Shock Collars: What Manufacturers Don't Want You to Know- COAPE, reproduced by BanShockCollars.ca with permission.

We make no apologies for this article being one-sided – that is – against the use of e-collars for training dogs. Furthermore, we challenge anyone who feels that the information presented here is overly bias against e-collars to produce equally robust research supporting the benefits of these devices in everyday dog training.

Up here in bonny Scotland, following the petition to ban the use of e-collars launched by Siobhan Garrahy in March, 2015 (Scottish Parliament, 2015), the Scottish Government announced that there will be a public consultation this summer (Scottish Government, 2015). This means that everyone living here will have the opportunity to **have their say** on whether the use of e-collars should regulated, or even banned. Of course, the use of e-collars is already banned in Wales, Denmark, Germany and Sweden, and controlled in parts of Australia and in New Zealand. It seems timey, therefore to write here about the technology and the use of e-collars in dog training.

PART 1: To begin at the beginning

Last year, an interesting study was published that compared positive and negative reinforcement training techniques in dogs (Deldalle and Gaunet, 2014). Although many studies have already been done on the damaging effects of aversive training methods, the scope of the study was uniquely different. Rather than focus on the more extreme forms of training, this study set its sights on every-day family pet dogs trained in local, every-day family-friendly training classes – the very kinds of classes we can find dotted around in most communities.

For phase 1 of the study the researches visited all the classes in a selected

community where owners had brought their new, young untrained dogs to be taught the basics for the first time. What they wanted to identify was one class where the instructors taught a predominantly negative reinforcement (R-) technique and another where predominantly positive reinforcement (R+) was taught to the owners. The chosen behaviours for the study were 'sit' and 'walking on lead (i.e. not pulling)'. For the 'sit', in the R- class owners where taught to put pressure on their pup's lead by pulling up while pushing down on the rump with the other hand until the dog sat, when they released the pressure. For the 'walking on lead' the owners where taught to pull on the lead until their dog was in position and then release. For the 'sit' and 'walking on lead', in the R+ class owners where taught to use verbal praise and treats when their dog was in the correct position.

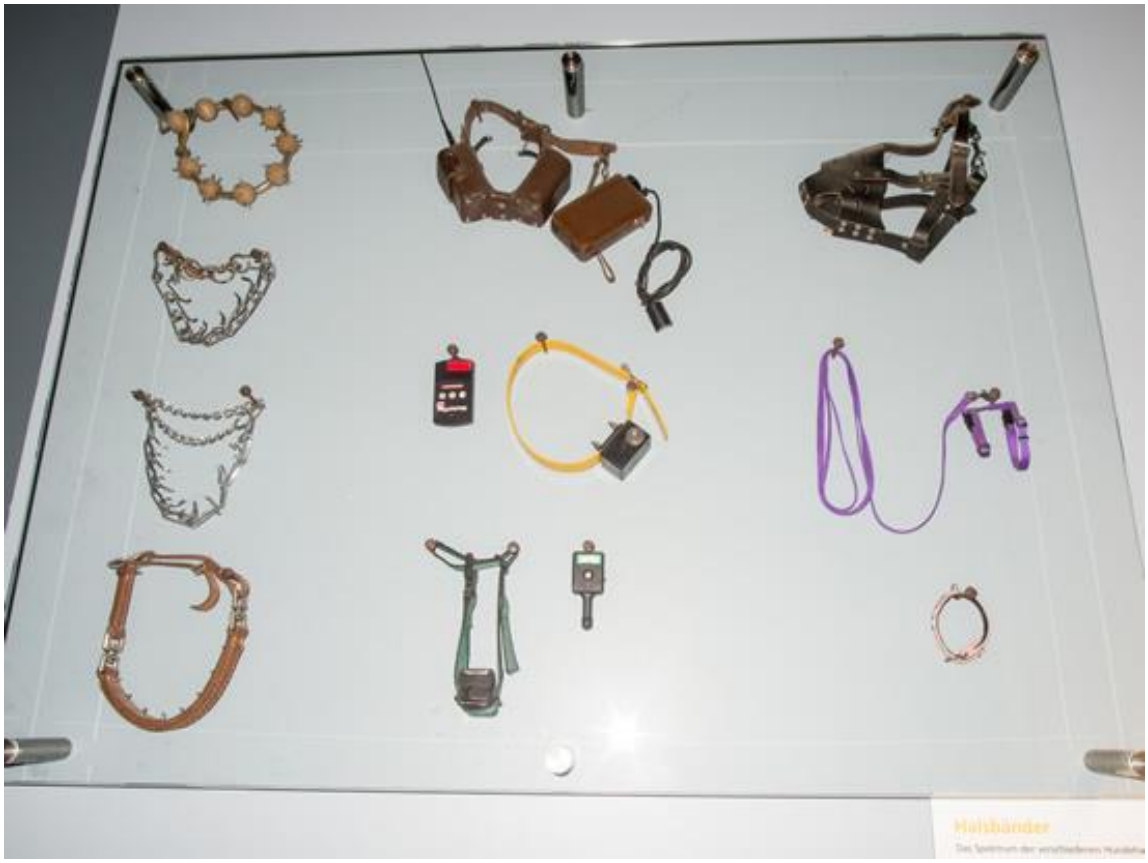
For phase 2 of the study the researches turned their attention to the advanced classes of their two chosen establishments where older dogs were learning more elaborate behaviours. Now, here's the point – all these dogs were already 'experts' at the 'sit' and the 'walking on lead' they had learned when they were younger, perhaps some years ago in some cases. What the researchers wanted to do was to closely observe how these dogs now reacted when asked for each of these behaviours by their owners. They managed to observe the reactions of 26 dogs in the R- group class and 24 dogs in the R+ group class. This is what they found. For both the 'sit'' and the 'walking on leash' more dogs in the R- group showed low body posture and most of the dogs avoided looking at their owners. The exact opposite was seen in the dogs in the R+ group. Furthermore, for the 'sit', the dogs in the R- group showed many other stress-related behaviours as well, including mouth-licking, yawing, scratching, sniffing, shaking, and whining.

