**The Effect of Rest Days on Unwanted Behaviours Dog Owners Seek Professional Advice For**

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## Abstract

Attention seeking behaviour, noise reactivity, restlessness, stress behaviours and excessive following are all reasons a dog owner may call in a canine professional for behavioural advice and guidance. These are not issues of obedience but a breakdown in behavioural life skills. This study aimed to ascertain if over-stress from too much physical activity in a day can exacerbate these problem behaviours. Daily walks are socially accepted to be healthy for both owner and dog, but there is an argument that too many stimulating walks can cause stress within a dog, not relieve it.

An observational study was done on a five-year-old terrier cross across two weeks. Week one the dog had three rest days, congruent with his usual routine. Week two the dog did not have any rest days and was walked every day. Rest days were interpreted to mean a day off from physical activity; however, mental activity and enrichment was still provided. The dogs behaviour was monitored across the majority of the day throughout the study days and observations made on 5 categories of behaviour relevant to this dog.

This study found significant differences between the dogs behaviour on rest days compared to walk days during week one and week two. During week one attention-seeking behaviours, restlessness and stress behaviours only occurred on walk days. During week two there was a significant increase in the quantity and quality of these unwanted behaviours, as well as an appearance of following behaviours and noise reactivity.

This study supports the notion that daily walking can be over-stimulating to a dog and generates a build-up of stress within their system, expressed through various behaviour issues. Rest days in a dogs routine has the potential to alleviate unwanted behaviours that dog owners seek out help for.

Contents

[Abstract 2](#_Toc513218284)

[Chapter One: Background & Context 4](#_Toc513218285)

[Chapter Two: Literature Review 6](#_Toc513218286)

[Chapter Three: Research Methodology 13](#_Toc513218287)

[Chapter Four: Data Presentation 14](#_Toc513218288)

[Chapter Five: Discussion and Analysis 19](#_Toc513218289)

[Chapter Six: Conclusion 22](#_Toc513218290)

[References 26](#_Toc513218291)

[Appendix 1 : Record Sheet 28](#_Toc513218292)

[Appendix 2: Daily Activities & Behaviour 29](#_Toc513218293)

Chapter One: Background & Context

There has been significant research into the health benefits of dog ownership and dog walking from the human perspective. Dog ownership provides a stimulus for walking, increasing physical activity and fitness (Coleman et al., 2008) and improving mental health (Jennings, 1997) through the relational benefits of bonding through experiences, and the social interactions that walks provide (Westgarth et al., 2017).

On the other hand, there has been minimal research into the health benefits of walking and exercise from a dogs perspective although good health from regular walking is advocated, especially for warding off obesity (Barbour et al., 2011; Westgarth et al., 2017). The ‘Code of Practice for the Welfare of Dogs’ suggests a dog needs to be exercised daily unless otherwise recommended by a vet (DEFRA, 2017); however, there is no differentiation between physical exercise through walking and playing and mental exercise through scent, interactive and training games.

The concept of a dog having “rest days” where rest and mental enrichment is favoured over physical exercise is becoming more encouraged amongst those who work professionally with dogs. Canine behaviourists are starting to discuss the over-arousing experience of a dog who is exposed to walks and high-paced activities every single day; particularly for owners who are seeking out help due to behavioural issues inside or outside the house (Cooper, n.d.). A routine of daily vigorous physical exercise can lead to a build-up of stress hormone (cortisol) in a dogs system which will likely have negative implications in terms of physical health and behaviour. A rest day is a day free from physically arousing activity with the goal of giving a dog time and resources to discharge cortisol and enjoy relaxation. It is encouraged that a rest day be punctuated with calm activities that benefit the dog in other ways; for example, scent activities and training games that build on the dogs connection and bond with the owner.

A lot of behaviours that an owner seeks out advice for from a professional can be caused by, or exacerbated by, an accumulation of stress within the dog. Reactivity, hyperactivity, destruction, excessive vocalisation and inability to rest are just some of the behavioural difficulties that can arise as a result of the cumulative effect of stress hormones within the dogs physiology. A dogs underlying physiology has a significant effect on their behaviour, independent of their levels of formal training. A stressed dog is not in need of further obedience training but dedicated management to decrease their daily experience of stress.

Presently, there is a lack of knowledge amongst owners regarding the importance of mental stimulation within a dogs life, not just walks. Behavioural consultations and training sessions are also best used to encourage owners to adopt various mental stimulation activities as a daily requirement for their dog. The confidence boosting effects, as well as the calming effect of brain engagement, is not just for dogs going through specific behaviour modification but for all dogs. Rest days are a way of assimilating this vital brain work and ability to find relaxation into a dogs routine, likely to help curb the unwanted behaviours seen by the owners seeking out help with their dog.

