What Questions Should The Dutch Minister Ask Her Officials?

This note offers the Dutch environment minister international insights into the choices she has regarding the training of dogs with electronic collars (e-collars). It is written by a firm of lobbyists based in London which seeks to help ministers from being blindsided regarding the science and the politics of the issue.

To evaluate the best policy outcome for animal welfare requires a review of the academic research on:

i) the efficacy of these training tools in achieving their goals and

ii) their impact on animal welfare

The problem for ministers is that, because of the noisy passions created by the issue, a sober overview of the science rarely reaches their inboxes. The temptation for their officials is to ignore the academic consensus and cherry-pick outlier studies. There is also a tendency to rely on statements from campaigners which are based on anecdotes, inflammatory language and references to other campaigners' leaflets.

Decision makers today however enjoy two significant sources of information. Firstly, they are able to draw on an increasing body of academic research which is detailed below.

Secondly, they can review the experiences of other countries which have grappled with the issue. The differing policy responses implemented in countries such as Germany, Australia and Scotland means that the Dutch Government can, by reviewing the real world outcomes in these countries, create robust impact assessments for the three main options.

These are: i) reliance on existing cruelty legislation, ii) regulation and iii) an outright ban.

Finally, some questions are provided for the minister to pose to her officials.

The Science Of E-Collar Training

The genetic divergence between wolves and dogs occurred around 30,000 years ago. Since then humans have been trying to handle the innate predatory instincts of their dogs - preventing them chasing and attacking both animals and children.

Restraining dogs with leads is an important solution but only a partial one. That is because most attacks occur when the dog has escaped from its owner's control. Another constraint on the use of leads is that dogs need to be allowed to exercise freely.

These limitations on leads means that ensuring powerful dogs have effective training is imperative.

There are two main types of training which can be used as alternatives or in combination. The first rewards the dog with food and the second uses aversive methods designed to get the dog to associate attacking its prey with an unfavourable outcome.

Reward Based Training: The "purely positive" doctrine of relying only on rewards has strong anthropomorphic appeal. In its introduction to the consultation the Dutch Government argues that "the latest scientific insights" show that such positive training is more effective than e-collar training. However it does not give any academic validation for this claim.

By contrast, a paper published this year found experts to be "pessimistic that it would be possible to prevent predatory behaviour in dogs using only positive, reward-based methods". [1]

Aversive Training: historically there have been several techniques designed to get dogs to associate attacking their prey with an unfavourable outcome. Methods have ranged from beating dogs with sticks to placing puppies in a pen with mature sheep so that they get kicked. More socially accepted versions of aversion training include yanking the dogs' leads and verbally scolding them.

E-collars are an aversive technique which enables a highly graduated response. This can range from i) a barely perceptible nudge (akin to a TENS machine used for human pain relief) to ii) a startle setting to be deployed if the dog has become fixated on an attack. This is the "emergency brake".

Around the world e-collars are used to train dogs not to attack a wide range of predatory targets: in New Zealand the Government pays for e-collar training to deter dogs from attacking kiwi, in Australia vets recommend it to stop dogs biting snakes while in England it is used to protect sheep. [2] [3] [4]

Two questions follow.

Question 1) - is e-collar training effective at stopping attacks?

The Dutch Government's preamble to this consultation is emphatic that it is not. It asserts that there is "no solid scientific basis" for electronic training with dog collars.

This is not true. There is a clear consensus among international academics who have conducted research studies that e-collars are very effective at training dogs to hold back from their predatory instincts:

- "The collar averted all 13 attempted attacks on lambs" *Andelt* [5]
- "No dogs showed interest in or attacked a lone sheep in the path test" *Christiansen* [6]
- E-collars "resulted in complete and permanent elimination of aggression in all of the 36 dogs tested" *Tortora* [7]
- "the most effective treatment for discouraging predatory behaviour in dogs" *Howell and Bennett* [8]
- "the electronic training collar induces less distress and shows stronger 'learning effect' in dogs" *Salgirli* [9]
- this aversion response does not require continued use of the e-collar and "lasts at least 1 year after training" *Dale and Statham* [10]
- "electronic training collars can be an effective remedial measure for some types of problem behaviour in dogs" *Coleman and Murray* [11]
- Negative reinforcement is "desirable and necessary" *Marschark and Baenninger* [12]

A key insight from the literature it that the training impact endures even when the dog is not wearing the collar. Most attacks involve dogs which have escaped human control, so the enduring nature of e-collar training effect is critical towards protecting the welfare of the predatory target.

There is an outlier study from Lincoln University which suggests that e-collars are not more effective than training solely with rewards. [13] It is noteworthy that i) this study was a project conducted by an MSc student who is not an academic and ii) the methodology used was so flawed that it has been lambasted by a leading critic of e-collars - the School of Canine Science. [14]

Question 2) - Do e-collars have a net positive impact on animal welfare?