There are three 'take-home' points here –

1 all these dogs are much loved family pets living at home with their owners, yet the data suggests that the R– group of dogs have formed an aversive association with the presence of their owners at some level, as shown in the 'walking on lead' test.
2 for the 'sit' command the data suggests that the R– group have also developed an aversive association with the 'sit' command itself – it has become a secondary R–, as shown by the additional stress-related behaviours exhibited by these dogs.
3 As every good dog trainer knows, good eye contact and attention to the trainer is the cornerstone of effective training and is also a good indicator of the dog's relationship with, and trust of the trainer/owner; there are many studies that confirm this.

This study is worrying as it clearly shows that even accepted and widely used R- training methods have a long-lasting negative impact on a dog's welfare and his relationship with his owner. This begs the obvious question "how much worse can this be for dogs trained using extreme forms of positive punishment (P+)

such as the delivery of electric shock?”



Training aids' on display at the WOLFCENTER GbR Kasernenstraße, Germany.Copyright RFT

The psychology of punishment
Let’s objectively consider the effects of punishment at its most extreme. We have known about the effects of shock on a dog’s behaviour for decades, specifically the induction of what psychologists call ‘immobility’. It was Martin Seligman who coined the term ‘learned helplessness’ back in the 1970’s through his studies of inescapable electric shock in dogs (Seligman, 1971). **Learned helplessness** is the state where the dog is no longer able to learn and engage an avoidance behaviour. Seligman noted that his dogs just lay down and gave up any attempts to escape, even though they continued to receive electric shocks, and even when the cage door was open and the opportunity for escape was obvious. Furthermore, about 5% of the dogs used in these and subsequent studies lay down and gave up after the first shock (Seligman & Groves, 1970; Seligman & Maier, 1967). We now know that dogs have a range of different personality types, linked with breed/type/temperament, where some are better able to cope with negative life events, including punishment, than others (Ley et al., 2007; 2008).

Now think about the use of torture in our society.

We all-too-often hear horrifying stories about its use in various parts of the world, but it is often forgotten that the 'psychology' of torture is not just based on inflicting pain, there are two other crucial elements as well (Basoglu, 1999):

- Control, where the victim has no control over his situation.
- Predictability, where the victim does not know what is going to happen next, or when.

These two variables together are **hugely damaging and stressful both emotionally and physically** via the ongoing release of stress hormones, and their impact on the victim's neurophysiology and immune system. These effects have also been clearly demonstrated in dogs too (see Beerdaet al., 1997; Dess et al., 1983; Schalke et al., 2007). One hugely significant observation Seligman made was the link between learned helplessness and depression (Seligman, 1975), and this link is now accepted and widely used in human cognitive psychotherapy. The state of depression in dogs is on a continuum that manifests itself behaviourally through such behaviours as loss of appetite, weight loss, unresponsiveness to training, unresponsiveness to contact with owners, non-aggressive when provoked and finally immobility where the animal simply gives up. From any decent trainer's perspective inducing immobility in a dog (i.e. cessation of **ALL BEHAVIOURS**, not just the one targeted for modification) is not synonymous with improvement of that behaviour.

