Behavioural Insights commissioned workshops with Stakeholders. Subject: Dogs and livestock worrying

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Contents

Crynodeb Gweithredol

Fel rhan o'i Rhaglen Diwygio Mynediad, gofynnodd Llywodraeth Cymru i Cyfoeth Naturiol Cymru (CNC) ddarparu cyngor ar gamau gweithredu cysylltiedig ac opsiynau ar gyfer nifer o ddiwygiadau. Trafodwyd ac archwiliwyd opsiynau ar gyfer newidiadau i ofynion deddfwriaethol a chamau gweithredu ategol i ddarparu ar gyfer: mater 'cŵn i fod ar dennyn byr o hyd penodol yng nghyffiniau da byw drwy gydol y flwyddyn'.

Cyflwynodd CNC bapur cyngor ac argymhellion i Lywodraeth Cymru ar faes diwygio 'cŵn ar dennyn' ym mis Mawrth 2022, a ffurfiwyd drwy gydweithio â rhanddeiliaid allanol. Yn ogystal â chwmpasu cyngor ar ofynion deddfwriaethol, cyflwynwyd nifer o argymhellion anneddfwriaethol i'w hystyried.

Gan gyfrannu at yr argymhellion anneddfwriaethol, [nod](#) y prosiect hwn oedd datblygu dull ymddygiadol sy'n seiliedig ar wyddoniaeth a fyddai yn y pen draw yn cynhyrchu nifer o [syniadau sy'n seiliedig ar ymddygiad](#) ar gyfer ymyriadau wedi'u targedu a allai leihau nifer y digwyddiadau â chŵn yng nghyffiniau da byw.

I ddechrau, comisiynwyd adolygiad cyflym o'r llenyddiaeth gan CNC a gynlluniwyd i archwilio cyfuniad o erthyglau academaidd a pholisi / llenyddiaeth lwyd i nodi erthyglau neu bapurau yn amlinellu ymyriadau neu weithgareddau a gynlluniwyd i wella rheolaeth cŵn o amgylch da byw. Yn dilyn hyn, comisiynodd CNC DJS Research Ltd i gyflwyno prosiect mewnwelediad ymddygiadol i ddarparu rhai safbwyntiau amgen i gyfrannu at y Rhaglen Diwygio Mynediad. Cynhaliwyd tri gweithdy gyda rhanddeiliaid / arbenigwyr ar draws [grwpiau defnyddwyr amrywiol, tirfeddianwyr a'r sector cyhoeddus](#) ochr yn ochr ag wyth cyfweliad ffôn byr gyda pherchnogion cŵn yng Nghymru i wir ddeall bywydau gwahanol fathau o berchnogion cŵn. Mae'r ddogfen hon yn adroddiad ysgrifenedig o'r gwaith hwn.

[Nodwyd ystod lawn o ymddygiadau](#) yn ystod y trafodaethau, aseswyd hwythau wedyn yn ôl pa mor ymarferol fyddai newid pob un, a faint o effaith fyddai newid (cadarnhaol) ym mhob un yn ei gael ar ein nod yn y pen draw. Aethpwyd â phedwar ymlaen i fod yn destun archwiliad dwfn, gyda'r rhwystrau a'r galluogwyr cysylltiedig i gael eu dadansoddi'n fanwl.

Gwnaed y dadansoddiad manwl hwn trwy ddefnyddio'r [model COM-B](#), sy'n haeru bod newid ymddygiad yn digwydd o ganlyniad i ryngweithio rhwng tair cydran: i) gallu, sy'n cyfeirio at p'un a oes gan bobl yr wybodaeth a'r galluoedd angenrheidiol i gyflawni ymddygiad penodol; ii) cyfle, sy'n cyfeirio at y grymoedd allanol sydd naill ai'n annog ymddygiad neu'n lleihau'r tebygolrwydd y bydd yn digwydd a iii) cymhelliant, sy'n cyfeirio at yr holl brosesau mewnol (gwybyddol ac emosiynol) sy'n effeithio ar ein penderfyniadau a'n hymddygiad.

Canfuwyd bod mwy o rwystrau i ymddygiad dymunol na galluogwyr. Mae'r rhwystrau hyn hefyd yn amlochrog, gan amlygu y bydd angen i unrhyw ymyriadau fynd i'r afael â sawl mater os ydynt am gael effaith.

Crëwyd rhestr hir o syniadau ar gyfer ymyriadau posibl trwy ddefnyddio'r [Model STEAM o ddylanwad ymddygiadol](#). Yn cynnwys egwyddorion ymddygiad allweddol y dangoswyd eu bod yn gymharol gadarn ar draws gwahanol feysydd, mae'r model hwn yn honni er mwyn

annog ymddygiad penodol y mae'n well ei gadw'n syml (**simple**), amserol (**timely**), hawdd i'w wneud (**easy**), deniadol (**attractive**) a gan y negeseuwr cywir (**messenger**).

Lluniwyd y rhestr hir o syniadau ar gyfer ymyriadau ymddygiadol naill ai ar y cyd â rhanddeiliaid neu roeddent yn deillio o broses o gymryd awgrymiadau llythrennol y cyfranogwyr neu eu dehongli trwy bersbectif lens ymddygiadol a ddisgrifir yn y ddogfen hon. Ceir rhagor o fanylion am bob syniad yn Atodiad B.

Yn dilyn rhai argymhellion cyffredinol a fyddai'n cynorthwyo unrhyw ymyriadau ymddygiadol, arweiniodd dadansoddiad o effaith a dichonoldeb pob syniad at weithredu is-set o syniadau i ddarparu dull darluniadol o sut y gallai CNC a'i sefydliadau partner gynllunio ymyriad i fod yn seiliedig ar arwyddion sy'n hybu teimlad o hunanymwybyddiaeth ac ailystyried llwybrau cerdded gwahanol ar safle penodol. Yn dilyn hyn, darperir opteg mewnwelediad ymddygiad sy'n cwmpasu ystyriaethau ar gyfer unrhyw gyfathrebu ac ymgyrchoedd codi ymwybyddiaeth a allai gael eu cynnal yn y gofod hwn.

I gloi, mae'r adroddiad hwn yn cynrychioli dechrau sgwrs ar yr hyn y gallai ei gymryd i helpu i leihau nifer yr achosion o gŵn yn poeni da byw. Mae'r ymchwil hwn wedi dangos sut nad yw cerdded cŵn fel ymddygiad yn digwydd mewn gwactod; hynny yw, mae'n gweithredu mewn cyd-destun a cheir sbectrwm cymhleth o 'fathau' o berchnogion cŵn, ac mae pob un yn dangos ymddygiad a phriodoleddau gwahanol. O ystyried bod cymaint o wahanol agweddau ar berchnogaeth cŵn i fynd i'r afael â nhw, a gwahanol fathau o dir yr eir â chŵn am dro arnynt, ni fydd ateb cyflym i leihau nifer yr achosion o gŵn yn poeni da byw.

Bydd lluniad a chyfuniad cywir ymyriadau yn dibynnu ar lawer o ffactorau, megis y cyd-destun, y gynulleidfa, a nodweddion y safle dan sylw. Cyn mynd ag ymyriad yn 'fyw', bydd angen cynnal profion i fireinio'r fformwleiddiadau terfynol ond mae'r cyfuniad o godi ymwybyddiaeth mewn ffyrdd perthnasol ynghyd â defnyddio ymyriadau i ddylanwadu'n uniongyrchol ar ymddygiad cerddwyr cŵn yn addawol.

Ar ôl cynhyrchu'r adroddiad hwn, efallai y bydd CNC a phartneriaid am greu meini prawf ar gyfer gwneud penderfyniadau i gytuno ar y cyd ar ymyriadau â blaenoriaeth yn fwy ffurfiol. Yna gellid cyflwyno'r rhain i'w treialu gan ystyried rhai o'r syniadau am ddulliau ymyrryd a restrir yn yr adroddiad hwn neu ddefnyddio dulliau eraill sy'n addas i'r diben ac wedi'u teilwra ar gyfer dewisiadau ymyriadau terfynol. Bydd CNC yn gallu llywio'r broses o wneud penderfyniadau yn y dyfodol ar lawr gwlad, ac o fewn y broses o wneud penderfyniadau polisi, a gobeithio y bydd hyn yn ychwanegu at yr offer presennol ar gyfer rheolwyr tir a rhanddeiliaid eraill sy'n hybu cerdded cŵn yn gyfrifol.

Mae'r Atodiad yn cynnwys cymdeithasau rhanddeiliaid a gynrychiolir yn y gweithdai yn ogystal ag ehangu ar y syniadau amrywiol a ystyriwyd ar gyfer ymyriadau.

Executive summary

As part of its Access Reform Programme (ARP), Welsh Government (WG) requested that Natural Resources Wales (NRW) provide advice and options for associated actions, for a number of reforms. Options regarding changes to legislative requirements and supporting actions to provide for: 'Dogs to be on a short-fixed length lead in the vicinity of livestock at all times of the year' were discussed and explored.

NRW submitted an advice and recommendations paper to WG for the dogs on leads reform area in March 2022, which was formed from collaborative working with external stakeholders. As well as covering legislative requirement advice, there were several non-legislative recommendations put forward for consideration.

Feeding into the non-legislative recommendations, the aim of this project was to develop a behavioural science-based approach that would ultimately generate various behaviourally-informed ideas for targeted interventions that might reduce the number of dog related incidents that occur in the vicinity of livestock.

Initially, a rapid literature review was commissioned by NRW which was designed to explore a combination of academic articles and policy/grey literature to identify articles or papers outlining interventions or activities designed to improve dog control around livestock. Following this, NRW commissioned DJS Research Ltd to deliver a behavioural insights project to provide some alternative perspectives to contribute to the Access Reform Programme. Three workshops were conducted with stakeholders/experts from across various user groups, landowners and the public sector alongside eight short telephone interviews with Welsh dog owners to really understand the lives of different types of dog owner. This report forms the write up of this work.

A full range of behaviours were identified during the discussions which were then assessed according to how feasible each might be to change and how impactful a (positive) change in each would be on our ultimate goal. Four were ultimately taken forwards to be the focus of a deep dive into their associated barriers and enablers analysed in detail.

This deep dive detailed analysis was done using the COM-B model, which posits that behaviour change occurs as a result of an interaction between three components: i) capability, which refers to whether people have the knowledge and abilities necessary to carry out a specific behaviour; ii) opportunity, which refers to the outside forces that either encourage a behaviour or decrease its likelihood to occur and iii) motivation, which refers to all the internal processes (cognitive and emotional) that affect our decision-making and behaviour.

It was found that there were more barriers preventing desirable behaviour than there were enablers, with the barriers being multi-faceted highlighting how there are several things that any interventions will need to tackle if they are to have an impact.

A long list of potential intervention ideas was created by using the STEAM model of behavioural influence. Comprised of key behavioural principles that have been shown to be relatively robust across various domains, this model holds that to encourage a

behaviour it is best to make it **s**imple, **t**imely, **e**asy to do, **a**ttractive and provided by the right **m**essenger.

The long list of behavioural intervention ideas created were either co-developed with stakeholders or were derived from a process of taking participants' literal suggestions or interpreting them laterally through a behavioural lens described in this document. More detail on each idea can be found in Appendix B.

