

Speaker's notes for:

The Social Organization of the Domestic Dog, a talk given in Coventry on 27 September, 2009. With thanks for the invitation, the kind reception, and the help received from the United Kingdom Registry of Canine Behaviourists.

Relevant excerpts from:

The 100 Silliest Things People Say About Dogs

Myth 6 refers to part production

Myth 11 explains the dog's self organising system and is the main body of the talk

Myth 12 explains the use of signals in this SOS

Myth 13 explains the function and resolution of threat matches in this SOS

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Myth 6: Dogs have an instinctive bite inhibition, which automatically makes them unable to bite if the other surrenders in a fight.

This myth is told with much flair. Dogs are supposedly as chivalrous as human knights of old used to be. If two dogs are arguing (with their teeth of course, as dogs sometimes will seem to do), they are supposedly trying to really hurt each other. (More about this nonsense in Myths 12 and 13.) During such an argument, the underdog can supposedly save his own life by flopping over onto his back. Just as King Arthur would not cut off the head of the errant knight kneeling in remorse before him, neck exposed for the sword, the top dog is supposedly instinctively unable to go in for the kill once he sees the other dog's exposed belly. According to this myth, all signs of submission cause an automatic, inherited, chivalrous inhibition of the dog's bite to turn on, so that he can't inflict damage on the other dog even though he still wants to.

This is all very romantic, but it isn't true. Worse, if you believe this myth, you may end up creating a dangerous situation by the way you raise your dog. What are the facts?

It is true that a normal dog's brain is designed, at birth, to enable him to grow into a creature who is very reticent about using aggression. This capacity is seated in various neurological structures, and in the brain's chemical housekeeping. Both of these are indeed partially determined by genetics. However, a dog is most definitely not born already controlling and inhibiting his bite. He is also not born with any knowledge about the meaning of the signals and gestures that dogs use to communicate. These are both things he has to learn. And it's the way in which he learns these two things that ends up making him reluctant to use any kind of aggression at all.

A pup is not finished yet when he is born. His muscles and his jaws are small and weak. His brain still has to do ninety percent of its growing. This combination of weak jaws and an incomplete brain are one of Nature's great designs. The puppy has time to learn all kinds of things long before he is capable of inflicting real damage on anyone. Because his brain is in the early stages of formation, everything he learns now will become actually, physically anchored in the actual, physical connections which are now growing among the neurons in that brain. If he learns now to control how hard he bites and what all the canine signals mean, this knowledge will be anchored forever in his brain's physical structure. He will be able to have instant and precise reactions for the rest of his life, without having to think about it.

But you may ask, why are puppy teeth so darned sharp if the pup still has to learn to inhibit his bite? Isn't that so he can inflict damage despite his weak jaws? And why do puppies do so much biting if not to practice aggression? Answer: Those sharp puppy teeth aren't meant to inflict damage; they are meant to inflict pain. In doing so, they serve a specific and important function in the pup's development of bite inhibition. Puppies start to play biting games with littermates even before they are able to walk steadily on their feet. The sharp teeth make sure that even at this weak stage, the pup's bite will be painful to his playmate. The pup stumbles over to a sibling and delivers a play bite. This sibling yelps (a pain reflex, not learned behaviour) and moves away. The biting pup is amazed and impressed by the results of his play bite. Apparently his teeth are very dangerous. He also finds out that biting ends the game, and that the other pup shuns him for a while. The next time he wants to play, he'll be more careful. He'll make sure his play bite is only a grab, without any pressure behind it at all.

If the pup makes the same mistake with an adult dog, something else happens. The adult dog lashes out, acting like he's attacking the pup. He jumps all over the pup, bumping the pup off balance, growling like he's going to kill the pup, and snapping *in the air* back and forth on both sides of the pup's head and neck as the pup lies there under this tidal wave of violence. The pup sees the huge adult teeth whizzing by, back and forth around his head and neck, just missing him each time, and he begins to yelp with fear (a reflex, not learned behaviour). The adult dog stops his feigned attack, maybe growls a little more at the pup, but then he walks away.

A little later, the puppy tries to approach the adult dog, but the adult dog isn't in the mood yet. He freezes up and stares at the pup, perhaps he curls his lip to expose some front teeth for a half a

second. The pup sees this, but he doesn't as yet attach any meaning to it. He keeps approaching. The adult dog lashes out, biting just once in the air about an inch in front of the pup's face. Then the adult pauses, watching to see what the puppy will do now. The puppy's tail has dropped, and is now pressed against his buttocks (a reflex, not learned behaviour). He sees that this time the adult dog isn't jumping all over him immediately. But the puppy remembers what happened just a few minutes ago, and he doesn't dare move, so fleeing isn't an option here. So he chooses to try out a behaviour that was always safe and pleasant, back in the days when he couldn't pee or poop unless his mother massaged his belly with her tongue. The pup flops over onto his back and waits. Now, the adult dog has seen this gesture before, and he knows that it is a signal that says, 'I have no bad intentions'. The pup has, by accident, done the right thing. The adult dog breaks eye contact, maybe sniffs the pup's groin, then goes to lie down a couple of yards away. The puppy waits a while, but nothing else happens. He finally dares to try to walk away. He finds out that he can now safely do this.

These are the learning experiences. The puppy doesn't know his teeth are especially sharp, or that he can't inflict real damage yet, so these experiences teach him that his teeth are very dangerous. If he's not careful with those teeth, bad things happen. Either no one wants to play with him anymore, or he gets a horribly scary reaction. He is learning to feel an aversion for using his teeth carelessly, because he is finding out he has to be worried about what it may unleash upon himself.

The puppy has also learned something about yelping. The other puppy yelped before he ran away. So a yelp predicts that the other won't play with you anymore for a while. On the other hand, when the pup yelped himself, the adult dog stopped snapping his jaws in the pup's face. Apparently, yelping yourself stops something that scares you. The puppy has learned that a stare and a curled lip have predictive value: the other dog will lash out if you keep approaching. He has found out that lying on his back will get a different reward than back when his mother licked his belly: the irritated adult dog shows some calm interest in the pup's belly, then moves off. The puppy has now had the experience that when the other looks away, it means you can stand up again without being snapped at. The pup is starting to assign meaning to various signals and gestures - both in himself and in the other - which, up to now, just seemed like random behaviour to him. These gestures and signals are gaining predictive value about what the other might do. They also start to be an instrument the puppy can use himself, in order to influence the reactions he gets from his surroundings.