## Chapter Two: Literature Review

Significant research has focused on the positive effects of owning a dog, with regards to owner health variables such as activity level and weight (Lentino et al., 2012) or psychological well-being (Campbell et al., 2016). Lentino et al. (2012) found that dog owners from the USA had healthier body weights, did significantly more physical activity and had greater social support scores than non-dog owners. They found evidence to suggest there are health benefits specific to the low intensity exercise pattern of dog walking, independent of moderate-to-higher level activity. Dog walking is therefore encouraged in communities as a way of promoting a healthier lifestyle. These results are based on self-report measures, however, which could raise queries about the validity and reliability of self-reported activity levels.

An observational study on dog walkers was done to counter these difficulties with self-report methods, and they found that whilst in poor weather non-dog walkers’ visits to parks plummeted, dog walkers’ visits remained constant. Due to a likely obligation for their dogs wellbeing, dog owners were seen to be committed to their physical activity regardless of weather (Temple, Rhodes & Higgins, 2011).

It can be critiqued that the causal relationship cannot be determined from studies into health and dog ownership as it may be that healthier people tend to own dogs; however, Serpell (1991) studied newly acquired dog owners. They reported a highly significant reduction in minor health problems within a month, effects that persisted for the entire 10 months of the study.

Less focus is put on the benefits of a dog being walked, bar general good health, lower risk of obesity (Barbour et al., 2011; Westgarth et al., 2017) opportunities for socialisation (to other dogs and people) and toilet breaks (Campbell et al., 2016; Degeling & Rock, 2012). Walking the dog can be conceptualised as a caring practice that typically happens in the public arena (Degeling & Rock, 2012). Furthermore, walking the dog was found to enhance an owners psychological health by directly providing them with an enjoyment giving activity that participants felt essential for their dogs wellbeing (Campbell et al., 2016).

Exercising a dog can counteract the adverse effects of stress. Exercise positively influences the physiology of dogs: primarily neurotransmitter activity - increasing noradrenaline and serotonin levels - believed to have beneficial mood effects (Lindsay, 2000). The Kennel Club website guides owners on how much exercise their dog needs, categorised by breed type. Toy breeds, for example, are categorised as needing up to 30 minutes per day. Large breeds such as Great Danes, more than 2 hours a day. This advice is severely lacking when no consideration is given to a dogs individual needs; and indeed, exercise that isn’t physical.

Lim & Rhodes (2016) found that exercise requirements due to breed recommendations do influence the reality for the dog owners in their study. Medium to large sized dogs and younger dogs were generally walked more. Not taken into account generally is the dogs individual energy level independent of age, breed or size. This is a study that uses self-report questionnaire methodology therefore the responses may be biased according to what the participants feel is expected or how they would like to think. Furthermore, all participants were recruited online via facebook groups that connect dog owners with the same beliefs and mentalities; therefore, sample bias makes the results unreliable also.

We do know, however, that generally the more a dog is encouraged to do the more their fitness levels increase and the more they want to do. Repeated bouts of exercise in a study of sled dogs led their bodies to compensate with changes regarding replenishment of muscle glycogen to support continued exercise (McKenzie et al., 2005). Physical exercise is a cardiovascular workout, increasing heart rate and respiration through movement. A dog who is pushed to do more and more physical activity will become fitter and demanding of more. This can lead to frustration on part of the dog and owner, who may struggle to keep up with the increased fitness levels in the longer term, and this frustration can lead to unwanted behaviours (Kasperowicz & White, 2017). In a qualitative study based on interviews, owners spoke of being compelled to engage in daily dog walks to satisfy their dogs needs, even above their own. They would speak of their dog looking with “pleading eyes” for their walk and without their walk they complained of behaviours such as restlessness and digging, which they found stressful to deal with (Campbell et al., 2016). Therefore walks in this study are viewed as a way of minimising unwanted behaviours.

A quantitative study by Degeling, Burton & McCormack (2012) found that out of 241 dog owners, dogs were walked on average 5.4 times per week. Ten percent of owners reported not walking their dog at all and there was one recording of a dog being walked 28 times per week. Furthermore, the length of time a dog is walked varies over their lifetime depending on the owners capabilities, preferences, social and physical environment. The quantitative nature of this study means no detail is sought out on how these varying levels of physical activity might be contributing to unwanted behaviours in the dogs.

A study in the UK found that 77% of dogs in the study were reported to walk once a day or more. Owning multiple dogs, the dog being of small breed and more people in the household were all negatively associated with daily dog walking. Aggression was also negatively associated with dog walking; however, it wasn’t thought that the reduced exercise caused the aggression as it was only aggression towards household members. The study concluded it was likely a breakdown/weakened relationship between dog and household members causing the aggressive behaviours and lack of walks together (Westgarth, Christian & Christley, 2015).

