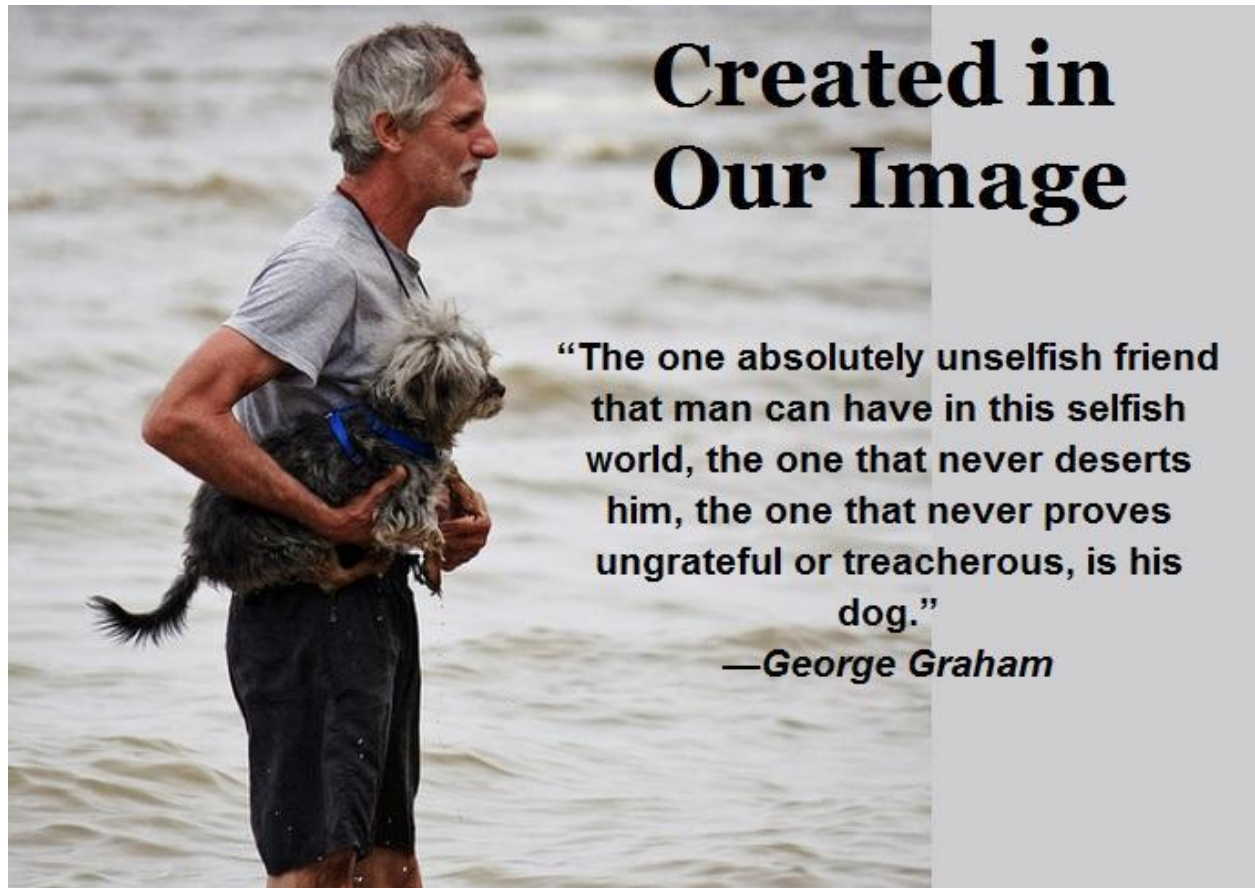
Breeds are usually categorized by the functional type from which the breed was developed. The basic types are companion dogs, guard dogs, hunting dogs, herding dogs, and working dogs, although there are many other types and subtypes. Breeds may be traditional breeds with long histories as registered breeds, rare breeds with their own registries, or new breeds that may still be under development.

In some cases, a breed's origin overlaps the boundaries of two or more countries; the dog is normally listed only in the country with which it is most commonly associated; for example, by its designated country according to the Fédération Cynologique Internationale (FCI). Some dogs, such as the Löwchen, have an uncertain origin and are listed under several countries.



Created in Our Image 24: Medical detection dogs

Medical detection dogs are capable of detecting diseases by sniffing a person directly or samples of urine or other specimens. Dogs can detect odour in one part per trillion, as their brain's olfactory cortex is (relative to total brain size) 40 times larger than humans. Dogs may have as many as 300 million odor receptors in their nose, while humans may have only 5 million. Each dog is trained specifically for the detection of single disease from the blood glucose level indicative to diabetes to cancer. To train a cancer dog requires 6 months. A Labrador Retriever called Daisy has detected 551 cancer patients with an accuracy of 93 percent and received the Blue Cross (for pets) Medal for her life-saving skills.