This is how a puppy learns to be able to take part in social traffic safely by the time he is an adult. He learns to be reticent about starting arguments. He learns to be extremely careful about how hard he bites, limiting himself in fact to pressureless grabs. He learns to recognise social signals and use them. It is important that the puppy has all these experiences early on, before he loses his sharp little milk teeth. By the time this happens, his jaws will already be strong enough to inflict real damage. By that time, the adult dogs won't be so forbearing with him anymore. He'll be coming into puberty, and start temporarily having trouble controlling his impulses. If he hasn't developed a firmly anchored, reflexive bite-inhibition by then, it will become dangerous for him to play with other dogs. If he is biting too hard, he is dangerous for other dogs - they won't be able to teach him without great risk to themselves. They may react so violently to his too-hard biting that it becomes dangerous for him to play with them. A dog reaches an age where it is too late to learn. He will go through the rest of his life with a handicap.

If you make sure your puppy has all these experiences before he loses his milk teeth, you will be making sure that these important elements of social behaviour are actually anchored in the physical connections between his brain cells. Your adult dog will inhibit his bite even when he is extremely excited. He won't bite too hard in an argument with a playmate, nor when you accidentally step on his foot and he lashes out in a pain reflex. Neither you nor the other dog will ever have more damage than a bit of dog spit on your clothing. Your adult dog will instantly recognise and respond to the subtlest of signals given by the dog he is playing with (or arguing with). He will be able to avoid arguments you didn't even see coming (and don't know you missed). He will be trustworthy when it does come to an argument, neither going on too long, nor inflicting wounds during the fight. He will be better able to protect himself because he can see when the other dog is feeling uncomfortable, and he knows how to reassure him.

Please note: These are not things you can teach your pup. Only other dogs can teach him these things.

Fact: Dogs are not born with an instinctive bite inhibition. They are not born knowing the rules of King Arthur's Round Table. They are not born knowing their native language any more than we are. These are all learned behaviours. It is our responsibility to make sure our puppy gets the chance to learn these things during the proper developmental phase, by exposing him to lots of other puppies and socially skilled adult dogs.

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Myth 11: Retake: Dogs live in a dominance hierarchy.

We have now seen that this is a rather evil human projection. Now we come to the question of what dogs actually do, if they don't engage in dominance all the day long. If dogs don't live in stable closed groups (which they don't), and if they are constantly having to meet strangers (as they are), and if the groups are constantly evaporating, changing and re-forming, then how do these groups arrive at any kind of stable or even workable organisation?

The answer is, in a nutshell, that dogs live in what we call an autopoietic, complex, self-organising system, which will tend to move away from chaos and towards any one of many available stable states within its state space. Now this sounds complicated and technical and hard to grasp, because it is full of jargon. But as with most things, it is not so complicated at all if only you remove the jargon. Which we will now do.

A system is a collection of parts, but it is not any old collection of loose parts. A stamp collection is not a system. To form a system, the parts have to be somehow connected to each other. Because they are connected, they constitute a whole that is distinguishable from the surroundings. But tying a bunch of tin cans together still doesn't make them into a system. A system has parts that move in relation to each other, in order to perform some function or reach some goal. A coffee machine is an example of a system, whose parts move in a coordinated way and in relation to each other, to perform the function of producing a cup of coffee. A car is a system. The parts are set in motion and work together when the function of the car has to be fulfilled - getting some load from point A to point B. However, neither of these machines is complex or self-organising. They are not complex because there is only a single arrangement of parts to choose from. If a spark plug falls out or you put water in the petrol tank instead of the radiator, then the whole thing stops working. It's no use trying out putting the coffee filter under the pot for a change. There is also only one equilibrium to choose from: a certain mixture of petrol and oxygen (or coffee and water), the right octane (or voltage), the timing of the sparks exactly right, various gaps just exactly so wide and belts just so tight. These systems are not self-organising. They are put together in a factory by some power outside themselves, according to a design that someone else thought up. If their balance gets lost, these systems are not able to restore the lost equilibrium themselves. Some outside power has to take them apart and put them back together again, restoring them exactly to the state they were in when they came from the factory.

A self-organising system is one that is capable of creating some kind of order inside the system without outside help. The parts move on their own and they can be arranged in various ways. They move around with respect to each other until the system arrives at some kind of equilibrium. When the parts move, they don't move randomly. They follow certain rules. These rules are internal to the parts themselves, something in their own nature that limits their movements and behaviour. One example of a self-organising system (hereafter: SOS) is a bunch of atoms in a bell jar. The atoms are connected to each other by the fact that they share a physical space in which they continuously collide with each other and exchange energy. Their system is distinguishable from the outside world - they aren't colliding with any atoms out there just now. The goal of this system is to spread the available energy around evenly. The atoms will move around, obeying the laws of thermodynamics, until this

even division is reached. At this point, the system has arrived at a stable state. There are many arrangements of atoms that will work. It doesn't matter if a particular one is over here or over there. If you heat the bell jar, the atoms will begin to move again until the energy is again evenly spread around. They do this without external help, moving around according to their own internal rules, colliding and rearranging themselves until a new equilibrium (this is, a stable state) is reached.

A second example of an SOS, one that starts to look a little more like dogs, is a room full of people at a party. The collection of parts (i.e. people) in the room constitutes a small social system, for as long as the party lasts. It is bounded by the walls of the room, and distinguishable from the outside world full of noninvited people. Inside the room, each person is a part in the system. These living parts of the system move around, following certain internal rules, until everyone in the system is in a comfortable position. This works a little differently than a bell jar full of atoms that have no feelings. In an SOS that consists of living beings, one of the factors that affect the search for balance is each living creature's feeling of well-being. This makes our party a *complex* system: equilibrium is being sought on more than one level at once. Each system part (each party-goer) attempts to find an inner balance of feeling good, while at the same time not disturbing the balance at the level of the party as a whole.

The goal of this social system (our party) is to provide maximum enjoyment for a maximum number of guests at the same time. The system is not in equilibrium until everyone has a drink, a good place to sit, and a conversation partner they like. At this point, the inner balance of all guests is stable, while the social system itself is in balance as far as the goal it is meant to achieve. All the parts will remain where they are as long as this balance is maintained. This lasts only so long, until someone's drink is empty, or until conversation partners get bored with each other. At this point, there is a dip in the individual well-being of a number of system parts, which also means a dip in the larger system's fulfilment of its own goal. Some system parts may start to move around, looking to repair the dip - refilling a drink or shifting conversation partners. But it doesn't have to be a dip that causes change. It can also happen that some new and interesting guest arrives. Some of the party-goers will see a chance here to increase their internal state of well-being yet more, compared how it is with the person they are talking to. They may shift positions so as to go talk to this new, interesting guest. Here, it's not a dip triggering change. Instead, it's the chance of yet more fun that gets some parts moving. They can gain this increased enjoyment without causing the whole system to crash, and in fact, their own improved fun level will move the larger system even closer to its goal of maximum fun for maximum guests. Some of the parts in our SOS will, thus, start moving around, taking up new positions in relation to each other, until their dips are restored to the previous level, or until their fun is even more maximised - upon which the system has found a new equilibrium on all levels. There are many various arrangements of party-goers that will serve the function of maximal fun - there is more than one equilibrium to choose from, both on the level of the individual and on the level of the whole.

