

# **Dogs & Wolves**

## **4 How they learn**

An overview of how dogs and wolves learn – but mostly dogs. For dog trainers and the interested dog-owner



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*The way that dogs and wolves learn is basically the same except that wolves tend to learn faster and are more sensitive. So, anything you know about how dogs learn tells you something about how wolves learn and vice versa.*

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*One of the difficult things about writing a document like this is in deciding what to leave out. Opinions on this will vary from trainer to trainer and owner to owner but there has to be a limit somewhere and that means that something – or rather, a whole lot of things – will have to take a back seat. This document was designed with two purposes in mind. Firstly to provide information that is most often - for whatever reasons - missing or unreliable in published material; If you read something here that contradicts what you have read in a book or website then on average you should believe what it says here. Secondly, this document acts as a focus to draw together, in one place, the key facts and truths upon which understanding of the subject depends.*

*This essay is mostly aimed at people wanting to be dog trainers and the interested owner and is written from the standpoint that what matters is the truth about the subject, not political correctness, trendy theory or cult dogma. You will find no platitudes here, just fact and truth as near as I can record the two. It is designed to be read in its correct place in the sequence of other essays in this series. If you have not read the preceding essay(s) in this series yet, then you may not appreciate the meaning and rationale behind various terms which are discussed in the other essays.*

*In this essay, I have tried to account as best I can for the differences between individual dogs. One can almost never say things like “no dog ever ...” or “every dog will always..” because dogs are all different. Even if instead one says things like “most dogs..” one will inevitably run into the person who has never met “a dog that does..”. If you have never met a dog that does anything mentioned here then all I can suggest is that you enlighten us and write your own essay on dogs.*

*When you make up your mind who to believe about a subject, how do you decide ? Do you want to believe what your friends do, what your parents approve of, what makes you feel happy or just the bald, uncomfortable truth for its own sake ? In dog training ,looking at the published material, you certainly have the choice. In writing this essay, I have simply taken the role of informed but dispassionate observer and analytical recorder. I have no ideological axes to grind, no complexes to indulge and I am not in anyone’s theory and dogma camp. When I promote an idea, it is because that idea works in the real world; when I debunk one, it is because no matter how much water it holds in the world of theory and popular books, it doesn’t hold any in the real, hands-on world. What you read here is bald - perhaps uncomfortable - truth for its own sake*

*This essay is aimed at people in the world of pet dogs and pet-dog training, not the world of working or defence dogs.*

# 1 How canines learn

*(Just before we start; If all this is new to you then you will probably find it quite heavy going. There is a lot to think about and remember here. Don't try and consume it all in one sitting. Read a bit at a time and mull it over before taking another helping.)*

“Learning” is not necessarily the same thing as “training”. Training is the process of establishing habit and not all learning leads to habit. Learning can often be accidental but training implies deliberate intention. Both concepts are important in understanding how dogs change their behaviour and attitudes but despite their differences, what both have in common is the way in which things can be learned.

There are three main processes by which dogs of any age learn:

- Classical conditioning
- Operant conditioning
- Observation learning (copying)

There is also a fourth, more nebulous process involving cognition and active reasoning but this process is currently more the subject of (fascinating) research rather than mainstream training method. The majority of the discussion here will be confined to the first three processes because these are the ones which are of most use to most practical pet dog trainers.

## 1.1 Stimulus and response

Before looking at how the methods of learning work, let's consider the fundamental element of behaviour which is the relationship of stimulus and response. A stimulus is simply any combination of things that release (set off) a behaviour – for example the sight of a running rabbit releasing prey-chasing behaviour. The relationship is simply – and obviously:

Stimulus      → (followed by)      Response behaviour

Sometimes, the response is not a visible behaviour or any kind of action at all but just a feeling or emotion which we cannot actually see. In this case, the relationship is:

Stimulus      → (followed by)      Emotion or feeling

Now let's look at the first of these two things, the behaviour one, and take the jargon a stage further.

When a dog indulges an instinctive behaviour – one it is genetically programmed to be able to do - it is responding to an “unconditioned stimulus”, the stimulus is called “unconditioned” because it didn't have to learn how to recognise or respond to it. The sequence of activity is:

**Unconditioned stimulus**      →      **Unconditioned Response**  
Eg. Sight of rabbit running                      Prey chasing

The Response is also called “unconditioned” because it is not one the dog had to learn how to produce.

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Instinctive behaviours do not need a reward to prevent them being forgotten – they never will be; they are released whenever the stimulus is presented. There are only three ways in which an instinctive behaviour can be prevented from occurring in response to its stimulus:

- 1) By a temporary process of habituation where the stimulus is presented very rapidly and repeatedly with each stimulus occurring before the completion of the response to the previous one. Such sessions do not change the stimulus / behaviour relationship or extinguish the behaviour long term. The animal just gets “overloaded” and stops responding temporarily.
- 2) By being over-ridden by a stronger stimulus to a different behaviour.
- 3) By a learning or training process in which the stimulus also becomes associated with some negative emotion such as fear or pain which causes the animal to produce avoidance behaviour in response to it.