Created in Our Image 25: Time

Does your dog seem to know when it's time to go to the dog park, even before you've taken out the leash? Is his face pressed against the window waiting for you to come home from work each day? To many dog owners, canines may seem to have an uncannily accurate concept of time. But do our four-legged friends really know what time it is, or is there something else at work in their minds?

In trying to understand dogs' concept of time, humans cannot help but reference their own concept of time. But that's tricky since humans have the unique ability to construct artificial measures of time such as the second, minute, and hour. This is mainly because humans use episodic memory in order to travel through time, recalling past events and looking forward to future ones. It's what many scientists believe makes humans unique.

But just because dogs don't perceive time in this way doesn't mean they are completely stuck in the moment, as a lot of the research on this subject would suggest. Dogs are capable of being trained based on past events and taught to anticipate future events based on past experiences. This argues in favor of a kind of canine version of episodic memory, according to research conducted by Dr. Thomas Zentall of the University of Kentucky.

The essential difference appears to be that humans can pinpoint when something happened in the past by relating it to other events. For example, we remember our wedding day as well as who attended, what songs were played, and the happiness we felt. Dogs, on the other hand, can only distinguish how much time has passed since an event has occurred (e.g., "My food bowl has been empty for six hours."). Of course, they don't need only memory to tell them this; a growling stomach says it all.

There is also research evidence for dogs' understanding of the concept of time based on changes in their behavior when left alone by their human companions for different lengths of time. Studies show that dogs display greater affection toward their owners if they've been separated for longer periods of time. As the amount of time away increases, so does the dogs' excitement. This will come as no surprise to dog owners; most canines get excited about the return of the master to the castle, especially after long absences. But this research is also important because it shows that dogs are capable of recognizing and responding to different spans of time.

Created in Our Image



“The psychological and moral comfort of a presence at once humble and understanding—this is the greatest benefit that the dog has bestowed upon man.”

—*Percy Bysshe Shelley*

Created in Our Image 26: Dog Psychology

Canine communication consists of eye contact, body language, and reading energy. The most important law when trying to understand animals, especially canines, is that they love to follow strong and confident personalities. Do you feel sorry for your dog? Or maybe guilty? These emotions are interpreted by dogs and other animals much differently than people. For most people, this can be a difficult concept to grasp in the beginning. You must be strong and confident in order to be an effective pack leader to a dog. Your dog needs to know that you know how to lead him. They need to know that you are confident in your decisions and that you can handle whatever the world throws at you. Your dog needs for you to learn to be a "Loving, Benevolent Dictator". Just like being a great parent to a child. Sensitive and nervous dogs absolutely require you take over for them. You will build an enormous amount of trust with your dog.

Three pillars that are fundamental to success.

1. Patience. You must sometimes wait for the dog to learn or deflate. Don't become frustrated.
2. Persistence. You must be willing to never accept no as an option. Be calm but firm and always follow through. It gets easier!
3. Consistence. Providing rituals and maintaining the same rules from everyone in the family and beyond provides security and stability to your dog.

Remember, rules equal freedom. The better behaved your dog, the more he is able to be in public and go places with you. - not stuck at home.

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“You can’t have a pristine house with ten dogs, and I’d rather have the ten dogs.”

—Glenn Greenwald

Created in Our Image 27: Communication

All dog owners know that there are times when their four-legged friend seems to understand just what they are thinking. Over the years, the field of canine psychology has demonstrated that there is a large degree of truth in this assumption. Dogs are able to learn words - specifically nouns and verbs - so that they know what their owners are referring to when they issue commands. Furthermore, dogs can follow the gaze of their owners, and they demonstrate other behaviors that are also evident in human psychology. Dogs can even become susceptible to disorders such as depression and compulsive behavior.

While dogs do not use words to tell people or other animals what they are thinking, that does not mean that there is not a type of "dog language." This language consists of barks, growls, yowls, whimpers, postures, and so forth. In fact, it is possible to differentiate between different kinds of barks and to see in a dog potential signs of aggression.



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"The greatest fear dogs know is the fear that you will not come back when you go out the door without them."

—Stanley Coren



Created in Our Image 28: Emotions

We now understand that dogs have all of the same brain structures that produce emotions in humans. Dogs also have the same hormones and undergo the same chemical changes that humans do during emotional states. Dogs even have the hormone oxytocin, which, in humans, is involved with feeling love and affection for others. With the same neurology and chemistry that people have, it seems reasonable to suggest that dogs also have emotions that are similar to ours. However, it is important to not go overboard and immediately assume that the emotional ranges of dogs and humans are the same.

To understand what dogs feel we must turn to research which was done to explore the emotions of humans. Not all people have the full range of all possible emotions. In fact at some points in your life you did not have the full complement of emotions that you feel and express today. Research shows that infants and very young children have a more limited range of emotions, but over time the child's emotions begin to differentiate and they come to be able to experience different and more complex emotional states.