The movement of parts is not, however, arbitrary. It is governed by internal part variables (since people enjoy different things), by external factors (like which chairs and drinks there are to choose from), and by certain rules. All of our participants follow certain rules as they seek new balances. These rules are, in this case, the rules of politeness at parties. For example, the evening must progress without embarrassing scenes or heated arguments. You don't throw someone off his chair by brute force, there are certain subjects you do not bring up, and you do not conspicuously join the conversation group that includes the man who just found out yesterday that you are having an affair with his wife. These are rules that limit the behaviour and movements of the system parts as they continually seek equilibrium on the individual and the social levels.

The rules are internal to the parts, imparted to them and made into part of who they are during their production (i.e. during their upbringing by other human beings). The party-goers follow these rules voluntarily. If everyone behaved in an egotistical manner, seeking only to maximise their own internal well-being position (e.g. when the lover did give in to the temptation to show off to the husband, or if someone was just tipped off her chair onto the floor), the whole system (the party) might deteriorate into a non-fun free for all. No one wants this to happen. People who break these rules risk getting thrown out in order to maintain system stability, because after all, the whole point of the system is to maximise fun for as many guests as possible, and not just for one selfish boor. So we know that too much selfishness will make things unpleasant not only for everyone else, but also for ourselves. We ourselves gain by participating in keeping the system stable (i.e. civil) and are willing to make smaller sacrifices in order to get this gain.

As we maximise our positions according to our own internal states, juggling variables only we can know about (tired legs, thirst, boredom), while yet allowing the rules to limit our behaviour, the system as a whole organises and reorganises itself without interference from any central, organising authority. In fact, we absolutely want the system to *self-organise* by our making our own choices and following our own internal rules as we move around in the party's social landscape. We want the party to reshuffle itself again and again into a comfortable equilibrium for all system parts, by those parts being free to move and rearrange *themselves* as inner states (thirst, boredom) and outer circumstances (a new guest) change. It is extremely irritating to us if our hostess insists that we talk at length to her unmarried son or daughter, or if she tries to make us sit in a certain spot, drink her favourite drink, or eat more than we want to.

Now to get back to dogs. Every time multiple dogs - and that means even just two - share a physical space, they immediately constitute an SOS, which will immediately start to move away from chaos by seeking an equilibrium. The dogs's SOS is very similar to our party. It too is a complex system that looks for delicate equilibriums on more than one level simultaneously, taking many invisible variables into account, and with many different equilibriums to choose from as it self-organises. When a dog sees a stranger, his inner equilibrium might go off balance - his adrenaline level might rise, his feeling of safety might suffer a dip, or his curiosity might be aroused because he expects an increase in his well being. These are internal variables that depend on his experiences in the past with strangers. Either way, he wants to restore some kind of internal balance. At the same time, he will want to know that the larger, social balance - the peace in the group - is still safe. The domestic canine SOS has the same goal as our party: maximal well-being and safety for all the parts (in this case dogs) who are sharing the physical space at that particular moment. Just like our party, each part will execute a search to maximise its own inner well-being and stabilise its own part state, while at the same time maximising (or at least preserving) the stability, peace and fun of the larger social landscape the dogs occupy together. And, just like our party, they do this without reference to any central, organising authority.

So when dogs meet each other, they immediately start looking for the return of both the internal and external equilibriums that have been disturbed by the sight of each other. But if they don't know each other, there may be some danger involved. After all, a dog always carries his weapons with him, and you don't always know if the other guy is going to follow the social rules, or whether he is going to understand your signals and react normally to them. So the first thing dogs have to do is check out whether the other dog is going to use his weapons, and whether he understands and uses the common language. (More about these signals in Myth 12.) After some exchange of signals, it becomes sufficiently clear that there is a common language and that neither dog is going to get violent right away. Both dogs can now at least predict the other's behaviour in the domains of language and aggression. This is the crucial minimum of predictability that has to be established before the interaction can progress safely to the next stage.

It can be that this next stage is simply moving off to follow their humans. The next time these dogs meet they will still know about each other and the meeting will be less tense. It can also be that the dogs stick around to play with each other. In this case, the next stage of exploration starts: learning about each other's personal preferences and boundaries. As the dogs play on a field, they discover various things about each other. The first dog is very anxious to keep the stick his owner just threw and wants the second dog to stay several feet away from it. The second dog likes contact games rather than a ball or a stick. They can't talk to each other, so the dogs have to find this out by trial and error. The first dog growls when the second one so much as looks at the stick. The second dog can conclude, "Okay, that's important to him and he wants me to keep some distance." The first dog sees the second one stop or move away, and then he knows, "All right, he understood my signal, and he values peace in our relation enough to let me keep my stick." The second dog makes all kinds of "come chase me" gestures, which show the first dog that this is the kind of game he wants. Secure enough now about his stick, the first dog might leave it for a moment to indeed play a round of chase along the border of the field. If the second dog bumps the first one during this game, he might get a snarl. This tells him that the first dog is not comfortable with such close contact. He might drop his tail, fold his ears back, move away a little - he's saying, "Okay, I got your message, and I didn't mean any ill." Or he bumped into a third dog during the chase, and these signals are saying, "Oops, didn't see you, sorry." These dogs are not being dominant and submissive. They are simply exchanging information about their respective inner states so that they will become or remain predictable to each other. Predictability about each other's likes, dislikes and personal boundaries allows them to find or

maintain equilibrium in their relations with each other. When all the dogs in the physical space have found some equilibrium, then the larger social system has also arrived at one of its possible balances. The dogs play cheerfully, sharing space, taking each other's preferences and boundaries into account, dashing past each other at exactly the right distance each dog needs, no problem.

These relations generally have to be established one on one. Because dogs learn about each other by exchanging signals, they have to look at each other to learn. It is looking at the other that causes your feelings specifically about him to arise and change your inner state, which you then signal. It is by looking specifically at you that the other dog sees the signs of your internal state. So a dog can only concentrate on one relationship at a time. This is one of the reasons a dog will freeze up and stand totally still when he is being smelled by a whole group of other dogs. By freezing up, he is giving a non-violence signal, but is saying nothing more. He keeps his mouth shut for the moment, as it were, because you can only have complicated conversations one-on-one. If he is very socially secure, the dog might just flip onto his back for the whole curious crowd (I just know everyone will be charmed by the sight of my belly). This is a safe signal to send out to a collective, one that can't offend anyone or lead to difficult conversations. If he does this, the whole group gets the important message, some predictability about the new dog in one go (He knows our language and has no violent intentions). The preservation of the general safety in this dog's presence is immediately clear to all.