If the Dutch Government accepts the scientific consensus then it follows that, for those animals which are the predatory targets of dogs, e-collars produce the huge welfare advantage of not being attacked.

But what about the welfare of the dogs? If e-collars were shown to be overwhelmingly cruel to dogs it could still be argued that this would outweigh the injury and deaths caused to predatory targets.

Here we find that leading academics do not consider that this is the case:

- Dogs "did not show considerable or persistent stress indicators" *Schalke* [15]
- There was "no negative effect on the dogs" *Christiansen* [16]

The Political Options For E-Collar Training

1) Status Quo: the overwhelming majority of countries have decide against either banning e-collars or specifically regulating them. This is out of respect for the scientific consensus and the lack of any evidence of widespread abuse of e-collars. These countries instead rely on existing anti-cruelty legislation to deal with any abuse.

The prosecution of police dog trainers by the Dutch authorities shows that this is a robust option. [17] The Scottish Government, which initially planned to ban e-collars, has now decided to rely on its current law against cruelty. In part this was because the British Veterinary Association said that it had no evidence of e-collars being abused. [18]

2) Regulation: the Australian Government of Victoria introduced regulation in 2019 because it believed that the benefits of e-collars could be achieved at the same time as minimising the risk of abuse. [19] Its approach of regulating approved users and products provides an oven-ready template.

3) Banning E-Collar Training: this is the most radical approach and the countries which have done this provide petri-dishes for the unintended consequences of what is ostensibly a pro-animal welfare policy.

The problems they face are that:

a) without e-collar training animal deaths increase

- Dead livestock: In Wales, where e-collars are banned, attacks on sheep rose 113% in just one year. At the same time attacks fell in the rest of the UK where e-collars are permitted [20]
- Dead dogs: owners unable to train dogs with strong predatory drives are forced to destroy their pets
- Dead dogs: owners find it harder to keep their dogs away from mortal dangers such as roads

b) effective enforcement is impossible:

In Germany they have found that e-collar use is hard to detect especially in rural areas. So, if Holland banned them, many owners would continue to get their dogs trained with e-collars either covertly in Holland or abroad. There would be no Dutch Government safeguards in place.

In an era of post-Covid pressure on public finances it seems unlikely that public funds will be diverted into enforcing a ban on dog-loving Dutch e-collar users who are convinced that this training benefits their pets.

c) bans involve unacceptable inconsistency

The exemption of cats from the proposed Dutch law is curious. If dogs are traumatised by e-collars why are cats not traumatised?

A further inconsistency is the use of livestock fences. The average stimulus received by a dog through its e-collar is thousands of times less than that delivered if it touches an electric livestock fence. [21] How can the much lower stimulus of e-collar training be cruel if powerful livestock fences are humane?

Then there is the matter of consistency in tackling the abuse of dogs. In the video showing abuse by the KNPV trainers the cruelty was being created through the use of sticks, boots and the yanking of leads. If the Government wants to reduce cruelty why is it not banning these implements?

Where Are The Votes In This Issue

Environment ministers seeking to demonstrate their animal welfare credentials often seize on the issue of e-collars. The public's love of pets and the pejorative name "shock collar" make the issue seem like a vote winner. Ministers are then won over by campaigning organisations.

However in their submissions these groups are often simply quoting each other and citing anecdotes instead of scientific research. For example, they falsely claim that e-collars burn dogs' necks. (A court case in Australia found that they do not generate anything like enough power to do this. However, excessively tight collars can produce ulcers. [22])

When ministers make the effort to hear through this noisy campaigning what the science actually says they rethink the issue. They start to see that banning them does not support the interests of animal welfare.

Ministers who then ask themselves why thousands of animal lovers use these devices on pets they adore soon realise that banning them is not a vote winner.

Given this it is no surprise to see that in Holland's consultation an overwhelming majority of respondents have been against the ban. Several hundred have submitted their opposition to a ban despite their view being "unfashionable". Only some 50 people have been bothered to support it.

Given that there is so little real support for a ban the Government would find it hard to see the political justification for pushing this legislation through Parliament against determined opposition.

Questions For The Minister To Ask Her Officials

1. Given the emphatic nature of the science on e-collars why was she advised incorrectly by officials that no "scientific basis" exists for e-collars training?
2. Why was the minister incorrectly advised that relying solely on reward-based training is judged effective by scientists at reducing predatory attacks?
3. Have officials estimated in their impact assessment the number of dogs with strong prey instincts which would be destroyed because their owners would no longer be able to train them with e-collars?
4. Have officials estimated the number of livestock and wild animals which would be fatally attacked by dogs if e-collars were banned?
5. If officials in Australia can produce regulations for e-collars why cannot Dutch officials copy them?
6. What budget are officials suggesting should be committed to enforcing a ban?