### 1.1.1 Classical conditioning:

Classical conditioning is about the “stimulus -> emotion” response; it is about teaching an animal to have certain feelings or emotions about something which may prompt it to produce some kind of desired behaviour *as a secondary effect*. It therefore concerns getting the animal to associate some kind of stimulus (called the Conditioned Stimulus) with whatever it is (the Unconditioned Stimulus) that would normally produce the desired state of mind. The connection between the two in the animal’s mind is called a “classical association.”

So, say the state of mind you want is the one that a dog is in when it smells food (which results in salivation – the desired behaviour) and you want the dog to get this feeling and therefore salivate when it hears a bell, then you have to find something that would normally make the dog go into its “food-smell” state of mind and teach it to associate that “something” with the sound of the bell. The most obvious choice of a thing to make the dog feel its “food-smell” feeling is the smell of food itself.

So, to achieve this conditioning, the Unconditioned stimulus is preceded by the Conditioned Stimulus, thus – as in the famous Pavlov experiment:

<b>Conditioned stimulus</b>	->	<b>Unconditioned stimulus</b>	->	<b>Unconditioned Emotional Response</b>
Bell rings (immediately followed by)		Smell of food		Food-smell feeling (leads to
----- Classical association -----				the behaviour of salivation)

..soon becomes

<b>Conditioned stimulus</b>	->	<b>Conditioned Emotional Response (CER)</b>
Bell rings		Food-smell feeling (leads to salivation)

Because the bell always rings just before it is presented with the smell of food, the dog soon learns that the sound of the bell predicts the arrival of food and it will get the same feeling when it hears the bell that it does when it smells food - and then salivate as a result.

Classical Conditioning is used in training as a way to change the association that the animal has for a particular stimulus - the stimulus may be an object, situation, person, other dog, place or just about anything else. For example, amongst other things, it provides us with the mechanism to cure fear problems by teaching the animal to associate a good feeling or happy emotion, instead of the bad one

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it's already got, with the problem object. The process of 'desensitisation' is one of classical conditioning.

It is important to remember that:

- Classical conditioning involves evoking a feeling or emotion which then *may* result in a behaviour. It is not just the training of a behaviour; it is the training of an emotion which *may or may not* result in one.

It is a feature of classical conditioning that in the animal's mind, the Conditioned Stimulus (Eg. bell) merges identity with the Unconditioned stimulus (Eg. food) to a very large extent so that it might eventually begin treating the Conditioned Stimulus as though it were itself, food. (This can give rise to a peculiar problem in training where the Conditioned Stimulus is a real, material object, rather than a sound or smell – a ball, for example. When a dog is always given food after being shown a ball, it can eventually begin to treat the ball itself as though it were food and may even ignore the actual food treat when it arrives.)

(Just before we leave this subject, you may have seen the Pavlov bell and food experiment stuff elsewhere but the descriptions always say that the bell makes the dog feel "hungry" and that causes salivation. This is obviously wrong. It is patently obvious that hunger *does not* cause salivation; it is the smell of the food which causes a "smell-of-food" feeling that then results in salivation. Dogs do *not* salivate all the time when they are hungry, they only salivate when they can see or smell food or hear it being prepared.)

### 1.1.1.1 Classical association

Classical association is the driving force behind classical conditioning.

In the bell and salivation experiment, the animal forms what is called a "classical association" between the bell and the food-smell emotion. A classical association is the link in the animal's mind between a stimulus and the emotion it evokes; nothing more.

Classical Association and Conditioning provide us with the means to alter and improve dogs' attitudes to things and discourage and stop behaviours we don't want for example by training a dog to associate the indulgence of them with negative and unpleasant actions (and hence feelings).

### 1.1.2 Operant conditioning:

The teaching of behaviours or actions without necessarily caring what emotion is involved is termed 'operant conditioning' (operant is a German word for "behaviour") or sometimes "instrumental conditioning" and is simply the process of increasing the occurrence of some behaviour by rewarding the animal when it performs it. When a dog has been taught to produce some specific behaviour on cue then the sequence of activity is:

**Cue** → **Behaviour** → **Consequence**  
Command      Action                      Reward

A cue is simply a substitute stimulus and as such can be absolutely any combination of things that a stimulus could be. Typically, in dog training, a cue is a gesture or verbal command from the trainer.

Learned behaviours require a reward of some kind to be obtained for most or all occurrences of the behaviour until such time as it starts to become habit. If the reward does not occur reasonably