CLICKER TRAINING

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Clicker training has relatively recently been popularized as a training technique for use with dogs. It uses scientifically based principles to develop behaviours. The process involves continually and precisely reinforcing behaviours we like, as a result those behaviours are much more likely to be repeated. Clicker training involves the use of an event marker to tell the dog when it has done want you are after, this is followed by the delivery of something the dog wants (usually food). Because the clicker marks a moment in time so precisely, it enables us to develop very precise behaviours if it is used correctly.

A clicker trained dog begins to alter its behaviour to make the click happen. The dog becomes a participant or partner in the training process rather than the object of the training. Because this type of training requires the dog to develop the confidence to try new things it is not compatible with training methods that work on a theory of inhibiting the dog's actions. You can not use clicker training principles to supplement training with a check chain.

What is the clicker?

Clicker training is training using a conditioned (secondary) reinforcer as an event marker.

Primary reinforcers are things the dog naturally wants such as food, water, social interaction and games. Unlike primary reinforcers a clicker doesn't start off as a reinforcer at all, but gets its reinforcing properties from the association with something else (a primary reinforcer). The sound of the clicker is associated with food (or another primary reinforcer) and a result the clicker is a secondary reinforcer. It enables you to give clear and immediate information about which behaviour you like (some people have likened the sound of the click to taking a photo at the moment you like), this is followed by the delivery of the primary reinforcer a few moments later. In this manner it acts a bridge between the dog performing the behaviour and receiving the primary reinforcer.

The clicker acts as an event marker and a release, that is "click ends the behaviour". You do need to be a little careful of taking "click ends the behaviour" too literally.; While it is true that what the dog is doing when it hears the click will be reinforced, so the behaviour the dog is doing when it receives the primary reinforcer will also be partially reinforced. This means if you are teaching a sit and you click the sit and then the dog gets up to come to you then you are reinforcing getting up from a sit as well as the sit. Bob and Marian Bailey emphasise "Click for action feed for position". They also suggest you think of reinforcement as a process and not a single event, the process starts with the click and ends after the delivery of food.

Using a clicker has a number of advantages over the use of a word like "Yes". We tend to talk to our dogs all the time, therefore words themselves are very common in the dog's environment and so are not particularly distinct. Also a word can convey emotion and can be delivered in a number of different tones, there are a lot of ways of saying "Yes". Having said that, if you are not after a high level of precision, the use of a word might be an easier option, just be careful that you try to deliver the word the same way each time.

How to Start- Classical Conditioning.

The click is given meaning by associating it with a primary reinforcer (this is classical conditioning). This process simply involves clicking and then giving the dog some food, for each click the dog gets a piece of food.

Some Points:

- You can do this anywhere, even in front of the TV
- Have the sound of the clicker be the only indication that food is coming. That is be careful that the dog does not pick up on other cues like reaching for the food
- Try to keep the time between the click and the offering of the food as short as possible. Keep the food in easy reach and don't "fiddle" with it, plastic bags are not usually good for storing food in because of the "fiddle" factor.
- Be careful not to train anything at this stage. This means you need to be a little careful that the dog is not always doing the same thing when you click. For example if you click only when the dog is looking at you they may think that to get the click to happen they must look at you, or if you only click when they are sitting they may think they have to sit to get you to click. This could cause problems later when you are trying to train other behaviours. This stage is not about training anything but rather about making the association between the click and the food.
- Stay at this stage until the dog starts responding to the sound of the clicker. It will probably take between 20 and 50 clicks which you might do over 2 or 3 sessions.

Timing

The Bob and Marian Bailey describe training as a "training is a mechanical skill" and so you need to practice. This practice should happen away from the dog. You need to practice your signals, footwork, luring, use of equipment like a target stick and your clicking.

The clicker lets you develop very precise behaviours if your clicking is precise. If you are too slow in your clicking your training will progress much slower. To develop better timing with the clicker you can practice by:

- Clicking while watching football. Try clicking every time the ball is kicked.
- Clicking while watching cricket. Try clicking as the ball is hit.
- Watching your favorite show. Try clicking for each change of camera angle as they cut between shots
- Watching your favorite show. Try clicking every time anyone's name is used
- Have someone bounce a ball for you and click as it hits the ground.

Using Food.

Pamela Reid describes how dogs can habituate to the reinforcer (Excel-erated Learing, Pamela Reid). This is where the reinforcer becomes less significant to the dog due to its familiarity. TO prevent this, it is important that the reinforcer itself be kept from becoming too familiar. One way of avoiding the habituation is to have a range of different types of food on you. This keeps the training more interesting because the dog is never certain what it will be getting. Think about how you deliver the food. Personally I throw food and find it adds to the dog's interest. Some trainers don't like throwing food because they don't want their dog picking food off the ground.