Following some universal recommendations that would aid any behavioural intervention, an analysis of each idea's impact and feasibility resulted in a sub set of ideas being taken through to provide an illustrative approach of how NRW and it's partner organisations could design an intervention for based around signage that promotes a feeling of self-awareness and re-framing of different walking routes on a given site. Following this, a behavioural insight optic is provided covering considerations for any comms and awareness raising campaigns that might be taken in this space.

In conclusion, this report represents the start of a conversation on what it might take to help reduce the number of dog worrying incidents occurring in the vicinity of livestock. This research has illustrated how dog walking as a behaviour does not occur in a vacuum; it operates in context and that there exists a complex spectrum of dog owner 'types', with each displaying different behaviours and attributes. Given there are so many different aspects of dog ownership to tackle, and different types of land on which dogs are walked, there is going to be no quick fix to reducing the number of dog worrying incidents that occur in the vicinity of livestock.

The correct formulation and blend of interventions will depend on many factors, such as the context, the audience, and the characteristics of the site in question. Before going 'live' with an intervention, testing will be required to refine final formulations but the combination of raising awareness in relevant ways along with deploying interventions to directly influence dog walker behaviour offers significant promise.

Following the production of this report, NRW and partners may wish to create decision making criteria to jointly agree priority interventions more formally. These could then be put forwards for trialling taking account of some of the intervention method ideas listed in this report or using other methods fit for purpose and bespoke for final intervention choices. NRW will be able to inform future decision making on the ground and within policy decision making and hopefully add to existing tools for land managers and other stakeholders promoting responsible dog walking.

The Appendix contains stakeholder associations represented at the workshops as well as an expansion of the various ideas considered for interventions.

Introduction

Background and objectives

As part of its Access Reform Programme (ARP), Welsh Government (WG) requested that Natural Resources Wales (NRW) provide advice and options for associated actions, for a number of reforms. Options regarding changes to legislative requirements and supporting actions to provide for: 'Dogs to be on a short-fixed length lead in the vicinity of livestock at all times of the year' were discussed and explored.

NRW submitted an advice and recommendations paper to WG for the dogs on leads reform area in March 2022, which was formed from collaborative working with external stakeholders. As well as covering legislative requirement advice, there were several non-legislative recommendations put forward for consideration.

Feeding into the non-legislative recommendations, the aim for this project was to develop a behavioural science-based approach to support NRW and WG in promoting responsible recreation with dogs in the countryside.

Specifically, NRW asked DJS Research Ltd to conduct three workshops with stakeholders/experts from across various user groups, landowners and the public sector.

Research methodology

A multi-phased methodology was deployed comprising of a NRW literature review, stakeholder/expert workshops and short telephone interviews (tele-dips) with dog owners.

All fieldwork took place across a three-week period in February 2023.

Specifically, the process can be summarised as follows:

- Reported in a separate standalone document, a process of desk research was commissioned by the NRW team around the time that the research began. This process explored a combination of academic articles and policy/grey literature to identify articles or papers outlining interventions or activities designed to improve dog control around livestock.

- Eight 'tele-dip' interviews with dog owners in Wales to understand their views on dog ownership, the role that dogs play in their owners' lives, how people care for their dogs and to understand perceptions around on/off-lead behaviour. Participants were recruited from the DJS proprietary recruitment panel, Opinion Exchange; a market research community of participants who are selected to take part in our research projects. All who took part were incentivised with a £5 thank you for their time. Participants included those with young children at home (including those with disabilities); with older children at home; with no children at home and those from single person households. All participants were offered the opportunity to take part in Welsh.

- A three stage process, each with a two hour online stakeholder/expert workshop. These workshops had a minimum of 12 participants (the majority of whom were dog owners themselves). A pre-insights questionnaire provided stakeholders with an initial statement of the problem and allowed them to detail their perspectives and ideas. The results informed the design of the workshops. Each stage had its own specific objective, as follows:

    - **Stage 1 –** to pinpoint problematic behaviours that are enabling dog related incidents in the vicinity of livestock.

    - **Stage 2 –** to analyse the problematic behaviours identified in Workshop 1 and understand barriers and enablers.

    - **Stage 3** – to develop a range of ideas for interventions that might reduce the number of dog related incidents that occur in the vicinity of livestock.

Overview of approach
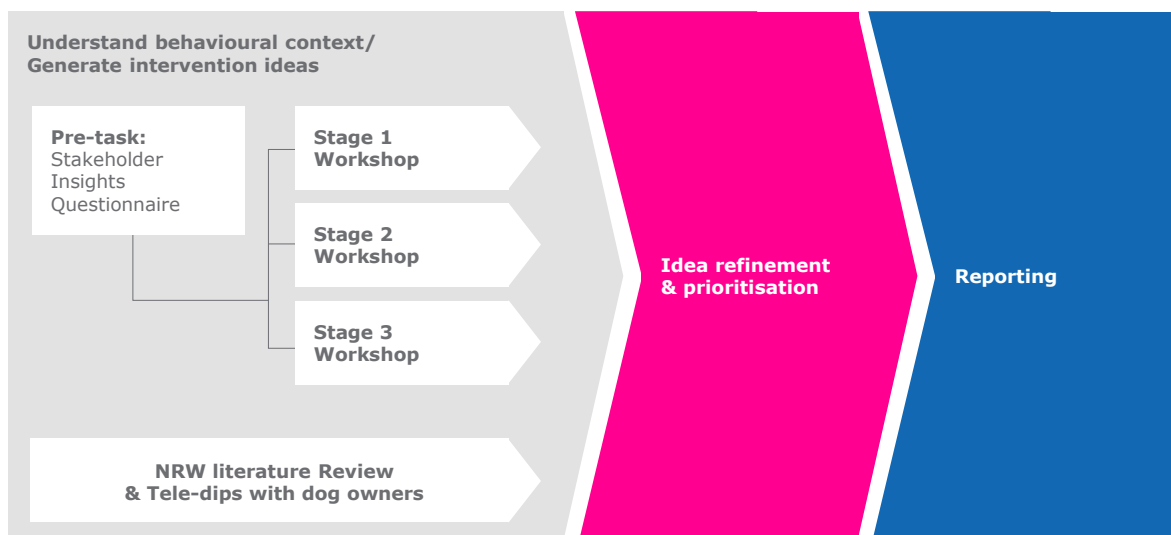
A list of stakeholder organisations represented in the workshops is included in Appendix A.

Following the above steps, a synthesis of information was carried out to come up with a number of different ideas that NRW could test in the real world, in a separate piece of work, that might reduce the number of dog related incidents.

DJS approach to the application of behavioural science

Human beings are often treated as 'empty jars' waiting to be filled with information regarding the 'right' and 'wrong' way to behave. The assumption is that, armed with this information, they will then behave in the right way.

Human behaviour is, of course, a lot more complex than this. We are influenced by a host of seemingly irrelevant factors, many of which we are not always immediately aware of.

It is worth emphasising one fundamental point. People do not have access to perfect introspection of their own behaviour. As such, many of the ideas generated by this methodology are not solely the product of thoughtful reflection by the workshop participants.

Whilst some of the suggested ideas presented in this report did come from the literal suggestions of our participants, just as crucially, some came from interpreting their literal spoken words, *laterally*.

In other words, we listened to the clues they were providing but we viewed them through a behavioural lens which then enabled us to arrive at some suggestions that no participant *literally* suggested.

Had we not done this and instead opted to solely rely on their literal spoken words, our evidence would very likely be contaminated by factors we would have been oblivious to because participants are not aware of all the factors impacting on their daily decisions. NRW therefore, must not be afraid to go beyond the literal. By taking the literal and interpreting it laterally through the lens of behavioural science inspired thinking, we can open a world of opportunity to generate innovative ideas, so far unevaluated in this space.

To provide some illustrative context, we provide an example below.

An example from other research of listening literally, but interpreting laterally
A water company wants to reduce the number of wet wipes that customers are flushing down their toilets because they are leading to blockages along its pipe network.

After being *literally* told by customers that they should inform them that certain items can cause problems, it mails its customers about what cannot be flushed…despite having done so several times in the past to no avail (as such mail tends to land in the bin).

Whilst many had experienced the direct impact of a blockage or leak, the issue had not impacted on most in any significant way; it had remained emotionally neutral.

Therefore, the water company could look to shift the need by taking the focus away from the company and repositioning it on things its customers care about. By interpreting *laterally,* the desire to be informed this water company could work in partnership with local institutions to change the messenger from a water company to **their** baby's nursery, **their** children's school, **their** local hospital etc.

Notice how no one specifically asked for the messenger to be changed, but the literal feedback (i.e. to be informed) combined with the behavioural insight (i.e. that the weight we give to information depends to a large extent on the information's source), led to the suggestions listed above.

Behavioural science can help to improve outcomes by bringing a systematic understanding of the psychological underpinnings of human behaviour to the table and, as will be detailed later in this report, lead to behaviourally informed solutions that do not necessarily rely solely on the literal, spoken word of participants, which often only tell half the story.

This report will now go onto break down the process and findings from each stage of the research in more detail.

Results

Problematic behaviours identified

In this stage, our primary goal was to identify the specific behaviours that are most problematic. Ideally, we wanted to arrive at a range of discrete behaviours, with a small sub-set of those then being taken through to the next stage of the research where we would look to behaviourally dissect each to understand their barriers and enablers.

It should be noted here that although we were interested in behaviours, our participants also raised several desirable outcomes that were more attitudinal in nature. As was alluded to earlier in this report, awareness raising is often insufficient on its own. Nevertheless, it may be helpful to track given the lack of awareness of either the Countryside Code or the Dog Walking Code that was apparent amongst the dog owners spoken to.

Drawing on our participants' expertise and knowledge, various problematic behaviours were highlighted, including:

- Dog owners have poor/no recall skills once their dog is roaming
- Poor/no training of dogs and dog owners
- Letting dogs off lead as soon as enter a field/ go through a gate/ open a car door
- Poor preparation (no lead brought or forgotten)
- Signs ignored
- Signs unnoticed
- No monitoring of dog once the dog is off lead
- Owner distracted with other things (e.g. smartphone, conversations, views)
- Lack of knowledge: of there being different requirements to access legislation / for dogs to on lead at different times of the year
- Lack of knowledge: of what 'disturbance' or 'worrying' constitutes
- Insecure homes/boundaries leading to escaped dogs
- Defaulting to walking routes that are not optimal

It was clear from our investigations that dog walkers live in a world that is, by default, complex. Their behaviour is being influenced by multiple factors. These problematic behaviours were assessed according to how feasible each might be to change and how impactful a (positive) change in each would be on our ultimate goal.

In consultation with NRW, a shortlist of four desired behaviours for dog walkers were taken through to the next stage of the research. These were:

- To see a sign and to act on it when they do
- To plan the walk, in advance

- To monitor the environment and get dogs on leads before problems occur
- To attend appropriate dog training in the first 6 months of ownership

Each of these behaviours are clear, measurable and unambiguous. They occur at specific moments in time when the dog walker either exhibits the desired behaviour or does not.

Note - During the workshops the importance of securing dogs in the home and external boundaries was brought up. Whilst out of scope (given this research was looking to impact dog walkers), this is a key issue that precedes many livestock worrying incidents. Further research could be carried out to explore this specific problem in greater detail.

Barriers and enablers associated with problematic behaviours

This sub section identifies the barriers and enablers associated with the problematic behaviours identified above. We have grouped them into four main areas:

- Behavioural area 1 – signage

- Behavioural area 2 – planning in advance

- Behavioural area 3 – monitoring the environment + recall skills

- Behavioural area 4 – accessing dog training

To identify the barriers and enablers we used the COM-B model, which posits that behaviour change occurs as a result of an interaction between three components: capability, opportunity, and motivation.