A qualitative study suggests a complex inter-relationship between both the dogs and owners needs with regards to dog walking (Westgarth et al., 2017). Owners spoke of the positive outcomes of their dogs being walked including increased fitness, mental stimulation, opportunities for socialisation and extended life. These were reported to be the primary motivation for dog walking by the participants in this study. This was constantly negotiated around the owners own needs, commitments and abilities, which caused the dog walking routine to change. The unique owner and dog dynamic influenced the outcomes for these partnerships (Westgarth et al., 2017).

In the above study by Westgarth et al. (2017) owners shared the belief that daily exercise for a dog is considered the minimum general standard; however actual frequency of walks in the study varied from three hours a day to never. Old, ill, or very young dogs were thought to need less exercise, and size and breed of the dog did influence perceptions on exercise requirements. The qualitative methods of this study allowed for more of the complexity of a dogs life to come into the equation; as long as there was an absence of adverse consequences such as barking, chewing and attention seeking, not walking the dog daily was reported to be acceptable. This is just one study, however, that took place at North-West UK with participants who were sufficiently dedicated to their dog enough to go on a walk with a researcher and chat. Therefore the results of this qualitative study cannot be generalised to dog owners in general.

Westgarth et al. (2017) and qualitative studies by Degeling & Rock (2012) and Campbell et al. (2016) found that as well as illness and age-related changes leading a dog to be walked less, another important demotivator for walking the dog was behavioural reasons. For example, if the walk was not considered best for the dog, such as in cases of fear and anxiety, owners could understand it would cause too much stress for the dog to be walked every day and therefore opted for alternative forms of exercise such as playing. Dogs not finding the walk pleasurable contributed to a negative owner experience of the walk also (Westgarth et al., 2017). Furthermore, barriers to dog walking includes concerns about aggression and problems with their dogs coming into contact with children on walks. Anxiety over inappropriate behaviour was visibly seen in the study by Campbell et al. (2016) which has the potential to negatively influence dog walking on the owners well-being.

Dog walking depends on a partnership between dog and owner. Dog owners with a strong attachment and responsibility to walk their dogs are more likely to do so. Furthermore, in general, dogs are walked due to personally valued outcomes. The higher the levels of responsibility reported, the higher both intrinsic (getting something pleasurable from the activity of dog walking) and identified (personally values the health importance) regulation (Lim & Rhodes, 2016). External regulation due to extrinsic motivators are also an identified factor that influences behaviour. Some dog owners may be motivated to engage in the dog walking behaviour to obtain an outcome separate from the activity itself. For example, a dog owner feeling compelled to walk their dog daily as the belief is that others will be punishing of them if they did not (Lim & Rhodes, 2016). Whilst this study didn’t identify this as an issue, possibly due to participants saying what they want to believe motivates them rather than what actually does, it cannot be abandoned entirely as a driving factor in a society where it is the “social norm” to walk your dog every day, backed up by advice from organisations such as the Kennel Club.

A dogs life in our human homes is mostly controlled by owners: what, where, when and how they eat, their daily activities, where, when and for how long they sleep and so on. As we have seen, in terms of walks, the owner tends to stipulate how often they go for a walk, the speed of movement, where they walk and when. Pangal (2017) was interested in observing what dogs do when given the choice, away from human interference. Street dogs in an urban area of India were studied through snapshot observations. Video data was collected on the activity of each dog visible every hour for 20 hours over 14 days. The activities the dogs were engaging in were classified into four categories: asleep, awake, on feet and moving. The conclusions from the results were that the dogs chose to not be very active and preferred one activity more than any other: sleeping. When they were observed to be moving it was slow paced, not engaging in high intensity chase activities. Of all the dogs observed through all the time scales, only 23% were moving (walking, trotting, sniffing, foraging), 77% of dogs were not moving (Pangal, 2017). Dogs in our homes might choose and benefit from a similar calm sedentary lifestyle, if given the choice, based on sleep, relaxed walks, sniffing behaviours and mental stimulation rather than fast paced physical exercise.

In a family household a dogs schedule can become very full with arousing events on top of daily walks: agility classes, hikes, days out with the family, play dates with friends, grooming appointments and so on. Excitement is stressful and too many demands in training and daily life, as well as full speed activities such as fetch, can cause a dog significant stress. The concern is whether our dogs are getting any time to really rest - not moving - as they chose to do 77% of the time in Pangals study (2017). It cannot be denied that a lack of rest time causes a dog stress (Rugaas, 2006; Scholz & Reinhardt, 2007).