PART 2: Electric shock collars on test

In 2007 the Government's Department for Environment, Food and Rural Affairs (Defra) commissioned two wide-ranging studies on the effects of shock collars on the training and welfare of dogs. One objective of the studies was to investigate the electrical characteristics of a range of shock collars available for purchase in the UK. The results were published in June 2013 and reveal some disturbing facts (Defra AW1402. 2013; Lines et al., 2013). The researchers identified 170 different models of shock collar freely available in the UK marketed under 14 different brand names and all operated by a wireless remote control handset. 13 collar models from 9 brands were selected and the researchers then acquired two of each model, 26 collars in all, for testing in the laboratory. Most of the collars were bought as new online, with the remainder being borrowed from dog trainers. 3 of the collars were not capable of signalling a warning to the dog, while the other 10 could do this as a tone or a vibration. One of the new collars bought online was a cheaply made counterfeit available for sale at a very attractive price.

There was consistency of the electrical output from collars of the same model. However, for collars of different models, even from the same manufacturer, the **electrical output varied widely**, yet this information was not given to the consumer, either in the instruction manuals or on the manufacturers website. What this means is that a setting of 4, for example on one collar is not necessarily the same as 4 on a different model from the same manufacturer.

Most of the collars could deliver shock over a range of levels as both a momentary pulse, lasting for between 4mS and 500mS (half a second), and as a time-limited continuous series of pulses lasting for between 7 and 13 seconds. However, the **way the continuous shock was generated in some of the collars was of concern**. In 6 of the collars the strength of the shock a dog would receive from a 1-second continuous pulse set at the mid-level setting was the same as the shock the dog would receive from a momentary pulse set at maximum level. That is, a one-second continuous pulse of shock contained **up to 143 times the electrical energy** as the equivalent level of momentary shock. This difference from the dog's perspective is huge and there should be clear warnings in the instruction manuals that these collars function in this way.

All the collars came with instruction manuals which varied in the quality and accuracy of the advice they gave to operators. For example, only 3 manuals stated that if the **dog vocalised when shocked the setting was too high**. For instructions on training basic obedience, most of the manuals advised that the shock collar should be used after the command has been introduced. Some manuals, however reversed this advice and recommended shocking the dog before the command was given. The same inconsistencies in advice were apparent for some specific behaviour problems. One aspect of advice given in most of the manuals is of great concern to us here, given the variation in shock intensity discussed above. Most manufacturers recommended using a **continuous shock setting until the dog shows the required behaviour**. Furthermore, these manuals gave little or no advice of where and when to use the momentary shock function.

2 brand new collars had **electrical faults**. One collar intermittently delivered its maximum shock regardless of the level chosen on the remote handset. This was related to a fault in the level setting dial and its circuitry. The other collar also had a faulty dial that delivered a lower level of shock when set halfway between 2 level settings. These faults may reflect the quality of the electronic components being used, and in any event demonstrate serious design flaws that should never be allowed to happen. **All collars should incorporate safety cut-out circuits**, as is done with other electrical equipment used directly on human skin. In fact if these kinds of fault were found in a brand of electrical stimulation device for human use, for example TENS machines used commonly by the NHS for controlling pain, there would be a media frenzy and an immediate recall by the manufacturer. For another collar, the instructions indicated that the duration of continuous shock for the device was 8 seconds, but in fact it was 11 seconds. This **lack of attention to detail by the manufacturers is not encouraging**.

The counterfeit collar only had one level of shock and no cut-off for the continuous shock at all. That is, it delivered shock for as long as the controller pushed the button, or until the batteries ran out).

RFT e-COLLAR TEST REPORT

In 2012, I purchased a top-of-the-range e-collar from a reputable supplier in the UK for our students to play with. Following the Defra report, I took a look at this device with a more critical eye, and this revealed some very basic, but worrying flaws in its design. The hand-held remote control comes with a belt clip and a neck strap so that it can be easily carried hands-free when not in use. The problem with this is that there is **no means of switching off**, locking, or otherwise disabling the remote control, other than not operating any of the buttons for 10 minutes, after which the device goes into stand-by mode. Pressing any button then wakes it up.