What we usually see happen is that the more self-assured dogs sniff the frozen newcomer for a sec, then just walk away. Often, one dog will stay near the newcomer. This is because he still doesn't feel sure enough about the newcomer to share the space with him. His inner state is still out of balance (maybe he's had bad experiences in the past, and his adrenaline level is still a little high due to this new dog showing up). He is still looking to restore his inner equilibrium, and wants more information. To get more specific information, the dogs will have to look straight at each other, and this is just not possible in a group. But now the others are gone, and our insecure dog stands there growling. I call this growl a threat gesture because the growl means the dog perceives a threat to his safety or well-being. With this threat gesture, he is basically telling the new dog that he feels unsure of himself, and is asking for reassurance so his inner state can settle down. If the new dog gives a calming signal, for example turning his ears outward and lowering his tail just a dot, he is saying, carefully, You don't need to worry, I'm no threat to your safety or well-being. The first dog's adrenaline might drop a little, and so does his tail, while he stops growling (Okay, I feel a little less worried now). When the second dog sees that the newcomer feels less tense and thus less likely to lash out defensively, the second dog can safely take the non-threat signals a little further. He folds his ears all the way back, drops his tail completely, and starts to move a little. The first dog feels yet more reassured, and gives signals to express this. The second dog sees the decrease in tension and feels safe breaking eye contact to smell the other dog's lips or backside, or even to make a little play jump. This signalling of decreasing tension goes back and forth, until both dogs have restored their inner equilibrium. To put it differently, the dogs each begin to trust each other, which enables them to relax and share a physical space. Don't worry - trust is not anthropomorphism here. Even among humans, trust is nothing more than the feeling that the other is sufficiently predictable that your internal state is not disturbed by fear of danger in his presence.

After this, in play, or in walking further together, the dogs explore each other's personal boundaries. Just like our party-goers, each dog has an internal state of well-being that he wants to preserve. This well-being can be affected by many variables, depending on the dog's history. A dog's behaviour and choices in seeking maintenance of well-being have nothing to do with some personality trait that is written in stone (e.g. dominant or submissive), but are the result of the dog's experience in the past. The choices are also influenced by his internal state from moment to moment (tired or not, hungry or not, full of adrenaline or not). Some dogs have learned that a tennis ball is the most wonderful play opportunity they will ever get, so they are fierce about keeping the tennis ball. Other dogs don't see any meaning in the tennis ball and will give it up willingly to another dog. A dog's personal zone is larger or smaller, depending on his experience in the past with intimate contact. The dog on a diet is obsessed with the bread someone strewed around for the birds. The castrated dog doesn't much care about the female in heat who just showed up. And so there are many different well being positions in life, which are all highly personal, and which each dog will try to preserve. The outside observer can't always see these variables, but this is no reason to pretend they aren't there. That we can't see them doesn't matter, as long as we know, watching the dogs, that they are trying to preserve a certain internal balance, exchanging one thing against another according to their own insights (not ours!) about what serves them best at that moment.

As they are balancing their internal equilibrium, one of the things dogs keep an eye on is the equilibrium in the larger, social system they share with the others. If this system becomes unstable, it is, just like our party, unpleasant and perhaps dangerous for all present. When two dogs have an argument, it's unpleasant for both of them and adrenaline levels shoot up, they have to expend a bunch of energy, and it always feels kind of scary because you never know absolutely for sure what the other guy will do. So social stability is one of the variables that affect dogs' inner well-being, and they are very good at keeping an eye on it.

This is why dogs are so sensitive to social space. Again, they learn as they go. Two dogs are racing around the field, playing tag. One of them runs very closely past a third dog, who is lying there chewing on his tennis ball. This third dog jumps up and does some protest barking and air snapping, then returns to her ball. The running dog looks to us like he didn't even notice this, but in fact he picks up on this social-space information on the move and without batting an eye. If we keep watching, we see that the next time he passes, he does this at a greater distance from the chewing dog. Even in wild play, dogs pick up on what's going on in the larger picture and change their behaviour to accommodate and keep the system stable by not perturbing the other dog too much.

This is also why dogs are willing, to a varying extent (depending on their personal histories), to make trades or give things up to each other in order to restore a threatened or lost social balance. Two dogs who have just met both run after a ball someone throws. As they approach the ball, one of them starts to growl. The other dog can't know what kind of history is behind this, but he knows the growl is a sign the other feels worried about the outcome and that the relationship could now become unstable – a conflict might arise. So he slows down and lets the first dog get the ball. After all, he has plenty of tennis balls at home, and to him the ball is an excuse to play the running game. The growling dog notices this. The next time they go for the ball together, he doesn't growl, but he gets the ball again just the same. Later, the second dog's owner is giving him a treat. This dog is on a diet and is always hungry, so this time *he* growls when the first dog approaches. *You can have the ball, but you sure can't have my food.* The first dog moves off a little and watches from a greater distance. The hungry dog notices this. The next time treats are handed out, he may still keep an eye on the other dog, but he might not feel he has to growl. He's seen that the other is willing to keep a little more distance around food. (It just so happens that in this other dog's home, tennis balls are scarce, but food isn't.) The two are each learning what is and isn't important to each other's internal well-being equilibrium. They take this into account in their interactions, and thus keep the social system stable.

This is not a dominance hierarchy, but a system of mutual trade-offs. One dog is willing to trade a little playing space for peace on the field. Another dog will give up a ball, another food, receiving the resource in return. This is a complex SOS, which seeks equilibrium on multiple levels at once. The dogs are not trying to dominate each other, but are seeking compromises, to bring all levels of the system into acceptable equilibriums at the same time. Dogs do not try to selfishly maximise their own well-being anymore than our party-goers did (see also Myths 14, 15, and 16). And you can't tell what's truly going on just by watching the visible physical resources. In the first place, as we have already seen, social stability is one of the factors that affect dogs' inner well-being. Arguments (social instability) decrease everyone's well-being by making all feel less safe. In the second place, and this is something scientists seem to have forgotten, dogs greatly enjoy each other's company. The very presence of the other adds to a dog's personal well-being. So when a dog sacrifices something (e.g. the tennis ball), this isn't really a sacrifice. The dog is making a choice, an exchange, between two things he values. In such a case, we can only conclude that the dog apparently values the avoidance of a conflict, or preservation of the good relations with the other dog, more than he values the thing he gave up.