Biological stress has a high significance for dog welfare and is a direct result of internal states and environmental influences that have an impact on the dog causing it to need to adapt (Dog Behaviour Clinic, n.d.). A dog unable to act in accordance with its motivational state can be described as being under stress (Jensen, 2007). Stress is typically viewed as a negative and damaging excess burden on an organism that causes a reduction in wellbeing and health. Every dog is unique, however, in its stress thresholds. Some dogs have a more powerful sympathetic nervous system, meaning they are prone to emotional reactivity and have a lower stress threshold. Some dogs have a more powerful parasympathetic nervous system, meaning they have a higher stress threshold and naturally more calm and stable. When a dog surpasses their stress threshold unwanted behaviours and behaviour problems are more likely to develop (Dog Behaviour Clinic, n.d.).

During stress the adrenal medulla secretes adrenaline and noradrenaline via the sympathetic adrenaline medullary axis. Furthermore, the hypothalamic pituitary adrenaline axis stimulates glucocorticoid secretion via the adrenal cortex: mainly, cortisol (Beerda et al. 1997). Glucocorticoids like cortisol can take two to six days to return to baseline level once secreted into the dogs system; however, for dogs who are exposed to arousing events every day, often multiple times a day, the cortisol has a cumulative effect and can be four times higher than normal within just a few days. Observationally we cannot see levels of these hormones within our dogs. Their physiological state can only be temporarily understood by their behaviour (Cooper, n.d.).

An increased activity in the sympathetic nervous system when a dog is under stress is associated with increased heart rate and blood pressure (Jensen, 2007). Physically, a dog in a constant state of high stress is “more likely to get stomach problems, allergies and heart trouble” (Rugaas, 2006: 52). Observations of an animals behaviour is thought to offer a good insight into their inner state, rather than just measuring one feature of their physiological state e.g. cortisol levels (Miklosi, 2015). Behaviourally, stress within a dog can cause stress behaviours/calming signals, aggressive displays/defence mechanism activations that are faster or more forceful, agitation or restlessness, barking, over-reaction to things, excessive licking/scratching and loss of appetite (Rugaas, 2006; Scholz & Reinhardt, 2007). Impulse control and previous learning is a higher cortical activity that is compromised by stress, and behavioural thresholds for innate patterns around defensive action patterns are lowered. Therefore, undesirable behaviour based in fear and anger is caused by excess stress and reducing stressful influences in the dogs environment is considered necessary management (Lindsay, 2000).

Linda Cooper looked at dogs with reactivity difficulties and their exercise levels. Dogs with fears or frustrations can end up living most their life in a state of stress which increases their reactivity and importantly, diminishes their ability to learn. A reduction in displays of reactive behaviour and owner-reported calmer demeanour of the dogs in the home environment was found, due to a change in exercise regime and programme of relaxation. Furthermore, it was found that the longer the dog is exposed to this new lifestyle the more likely a positive change in behaviour will be noted (Cooper, n.d.).

The study above incorporated calming mental stimulation and enrichment into the change of exercise regime. A balance of physical and mental stimulation is fundamental to the needs of a dog. Mental stimulation engages natural scavenging behaviours and encourages problem solving and constructive use of their brains. This helps to give dogs a purpose, enriching their lives and warding off behaviour problems or unwanted behaviours. Adequate mental stimulation is more tiring on the body than physical exercise and rest after these types of activities is vital (Kasperowicz & White, 2017). Therefore, mental stimulation is the perfect activity to encourage rest in dogs who are taking a day off from physical walking. Food puzzles and toys such as Kongs ®, Busy Buddy ® toys, Nina Ottosson® toys and Snuffle Mats ® are all examples of suitable mental enrichment for most dogs; however a lot of mental enrichment can be made by hand for free also e.g. Sprinkles ®. All dogs should receive mental stimulation and behavioural enrichment, regardless of their environment (Overall & Dyer, 2005).

In a study by Owczarczak-Garstecka & Burman (2016), it was found that shelter dogs who rested during the day showed less repetitive behaviour (a significant stress behaviour) and received a higher percentage of ‘relaxed’ observations by the kennel staff. Quiet times for shelter dogs are encouraged, when visitor access is restricted and noise levels kept to a minimum, to allow dogs to rest and sleep during the day and improve their welfare. This need for quiet time can be applied to dogs in a home environment too as sleep is necessary for good physical and mental health.

For dogs without significant fears or frustrations within the world they live, no studies have been done to observe how their behaviour changes with regards to whether they have a routine that incorporates “rest days” or not, which is the goal of this study. This study acknowledges that a dog does not express a “wrong” or “bad” behaviour. The behaviours of interest in this study are likely as a result of increased stress levels within the dog, unrelated to “obedience”. For this reason the behaviours in question are labelled “unwanted behaviours”; an acknowledgement that both owners and dogs can find these behaviours frustrating and stressful to live with.