On several occasions, **I found myself pressing one of the buttons by mistake** as I was trying grasp the device, especially when walking along. Think about the impact of this on a dog in relation to predictability had I pressed the shock button, and also in terms of intensity of shock had I inadvertently pressed the increase-level button, or the plus-two-intensity button (yes, there really is one of those too!). Cold hands in winter, and perhaps pulling the device in and out of a pocket, would make it even more likely to press buttons by mistake. Now, I would consider myself as pretty representative of the majority of dog owners who purchase these devices to train their dogs – that is not an expert in using them.

Another obvious flaw is that there is **no way to limit the duration of the shock** when the shock button is pressed. Instead, as the manual clearly states, when the button is held down, 'stimulation' remains on for 8 seconds after which it times out until the next button press. Again, thinking about the novice user preoccupied with watching their dog, holding down the button – rather than mindfully releasing it – is likely to be the default behaviour. It would be much better to have an adjustable time-out to avoid this. Furthermore, I measured the duration of 'stimulation' and it consistently **timed out after 11 seconds, not 8 as stated in the manual**.

The manual that comes with the e-collar is **grossly inadequate** in my view, although there is a note referring the user to more details on the manufacturers website. However, this is not acceptable given the dangers of inadvertently misusing it, especially for the first-time user. The **language used in the manual is ambiguous and confusing**. For example, terms such as 'annoying stimulation' on one page, 'hiding and acting fearful' on another and '…should not panic or vocalise when receiving stimulation' on another.

The **manual advices that the user should consult with a professional trainer or behaviourist before use in just 2 circumstances – if the dog is aggressive, or if the dog is disabled**.

Mack, the Springer Spaniel wearing the device tested by RFT. Mack is one of over 150 Spaniels successfully rescued and rehomed by Springer Rescue Scotland every year.

PART 3: The emotional and behavioural effects of electric shock on dogs

There are **three different types of electric shock collar available for dogs**. Those that are triggered automatically, such as invisible fences and bark collars, and those that are triggered manually by a handler via a remote control handset. For the dog, the end result is the same – he receives an electric shock painful enough to interrupt behaviour. There is no doubt that in this regard these devices are very effective, and this is further supported by the volume of readily available literature online, and is also confirmed by the many dog owners and dog trainers that continue to use them, and endorse their use to family and friends. What is not as well publicised is the compelling catalogue of studies that have been undertaken over the last couple of decades looking at the fallout of using shock to train dogs. Here is a brief chronological review of three recent studies that encapsulate some of the problems. Please note that we have adopted an objective and unsentimental approach in reporting these studies in order to keep the information clear, concise and informative.

STUDY 1. 2000

A retrospective study of five serious and apparently unforeseen and random dog attacks on 3 adults and 2 children (Polsky, R. 2000) concluded that the use of

electric boundary fences by the owners of these dogs was largely responsible for the attacks. The dogs involved were all family pets, 3 Golden Retrievers, an Akita and a Rottweiler, and none of the owners of these dogs believed their dogs to be aggressive, or a danger to the public in any way. The common factor here was that these dogs had been fitted with shock collars that were automatically triggered when the dogs came within range of the buried boundary wire surrounding the properties. It is likely that these dogs were approaching the people involved here in a gesture of greeting, only to **receive multiple electric shocks completely out of context with their current behaviour**. The result was that each of these dogs instead launched a serious attack on the approaching human, and in each case delivered deep, multiple bites and lacerations. That is, **these attacks were anything but inhibited**.
As an aside, numerous studies have also shown a clear correlation between aggression in pet dogs and the use of P-/R- training methods employed by owners and trainers, for example 'alpha roles' in dominance reduction programmes (see for example Casey et al. 2013; Herron et al., 2009; Rooney and Cowan, 2011).

STUDY 2. 2004
A study investigating the use of shock collars during the initial training of 32 German Shepherd guard dogs demonstrated that all dogs showed signs of stress and pain, including lowered body posture, high pitched yelps, barks and squeals, avoidance, redirected aggression on other dogs, and tongue flicking (Schilder and van der Borg, 2004). The researchers noted that these reactions only lasted a fraction of a second as the dogs received the shock. However, when these dogs were later tested following their 'graduation', in some cases **years later**, some continued to show many of the same stress-related behaviours, even though shock was only ever employed during the initial training. Furthermore, when the dogs were worked by the individual who originally trained them, their stress and fear-related behaviours was further increased, showing that the presence of the handler and the sound of his commands had become **conditioned cues associated with previous shock**. This clearly supports the findings of the first study cited in this article (Deldalle and Gaunet, 2014).