The COM-B model covers capability, opportunity and motivation (which together result in a behaviour) and can be broken down further, as outlined below:

Capability: refers to whether people have the knowledge and abilities necessary to carry out a specific behaviour. Its two components are:

- Psychological capability: our knowledge and our psychological and information processing skills.

- Physical capability: our physical strength and skills.

Opportunity: refers the outside forces that either encourage a behaviour or decrease its likelihood to occur. Its two components are:

- Social opportunity: social norms and cues that can encourage or discourage a behaviour.

- Physical opportunity: environmental cues and resources, such as time or money.

Motivation: refers to all the internal processes (cognitive and emotional) that affect our decision-making and behaviour. Its two components are:

- Reflective motivation: high cognitive processes, such as creating plans and assessing what has occurred along with our beliefs, values and goals.

- Automatic motivation: automatic processes that are often outside of our awareness, such as emotional responses, habits, impulses and inhibitions.

The model suggests that in order to promote successful and long-lasting behaviour change, one or more of the COM-B elements must be altered.

Diagnosing and understanding a given behaviour through this lens is, therefore, enlightening from a behavioural perspective because it allows practitioners to develop a

foundational understanding of key barriers and enablers of a behaviour, on top of which ideas for effective behaviour change interventions can be devised.

The below breakdowns are taken from an amalgamation of stakeholder feedback during the workshops as well as from the tele-dips with dog walkers. Listing these as we have in this report may create the impression that they are separate phenomena, that exist in isolation. In reality there are a host of interactions and feedback loops that together are creating a system of behaviour when exercising dogs in the countryside which is resulting in incidents of livestock worrying.

The tables below summarise the COM-B analysis for each of the four desired behaviours. Note that there are many common influencing factors between each of the behaviours.

Behavioural area 1: To see a sign and to act on it when they do

This area covers contents of signage, access to signage and attention (or lack thereof) to signage, presence of signage, ignoring signage and/or confusing messaging on signage.

Influencing factor	Barriers	Enablers
Physical capability	• Visual impairment	• Appropriate design for maximum accessibility
Psychological capability	• Ability to read, dual language is not always apparent • Language is not as simple as it could be (e.g. what exactly constitutes livestock?) • Lack of knowledge that *all dogs* are capable of worrying livestock instinctively • With familiarity, people forget to take in signs	• Imagery can trump language • Simple language • Reduced number of messages shown per sign
Physical opportunity	• Some signs are hard to see (e.g. poorly maintained, poorly positioned etc) • Some areas suffer from over saturation of signage • Signage that never changes leads to 'sign blindness' • Many sites are not optimally physically designed & discourage the behaviour	• Visually and emotionally salient signs • Novel, new, updateable signs • Environment is designed to promote salience of signs
Social opportunity	• Many other dogs are off lead leading to problematic norms (regardless of what signs say)	• Interactions with other dog walkers/wardens/site volunteers

	• Other dogs seen as the problem, not their own • Perception that to care for a dog is to let them be free and off lead	
Reflective motivation	• Lack of attention given to signs • Stronger goal is to give their dog freedom/exercise • Dog on lead = perception of poor care of pet	• Many see dogs as full family members so their happiness comes first • Many care for their dog's safety, happiness, care
Automatic motivation	• Walks are often habitual, meaning to take in and act on a sign is not • Little in the way of accountability • Signage not always noticeable • Some messengers lead to reactance/negative emotional response	• People are more willing to engage in new behaviours during life events • Positive emotion reactions to signage

Behavioural area 2: Plan the walk, in advance

This area covers behaviours associated with actively planning a walk in advance and automatic behaviour associated with habitually walking the same route. Habit and experience is a particular issue for dog walkers taking the same routes each time as they can create an artificial sense of security and false assumptions around what is required when encountering different environments (i.e. there is a stark contrast between walking in an urban environment mid-week and a rural weekend walk).

Influencing factor	Barriers	Enablers
Physical capability	N/A	N/A
Psychological capability	• Forgetfulness – people forget their leads, poo bags, treats etc • People do not always know how to plan a walk and what resources are available to do this • Many resources are online, but not all people are • Poor awareness of the ramifications of not doing so	• On site information being provided
Physical opportunity	• People's lives are busy and they do not always have the time, resources or inclination to plan their walk	• Crafting the physical environment so that minimal/no planning still results in desirable behaviours
Social opportunity	• Many walks are habitually driven meaning that with time the importance of planning fades • Little in the way of a norm around the importance of planning	N/A
Reflective motivation	• Sometimes walking is spur of the moment to be fit in as and when it can be. Stopping to plan does not help people achieve their goal for quick exercise	• Making clear that to do so reflects on them as 'responsible' dog owners
Automatic motivation	• Whilst walking routes are often habitually driven, planning walks is not	N/A

Behavioural area 3: Monitor environment + recall and control to get dogs on leads before problems occur

This area covers behaviours that take place at the site at which a walk is occurring.

Influencing factor	Barriers	Enablers
Physical capability	- Owners may not have the ability to control their dog in open spaces (e.g., lack of recall, stronger dog) - Livestock may not be visible – so the potential problem is not obvious - Owners may be distracted (particularly by use of smartphones) - If dog owners don't intervene *before* dogs become too excited and begin to 'chase', then it is hard to recall even the most well-trained dog.	Dogs can be trained to return on command (some breeds easier to train in control than others)
Psychological capability	- Owners may not believe their dog to be a danger and consider that any problem is with other people's dogs. 'My dog would never do that…' - Lack of awareness of their dog's 'hardwired' animal nature to chase etc - Lack of awareness of what constitutes 'disturbance' of wildlife and livestock - Recall may not have been taught and therefore there is no control - Lack of knowledge of the implications and responsibilities of dog ownership - Lack of familiarity with the rural environment (particular for urban dwellers) - Unaware of guidance / rules regarding control of dogs and / or confusion due to complexity and contradiction between guidance from various sources	- Education and awareness of the right behaviours as well as risks, consequences and penalties of the wrong behaviours – messages communicated via vets, local dog groups, signage - Awareness of and sensitivity to the welfare of wildlife and livestock (as well as the dogs) - Visible, clear, simple and consistent messaging regarding desired dog owner behaviour. Also regarding the penalties (current and forthcoming) - Situational awareness and potential hazard identification – to enable intervention

		before potential incidents arise.
Physical opportunity	• Some environments may be visually clear (e.g., open gates between connecting fields), which leads to owners assuming that they will be able to control their dog and get them back on the lead in time. • If there is a lack of signage, then owners will have to make their own judgement and this leaves room for error and inconsistency • Recall issues may occur more frequently in wide, open spaces. • Lack of alternative areas with clear separation between recreation and livestock.	• Clear directions for dog-safe routes (avoiding livestock) • Clear visually appealing signage to show dog-safe areas/consequences for dogs who disturb livestock • Environment is designed to encourage help owners control their dogs
Social opportunity	• Many other dogs will be off lead, running free and owners may assume that because of this, the environment is safe. • Location of walks may depend on others (e.g., group walk) which increases the likelihood of limited recall of dogs. • Seeing *others* letting their dogs off the lead may encourage dog owners to do the same.	• Dog walking is often a very social activity. The behaviour and comments made by other dog walkers can influence the right behaviours. • Organised walks/training classes designed to improve dog owner skills regarding control of dogs
Reflective motivation	• Owners may believe their dogs should always be free to freely run and enjoy the environment.	• The welfare of *all* animals being considered, not just the dogs.
Automatic motivation	• Owners view their dogs as part of the family, have strong emotions and feelings which may mean they allow their dogs off the lead out of habit more often so they can be 'free' • Habitual walks lead to less monitoring of immediate environment as owners do not expect any new hazards, including livestock.	• Owners will want to be involved if involves their emotions and feelings, allowing them to emotionally connect

Behavioural area 4: Accessing dog training

Accessing dog training is intended to be interpreted in its widest possible sense. This could include accessing formal dog training classes, talking to other dog walkers, reading, searching for information online and/or engaging with community groups.

Influencing factor	Barriers	Enablers
Physical capability	• Lack of availability of appropriate training in easy reach.	• Easy availability and access for training.
Psychological capability	• Lack of awareness of the hard-wired animal behaviours of their dog and the potential problems which can be caused • Lack of awareness that the positive behaviours of dogs and dog owners is determined very early and is then much harder to change once habitualised. • Lack of knowledge may mean new owners do not understand the critical stages of development of the dog.	• Awareness of need for appropriate training. • Encouragement from vets, breeders etc to attend training • Educational material demonstrating the benefits of training. 'Sooner the better' messaging.
Physical opportunity	• Lack of awareness of classes available • Expense of classes	• Ease of access to and affordability of training. • Discounted places, loyalty cards, vet packages etc
Social opportunity	• May be embarrassed to be seen 'going back to school' • Busy dog owners e.g., working parents, may not prioritise this training over other social commitments	• See as a social occasion, to meet other dogs, make friends both human and dog • A chance to see how others behave – 'my dog is better' as they attend classes and learn to behave
Reflective motivation	• Owners believe their young puppies should be free and able to run around • Owners may want to enforce strict training early	• Owners need to see the benefit of early training. allowing training to be fun and incorporate elements of excitement for the puppies

Automatic motivation	• Owners may already have dogs which did not attend training, and therefore they may not feel it is needed. • Owners may associate dog training with stricter households and may not want their dog to feel restricted	• Positive association with training required to motivate and encourage owners to attend

In summary, the evidence tells us that in this research there are more barriers preventing desirable behaviour than there are enablers. The barriers are also multi-faceted and highlight how there are several things that any intervention is going to need to tackle if it is to have an impact.

Discussion

To re-cap, above we discussed four behavioural areas along with the barriers and enablers associate with each. Those four areas were:

- Behavioural area 1 – signage

- Behavioural area 2 – planning in advance

- Behavioural area 3 – monitoring the environment + recall skills

- Behavioural area 4 – accessing dog training

Before outlining various intervention ideas, the following needs to be recognised: *there are different types of dogs, dog walkers and land on which dogs are walked.*

To further illustrate just how complex changing human behaviour can be, consider the nature of reality, which this report posits exist in two forms; objective reality (e.g. that which can be observed and measured) and subjective reality (e.g. that which exists in the mind of the beholder).

What something "is" fully depends on the psychological context in which it is being experienced. This idea of a malleable reality is important to understand when trying to reduce incidents in the vicinity of livestock because livestock and dogs occupy different conceptual spaces when it comes to how they are often perceived.

For example, during the tele-dips, when dog owners were asked for words that came to mind when thinking about certain livestock, we heard words such as "burger", "curry", "cheese", "tasty", "milk", "wool" etc. In other words, many functional attributes were consistently offered that were lacking in any kind of emotional sensitivity. In fact, when we did hear words that garnered some emotional response, they were often negative, such as "smelly" and "dirty".

In contrast, when asked about dogs, words such as "companion", "family", "friend", "cute" and "child" were offered.

The ramifications of this subjective perception on subsequent (problematic) behaviour are best demonstrated by "Gill" (an archetype dog owner compiled from our tele-dips).

On the surface Gill projected an outward manifestation of someone who was aware of, willing and able to behave in the right way. They knew dogs should not be off lead in the vicinity of livestock, they were aware of signage as they walked past it every day on their typical route and they claimed to obey its messaging.