So the behaviour we have been taught to call 'dominant' is in fact merely an exchange of information, upon which the dogs then make choices. It is a search for a mutually satisfying balance between two dogs. It is not up to us to determine that one dog has 'won' and the other has 'lost.' In doing so, we fail to take their own variables into account (which are the only ones that matter!). In fact, the dog who gives up a thing thinks he is making a satisfying, and in his own eyes winning choice, given his own valuation of all the available options and taking all the multiple equilibriums into account that he wants to preserve. Assigning more value to a thing that is taken by force is a truly typical *human* projection! This projection has led scientists to miss another reality. If we watch un-blinded by labels and projections, then we see that dogs most often get hold of an object by the handy use of charm,

calming signals, and distraction tactics. There is not a dog in the world who then values the object less because he got it this way. And it is another human projection to call these tactics "submissive" when in fact they are simply an expression of greater social skill. It is, generally, the socially unskilled dog or the distressed dog, who reverts to force to take a thing, and it reveals much about us (and nothing about dogs) that we would consider such a dog "superior" or assign leadership qualities to him.

With our picture in place of dogs exploring each other's boundaries and making compromises to reach inner and outer equilibriums simultaneously, we can now describe the rules the dogs follow as they do this. During my fourteen-year study of dogs, I was able to discover these rules and test them exhaustively. These are dogs' own rules, not ones thought up by a human - although humans greatly improve their relationships with dogs if we obey these rules (which we don't always do). In any case, every socialised dog carries these rules inside himself, just as our well-brought-up party-goers have internalised the ones they learned growing up. Dog rules are, however, different from human rules, and there are not so many of them. Here they are:

1) We will not use aggression in social interactions, but will limit ourselves to signals and avoid damaging each other. This is *the* main rule dogs depend upon. It is extremely traumatic for a dog when another dog does not honour this rule and attacks for real. (And don't try to tell us that humans have this rule too, or we will know you never watch the evening news.)

2) We will respect each other's personal zone and not enter it without permission. This rule is important, but it is less important than Rule Number One. It isn't so much traumatic as somewhat threatening when a dog disobeys this rule. When this happens, you may see some snarling and snapping, or maybe even a short, ritual "fight" (which isn't really a fight - see Myths 12, 13, 33 and 34). This is a rule we do share with dogs, though we disobey it more often. (The dog who disobeys this rule is just as pathological as the human who engages in sexual harassment on the work floor.)

3) We will be considerate of each other's personal preferences once we have learned them. How far this consideration goes is, as we have seen, dependent on each dog's internal state at a particular moment, balanced against the wish to maintain both relationships and social peace. (See Myths 14, 15 and 16 if you think your dog doesn't obey this rule.)

With these three simple and elegant rules, internally carried by each part of the domestic canine social system, the dog system is able to achieve one of the many possible equilibriums with amazing flexibility and speed. Each dog ends up with the things he values most at that moment while social peace is preserved, and the dog who consistently does not obey the rules get thrown out of the system (which chasing away can be a collective enterprise). We cannot determine some kind of hierarchy among the dogs in this balance (unless we are willing to project), because we cannot know how the *dogs* are valuing the things they add and subtract from their position in the whole. All we can do is observe that each dog has reached a position he is happy with. This position is not reached by brute force, but by voluntarily seeking compromises. It doesn't interest a dog in the least whether some other dog has "more". In fact, dogs don't even have the brain structures that would enable them to think the concept "more" or "less" or conceiving of and comparing sizes or quantities. This kind of math is quite beyond them. All a dog knows is that he has his own personal "enough" (more on this later, in Myth 14). Therefore, this dog SOS works excellently well. A dog group can absorb practically unlimited numbers of dogs quickly and flexibly, as long as everyone follows the three simple rules.

At the beginning, I said that dogs live in a complex, autopoietic, self-organising system. Now we understand "complex" and "self-organising" but what does "autopoietic" mean? It means, quite simply, that the system is capable of producing and repairing its own parts. You don't have to take an autopoietic system to the garage, or buy new parts for it. It is self-perpetuating and self-maintaining. Autopoiesis occurs when a system consists of living creatures. A dog bears pups without external help, and dogs all around the world raise pups - if humans don't interfere - into functioning system parts who know and voluntarily follow the rules. As we have seen in Myth 6, the ability to take part in the social system is learned, not inherited. Dogs do this part production quite well all by themselves.

A dog must interact with other dogs while he's a pup so as to learn the rules, otherwise he may end up having trouble participating in social interactions. An adult dog who didn't play enough with others in his youth may need finishing (as a part) if he is to function in a social system. Another dog may have a traumatic and damaging experience, and end up needing repair to be able to function again in the dog social system. We may need help repairing our dogs, but dogs are quite capable of repairing such a part themselves without outside help. They will help the traumatised dog get over his fear, providing him with reassuring social experiences. It's actually quite touching to watch how socially skilled dogs react to fear in another dog - we could learn a lot from them. The socially clumsy (or incomplete) dog gets snapped at and snarled at, until he tempers his clumsy behaviour and starts to act more politely. The other dogs aren't dominating him, but are providing this incomplete part with some learning experiences he missed out on, and he is learning as he goes. As long as the hooligan refrains from using aggression (i.e. delivering one or more uninhibited bites, thus inflicting damage on other system parts), he will be able to learn from other dogs how to take part in the system.

Thus there are two production processes, which make sure the system is producing and repairing its own parts. One of them is the biological process of bearing and raising offspring. The second production process is learning. Learning is crucial both to the production of socially functioning offspring and to the repair of parts that don't function optimally for some reason.

So learning is an important production process in the dog SOS. Learning takes care of the production of functioning system parts and repair of damaged or incomplete parts. Their ability to learn enables dogs to take the deviant signals into account that they encounter, for example, from a dog whose tail the humans have cut off or bred to be permanently curled up on his back. Their learning ability, their readiness to seek compromise, and their three simple rules enable dogs to absorb members of other species into their social system. A dog can learn how to interpret the signals, and thus predict the behaviour, of a parrot, a cat, a human, if only we allow him to go through the right learning experiences. He is then able to use these signals across the species-boundaries, to seek equilibrium and construct an SOS with all kinds of non-dog species. It's actually miraculous - or maybe not, given the context the dog evolved in.

Dogs live in a flexible and complex self-organising system which is capable of seeking and finding equilibriums on multiple levels at once (all the dogs in equilibrium while the social system also finds a balance). The system produces and repairs its own parts. There are three simple rules that determine the system's movements by the individual parts independently and voluntarily following those rules, without some central authority guiding things. The system functions to find the maximum available safety and well-being of all the present participants. There is no hierarchy. There is only a whole range of possible balances, both for each individual participant and for the system as a whole. Each equilibrium is arrived at as the dogs seek compromises, weighing various choices, and seeking a balance between their own well-being and the stability of the social landscape (which is also an element in their well-being). A dog who can't compromise can't take part. His behaviour destabilizes the social system, making it unsafe or uncomfortable for other participants. Dogs aren't preoccupied with power, but rather with building mutual predictability and trust, so the system can balance in one of the many acceptable equilibriums it has to choose from. These acceptable equilibriums are situations in which each dog present has a well-being position he is satisfied with. Giving up a ball or a bone to preserve the relationship and the social peace does not mean the dog has lost. It means that he has made a tradeoff, shifting from the well-being position that included the ball to a position that included something else he decided was more important.