Avoid talking to the dog while it is working (talk all you like after giving the reinforcement). The dog doesn't need to be told it is "good" or is doing the "right thing" while it is working because the reinforcement is telling it that it is doing the "right thing". If you feel you need to talk to keep the dog's attention then look carefully at your rate of reinforcement and learning stage of the dog. Not only is the talking while the dog is working distracting the dog from thinking about the behaviour that is leading to reinforcement you are also setting up something that will just need to be faded later.

Criteria

You should enter each training session with a clear idea of what behaviour you are working on and what you will be reinforcing. The clicker enables the dog to participate in the training process by altering its behaviour. If you keep changing the behaviour you are working on in a training session you run the risk of confusing the dog. Thus, it is important to avoid haphazard training where you do a little of this and a little of that. Train one tbehaviour in a session. If you want to train more than one behaviour, do so in separate sessions (sessions can be separated by as little as a minute). You might like to do a session on something new (and thus a little stressful because learning new things is stressful) and then one on something the dog knows well.

Detailed plans and analysis can greatly enhance your training.
An example of a training plan.

Date		Start Time		Finish Time	
Previous Finish					
Session Criterion					
Trials					
Final Standard					
Additional Comments					

An example for teaching a target stick.

Date	2/7/05	Start Time	4.00pm	Finish Time	4.10pm
Previous Finish					
Session Criterion	Dog looks at target stick when held 10cm away while the dog is standing				
Trials	√ √ √ √ √ √ √ √ √ √				
Final Standard	Dog looks at target stick when held 10cm away while the dog is standing				
Additional Comments	The first few clicks took the longest to get, by about the 5th click the dog was looking at the stick almost immediately.				

Date	3/7/05	Start Time	4.00pm	Finish Time	4.10pm
Previous Finish	Dog looks at target stick when held 10cm away while the dog is standing				
Session Criterion	Dog moves nose 1 cm toward target stick				
Trials	√ √ √ √ √ √ √ √ √ √ √ √				
Final Standard	Dog moves nose 1 cm toward target stick				
Additional Comments	At first the dog just looked without moving but after the first time she moved toward the stick she seemed to get the idea.				

Date	4/7/05	Start Time	5.00pm	Finish Time	5.05pm
Previous Finish	Dog moves nose 1 cm toward target stick				
Session Criterion	Dog moves nose 5 cm toward target stick				
Trials	√ √ √ √ √ √ √ √ √ √ √ √				
Final Standard	Dog moves nose 5 cm toward target stick				
Additional Comments					

Date	5/7/05	Start Time	4.00pm	Finish Time	4.08pm
Previous Finish	Dog moves nose 5 cm toward target stick				
Session Criterion	Dog moves nose 10 cm toward target stick				
Trials	√ √ √ √ √ √ √ √ √ √ √ √ √				
Final Standard	Dog moves nose 10 cm toward target stick				
Additional Comments					

Date	6/7/05	Start Time	10.00am	Finish Time	10.10pm
Previous Finish	Dog touches nose to target stick				
Session Criterion	Dog touches nose to target stick within 5 sec of target stick being presented				
Trials	√ 0 √ 0 √ √ 0 √ √ √ 0 √ √ √ √ √ √				
	√ √ √ √				
Final Standard	16/20 reach criterion (at 80% success we can increase the criterion) Dog touches nose to target stick within 5 sec of target on stick being presented				
Additional Comments	The responses became much better as the session went on.				

Date	6/7/05	Start Time	4.00pm	Finish Time	4.05pm
Previous Finish	Dog touches nose to target stick within 5 sec of target stick being presented				
Session Criterion	Dog touches nose to target stick within 3 sec of target stick being presented				
Trials	√ 0 √ 0 √ √ 0 √ √ √ 0 0 √ √ √ √ √ 0				
	√ √ √ 0 √				
Final Standard	13/20 reach criterion (less than 80% success- do not increase criterion for next trial)				
Additional Comments					

Date	7/7/05	Start Time	4.10pm	Finish Time	4.15pm
Previous Finish	Dog touches nose to target stick within 3sec of target stick being presented				
Session Criterion	Dog touches nose to target stick within 3 sec of target stick being presented				
Trials	√ √ √0 √ √0 √ √ √ 0 √ √ √ √ √				
	√ √ √√				
Final Standard	17/20 reach criterion (above 80% success increase criterion for next trial) Dog touches nose to target stick within 3sec of being presented with it				
Additional Comments					