During our discussions, it became clear that Gill viewed their dog as a full family member and more specifically, as analogous to their child. They spoke of how they love to see their dog bounding into fields because it shows that it is "*happy*", "*determined*" and "*confident*" – and commented on how these are all traits that any mother would want in their child.

Faced with this desire to see their dog happy and free, Gill later went on to admit that the idealised notion of what they *should do* is not always the reality. Instead, they told how they would sometimes come across a field that had a sign saying that a dog should be on a lead, but if they could not see any livestock in the field, they would make their own judgement call and go in regardless, as long as "*no one was around to see me*".

The Gill archetype illustrates that dog walking as a behaviour does not occur in a vacuum; it operates in context. Note how Gill had all the information required, but they still did not behave in an optimal way from this research objective's point of view.

During our data collection, it became apparent that there exists a complex spectrum of dog owner 'types', with each displaying different behaviours and attributes. For example, some of those encountered included:

- 'Knowledgeable and responsible' owners. These owners understand the risks in the environment. They monitor the situation at all times and know when their dogs should be put on lead. They have the skills to recall and control their dogs.

- 'Humanisers' (e.g. the Gill archetype above) whose dogs are seen as members of the family and treated like a child. There is little or no understanding of the dog's hardwired animal behaviours, for example to chase.

- 'Pandemic puppy owners' who perhaps did not realise the implications of dog ownership or understand the nature of the breed when they acquired their puppy during lockdown, as millions did. A period when no formal training was available.

- 'Irresponsible owners' who are oblivious to their responsibilities as a dog owner, and simply do not care about the potential damage their dog can cause.

In addition to the above, the environment that the dog is used to adds another contextual variable. Dog owners from urban areas may not understand how their dog is likely to behave when let loose in the rural environment or understand much if anything about the practical ways of how they should behave to best manage and control their dog in places that have or are likely to have livestock.

It is important to note that this is by no means an exhaustive typology. Put simply, this is a brief elaboration of some of the types of owners we have interacted with during the research. It is included here to reinforce how, due to there being so many different aspects of dog ownership to tackle, and different types of land on which dogs are walked, there is no quick fix to reducing the number of dog worrying incidents that occur in the vicinity of livestock.

By looking to find a 'silver-bullet' solution, we would be left trying to implement a rather blunt intervention which would most likely not lead to a successful change in behaviour. Instead, whether considering cognitively oriented (that work to influence what people think), affectively oriented (that work to influence what people feel), or behaviourally oriented (that work to influence what people do) approaches, it is likely that a blended

approach will have the most impact but as to which blend works best, only time and testing will tell.

From discussions in the workshops there appears to be a lack of awareness of and consistency in the guidance regarding the specific behaviours that dog walkers should adopt. This requires judgement and nuance on behalf of the dog walker, taking into account the conditions in the environment and their ability to control their dog. However, there seems to be a 'default setting' amongst many dog walkers where dogs are walked 'off lead' at the first opportunity. Dog owners see walks as their dog's chance for 'fresh air' and to 'stretch their legs' therefore allowing them to be their 'true doggy self'.

Convincing all dog owners to only walk their dogs on a lead at all times is unrealistic. Indeed, this could potentially impact the welfare of the animal. However, through a range of thoughtfully crafted intervention ideas, influencing when and where this new default setting kicks in may be more easily achieved. The goal is that dog-owners keep their dogs on leads as the default behaviour, only allowing them off the lead in appropriate circumstances.

This report will now go on to explore a range of intervention ideas.

Developing and prioritising intervention ideas

To generate a long list of potential intervention ideas the STEAM model of behavioural influence was used. Described below, this model is comprised of key behavioural principles that have been shown to be relatively robust across various domains.
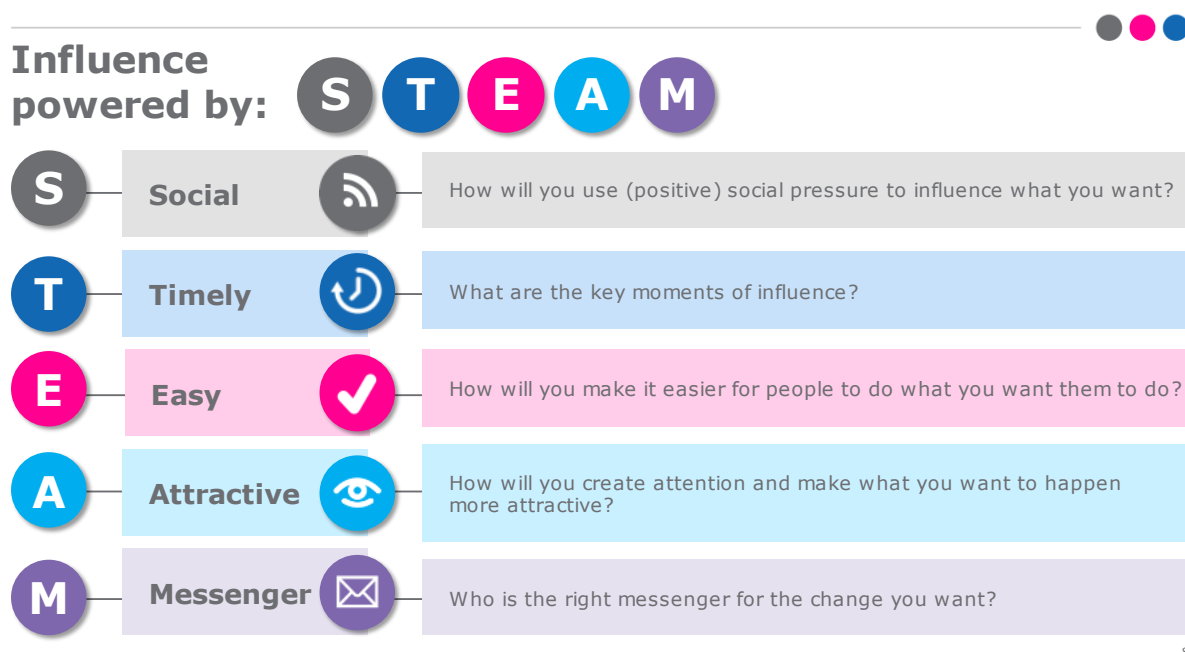
By discussing each of our behaviours/behavioural outcomes and moments identified through the STEAM methodology, we were able to generate a list of behaviourally-informed intervention ideas which approached the problem from the perspective of dog owners.

Many of these ideas cut across the different behaviours identified. In other words, their potential to impact on our overall goal is multi-faceted, depending on how they are ultimately deployed.

Below, we present our long list of behavioural intervention ideas. These ideas were either co-developed with stakeholders or were derived from the literal and lateral thinking described earlier in the document. More detail on each idea can be found in Appendix B.

This long list of ideas was subsequently discussed with NRW in order to refine and prioritise the ideas that were deemed most realistic, impactful and feasible. This resulted in two being identified as having the most potential.

The following table displays the original long list prior to that impact and feasibility exercise being undertaken.

Intervention longlist (please see Appendix B for further detail on each)

Idea	Description
Updateable signage	In behavioural science, the transmission of trustworthy signals of commitment and intent is known as signalling. The amount of effort spent communicating anything directly correlates to the meaning and relevance that is attached to it. By having signs that update (e.g. electronically or low cost whiteboards) this may signal that someone is monitoring behaviour and signify to dog walkers that the requests are current.
Route re-framing	On the one hand, stating something in five different ways can be seen as a waste of resources. On the other hand, it is entirely possible to generate completely different behaviours depending on how things are presented. Relaxation and taking in nice views were some primary motivators of dog walkers. Similarly, stakeholders told us how dog walkers are frequently distracted and on their phones as they walk. Using this understanding to develop and frame routes in appealing ways may be an avenue to explore. As one example, routes that are away from livestock could be positioned as ideal Instagram (or social media) routes.
Self-awareness signage	During our research, we were told how if no one was around to observe them, dog walkers can feel more inclined to ignore signage when they come across it. In other domains, research has found a relationship to exist between self-awareness and transgressive behaviour. Deploying signs designed to feel as though the viewer is being watched (e.g. incorporating the appearance of eyes into signage) could be explored.
Loan leads	People's lives are complicated: our time, energy and resources to devote to any particular task are limited. Whilst difficult to deploy in a wider context, on appropriately managed sites, having leads that can be borrowed could help combat the times when leads are forgotten. Strategically positioned depositories could house branded up leads that have key messages on them or which are visually salient to make them noticeable to others.
Visually salient, repeated markings	The visual salience of signs is key and yet we know from our stakeholders that too many signs can lead to all signs being ignored. Incorporating frequent visual reminders and vivid cues, just as ski slopes do, may be an effective way to ensure there is a visual reminder of when and when not to have a dog on a lead via, for example, red and green markers strategically positioned along routes.
Public pledge panels	Pledges are one form of what are known as 'commitment devices' and suggest that people are more likely to follow through on their "pledged" behaviours in a lasting way. From domains as diverse as voter turnout to seat-belt safety, pledging operates based on the finding that when you make a commitment public, you are more likely to follow through. Asking people to pledge to keep their dogs on leads at key points could be an idea worth exploring.
Social strollers	Cues from others are often taken as an indication of what is okay and what is not. This is an evolved function of the human condition and is incredibly difficult to override meaning that seeing other dogs off lead and other dog walkers in the vicinity can be just as communicative as any sign, as is the lack of them.

	Recruiting 'social strollers' on site (and through other means, such as social media) to help spread the word around correct and desirable behaviour, who themselves would then act as on-site beacons of how to behave.
Expand current remits	Recognising that there are groups of people who will frequently be out on site (e.g. volunteer schemes, ambassador and volunteer wardens) in many cases, using these as conduits for education might be worthwhile.
Doorstop messaging	Providing information at key points is often considered a key tenet of any behaviour intervention. Not all dog owners look after their own dogs during the day and as such, targeting those professional dog minders should not be overlooked. Working with this cohort could provide an avenue to further disseminate the messages around responsible dog ownership that otherwise wouldn't reach the owners themselves (e.g. partnering with professional dog walkers who can deliver key messages when dogs are dropped off back at home).
Craft the physical environment	The physical characteristics of our world directly influence our behaviours and interactions with it. Planting bushes and shrubs along pathways, replacing stiles with self-closing gates and installing fencing are examples of how conscious crafting of the physical environment can be impactful. Whilst this likely requires a considerable amount of effort to install, it likely holds a considerable degree of promise.
In the moment education	Offering quick tips and examples of how to teach recall skills, secure your home etc. to a relatively captive audience on site who otherwise would not go about attending such lessons could be beneficial. Targeting particularly busy/high footfall times would help enhance its timeliness.
Sniff-a-thons	Actively incorporating the desire for dogs to be provided with a sense of joy, freedom and fun, an experience might appeal to dog walkers and prompt them to take livestock-light/free routes, whether they are aware they are doing so or not. Strategically placed posts with dog-friendly scents at their base could entice dog walkers to take these routes.
QR code games	Encouraging dog walkers to complete livestock-light/free routes can take many forms. Games engage people and at their best, they captivate. A route with strategically planned check points which dog walkers must scan, take pictures of and/or submit at each point to prove they arrived at all check ins. A full compliment could then lead to a prize (a contribution to a charity, a monthly prize draw, a free dog treat from the on-site café etc).
Stage managed norms	Alongside frequent visual markers and crafting of the physical environment, if a new layout or geography is deployed, showing people how to use it properly might be important, at first. Whether red leads in 'no choice zones' or green and no leads when in 'your choice zones', having volunteers, wardens etc. correctly using any new routes could help create a norm.
Footpaths in your phone (app)	Push notifications are small, pop-up messages that a mobile app sends to a user's device and which show up even when the app is not active. These alerts, typically include reminders, updates, discounts, and more and are designed to catch people's attention. Geo-triggered notifications could act as timely reminders at key locations for when leads are needed vs. when they are not. Incentivising the download of the app would be required.
Airdrops	Airdrop (or alternative) messaging could be an avenue through which a message could be 'pushed' under people's noses whilst they are out on their walks. These would depend on people's settings being set to open and data

	allowances; however, it might be another means through which a message could land (clearly, pre-testing its perceived intrusiveness would be required).
Haptic feedback devices	On appropriately managed sites, haptic feedback devices, such as vibration bracelets (or built into loan leads etc) could be used to provide walkers with a physical reminder of when an active decision needs to be made (akin to when you exit a supermarket through its security gates and the alarm sounds).