## Chapter Three: Research Methodology

An observational research study was carried out with a 5-year-old terrier cross within his home environment. He is neutered (at 2 years of age), currently of good behavioural health and known to the observer since young puppyhood. At the time of study he was not going through any other stressful event such as food change, change within the household, or vet treatment. As a result he was physically healthy (no stomach upset or cause for pain).

With an early history of light reactivity, noise reactivity, inability to settle and significant attention-seeking behaviour his usual routine was one of four days per week going for a walk, three days per week doing mental stimulation activities at home. This routine had curbed his stress behaviours significantly and had been in place for over two years.

For this study, every day his activities were monitored. On rest days he would be engaged in a mentally stimulating training or enrichment activity at least twice a day for at least 10 minutes each activity. On walk days one of those mental stimulation activities would be replaced with at least a half hours walk. His walks were a mixture of slow paced walking and sniffing and fast paced running, chasing and playing with other dogs and the owners. He is never asked to repeatedly chase balls on walks or in play sessions. Outside of these activities his behaviour is his choice, but with seven dog beds at home, relaxation and sleep is encouraged. Various chews are always available to him also.

Observations about his body language including stress behaviours, levels of restlessness, levels of attention seeking behaviour and reactivity to noises, were made every day for 12 days, (see appendix 1). Week one (six days) was a usual week of three days of physical rest, three days of walking. Week two (six days) he was walked every day.

The observations took place for the duration of the study and noted regardless of the time of their presentation. Behaviour is changeable and so as full a day of observation as possible was thought to provide the most valid results. Excluding time spent with the observer out the house and the observer asleep overnight, observations were made for at least 14 hours per day.

## Chapter Four: Data Presentation

The daily activities were collated in a table alongside relevant notes about the dogs behaviour. In particular, four categories of behaviour were monitored: attention-seeking behaviours, reactivity to noises, stress behaviours and restlessness. Another category of behaviour was added on as a result of the observations of the dog during week two: following behaviours.

A number of behaviours were identified by the observer as the study went on. The behaviours were then categorised according to their function (see table one). The timing of these behaviours, and how they accumulated over the two weeks (see appendix 2) shows a distinct increase in negative stress levels for the dog being observed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Attention-Seeking Behaviours (for play, petting, grooming) | Reactivity to Noises | Stress Behaviours | Restlessness | Following Behaviours |
| * Growling at person * Licking person * Staring whilst wagging tail at person * Waving paw at person * Staring at person * Whining at person * Barking at person | * Barking at doorbell * Barking at people walking by the closed window * Barking at hearing voices out the open window * Barking at hearing dog noises out the window e.g. panting/collar tags jingling * Barking at bangs outside | * Repetitive paw licking * Air-licking | * Pacing * Standing around * Frequent position changes with no dozing in between * Aware of owners movements * Food demanding at certain times | * Following owner around the home * Staying next to owner as a result of “leaving cues” |

Table One: Observed behaviours during the two weeks of study

During week one there were observable differences between the dogs behaviour on a rest day and the dogs behaviour on a walk day (see image one). Namely, on all three walk days he showed significant attention-seeking behaviours, restlessness, and on one walk day showed a noteworthy stress behaviour: repeatedly licking paws. None of these behaviours were present on his rest days. Concerning noise reactivity, there were no observable behaviours on his walk days in week one. There was a single bark to the doorbell on one of his rest days; however alarm barking, given his breed, can be considered less about stress and more about instinct.

Image One: Behavioural differences within week one

During week two, on all six walk days he presented with attention seeking behaviours. Five days he presented with noise reactivity and restlessness. Two days he presented with stress behaviours. Finally, four days he presented with a behaviour not initially considered for this dog, following behaviours. When comparing the number of days per week these unwanted behaviours presented across both weeks, the difference is noticeable (see image two). Attention seeking behaviours increased by 100%, noise reactivity increased by 400%, restless increased by 66%, stress behaviours increased by 100%, and finally following behaviours increased by 400%.

Image Two: Behavioural differences across week 1 and 2

During week two the quality of the unwanted behaviours also escalated. Whilst it is understandable for this dog that he barks once at the door bell, his noise reactivity in week two became noticeably more born out of stress. For example, noises that previously would not stir him became a source of reactivity (growling, barking and huffing) such as people walking by the window.

During week two, the attention seeking behaviours happened more frequently, throughout the evening time especially, with an attempt at seeking attention happening up to five times on day three. The behaviours were also more urgent and demanding e.g. barking, whining and growling. During week one the attention-seeking behaviours happened less (only once or twice) and were less urgent (e.g. staring with no vocalisations or paw waving).