Date	8/7/05	Start Time	4.00pm	Finish Time	4.10pm
Previous Finish	Dog touches nose to target stick within 3 sec of target stick being presented				
Session Criterion	Dog touches nose to target stick within 1 sec of target stick being presented				
Trials	√ √ 0 √ √ √0 √ √ √ √ √ √ √				
	√ √ √√				
Final Standard	18/20 reach criterion (above 80% success increase criterion for next trial) Dog touches nose to target stick within 1 sec of target stick being presented				
Additional Comments					

Date	9/7/05	Start Time	6.00pm	Finish Time	6.10pm
Previous Finish	Dog touches nose to target stick within 1 sec of target stick being presented				
Session Criterion	Dog moves forward one step to touch target stick				
Trials	√ √ √ √ √0 √ √ √ √ √ √ √				
	√ √ √√ √				
Final Standard	19/20 reach criteria (above 80% success increase criterion for next trial) Dog moves forward one step to touch target stick				
Additional Comments					

Date	10/7/05	Start Time	4.30pm	Finish Time	4.35pm
Previous Finish	Dog moves forward one step to touch target stick				
Session Criterion	Dog follows target stick over 3 steps				
Trials	√ √ √ √ √ √ √ √ √ √ √ √				
	√ √ √√ √ √				
Final Standard	20/20 reach criteria (above 80% success increase criteriion for next trial) Dog follows target stick over 3 steps				
Additional Comments					

Date	11/7/05	Start Time	4.40pm	Finish Time	4.45pm
Previous Finish	Dog follows target stick over 3 steps				
Session Criterion	Dog follows target stick over 5 steps				
Trials	√ √ √ √ √ √ √ √ √ √ √ √				
	√ √ √√ √ √				
Final Standard	20/20 reach criterion (at 80% success we can increase the criterion) Dog follows target stick over 5 steps				
Additional Comments					

Date	12/7/05	Start Time	4.00pm	Finish Time	4.10pm
Previous Finish	Dog follows target stick over 5 steps				
Session Criterion	Dog follows target stick over 8 steps				
Trials	√ √ √ √ √ √ √ √ √ √ √ √				
	√ √ √√ √ √				
Final Standard	Dog follows target stick over 8 steps				
Additional Comments	Add cue "touch" while dog is touching the target stick				

As you can see, in the above example, I am wanting to achieve at least a 80% success rate on the present criterion before asking more of the dog.

Changing location or increasing distractions are separate criteria, this means that you might have thought you were teaching targeting, but the dog was learning to "follow the stick if it is in your kitchen". "Following the stick in your yard" might be a whole new exercise to the dog and so you may need to click for looking at the stick again when you go outside and build it up again (you will be able to go through the stages much faster this second time). To help make your training progress smoothly, it is useful to teach new exercises in a number of different environments. Take the new behaviours on the road early.

Pure Shaping and Directed Shaping
Clickers can be used with Pure Shaping and Directed Shaping

Pure shaping

This is training without the use of targeting or lures. The dog develops the behaviour through the use of successive approximations, as in the touch stick example. Another example could be to teach going to your mat by clicking:

- Looking at mat
- Moving toward the mat
- Paw on mat
- 2 paws on mat
- 3 paws on mat
- 4 paws on mat
- Sit on mat
- Drop on mat

The advantage of this type of teaching a learning is that you produce a dog that is looking for ways to make you click. The dog will develop the confidence to offer behaviours and in some cases will be easier to teach new behaviours. The disadvantages are that it can be very slow and it can produce a dog that "throws" behaviours at you when the reinforcement is not coming fast enough.

Directed Shaping

This generally involves luring or targeting to help get the behaviour and then reinforcing it. This has the advantage of it being much quicker than pure free shaping. Its disadvantage is that some behaviours are hard to lure or target (exercises that take place away from your body or involve some type of discrimination). Another disadvantage is the dog may rely on being told what to do and thus it is harder to get them to offer behaviours, they can become confused and unsure of what to do. A lot of trainers get

addicted to using the lure and don't let the dog think about how to get the click to happen. It is important the target or the lure is removed early in training.

Personally I used directed shaping the majority of the time but occasionally use pure shaping. I introduce a small amount of pure shaping because I like to have a dog that has the confidence to offer behvaviours. I use mainly directed shaping because it is faster and I don't want the dog offering behaviours too much (it's a balance that you need to find).

Adding the Cue
The cue is added once the dog is doing the behaviour perfectly. To add the cue start by saying the cue (or giving the cue signal) as the dog is doing the behaviour, do this at least 50 times over a range of different environments so the dog does not associate the cue with the environment. Next present the cue as the dog starts the behaviour, repeat at least 50 times. Next present the cue before the behaviour, just as the dog commits himself to the behaviour.
For more information:
http://www.clickersolutions.com/articles/2001b/addcue2.htm

Once the behavior is on cue (that is the dog does the behaviour when you cue it but does not 'offer' the behaviour at other times to try to get you to reinforce it) you can stop using the clicker and move to a verbal bridge word like 'Yes". You don't have to stop using the clicker but you may find that by moving to a verbal bridge you can save the clicker as a way to telling the dog you are working on new behaviours.