Designing interventions

In discussion with NRW, two ideas were selected for consideration for field trials:

- Self-awareness signage (e.g. the image of eyes watching us can influence our behaviour) and is drawn from behavioural area 1 (signage)

- Route re-framing (i.e. framing routes in appealing ways), drawn from behavioural area 3 (monitoring the environment + recall skills)

We begin with some universal recommendations, relevant regardless of the focus of the field trial.

Universal recommendations

Plan, plan then plan some more: Behavioural interventions are fraught with pitfalls. Planning in advance about what the pitfalls may be regarding the chosen ideas can be a fruitful exercise. Maybe you harbour various expectations that can be brought to light through this process or perhaps it will help to shine a light on potential dangers prior to roll out; either way, it is a useful exercise to perform to anticipate problems that might occur.

Iteration is important: It should be stressed that iteration is not to be feared. Interventions, initially, should be nimble enough so that they can be tweaked as observations about their performance are made. Even if the pre-planning mentioned above takes place, further refinements might still be required once the intervention goes live; this is ok and is to be expected.

Success starts small: Starting small is important for a number of reasons. Reflecting the point made above, it facilitates the ability to iterate. It will also save time and resources from those involved in its roll out. Furthermore, by starting small, you will be able to acquire feedback from those that the intervention is supposed to be impacting, allowing you to iterate further.

Pilot: As the reader will have seen, there are many ideas within this document and, upon reading Appendix B, you will see there are many formulations that each idea could take. Picking one out without piloting is not recommended. Online pilots can help provide a low-cost method of piloting, for example we often use Opinion Exchange, DJS' own panel of thousands of participants who are selected to take part in our research projects. Different designs can be piloted in order to receive feedback on different critical success factors such as comprehension and emotional resonance etc, all of which may be useful precursors to success.

Seek stakeholder advice: Ideas and solutions arrived at through the lens of behavioural science can sometimes be counterintuitive; this should by no means be taken as an indicator of their likelihood of failure. However, if stakeholders are not brought along from early on, encountering some ideas that go against the grain (e.g. unbranding signage despite those that have funded it wanting their logo to be seen) can lead to difficulties arising when seeking to roll out such ideas as part of planned interventions.

The report will now expand on the two ideas selected as possessing the most potential (according to their perceived impact and feasibility) and will consider ways that each could be evaluated.

We are now moving on to provide an illustrative approach of how you could design an intervention for each of these two areas. They could be adapted and varied in future discussion with NRW's in-house behavioural insights advisor and/or equivalent at WG.

Intervention 1: Self-awareness signage – an example of a field trial across two sites

Field trial question: How effective is improved self-awareness signage?

Key stages for a two site intervention:

- Selecting two sites with desirable characteristics.

- Selection of participants – convenience sampling (whoever walks past on the days and has a dog).

- Determine the types of data to be gathered (i.e. how many dog walkers pass the sign, do they observe the signage, do they act upon seeing the signage, attitudinal data after seeing the sign and any other variables considered important by NRW and partners).

- Agree design of signage to be used on one intervention site.

- Agree positioning of signage in consultation with partners.

- Place observers to gather observational data using a mixed method approach, including observation and survey data.

- Either place the observers at the two sites on the same day or on days where elemental characteristics are matched (i.e. weather, school holidays etc).

In ascertaining the proportion of visitors who are noticing the intervention and the proportion of visitors who are engaging with the intervention (i.e. placing their dogs on leads upon contact), we suggest that this is best done by observing behaviour in-situ.

Ideally we would gather observational data to examine if behaviour is being affected by our intervention, particularly if the intended behaviours are becoming more prevalent.

Working with stakeholders to identify ideal sites on which to test, this can be accomplished following the launch of the intervention by sitting/standing inconspicuously and observing how many visitors change their behaviour upon encountering the sign.

For example, at DJS we have a nationwide fieldforce who conduct fieldwork such as this who can be positioned over a given number of days in which self-awareness signage is in operation and in which it is not. Relevant counts for visitors and changes in behaviour can then be recorded.

Additionally, by collecting survey data from visitors after they pass the sign, they can be asked if they noticed it and for their thoughts on it. To make sure that the presented information is appropriately comprehended, specific comprehension metrics should be obtained. Additional measures of emotional resonance could also be gathered to understand how visitors felt upon encountering it.

Intervention 2: Route re-framing – an example of an online trial using simulation

Field trial question: How do dog walkers make decisions about which route to select depending on how routes are framed

Key stages for an online intervention:

- Design a variety of route frames based on evidence and expert knowledge on a simulated piece of land to be presented to participants via an online survey situated within a virtual scenario.

- Selection of participants – what different types of dog walkers would be included?

- Determine the types of data to be gathered – this will determine the design of the survey questions (i.e. which sites/frames are selected most often? How do these selections vary by different types of dog walkers?)

- Would recommend a short survey (i.e. no more than c.12 questions (c. 11 closed and 1 open) or an overall survey length of 10 mins with a behavioural insights informed introduction using clear and succinct comms).

- Anticipate at the start the analysis time required, particularly for qualitative data derived from open questions. This is often underestimated in terms of what is needed.

Given that the idea is a mechanism (i.e. re-framing routes in a variety of ways due to it being possible to generate different behaviours depending on how routes are presented), it would be useful to test various frames.

In order to test various frames in a low cost, relatively quick way we would suggest creating online scenarios where people are entered into mocked up sites in which they would encounter different options and are required to choose a route to take. These could be real sites in which signs are superimposed at key points at which participants must pick a route to take.

A battery of questions should be included to gather information on each formulation tested shedding light on appeal of site/route, clarity, comprehension etc to explore the findings in detail.

Regardless of the intervention choice and associated method, we recommend being clear about how the resulting evidence will be used (for example, policy making) and whose behaviour it is intended to ultimately change (for example, dog walkers and dog walking communities).

Behavioural insight optic for comms and campaigns experts

We have included this section because many of the ideas listed above will intersect with knowledge held by communications experts and campaign managers situated in NRW and stakeholder organisations.

We believe that whatever intervention or field trials are ultimately taken up, there is a place for a major campaign to amplify and reinforce the key findings held within this report and the wider Access Reform work.

Messengers

Cutting across all our behaviours/behavioural outcomes and moments is the issue of who should be communicating the relevant messages. There is no simple answer here which is why taking the time to pilot and test different formulations is going to be crucial in the next stage of the research programme.

During our discussions, different messengers were suggested as capable of packing a behavioural punch, such as:

- Local school children
- Local farmers (i.e. personalised, as is often seen in supermarkets)
- Vets
- Insurance providers
- Influencer/online personalities (e.g. The Dogfather)
- Local police forces
- Local professionals that local people know/ trust (i.e. local professional dog walkers and groomers, local kennels, local dog boarders, local dog trainers)

However, stakeholders noted how currently, many messages are branded according to who has helped to finance them. Whilst understandable, in order to get what we desire from dog walkers, we must prioritise what is important to them. As one participant put it:

"*You assume that because a logo is on there that people know they're funding it. Sometimes the people that provide the funding are a little bit too concerned with having their logo on there when that space could be used for other messaging. Especially in Wales where we have to do things bilingually, space is such a premium on signs.*"

Similarly, as another stakeholder noted: "*People will see ulterior motives in any messenger*" which might add credence to the view that un-branding altogether might be worth exploring.

Furthermore, the psychological principle of reactance is worth considering; that is, when people feel a valued freedom is threatened, they can act against it to restore that freedom. Encapsulating just how important this principle is, when commenting on what would happen if rules were put in place by the government to make dog leads compulsory, one dog walker commented: "*It wouldn't matter and I wouldn't listen, the government has made*

mistakes in the past and how do they have the right to tell people what to do with their animals?"

Stakeholders also remarked on how many dog walkers fail to plan their walks prior to leaving home. Partnering with brands to promote the importance of planning on their products could be one avenue to explore. Whilst not as timely, using dog food cans, for instance, that will naturally end up in view of dog walkers in a way that does not require dog walkers themselves to go out looking for it, is an example here.

Local B&Bs, hotels and tourist boards were also mentioned with which partnerships could be made to help disseminate a message, particularly given not all dog walkers will be local to the area.

Framing

A fundamental question crossing all communications, is can the target audience understand what you are trying to say? Questions were brought up regarding dual language requirements and literacy levels, with a minority perhaps being left unable to comprehend wording due to these issues. Furthermore, some of the language currently being used may not be as simple as it could be. Participants noted that often, signage is guilty of attempting to talk to dog walkers in the language of those constructing the signs as opposed to its intended recipients (e.g. the words 'livestock' and 'disturbance' were questioned as to how clear these terms would be to all that came across them).

Participants did suggest that 'shock tactic' framing could be trialled on the basis that, whilst "*We don't want to be cruel to people and rude, I think we're at a stage where we need to show the risk*" with a suggested frame being to use imagery and "*stats on numbers of attacks to shock people into acting responsibly*".

Whilst in the context within which such a message is deployed, we might get a sought-after reaction, caution may be required with such framing. From domains as diverse as car safety to reducing theft, research has found that, counterintuitively, when people are confronted with information indicating the prevalence of a problematic behaviour, it can backfire and lead to it becoming even more prevalent.

In contrast, the Identifiable Victim Effect suggests that desirable behaviour can be inspired by focusing on individuals rather than larger groups or statistics (i.e. people are more likely to donate when donation requests focus on a single person's story). Combining this insight with the stakeholders' desire for shock tactics and dog walkers' tendency to see their dogs as family members, we could depict a lamb injured, give him/her a name, state that he/she can often be found grazing in this very field and then state that, as a result, leads are required from this point to help ensure he/she gets to see his/her mum tonight.

Furthermore, loss framing could be incorporated should shocking statistics and graphic imagery be deemed inappropriate. Humans tend to experience the pain of losing as more powerful than the pleasure of gaining. For instance, framing messaging around the loss or threat to a dog's safety and happiness is a way to utilise this understanding as are potential fines and penalties, including the ability to own a dog.

Whilst ideal messengers clearly varied, once ideal options are established, there may be certain specific rules that are worth considering. For instance, the Eaton–Rosen phenomenon (or rhyme-as-reason effect) is a cognitive bias whereupon a saying is judged as more accurate or truthful when it is rewritten to rhyme. Various formulations could be tested, such as that shown below, but the point is that optimising the way information is being presented is key. A memorable message delivered simply may overcome a dry, reasoned argument:

"You see my collar, it's coloured bright red, That means it's time to put your dog on its lead instead. A green collar is the sign to see, for when you can choose to let your dog next run, off its lead and free."