The stress behaviours became more noticeably unhealthy during week two, for example air-licking (repeatedly protruding his tongue and dipping his head, seemingly licking air) during the final two days of the study. This, coupled with the following behaviours, caused the experimenter to end the study early.

The observer also noticed the dog changing in his choice of sleeping area depending on whether it was a walk day or rest day. During walk days he would primarily rest downstairs with the rest of the family, often switching from one bed to another to keep an eye on the owners movements. During rest days he would choose his area upstairs to rest in, where he sleeps every night, choosing to rest and relax on his own undisturbed.

## Chapter Five: Discussion and Analysis

Attention seeking behaviours such as barking or whining at an owner is often an unwanted behaviour discussed in behavioural consultations. Dogs carrying extra stress due to a stimulating day may demand more and more input from their owners until they physically exercise them to fatigue. Through reinforcement of these attention-seeking behaviours and a dog gaining in fitness levels due to a gradual increase in activity, it is easy to see how a vicious cycle is created of over-exercising a dog to deal with these unwanted behaviours, as in the study by Campbell et al. (2016). Helpful levels of exercise for good mental health then becomes unhelpful levels of exercise causing poorer mental health.

Attention-seeking behaviour is easily reinforced by any degree of response. In this study, both owners were careful to not reinforce the attention-seeking behaviours with any degree of attention, positive or negative. This is to ensure this collection of behaviours are continued due to stress levels within the dog and not learned behaviours.

The dog in this study showed attention-seeking behaviour on walks days even when enveloped around rest days (week one); however, not to the degree shown during week two. During week one, when met with no reinforcement, the attention seeking behaviours were shorter (seconds at a time compared to full minutes during week two) before the dog chose to go elsewhere. Attention seeking was an adverse consequence identified by Westgarth et al. (2017) that would discourage owners from not taking their dogs out on a walk daily. Therefore it is important to note that on the contrary, it could be the stimulation from the daily walks causing any attention-seeking behaviour they have identified within their dog. To counter this, a walk could be followed up with a scent activity to help the dog discharge the adrenaline before resting.

Noise reactivity is also a problem owners tend to seek help on. Whilst this can be due to a lack of mental stimulation, this study agrees with the literature that barking and over-reaction to stimuli can be due to a build-up of stress from an over-stimulating daily routine (Rugaas, 2006; Scholz & Reinhardt, 2007). Indeed, cortisol has been hypothesised to increase responsiveness to external stimuli as a way of preparing for the stressor ahead of them (Owczarczak-Garstecka & Burman, 2016). For the dog in this study, an energetic daily routine seemed to be inhibiting the quality of his rest. He was observed paying more attention to external noises when resting during week two - immediately opening his eyes and reacting to them with a mixture of growls, huffs and barks. The heightened stress levels within his body may have meant he was over his threshold, with less stimuli required to trigger a reaction during week two compared to week one. However, the results may be circumstantial as this observational study wasn’t controlled and it is possible that during week two the noises outside were just louder or more frequent.

A stressed dog is likely to spend more time on his feet, exhibiting restlessness, compared to a calm and relaxed dog. During week two the dog in this study spent noticeably more time on his feet: standing around, pacing, and switching between resting places frequently, compared to week one. In this study, even the walk days in week one resulted in observable restlessness, to a lesser degree, highlighting that the walks were perhaps too activating for the dog without a scent activity to help him find calm for the rest of the day. The dog choosing to rest downstairs with the rest of the family on walks days rather than upstairs on his own as he did on rest days can be interpreted as a symptom of restlessness also. Downstairs he would be fidgeting from one spot to another in between attention-seeking, whereas upstairs he was just quietly resting away from distractions. Further research could look at quantifying levels of restlessness in a dog who had just had a walk, compared to having a walk plus a scent activity after, using similar snap shot observational methods to Pangal’s (2017) “Lives of Streeties” study.

The stress behaviour observable in week one, paw licking, happened on a walk day that was particularly stimulating, involving two fast paced activities (long walk and play) and a further stimulating activity (being at the groomers). The paw licking was observed to be on the top of his paw and very repetitive in motion therefore unlikely to be serving any physical purpose. It happened for up to five minutes in his basket before going to sleep; therefore supporting the literature that excessive licking can be a stress reaction to help a dog self-soothe (Rugaas, 2006).

Whilst the original plan was to continue the walk week for seven days, the researcher cut the study short at the presentation of another significant stress behaviour from the dog on day five and six of week two: air licking. Having had previous history with the dog, the researcher had experience of knowing the air-licking was a stress behaviour the dog resorted to when under extreme stress - for example when moving house. The dogs welfare took priority and a plan was implemented to give the dog resources and time to discharge his built up stress levels.