If you are having trouble with your training
- Look at your timing. Are you clicking what you want or are you too slow?
- Look at your criteria. Are you looking for too much (lumping). Are you looking for a 5 step attention heel when you haven't trained a 1 step attention heel? A lot of problems can be solved by careful splitting of the behaviour down to its components.
- Look at the frequency of your reinforcement. Most people are too cheap; they expect a lot but don't want to pay for it.

Latency
Latency refers to the time between giving the cue for the behaviour and the dog actually doing it. If you are interested in competitions you should be working toward a latency as close to zero as you can get, even for pet behaviours it is nice to have the dog respond immediately. To achieve a very short latency you need to know how long your dog is taking to respond to you cue. If it takes an average of 3 sec to respond then don't reinforce any responses that take longer than 3 sec. Over time, as the average comes down, change your criterion. There is a very good article at
http://www.clickersolutions.com/articles/2002b/latency.htm

No Reward Markers

A number of clicker trainers use a no reward marker (NRM) to tell the dog that the behaviour they are doing will not lead to reinforcement and thus they should try something else. It is not delivered in an aggressive tone as it is just information to try something else (typical words used as a NRM are "wrong" or "try again"). Trainers can find they need a NRM when the dog is offering a range of behaviours, for example a dog might offer a drop or sit or rollover when you are training a stand. This is more likely with a dog that has a lot of experience of pure shaping and there are a number of behaviours that have not had a cue added.

In general, I think most trainers don't need to use a NRM if they make certain behaviours have cues attached, they use more directed shaping and they split the behaviour finely enough.

Keep Going Signal

A keep going signal (KGS) tells the dog that they are on the right track to getting a reinforcement. I personally don't think the clicker lends itself well to being a KGS as I like to keep its meaning as simple as possible (that's what I wanted, here is your reinforcement). People who use KGS often use a word that can be extended, for example gr-gr-gr-gr-gr-gr-great or ex-ex-ex-ex-ex-ex-ex-ex-excellent, in both these cases the gr-gr or ex-ex tells the dog to keep going and not to try something else. Again, this is going to be most useful where the dog that has a lot of experience of pure shaping and there are a number of behaviours that have not had a cue added. As a result, they are more likely to stop what they are doing and try something else if the reinforcement is not coming fast enough.

Similar to NRM (above), I think most trainers don't need to use a KGS if they make certain behaviours have cues attached, they use more directed shaping and they split the behaviour finely enough.

Ratios of Reinforcement

For the majority of behaviours you are best staying on a continuous reinforcement (CRF) schedule where every response that meets the criterion is reinforced. This gives you the opportunity to keep informing the dog when they have met the criterion you have established.

Much of the literature on clicker training talks of the value of a variable ratio (VR) of reinforcement , where some of the behaviours that reach your criterion are reinforced and some are not. In the clicker literature you will often find this described as two-fers or three-fers (the dog repeats a behaviour two or three times for the reinforcement). The advantage of a VR is that the behaviour becomes a lot more resistant to extinction. Under normal circumstances when you stop reinforcing the dog will eventually stop responding to the cue. Where the dog is used to not getting a reinforcement for every response this

stopping of responding takes a lot longer. Another advantage of VR is it leads to more variable behaviour so the trainer can select from a range of responses the ones they like best. This variation in response is also a weakness of VR in that the trainer can start reinforcing chains of bad and good responses, the dog can start to think I need to do a slow sit then a fast sit to get reinforcement. For most training, and even competing situations, there is not a great need for very high resistance to extinction because the dog is not going to be asked for a high number of repetitions before reinforcement so a VR is not necessary.

You can find detailed information at:

http://www.clickersolutions.com/articles/2001/ratios.htm

Recommended Resources

Internet:

There is a great selection of articles at
http://www.clickersolutions.com/articles/

Books

Click for Joy, by Melissa Alexander
This is an excellent book for people who have done some previous training and are wanting to further investigate clicker training.

The power of Positive Dog Training, Pat Miller
This is a good introductory book on dog training. It is the sort of book that could be read by people new to dog training and those with some experience. Of most use to new trainers will be the six week training plan.

Don't Shoot the Dog, Karen Pryor
The book at popularised clicker training. A very good reference on why positive training with a reward marker works and how to apply it in a range of situations.

Clicker Training for Obedience, Morgan Spector
A great book for the serious obedience competitor. The book is full of detail on how and why to use a clicker as well as very detailed descriptions of how you can teach the various obedience exercises.