...it's coming in 15 minutes!

Lastly, we know that dog walkers often use their own senses as a means of judging whether a particular route is safe and we also know that the potential impact of their choice is, at times, not all that easy to see. Similarly, the perception that it is always other people's dogs that are the problem as opposed to all dogs' DNA that is part of the problem suggests that highlighting this fallacy could be one way of countering this tendency:

What you can't see, dogs can smell

It's in a dog's DNA to chase. Put your dog on its lead now so all animals get to see their families tonight.

Conclusions

Through this research, we have attempted to understand what our dog walking audience needs alongside how best we can speak to them in their own language. This is only achievable by understanding what is most important to them, not just what we think should be important to them.

We note however, that robust evaluation is missing in this space. It is time to put that right. Only then can the evidence base be built that is rigorous and informative. Across this piece of research and others that have taken place, there are ample ideas ready to be trialled and tested; however, at this point, they are only hypotheses to be tested in different contexts. This is the next step that now needs to be taken.

This exploration project intended to inform the setup of interventions for trial at a local level that could encourage responsible behaviour of those exercising dogs in the vicinity of livestock. The interventions could then be monitored and evaluated as part of a separate piece of work. The correct blend of interventions will depend on many factors, such as the context, the audience and the characteristics of the site in question. Likewise, the tools selected need to be chosen accordingly. Before widely implementing an intervention, testing will be required to refine final formulations but the combination of raising awareness in relevant ways along with deploying physical interventions to directly influence dog walker behaviour offers significant promise.

Following the trialling of some of the intervention ideas listed in this report, NRW will be able to inform future decision making on the ground and within policy decision making and hopefully add to existing tools for land managers and other stakeholders promoting responsible dog walking.

References

Marfell, N. (2022). *A review of Literature: Dogs on leads and livestock worrying. What do we know?*

Michie, S., Van Stralen, M. M., & West, R. (2011). *The behaviour change wheel: A new method for characterising and designing behaviour change interventions.* Implementation Science, 6 (1).

Michie, S., Atkins, L., & West, R. (2014). *The behaviour change wheel: A guide to designing interventions.*

Sutherland, R. (2019). *Alchemy : The Surprising Power of Ideas That Don't Make Sense*

Appendix A

Stakeholder associations represented at the workshops:

Animal Welfare Network Wales (AWNW)
Battersea Animal Welfare
British Horse Society
Clwydian Range and Dee Valley AONB
Countryside Alliance
Country Land & Business Association
Kennel Club
Local Access Forums
Natural England
NFU Cymru
One Voice Wales
Ramblers Cymru
Snowdonia National Park Authority
Welsh Government Animal Welfare
Welsh Government Landscape Nature and Forestry Team
Welsh Government Wales Rural & Wildlife Police Crime Coordinator

Appendix B

Each of the ideas from the intervention longlist are expanded upon below. It should be noted that what follows are initial concepts, rather than polished, final designs. Some are accompanied by visual representations of how the ideas could look. Further refinement and testing is recommended to develop interventions that will guide and promote dog walkers to adopt positive behaviours when exercising dogs in the countryside.

Updateable signage

Rationale: all dog owners spoken to confirmed that their walks are often habitual. Additionally, The Dog Walking Code itself asks that walkers "*contact their local authority, or look out for signs, to get more information about what to do and where to go in your area*". These two observations are interesting given that the same signs encountered on the same walks can, over time, become part of the scenery and lose their power as communication devices.

This was best encapsulated by one stakeholder who commented: "*They will often whack up these year-round signs and then say 'Oh there was a sign and they're not obeying it so they're irresponsible' rather than 'maybe my signage isn't that good'*".

In behavioural science, the transmission of trustworthy signals of commitment and intent is known as signalling. The amount of effort spent communicating anything directly correlates to the meaning and relevance that is attached to it. Learnings from other industries speak to this. As one stakeholder put it: "*I used to work managing speed indicator signs and to counter people ignoring the signs there was a rota so that signs would be erected and they'd be left in place for 2/3 weeks and then they'd be taken down because if they remained there, people ceased to even notice their existence.*"

What: in order to break walkers' strong habits, we need to disrupt their auto-pilot mode (too often activated on a dog walk) with something salient enough to capture their attention. A changing and updateable approach to signage might do just that. For example, incorporating a rota system/time limit on signs to reflect the needs of the season. The signs are altered according to the current usage of the fields. Electronic signage, or even whiteboards, that display frequently updated messages signal that someone is monitoring behaviour to signify that the requests are current.

Route re-framing

Rationale: on the one hand, stating something in five different ways can be seen as a waste of resources. On the other hand, it is entirely possible to generate completely different behaviours depending on how things are presented. At present, it is notable that many signs currently in use are designed to encourage people to do the right thing for the right reasons. This may be setting a needlessly high bar.

What: we were told that a primary motivation for dog walking in the countryside was to relax, have fun with their dog and take in nice views. Similarly, stakeholders told us how dog walkers are frequently distracted and on their phones as they walk. Using this understanding to develop and frame routes in appealing ways, may be an avenue to explore. As one example, routes that are away from livestock could be positioned as ideal Instagram (or social media) routes.
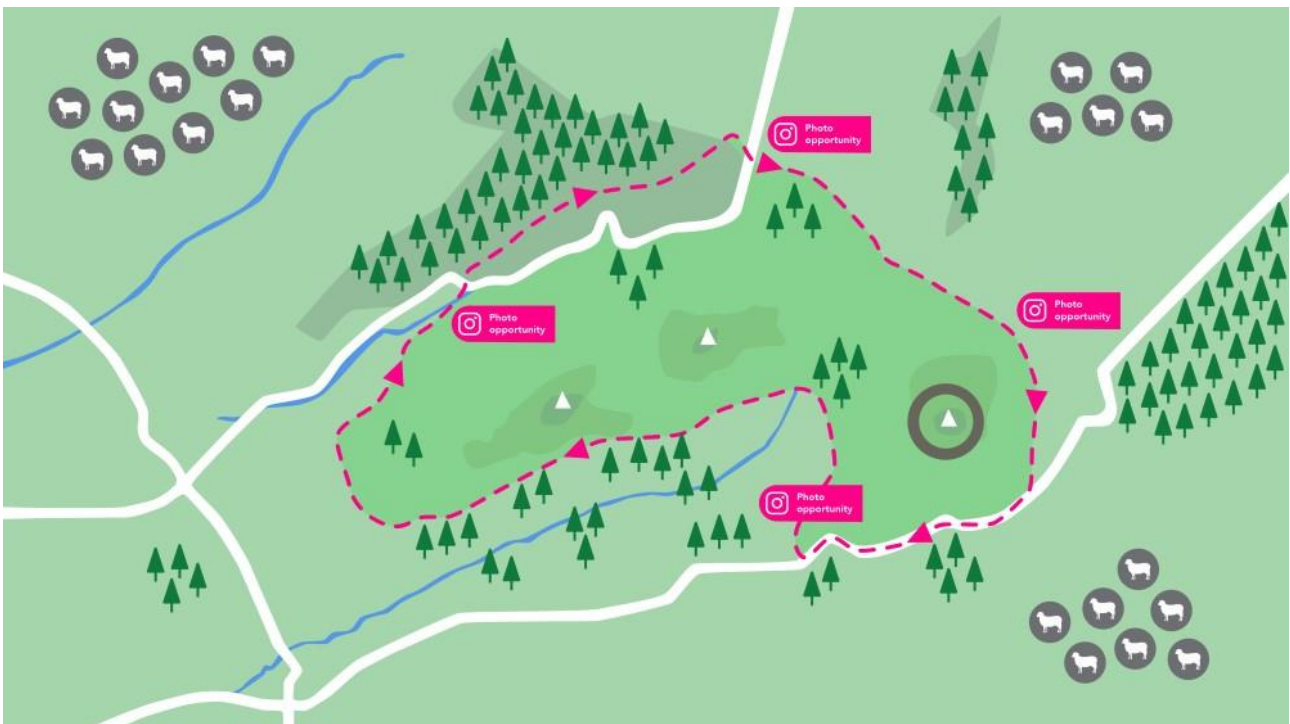

Different formulations could be tried, such as "dog friendly routes" or "dog safe" which may mitigate some of the potential attacks by making it easier for dog walkers to choose less sensitive routes. As one participant put it: "*What people want isn't logos. It is where can I go, what can I do.*"

Furthermore, dog owners want their dogs to have their freedom, fun and ability to run-around, but also know that a route is safe. Such framing may reflect how, as the signage owner, you understand how important their dog's enjoyment and safety is to them. This, in turn, may be more likely to activate the behavioural principle of reciprocity; that is, if you demonstrate that you care, they in turn will care more about what you say and be more likely to follow the rules.

Self-awareness signage

Rationale: during our research, we were told how if no one was around to observe them, dog walkers can feel more inclined to ignore signage when they come across it. In other domains, research has found a relationship to exist between self-awareness and transgressive behaviour. For instance, self-awareness induced by the presence of a mirror placed behind a candy bowl decreased transgression rates for trick-or-treaters during a Halloween study. Similarly, people have been observed behaving more altruistically and less antisocially in the presence of imagery that depicts eyes.

What: Signage that incorporates the image of eyes watching those as they approach accompanied by a clear and simple sign stating the desired behaviour (see later ideas around framing of specific messages). Alternatively, on smaller managed sites, a full length and wide mirror could be incorporated to enhance the chance that people see themselves as they transgress.
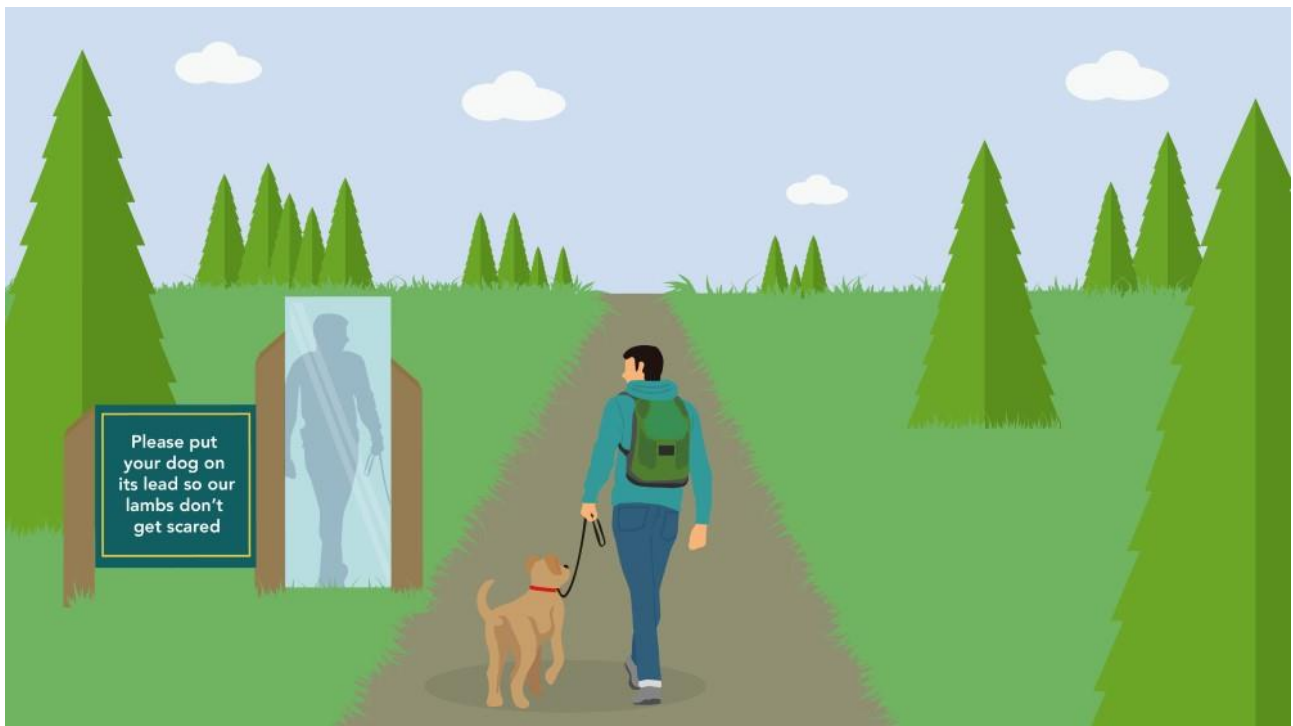
Loan leads