The ability to follow Rule Number One, no aggression (i.e. no uninhibited bites and no attempting to inflict real damage on others), is essential, however. Aggression makes a dog unable to function as a part of any dog social system. He will always be attempting to sabotage the entire system. His presence makes the social system unsafe for all the other participants. He can't be repaired, because this is too dangerous - he will be trying to destroy other system parts rather than to learn from them. The dog does not exist who is willing to risk his internal equilibrium to such an extent that he may cease to exist as a living system himself!
(See re: exceptions to this in Myths 38, 40.) Dogs who do engage in aggression, or who will risk their existence as a living system in order to fight, are not products of nature. They are a result of human tampering with dogs. Repair is impossible, and the owner has the responsibility to keep the dog away from other dogs.

Fact: The domestic dog's social system is, thus, much more complex - but also much more elegant and intelligent - than a mere dominance hierarchy. This dominance hierarchy model is clumsy and anthropomorphic, and does not do justice to dogs.

Semyonova, A, The social organisation of the domestic dog; a longitudinal study of domestic canine behaviour and the ontogeny of domestic canine social systems, Carriage House Publishing, The Hague, The Netherlands, 2003. www.nonlineardogs.com.

Myth 12: Dog body language is all about dominance and submission.

We have now seen (in Myth 11) that dogs live in a complex and flexible self organising system, and that this system has many acceptable balances to choose from. As the dogs move within their system, each dog also has many satisfying options to choose from. Dogs are not interested in competition the way people are (see Myth 14). In fact, such things as momentary hunger, thirst, and adrenaline levels, past experiences with tennis balls and other dogs, how many tennis balls happen to be lying around at that particular instant, the desire to keep the relationship with the other dog, what the other dog seems to want - myriad factors and choices - are playing a role as a dog decides what to do from second to second. Dogs are always balancing and compromising between many internal and external variables as they search for a mutually satisfying balance in a social interaction. They measure this by their own criteria, not by ours, and each dog's personal criteria are different.

So dog body language is not about dominance and submission. Rather, it functions to inform the dogs about each other's inner state (call it mood, emotion, momentary motivation, as you like), so they can take each other's inner state into account as they interact. Their language is about information, predictability, knowledge of each other, and finding compromises that both dogs are all right with.

If we want to understand what dogs are truly saying, we have to put all the old ideas aside. What we do need to remember is that a dog is always armed when he meets another dog. We also need to remember that some dogs have had good experiences with other dogs (or with humans), while others have had mixed or bad experiences. A dog can feel unsure of himself when he meets a stranger. If we take this into account, we see that all the signals we have been told to interpret as dominant really mean something else.

The dog who enters an interaction with threat signals (high tail, high posture, staring, curling a lip, growling, hairs bristling on the back, stiff gait etc) is in fact telling the other dog that he feels worried about the other's intentions. Uncertainty. It is entirely possible that the threatening dog is completely sure of his ability to keep the other at a distance by the use of force - but this confidence in his prowess is not the cause of the threats. The cause of the threats is *lack of confidence about what the other dog is going to do*.

This may seem paradoxical to those of us who are used to thinking in terms of dominance and submission but there is strong evidence for it. Dogs who frequently and chronically threaten are often greatly helped if we give them anti-anxiety medicines during a behavioural therapy (Simpson and Simpson 1996). If it were all about dominance and if anxiety about the other dog's teeth were the only thing holding a dog back from being a total dictator, we would expect a reduction in anxiety to lead to even more bullying - but this turns out not to be the case. A second set of proofs is found in a longitudinal study (Semyonova 2003), in which it turned out that dogs threaten the most in the period after an unpleasant or scary experience with another dog (or a human). Dogs also threaten more often if they have just generally had too few pleasant experiences in their history, or too many bad ones. In the field of behavioural therapy, it turns out that dogs stop threatening their owners only when they learn to trust what their owners are intending to do. Trying to dominate a dog generally makes his threat behaviour worsen, unless the owner is willing to beat the dog so severely that he becomes

paralysed with total fear (but that isn't dominance; it's just terrorising an animal). The dog will still bite if cornered, as any animal will, and the dog leads an unhappy life. A threatening dog is just plain worried about what the other is going to do, so he gives off a signal that says, 'please don't come any closer'. This is not dominance. The only solution is to work on showing the dog you are trustworthy and not dangerous.

The dog who behaves 'submissively' isn't being submissive at all. This dog is anxious to make contact because he enjoys social traffic so much. He is telling the threatening, unsure dog (or human) about his own inner state, saying that he has no scary, evil or strange intentions. He is telling the other that he will respect the rules of politeness. He is trying to reduce the other's worry, by saying, 'I'm not going to bite you or I won't steal your ball or I won't come into your personal zone until you give me permission'. Because these signals are meant to take away the other dog's anxiety (i.e. to calm the other dog's inner state), we call them calming signals. This is a better description of what the signals aim at doing than calling them 'submissive'. These signals all require that a dog have enough confidence to put himself in a vulnerable position. Averting your gaze, making squeaky puppy-noises, trying to look smaller, exposing your neck or belly - it takes confidence to use these signals, enough good experiences in life to believe that other won't attack suddenly. It is, in fact, this dog who is taking control of the situation. He is taking the worried dog by the hand, as it were, and comforting him, trying to reassure him that contact can be safe and pleasant.

The threatening dog is revealing that he hasn't had many pleasant experiences (or fears a bad one now), that he has less social self-confidence, and that he needs a little distance. He asks for distance and reassurance, and the other dog gives it to him. To put it more precisely, the threatening dog is indicating that his inner equilibrium is lost, because (for example) his adrenaline level is very high. The confident dog knows by experience that certain signals will help restore the other dog's inner equilibrium. (Of course, he isn't thinking this abstractly - he just has experience that if he gives off a calming signal, the other dog responds by reducing his threats a little, allowing our calming dog to come a little closer.) Indeed, the threatening dog receives this information about the confident dog's lack of bad intentions and he relaxes a little. Perhaps he drops his tail a few inches and turns his ears a bit. The confident dog approaches a little closer, continuing to give off calming signals. The threatening dog signals that his inner state is yet a little less mistrustful. This goes back and forth until the threatening dog has gained enough confidence that he can allow real contact. The calming dog has had success in returning both the worried dog and the social system they occupy together to equilibrium. Of course, it can also happen that the worried dog can't conquer his anxiety, not even with so much help, and that the confident dog decides to just leave him alone and go do something else.