Sources

[1] "pessimistic that it would be possible to prevent predatory behaviour…." see Howell and Bennett: https://www.sciencedirect.com/science/article/abs/pii/S016815912030071X
[2] New Zealand Government pays for e-collar training to stop dog attacks on native species: https://www.stuff.co.nz/national/120185885/whio-aversion-training-being-offered-to-owners-of-farm-hunting-dogs and using to protect kiwi: https://www.doc.govt.nz/parks-and-recreation/know-before-you-go/dog-access/avian-awareness-and-avoidance-training/
[3] Australian vets recommend them to stop dogs attacking snakes as "nothing else nearly as effective" - see page 14: https://issuu.com/engagemedia/docs/vet_practice_nov_2017
[4] UK National Sheep Association: https://www.nationalsheep.org.uk/dog-owners/sheep-worrying/2460/top-tips-training-and-further-help-for-dog-owners/
[5] "The collar averted all 13 attempted attacks on lambs" Andelt: https://www.researchgate.net/publication/258098937_Coyote_predation_on_domestic_sheep_deterred_with_electronic_dog-training_collar
[6] "No dogs showed interest in or attacked a lone sheep in the path test" Christiansen: https://www.ncbi.nlm.nih.gov/pubmed/11278032
[7] e-collars "resulted in complete and permanent elimination of aggression in all of the 36 dogs tested… the only treatment that has potential for success" Tortora: https://cpb-us-w2.wpmucdn.com/about.illinoisstate.edu/dist/6/45/files/2019/10/tortora-1983-safety-signal-training-elimination-of-avoidance-motivated-aggression-in-dogs.pdf
[8] aversive measures such as e-collars "the most effective" training, Howell and Bennett: see page 6: https://www.sciencedirect.com/science/article/abs/pii/S016815912030071X

[9] “the electronic training collar induces less distress and shows stronger ‘learning effect’ in dogs in comparison to the pinch collar” Salgirli: https://leerburg.com/pdf/comparingecollarprongandquittingsignal.pdf
[10] the aversion response does not require continued use of the e-collar and “lasts at least 1 year after training” Dale and Statham: https://unitec.researchbank.ac.nz/bitstream/handle/10652/2630/Dale%20et%20al%202013.pdf?sequence=1&isAllowed=y
[11] “electronic training collars can be an effective remedial measure for some types of problem behaviour in dogs” Coleman and Murray: http://aiam.org.au/resources/Documents/2000%20UAM/PUB_Pro00_TaniaColeman_RichardMurray.pdf
[12] Negative reinforcement “desirable and necessary” Marschark and Baenninger: https://www.tandfonline.com/doi/abs/10.2752/089279302786992685
[13] Lincoln University study: https://www.frontiersin.org/articles/10.3389/fvets.2020.00508/full
[14] School of Canine Science rebuttal: https://www.facebook.com/schoolofcaninescience/posts/3160247170734282
[15] Dogs "did not show considerable or persistent stress indicators”, Schalke et al., 2007: https://www.sciencedirect.com/science/article/abs/pii/S0168159106003820
[16] “no negative effect on the dogs’ Christiansen et al. (2001): https://www.ncbi.nlm.nih.gov/pubmed/11278032
[17] Dutch police dog trainers prosecuted for cruelty: https://nltimes.nl/2020/06/29/seven-arrested-abusing-police-dogs-training
[18] British Veterinary Association “no direct evidence of abuse”: evidence to Scottish government (January 2016): https://consult.gov.scot/animal-welfare/electronic-training-aids/consultation/view_respondent?show_all_questions=0&sort=submitted&order=ascending&_q__text=British+Veterinary+Association&uuId=622589211
[19] Victoria: decided against a ban after a consultation. Regulations published 2019: see page 19: https://content.legislation.vic.gov.au/sites/default/files/9cc60c2d-63c4-35b6-95ad-c39254a5d170_19-133sra%20authorised.pdf
[20] Dog attacks on sheep in Wales increased 113% in 2018: https://www.fwi.co.uk/livestock/sheep/escaping-dogs-add-to-livestock-worrying-cost-for-farmers
[21] Power of devices: whereas e-collars are designed to produce 5 mJ per impulse, livestock fences produce 15,000 mJ discharges - see page 7: http://ecma.eu.com/wp-content/uploads/2016/10/120411amc-ECMA-Technical-Requirement-6-0-FINAL-APPROVED.pdf and page 20: http://www.lacme.com/international/catalogues/cat_UK.pdf
[22] RSPCA in Australia fined $100,000 after claiming that e-collars burnt the skin of dogs: http://www.naiaonline.org/articles/article/orion-pet-products-pty-ltd-v-royal-society-for-the-prevention-of-cruelty-to#sthash.Vj1Q91ca.dpbs