Rationale: as we saw earlier, dog owners often used positive descriptors for their pets; they also used terms such as "chaotic" and "bonkers". People's lives are complicated: our time, energy and resources to devote to any particular task are limited. These descriptors reflect just how easy it can be to forget to bring a lead, regardless of how well-intentioned walkers may be. Making messaging that is easy to understand and receive is one thing, but crucially, if the communication is going to affect behaviour it has to also be easily actionable.

What: on appropriately managed sites, having leads that can be borrowed could help combat the times when leads are forgotten. Strategically positioned depositories could house branded up leads that have key messages on them or which are visually salient to make them noticeable to others (NB. Image below depicts loan leads alongside another mock-up of self-awareness signage).
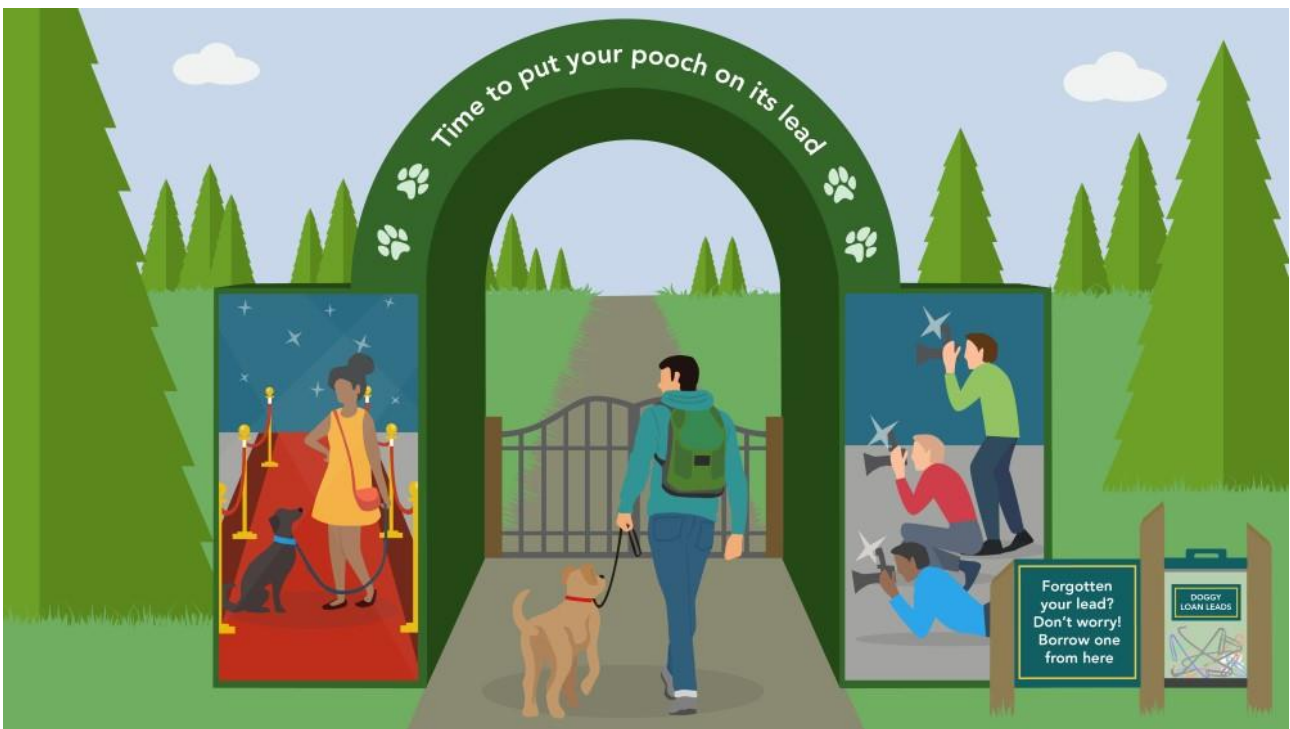
Visually salient, repeated markings

Rationale: the visual salience of signs is key and yet we know from our stakeholders that "sign clutter" is real. Too many signs can lead to all signs being ignored. As one stakeholder pointed out: *"Sometimes signs are placed in such a way that you're looking into the distance and it's placed down here [at the feet] or it's mucky or overgrown"* whilst another commented: *"Are they in the right place?"*

What: incorporating constant visual reminders and vivid cues, just as ski slopes do, may be an effective way to ensure there is a visual reminder of when and when not to have a dog on a lead via, for example, red and green markers along routes. Clearly, this exact formulation of the idea would be resource intensive, initially. It is the mechanism behind the depicted formulation that is of relevance here, which can be deployed in many different ways.
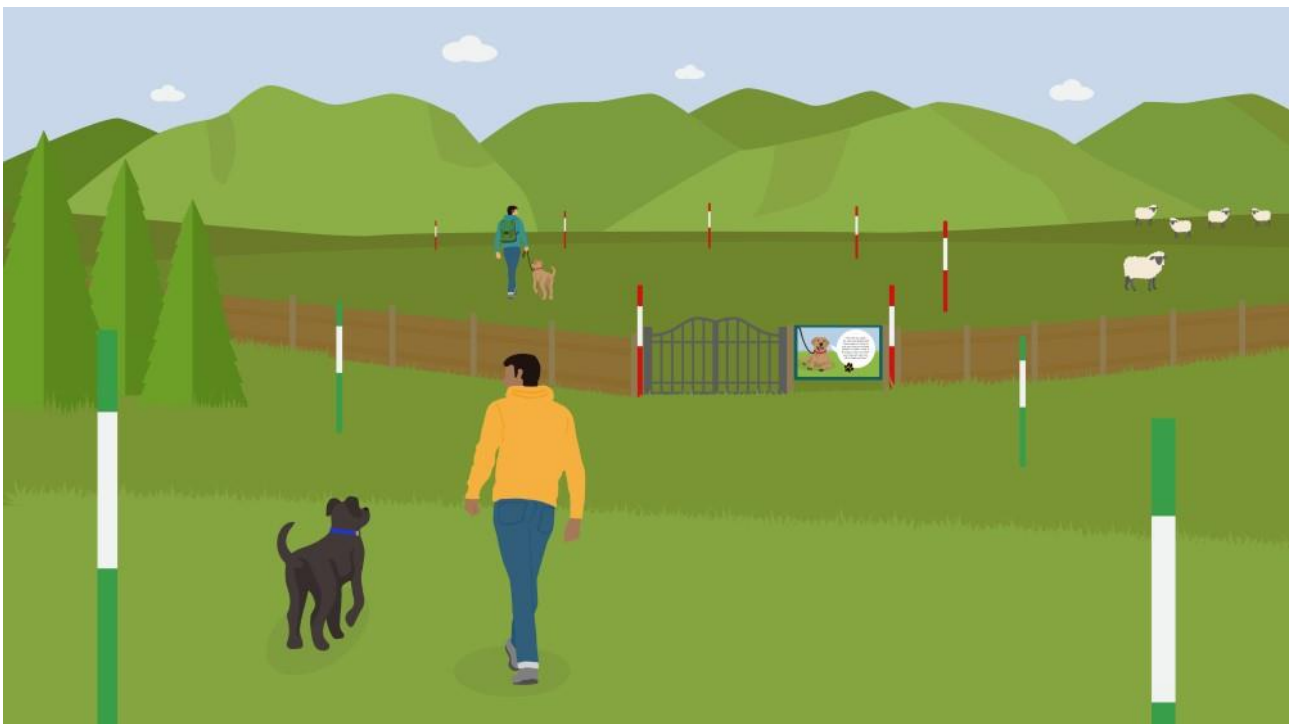
Public pledge panels

Rationale: Pledges are one form of what are known as 'commitment devices'. People are more likely to follow through on their "pledged" behaviours in a lasting way. From domains as diverse as voter turnout to seat-belt safety, pledging operates based on the finding that when you make a commitment public, you are more likely to follow through.

What: a board to sign and/or stick pledges on stating that you will keep your dog on its lead as and when you come across 'x' sign or visually salient marker. Stating how other 'Dog Lovers' have already pledged might help create an aspirational image and group that people will want to be a part of.
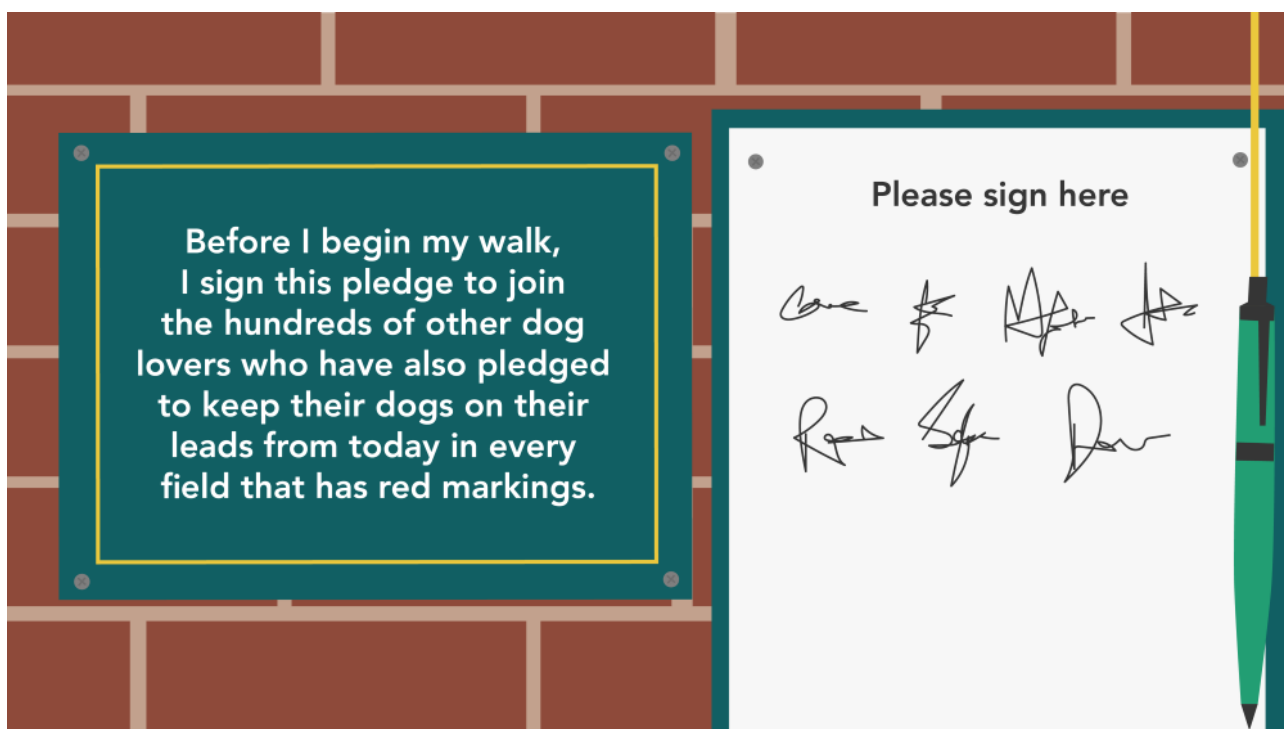
Social strollers

Rationale: there are many factors that lie outside of dog walkers themselves that make a desirable behaviour possible or prompt it. For many, dog walking is a social activity, both for the walker and the dog. As one dog walker put it: "…*the social side is key, both for my dog to see her friends and for me to meet other people*." Furthermore, cues from others are often taken as an indication of what is okay and what is not. This is an evolved function of the human condition and is incredibly difficult to override meaning that seeing other dogs off lead and other dog walkers in the vicinity can be just as communicative as any sign, as is the lack of them.