This data is important to our understanding of the emotional lives of dogs because researchers have come to believe that the mind of a dog is roughly equivalent to that of a human who is two to two-and-a-half years old. This conclusion holds for most mental abilities -- including emotions. Thus we can look to the human research to see what we might expect of our dogs. Like a young child, dogs will clearly have emotions, but many fewer kinds of emotions than we find in adults.

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“A dog doesn’t care if you’re rich or poor, smart or dumb. Give him your heart...and he’ll give you his.”

—*Milo Gathema*

Created in Our Image 29: Dreams

Many people believe that dogs do dream. Most dog owners have noticed that at various times during their sleep, some dogs may quiver, make leg twitches or may even growl or snap at some sleep-created phantom, giving the impression that they are dreaming about something. At the structural level, the brains of dogs are similar to those of humans. Also, during sleep the brain wave patterns of dogs are similar that of people, and go through the same stages of electrical activity observed in humans, all of which is consistent with the idea that dogs are dreaming.

There is evidence that they dream about common dog activities. This kind of research takes advantage of the fact that there is a special structure in the brainstem (the pons) that keeps all of us from acting out our dreams. When scientists removed or inactivated the part of the brain that suppresses acting out of dreams in dogs, they observed that they began to move around, despite the fact that electrical recordings of their brains indicated that the dogs were still fast asleep. The dogs only started to move when the brain entered that stage of sleep associated with dreaming. During the course of a dream episode these dogs actually began to execute the actions that they were performing in their dreams. Thus, researchers found that a dreaming pointer may immediately start searching for game and may even go on point, a sleeping Springer Spaniel may flush an imaginary bird in his dreams, while a dreaming Doberman pincher may pick a fight with a dream burglar.

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“I have found that when you are deeply troubled, there are things you get from the silent devoted companionship of a dog that you can get from no other source.”

—*Doris Day*

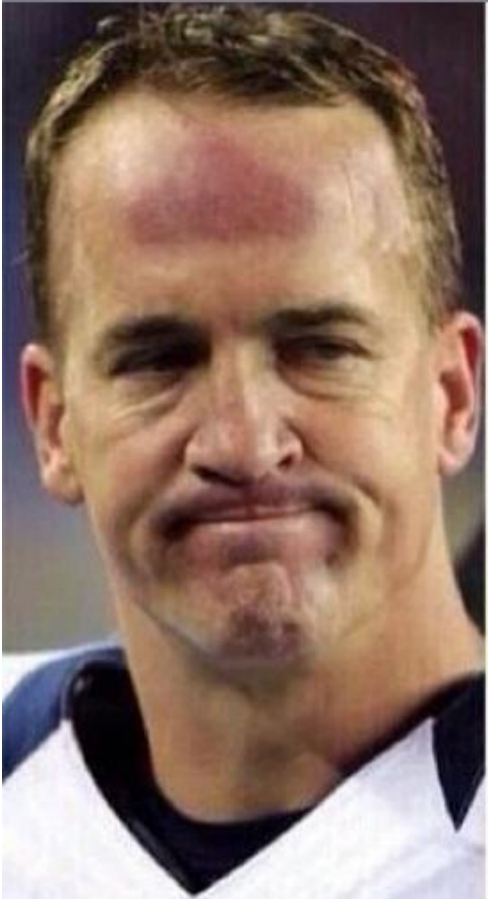
Created in Our Image 30: Human-Canine Bond

The concept of the animal bonding was articulated as early as the late 1930s, when Konrad Lorenz and his friend and colleague Nikolaas Tinbergen worked with geese in order to study the instinctive behaviors of animals, leading them to rediscover the principle of imprinting. The same concept was recognized in Boris Levinson's books *Pet-Oriented Child Psychotherapy* (1969) and *Pets and Human Development* (1979), which had an immense influence on the establishment of the field of study. Levinson is known for accidentally discovering the benefits of assisted-pet therapy. He found that withdrawn and uncommunicative children would interact positively whenever he brought his dog, Jingles, to their therapy sessions. His discovery was further reinforced by Sam and Elizabeth Corson at Ohio State University, who were among the first to research and evaluate pet-facilitated therapy.

Only in the early 1980s was the term 'human–animal bond' officially coined by Leo K. Bustad, who delivered a summary lecture on the Human-Pet Relationship on October 28, 1983 at the International Symposium in Vienna. This symposium was held in honor of Konrad Lorenz, and during his lecture Bustad praised him for his work on the human–animal bond and encouraged others to build on Lorenz's work on the subject. Lorenz later adopted it in his research on imprinting in geese.

Bustad and other pet therapy advocates formed the Delta Society, which was built on the earlier work of Levinson and Croson. In the 1970s and 1980s, national and international conferences led to greater recognition of the human–animal bond. Since then, there has been widespread media coverage of animal-assisted activity and therapy programs and service dog training.

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“DOG: A kind of additional or subsidiary Deity designed to catch the overflow or surplus of the world’s worship.”

—Ambrose Bierce