All of the dogs stress behaviours in this study involved licking. This is likely due to the release of endorphins that licking and chewing releases that help a dog self-soothe and feel better (Kasperowicz & White, 2017). The dog in this study was observed chewing an appropriate chew toy on both rest days and walk days. This dog has always had chews lying around for him to turn to along with other options given to him by his owners for extra mental stimulation or self-soothing activity; with no reliable way of knowing the emotion behind the chewing on the separate occasions, chewing was not assumed to be a stress behaviour in this case.

Following behaviours was a new behaviour for this dog, not previously observed within him before this study. Whilst following an owner around the home can be a sign of over-attachment and/or isolation distress/separation anxiety, this dog shows no other signs of those difficulties. His following behaviours seemed to be born out of an increase in daily stimulation and cumulative stress levels. He was observed following the owner on day 3-6 of week two: when the owner changed rooms or when the owner was displaying typical cues that they were leaving the house. During week one, even on walk days, whilst the dog would sometimes lift his head when the owner moved around he did not physically follow and spent more time upstairs on his own, uncaring about movement going on around him. Physically following an owner around the house is stressful for a dog as they can never truly relax, therefore further contributing to a dogs stress levels. During the observations in this study this behaviour was also having an effect on another resident dog in the household who would also start following and is another reason why the study was ended early.

## Chapter Six: Conclusion

As research shows, dog walking is based on a complex inter-relationship between both the dogs and owners (Westgarth et al., 2017). Dog walking is praised for helping owners get the recommended amount of exercise. However, this study shows we might be doing dogs a disservice relying on them to get the recommended exercise quota in. It might be better for some dogs if their owners take responsibility to exercise separately from them at times too.

This study supports the notion that rest days in a dogs routine can alleviate unwanted behaviours (based on the emotional state of the dog, not obedience) that dog owners seek out help for; in particular, restlessness, attention-seeking behaviours and noise reactivity. This study also suggests that following behaviours and stress behaviours can be due to physical over-stimulation. It is therefore worth noting that a healthy balance of walks, mental activities and rest days may actually help to prevent behaviour problems from happening in healthy dogs.

This study therefore supports the literature that suggests dog professionals and dog owners both need to be aware of how rest days within a dogs routine can benefit both the owner and the dog - both as a pair and singularly. With too much physical exercise for a dog there is a risk of over-arousal and creating hyper excitement (Kasperowicz & White, 2017) that is frustrating and unhelpful for both owner and dog. Dog owners need to understand that being a “responsible dog owner” is not necessarily about walking your dog every day. Both quality and quantity of walks can be modified to improve the behavioural and emotional health of the family pet.

It is becoming more well known that mental enrichment is an important part of a dogs life. Rest days in this study did not mean doing no activity all day, mental stimulation is still provided on rest days. Mental stimulation activates the problem-solving part of the dogs brain that releases oxytocin and helps a dog be calm, relaxed and content. In particular, mental stimulation and giving dogs activities to do on their own lessens their need for direct attention and helps them learn to relax by themselves. These are both vital life skills for a healthy family home (Kasperowicz & White, 2017) and a skill that will discourage attention-seeking and following behaviours within the home.

Studies suggests that walking the dog is a caring practice based on a positive relationship between the owner and the dog (Degeling & Rock, 2012) and an emotional connection including laughter acting as an intrinsic motivator (Campbell et al., 2016). However, given the importance of mental enrichment in a dogs life, rest days that incorporate these activities can also be encouraged as a caring practice, and the interactive activities too have the potential to emphasise emotional connection.

Regardless of specifics, research suggests an owners well-being is enhanced through the act of giving something to their dog, particularly something the dog finds exciting (Degeling & Rock, 2012). Giving through interactive activities/mental enrichment has the potential to have the same effect with that regard as a walk. Rest days are best punctuated with enjoyment giving activities, just ones that aren’t based on physical exercise.

Rest days and the mental stimulation within these days may actually improve a dogs behaviour on walks. For example, it may help insert some necessary impulse control into their own behaviour and boost the relationship between owner and dog thereby decreasing the risk of a dog finding its own entertainment away from the owner whilst on walks. This can improve recall, automatic check-ins and connection. This would go some way to alleviate the anxiety that some dog owners were found to feel due to inappropriate behaviour from their dogs on a walk (Campbell et al., 2016).

The qualitative methods of this study are more appropriate to this discipline as it leaves room for the subtle nuances of behaviour that quantitative studies can miss. For example the observational methods allow comments on the quality of a behaviour, not just the quantity. Often it is the quality of a behaviour that can signify increasing stress levels, not just quantity.