Fact: Dogs use their signals to exchange information about each other's inner state and each other's intentions, so they can take these into account as they interact. It's all about conquering anxiety and establishing trust. 'Dominance' and 'submission' are purely human projections.

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LONGITUDINAL STUDIES

One of the problems in the study of dog behaviour is that scientists only look for a very short time. Often they create experimental situations, put some dogs in these situations, test some responses, then draw their conclusions. Sometimes they observe dogs for a somewhat longer period. But this is usually still several fairly short sessions spread over several weeks or months. The researcher doesn't see what the dog is doing or experiencing between sessions. Often these are shelter dogs, dogs who are brought to a behavioural clinic at a university, or adult dogs researchers are watching in the wild. The trouble with this kind of observation is that you come in in the middle of the movie, go to the loo six times during the show, and then leave before it's over. You can't really know why the characters are doing what they do, what the plot is, what parts you've missed, and you miss the ending.

A longitudinal study is a study that covers a very long period of time, so that you can see how things develop over the years. Preferably, you also have to make sure you can watch the thing you're observing at least most of the time, so you don't miss important events. This is the only way to really find out what is really behind behaviour - by watching how it arises in the course of a dog's life and how it changes as the dog has various experiences.

The short-looking scientist sees a dog growling at the vet and resisting being touched. This scientist declares that the dog is dominant and wants to control the interaction. But if you've been watching for a longer time, you might know that the last vet this dog saw punched the dog in the head and then kicked him because the dog had air-snapped in a pain reflex. The dog is now scared of vets. Behaviour suddenly looks very different if you have been around watching for a while. When you have been watching long enough to know what kind of experiences a dog has had in the past, then you draw entirely different conclusions.

Semyonova, A, *The social organisation of the domestic dog; a longitudinal study of domestic canine behaviour and the ontogeny of domestic canine social systems*, Carriage House Foundation, The Hague, The Netherlands, 2003. www.nonlineardogs.com.

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Myth 13: When two male dogs meet, the first thing they want to do is establish their relative ranks with each other.

We have all seen male dogs facing off in what looks to us like a threat match. The popular story, and even the scientific dogma, is that they are trying to establish who is dominant, i.e. who has the higher rank here. But we have seen that dogs don't live in dominance hierarchies. They live in flexible, self-organising systems, which are sometimes very fleeting. We know that the dog SOS seeks equilibrium by juggling a multitude of variables, and that the only way to find a hierarchy is by projecting human values onto the choices dogs are making (see Myth 11). So what is this canine face-off truly all about?

When two dogs don't want to have anything to do with each other, they have a quite simple way of achieving this: keep your distance and don't bother to make contact with the other guy. When dogs do make contact, this is a choice. (This is assuming you haven't shut them up together in the bathroom.) It means they are interested in each other and want to establish some kind of relationship. They are voluntarily entering each other's personal zone. They both know this may be dangerous. Dogs are always armed. Not all dogs follow the social rules. So the bluffing dogs are, in fact, testing the three

following rules.

1) We will respect each other's personal zone and not enter it without permission.

This is the first rule that comes into play when dogs meet each other. Socially skilled dogs do not enter the other dog's personal zone without permission. (The grand exceptions to this are the aggressive breeds, the insufficiently socialised dog, and the adolescent dog.) You might not have noticed it, but our two males were already conversing long before they ended up facing off opposite each other. From the moment they saw each other, in fact. Before they were anywhere near each other, both males had already signalled that they weren't going to attack immediately. Each dog has also already signalled that he feels unsure of the other. This is what the whole slow approach on stiff, high legs means, including any growling and baring of teeth. Nevertheless, by approaching each other, they are both indicating that they do want contact. So, long before they are in the actual face-off, they have given each other permission to enter the personal zone, to see if they can establish a relationship.

As they stand there growling and other ado, they are learning about each other's inner state. The fact that both of them just stand there growling is proof that both are still refraining from attacking. At some point, *the most socially confident dog* will decide he's had enough proof that he's fairly safe in the other's presence. This more confident dog will be the first to give off a calming signal, perhaps dropping his tail a little and relaxing his stiffened legs somewhat, or turning his ears outward. These are reactions to the returning equilibrium in his own inner state (for example, that his adrenaline level has begun to drop as he starts to feel safer). This helps the other dog's inner state calm down a little, so this second dog's bristling hairs might smooth out, or he reciprocates by dropping his tail and turning his ears. His legs relax some, so both dogs' elevated attitude is now gone. The dogs progress to sniffing each other's body parts (usually anus and genitals). They may walk a few steps away from each other. They may deposit urine somewhere for each other to smell. You won't always be seeing these signals, because they can be quite subtle. Sometimes it looks to you like the dogs just suddenly stopped facing off and started playing with each other, and you think you're lucky. You're not lucky. The dogs have simply, but skilfully, used their signals to establish a minimal level of trust. But it's not *always* so simple. Sometimes dogs feel a need to test the most basic of all dog rules.

2) We will not use aggression in social interactions, but will limit ourselves to signals and avoid damaging each other.

This is the main rule, upon which all social traffic among dogs depends. To understand how this works, we first have to distinguish between real aggression and so-called ritual aggression. Aggression is aimed at inflicting maximal damage on the other, perhaps at killing him. Aggression is the delivery of one or more uninhibited bites - when a dog sinks his teeth in, uses the full power of his jaws, or rips, shears, and tears, and is trying to cause serious wounds. ~~Ritual aggression~~ is, in fact, not aggression at all. It is symbolic. The dog keeps his jaws open and waves his teeth around. He might grab a fold of the other dog's skin and pull on it a little - but he does this without causing wounds. He's not biting, he's pinching. It's inaccurate to call waving the teeth around and delivering pinches ~~aggression~~. These actions are nothing more than signals the dog is exchanging. These signals look awful to us, but in fact they are delivering a very important message: ~~Even~~ now, as upset as I am, I'm being careful about how I use my teeth on you. ~~We~~ are petrified, but after the whole thing is over we can't find a single wound.

Even ritual fights are very rare among dogs, but we need to understand what is going on when it does reach this point between (usually) two males. Usually dogs manage to build trust with milder signals. As they began the face-off, the two males showed each other they wouldn't attack immediately simply by not doing so. But the fact that one of the two still isn't relaxing may mean he's socially unskilled. He's not showing the usual readiness to indicate non-threat as quickly as possible. This is abnormal behaviour in a dog. His continuing tenseness means he still may go so out of balance that he lashes out at some point. At the same time, he's not choosing to just leave the shared physical space. This can be very upsetting to socially skilled dogs. The socially skilled dog is confronted with another dog who is obviously insecure and touchy, but who also wants to stay. If the tense dog stays, touchy as he is, who knows what he might do later? The socially skilled dog is not willing to make the trade-off of leaving himself. The joy of playing with all the others on the field is too great, so leaving is not one of the approximately equal well-being options he can choose from. The touchy dog also wants to stay, apparently not feeling so threatened by the other dogs who are present. He's chosen the dog he

feels most insecure about to have the face-off with. This might be the biggest other male around, but it might be some smaller dog who happens to look a little like the terrier who attacked him three weeks ago.