STUDY 3. 2007
As stated above, there are known variability's between dogs in their sensitivity to the effects of electric shock. An attempt to minimise this and allow for better comparison of the effects of different punishment contingencies was made in a study using 14 Beagles, 18 to 24 months old, bred in a specialised kennel that raised dogs exclusively for laboratory use (Schalke et al., 2007). What is unique about this study is that all these dogs had been raised in relative isolation from human contact and other, normal environmental stimuli, unlike most well-balanced family pets. The advantage here was that these dogs were as similar as they could possibly be with regard to their genetics, and they had all experienced the same life experiences in the standardised environment of the breeding kennels. What the researchers wanted to measure was the variability of

using remotely operated electric shock collars to control a common behaviour problem in dogs – worrying livestock. The 'livestock', or 'prey' in this case was a dummy rabbit. The dogs were first arbitrarily divided into three groups that determined how the shock was to be applied to each dog by the handler. Group A, the 'Aversion' group, received one shock pulse the moment they touched the rabbit. Group H, the 'Here group', received one shock pulse if they failed to respond to 'here' command. Group R, the 'Random group', received one shock pulse at one of the following randomly selected, and therefore unpredictable and out of context points in their behaviour – prior to orientation towards the prey, or while hunting, or after having finished the hunting process when there was no prey in the room anymore.

The study was carried out over a 15 month period and consisted of 3 phases. At the end of each phase each dog's stress levels where measured via blood cortisol and heart rate. Phase 1 took up the first three months of the study and consisted of the dogs getting used to the room where the rest of the study was to take place. Each dog explored the room every day in the absence of the other dogs to ensure that the environment was entirely familiar and non-threatening for all dogs. In addition, all dogs were trained to hunt for the dummy rabbit in the room, and the H group were also trained the recall cue 'Here'. Phase 2 consisted of training the dogs to avoid the dummy rabbit using the shock collar as prescribed by their respective groups. Phase 3 consisted of resting the dogs for four weeks away from the research facility, then simply re-introducing each dog into the test room and taking the final cortisol and heart rate measurements.

As expected **all dogs showed an increase in their stress levels** during Phase 2 and 3, and those of the H group were consistently higher than those of the A group. For the R group dogs, however the levels of stress measured were of the order of 10 times higher in both phases.

This study is important because it was designed specifically to investigate how shock collars might be used in every-day life. It **clearly demonstrates how easy it is for an owner or trainer to inadvertently or deliberately misuse a shock collar**, and how a small error in timing can lead to a dramatically more profound and damaging negative effect on the poor dog. The conclusions the authors reach on the results of this study are clear (Page 379):-

"The results of this study suggest that poor timing in the application of high level electric pulses, such as those used in this study, means there is a high risk that dogs will show severe and persistent stress symptoms. We recommend that the use of these devices should be restricted with proof of theoretical and practical qualification required and then the use of these devices should only be allowed in strictly specified situations."

PART 4: Final thoughts and conclusions

The Executive Summary of the Defra report (Defra AW1402. 2013) is clear:- "Overall, this project has highlighted the very variable outcomes between individual dogs when trained using e-collars. The combination of differences in individual dogs perception of stimuli, different stimulus strength and characteristics from collars of different brands, differences between moment ary and continuous stimuli, differences between training advice in manuals, differences in owner understanding of training approaches and how owners use the devices in a range of different circumstances are likely to lead to a wide range of training experiences for pet dogs. This variability in experience is evidenced in the data from trained dogs such as owner reports of their dogs response to e-collar use." (Page 4).

'**Protect**', '**Teach**', '**Love**'. Words that encapsulate what we all want for our dogs. Yet, these words are used by one of the largest manufacturers of electronic training devices. We can only guess that their use has been carefully chosen in order to tap into a most primal fear – losing our dog. The implication here is that the use of such devices facilitate the duty of all responsible and loving dog owners, and failing in this duty is an act of neglect. What is not mentioned anywhere in e-collar manufacturers literature is that **fear conditioning is not like any other kind of learning**, it uses different neural pathways and invokes different memory systems that often have life-long, negative effects on a dog's wellbeing. The evidence for this is **unequivocally overwhelming**.

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