It is possible then that this social element could be harnessed. Although dog walkers did stress that they would not all feel comfortable doing so, one stakeholder noted how "*We find peer pressure is more effective. If a member of the public tells you to put your dog on a lead it has more of an effect than others in high vis. We don't know why but it seems to resonate better.*"

Dog events or group walks provide positive ways of communicating key messages with dog walkers. The strong sense of community, common amongst dog walkers, could be capitalised on to create informal groups through which the right messages could then be disseminated.

What: recruit 'social strollers' on site (and through other means, such as social media) to help spread the word around correct and desirable behaviour, who themselves would then act as on-site beacons of how to behave. There may be potential to recruit existing formal and informal dog-walking groups to apply social pressure and influence group members as well as other members of the public.

Expand current remits

Rationale: we saw earlier how stakeholders have found peer pressure to be effective at policing good behaviour and it was suggested that if we are able to "*get communities of dog walkers talking to share knowledge about where animals might be at different times of the year*" this might have a positive influence. Whilst positive, we also know that many dog walkers may not feel comfortable confronting others. Finding other ways to utilise social pressure to facilitate good behaviour may be an avenue to pursue.

What: recognising that there are groups of people who will frequently be out on site in many cases, using these as conduits for education might be a worthwhile endeavour. "*We have volunteer schemes, ambassador and volunteer wardens, maybe there's a role there for training when we're talking to the public. The issue of livestock could be put in their inductions so they can then relay those issues into the wider public.*" It also enhances the observability of behaviour which, as discussed earlier, can have a powerful impact.

Doorstop messaging

Rationale: Providing information at key points is often considered a key tenet of any behaviour intervention. Not all look after their own dogs during the day and as such, targeting those professional dog minders shouldn't be overlooked. Working with this cohort could provide an avenue to further disseminate the messages around responsible dog

ownership that otherwise wouldn't reach the owners themselves (e.g. delivering key messages when dogs are dropped off back at home).

Craft the physical environment

Rationale: human beings are cognitively lazy and if we are given a pre-set option, by and large, we will go along with it. Despite this, many sites are not optimally designed to discourage a behaviour, encourage the salience of signage or facilitate the easy actioning of a desired behaviour. It should also be noted that in some instances, the environment actively encourages the types of behaviours that we do not want to see. For instance, one dog walker with a disabled child at home mentioned how when their child comes with them on a dog walk, helping them over a stile takes priority over worrying whether their dog is on its lead at the correct moment at which a sign may be telling them.

Utilising this human tendency to go with the status-quo, it may pay to take heed of one stakeholder's comment that "*The best interventions are those where you're managing the environment so that you're helping people do the right thing, but they don't even need to think it through.*"

What: knowing that the physical characteristics of our world directly influence our behaviours and interactions with it, planting bushes and shrubs along pathways, replacing stiles with self-closing gates and installing fencing are examples of how conscious crafting of the physical environment can be impactful. Whilst this likely requires a considerable amount of effort to install, it likely holds a considerable degree of promise.

In the moment education

Rationale: a key stakeholder commented: "…*the two months before ownership are key – this issue starts before the dog is welcomed into the home*." There is very little awareness of just how crucial this time is and just as little knowledge of how to teach a dog to have recall skills. There is also very little chance that people will take their dogs to training classes, even though getting in early is crucial.

What: offering quick tips and examples of how to teach recall skills, secure your home etc. to a relatively captive audience who otherwise would not go about attending such lessons could be beneficial. Targeting particularly busy/high footfall times would help enhance its timeliness.

Sniff-a-thons

Rationale: dog walkers feel that *"it's good for dogs to be off lead sometimes so they can run, explore and smell things"*. This desire to feel as though they are caring for their dogs whilst providing them with a sense of joy, freedom and fun could be capitalised on.

What: actively incorporating this desire into an experience might appeal to dog walkers and prompt them to take livestock-light/free routes, whether they are aware they are doing so or not. Strategically placed posts with dog-friendly scents at their base could entice dog walkers to take these routes.

QR code games

Rationale: encouraging dog walkers to complete livestock-light/free routes can take many forms. Games engage people and at their best, they captivate. As one dog walker told us: *"It's nice to get exercise and go outside, but it also brings me joy knowing I'm doing something my dogs will enjoy…you can have fun with them."*

What: a route with strategically planned check points which dog walkers must scan, take pictures of and/or submit at each point to prove they arrived at all check ins. A full compliment could then lead to a prize (a contribution to a charity, a monthly prize draw, a free dog treat from the on-site café etc). We know that as we get closer to an outcome, humans' motivation to continue tends to increase and given how we were told how a primary motivation to go walking was "*feeling like you've achieved something*", repurposing aspects of games (e.g. the completion of badges, accumulation of points, unlocking of children's stories) to gain the engagement that games create could inject fun into a dog walk and a motivation to follow a route outside of it being livestock-light/free.

Stage managed norms

Rationale: when a mechanical escalator was installed in the London underground in 1911, people were at first terrified of them. To promote usage, a one-legged man with crutches was employed to ride the escalator. After a day, passengers were reassured and a norm had been created. Similarly, when supermarket trolleys were first invented, actors had to be employed to counter the novelty factor and the fact that no one else could be seen to be using them.

What: alongside ski pole style markings and crafting of the physical environment, if a new layout or geography is planned and deployed, showing people how to use it properly might be important, at first. Whether red leads in 'no choice zones' or green and no leads when

in 'your choice zones', having volunteers, wardens etc. correctly using any new routes could help create a norm, particularly during busy periods.

Footpaths in your phone (app)

Rationale: stakeholders told us how people are often distracted on their phones, whilst out on walks and that "*People don't tend to plan their walks, but they do tend to use their phones when they're out for route finding etc.…*" Push notifications are small, pop-up messages that a mobile app sends to a user's device and which show up even when the app is not active. These alerts, typically include reminders, updates, discounts, and more and are designed to catch people's attention.

What: geo-triggered notifications could act as timely reminders at key locations for when leads are needed vs. when they are not. Incentivising the download of the app would be required.

Airdrops

Rationale: similar to the idea of notifications via an app except it is not reliant on people having to download an app. The walkers' own phones could become the carriers of the messages via Airdrop technology.

What: airdrop (or alternative) messaging could be an avenue through which a message could be 'pushed' under people's noses whilst they are out on their walks. These would depend on people's settings being set to open and data allowances; however, it might be another means through which a message could land (clearly, pre-testing its perceived intrusiveness would be required).
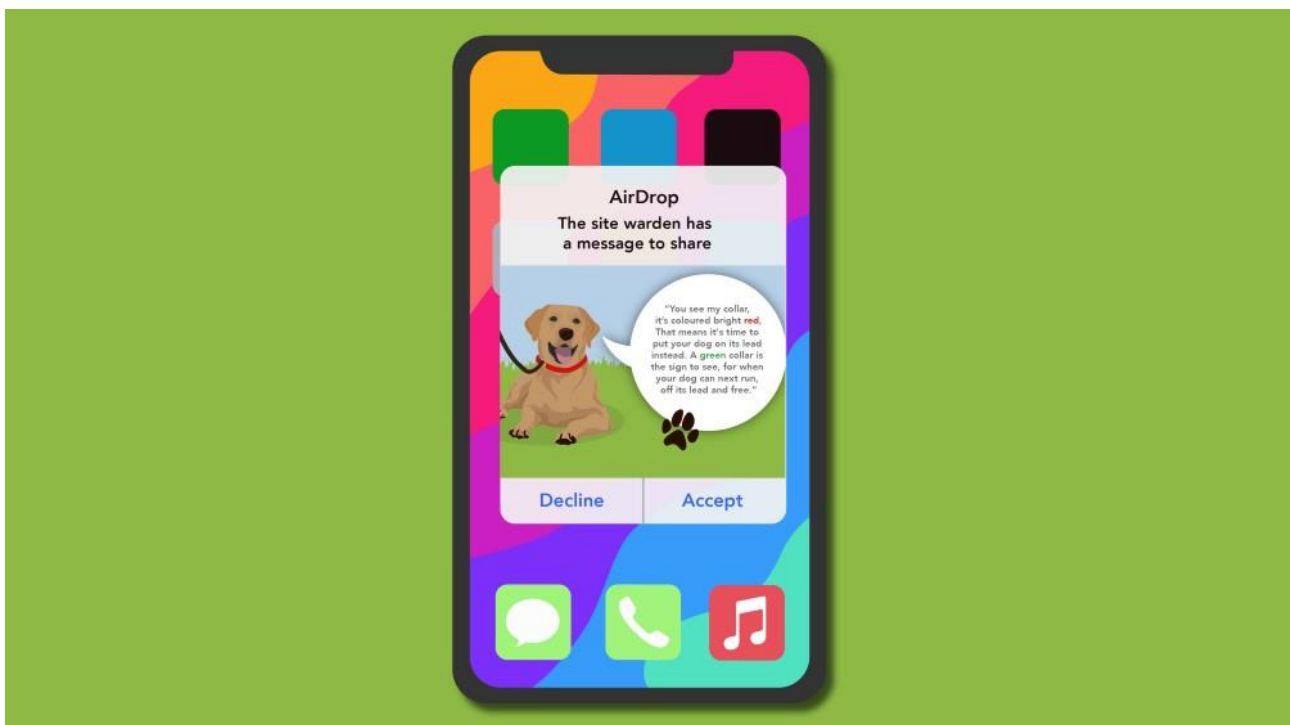
Haptic feedback devices

Rationale: haptic research, which investigates the sense of touch and its impact on behaviour, could provide insights into ways to keep dogs on leads. Research has shown that dogs can be trained to associate collar vibrations with staying near their owners, but what about humans being the subjects instead?

What: on appropriately managed sites, haptic feedback devices, such as vibration bracelets (or built into loan leads etc) could be used to provide walkers with a physical reminder of when an active decision needs to be made (akin to when you exit a supermarket through its security gates and the alarm sounds).