It may also be that *both* the dogs are just generally so socially insecure that they don't dare just trust the ~~No~~ Aggression rule. It can be that both dogs have had a bad experience with another dog who looked like the one they are facing off with. At the same time, they are choosing not to walk off and just go on their lonely ways. Both dogs still have hope (based on past experience) that a balance can be found and that this will be rewarding in the end. If they didn't have this hope, or if they thought a confrontation would lead to disaster, they'd have avoided each other in the first place.

In both cases a situation arises where each dog feels a need to test the other - to see the other either leave or give off a non-threat signal, showing to see the other either leave or give off a non-threat signal that shows he's finally relaxed enough that he won't be dangerous.

A dog can't just wait and see. The dogs' inner states are so far from equilibrium (so full of adrenaline and other stress hormones) that some kind of inner balance has to be restored before they can do anything else. The social system (even if it consists of only these two dogs) is also too far out of equilibrium. There are two dogs present whose well-being is suffering quite a dip. All this loss of equilibrium feels dangerous to dogs, who simply can't share a physical space with another whom they feel very worried about. After all, how can you just go off and play while there's a constant fear the other will suddenly attack while you're not looking, or bite you because you whizz by too close? Both the inner states and the social system have to be in balance, this is how the dog system works. If the balance can't be found with both present, then it'd have to be restored by one of the dogs leaving the shared physical space. So two dogs feel unsure of each other, but both want to stay. It will be the more insecure dog whose inner state goes so off balance that he loses it and lashes out at the other dog, and there they go.

Now we have what us humans call a fight. But it isn't a fight, it's communication. The dogs make a lot of noise, wave their teeth around, bat at each other's faces, maybe grab hold of the loose skin around the neck and shoulders, tug a little, let go, wave their teeth around some more, grab hold again. This all yields important information. For example, each dog shows the other that he has learned bite inhibition in his youth (see Myth 6). They also prove to each other that they will actually use this bite inhibition even in a tense and heated moment. By mutually proving this to each other - and sometimes the proof can only be found in the pudding - the two dogs can, ultimately, start to feel safe in each other's presence. In the ~~fight~~ they give the ultimate proof that they will be careful with their teeth no matter what. What usually happens is that one of the dogs decides he's had enough proof, so he gives off a signal that he's done testing. The other dog also knows he hasn't really been bitten during all this, so he responds to the signal by cutting it out, too - thus showing he does know these calming signals and what they mean. Suddenly the ~~fight~~ stops. The dogs now have enough information about each other to feel sure that sharing a playing field together will not result in a dangerous situation.

The dogs have not established respective ranks. They have done some trust building. Hopefully, you have allowed them to do this without ~~saving~~ them from each other. When you do ~~rescue~~ them from their conversation, they will just resume the conversation the next time they meet, because the thing still needs to be said before they can feel okay about sharing space.

I have to give one warning here, though. This chapter is about normal, socialised dogs. Not all dogs are normal or socialised. You should be extremely careful about exposing your dog to breeds that have been specifically bred for aggressive behaviour. These dogs are unable to engage in ritual conflict resolution because humans have bred a brain abnormality into them that makes them literally unable to control their fighting behaviour (see Myths 38. 40). This may not be their fault, but they will kill your dog all the same. And there are other dogs, not specifically bred for aggressive behaviour, who have simply never learned to inhibit their bite or to seek social compromises. These dogs are just as dangerous as the aggressive breeds. When you think your dog is in real trouble, e.g. if you see the other dog making a shearing or tearing movement with that piece of skin he's grabbed, or *if your dog begins to scream*, then you should rush over to help him. The best thing to do is to grab the attacking dog's hind legs (not your own dog's!) and lift them into the air. Most attackers will react as if

you hit the off switch. Ask the owner of this dog to leash his dog, and do not let go of those legs until he has done so.

That said, we can get back to normal, socialised dogs. There is a third rule these dogs test, usually in play after the first acquaintance has been made.

3) We will be considerate of each other's preferences once we have learned them.

Sometimes two dogs will have a threat match about a ball or a stick that is lying around and that they both spotted at the same moment. This occurs very occasionally between two dogs who already know each other, but usually it is dogs who have just recently met for the first time. Both dogs want the tennis ball. To understand what happens next, we have to refrain from reverting to labels and analyse what is in fact going on.

A dog's desire to have or to keep an object is a result of past learning experiences - e.g. he has learned that the tennis ball can be a source of pleasure. But not all dogs know this about tennis balls (or sticks, or whatever). One dog is on a diet, the other just ate. One dog's owner is always making a point of taking things away from him, the other's doesn't do this. And so on. Each dog will have his own particular valuation of all the objects that are lying around, and his own particular touchiness about it. At the same time, we have to remember that the preservation of relationships and social peace is, to dogs, a great good. As they look at an object the other dog also wants, it's not just about the object. They also have to make a decision about disturbing the peace or damaging (or even losing) the relationship with the other dog, whose company they were just enjoying so much. Each dog will have his own valuation of these social resources, just like with physical objects, and this will be dependent on the dog's personal history, just like with the physical objects.

If we remember this, then the way we describe behaviour changes. The dog who decides to walk away and surrender the physical object has not forfeited rank nor submitted. He has simply weighed all the various factors and all his various preferences, and decided that some other combination was worth more to him than the combination that included the tennis ball. He has maximised his inner well-being according to his own values, values we can't judge for him. We can't decide for him that he has lost, because in his own eyes the real losing move would've been to lose the trust and friendship of the other dog. By seeking a compromise - both with each other and between all the various factors that affect their own well-being - dogs shift their respective well-being positions, so that both dogs are satisfied with the outcome. The more often two new acquaintances have sought these compromises with each other, the more they know about each other's preferences, and the more easy and pleasant interactions will be.

Fact: The face-offs and symbolic fights (which are merely exchanges of signals) between two male dogs are not about rank and dominance. They function to generate predictability and trust in various crucial areas of interaction. In a threat match, each dog tells the other he feels worried. Each dog demonstrates his trustworthiness by not really biting, even in an escalation. These matches also serve to learn each other's preferences and boundaries, what each dog needs to feel comfortable, so this can be taken into account in future interactions.

Semyonova, A, The social organisation of the domestic dog; a longitudinal study of domestic canine behaviour and the ontogeny of domestic canine social systems, Carriage House Foundation, The Hague, The Netherlands, 2003. www.nonlineardogs.com.