Behaviour is always influenced by the environment around the organism (Miklosi, 2015). The dog in the study lives in a multi-dog household with two other dogs and two owners. As a result, his behaviour is vulnerable to the influence of the behaviour of the family members he shares his life with. For the duration of this study the routine of the other resident dogs did not change so there was, as much as possible, minimal extra stress from outside sources feeding into his own feelings and behaviour.

Whilst objectivity was of concern to the experimenter, this study is still at risk of being unreliable due to experimenter bias; that is, the predisposed notions of the experimenter influencing the results. This is especially the case as the experimenter was the observer/owner. Future research in this area would benefit from having an external observer who is unaware of the studies literature background and potential outcome.

Further to this, the observational study was reliant on one observer; therefore, when that observer was away from the dog no data was being recorded. However, the observer only tended to be away from the dog for a few hours a day plus sleep, and video evidence, just a few months old, showed the dog genuinely resting and relaxing when alone. Therefore the absences are not thought to affect the validity of the data results observed at all.

The study is an observational study on one unique dog and therefore cannot be generalised to dogs of all breeds, needs, ages, circumstances and individuality. Dogs will have individual needs with regards to physical and mental exercise dependent on their age, breed, health status, condition and behavioural issues (Kasperowicz & White, 2017). For example, working breeds may require more mental stimulation input than the dog in this study does for emotional stability. Enrichment tailored to the breeds typical behaviours may be necessary (Overall & Dyer, 2005). Levels of physical exercise tolerated within a dog is also dependent on their personal stress thresholds. Professionals and owners are encouraged to come up with a routine that is best for the single dog before them, manipulating the plan through observing the dogs personal stress behaviours.

Exercise can help with stress reduction but too much can also be the cause of chronic stress. The goal is finding a balance where both owner and dog are enjoying activities with each other, without causing too much stress within their system due to lack of rest days. Rest days provide their system with time to rest and balance its chemicals - vital for a healthy and happy dog (Kasperowicz & White, 2017).

The dog in this study had already been in the routine of regular rest days for a few years at the time of study. Future research could focus on observing the behaviour of dogs as they gradually switch from daily walks to the injection of mental stimulation and rest days into their routine. To some degree, dog owners of active dogs have created active dogs (Kasperowicz & White, 2017; McKenzie et al., 2005); those who owners say have to be walked daily otherwise unwanted behaviours arise. Dog owners with dogs who can relax and take a day off from walks have likely guided their dog, knowingly or otherwise, into learning how to appreciate this relaxation as an important activity that also feels good. It can be argued that with this study, all the observed behaviours thought to have their roots in stress may dissipate as the dogs system acclimatises to daily walks. Further research could assess this however this could be extremely detrimental to a dogs welfare so is not advisable.

Finally, this study uses solely observational data to come to its conclusions and whilst that is viable, further research could incorporate physiological measurements with the behavioural observations. The physiological measurements must not be invasive however and not interfere with the behaviours being monitored (Miklosi, 2015).

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## Appendix 1 : Record Sheet

Todays Date:

Rest Day or Walk Day?

Log his activities:

|  |  |
| --- | --- |
| What? How? | How long? Other details? Behavioural observations? |
| Breakfast: |  |
| Dinner: |  |
|  |  |
|  |  |
|  |  |

Daily behavioural observations outside of activities:

|  |  |  |  |
| --- | --- | --- | --- |
| Attention-seeking/demand behaviours | Reactivity levels to noises | Stress behaviours | Sleep |
| What?  How long for?  How many times?  To who? |  |  | How long?  Where?  When? |

## Appendix 2: Daily Activities & Behaviour

|  |  |  |  |
| --- | --- | --- | --- |
| Day | Rest or not | Activities | Behaviour |
| 9/4 | Rest | Guest over for 1.5 hours (no play, just laid with us) Chewing various chews for an hour Snuffle mat  Slow feeder for 1 meal | No attention seeking  No reactivity to noises  No restlessness Sleeping upstairs in his room  No food demanding |
| 10/4 | Walk | Walk with Peanut (50 mins) Extra play with Peanut (15 mins) Bath at grooming room  Kong for 1 meal | Attention seeking behaviours after dinner: growling, licking, staring with tail wagging, paw waving. At least 2 separate occasions during the evening.  Restlessness (standing around whilst others sleep) Stress behaviours: licking paws  Spent most of time downstairs not sleeping |
| 11/4 | Rest | Mystery box (30 mins) Training games (15 mins) Chewing (30 mins) | No attention seeking behaviours  One bark to doorbell  Slept most the time upstairs in his room |
| 12/4 | Walk | Walk with Keris (40 mins) Bath around groomers  Snake feeder for 1 meal | Attention seeking behaviours: staring, no vocalisations – 1 time  Restlessness  Dozing downstairs very aware of my movements |
| 13/4 | Rest | “Find it” in garden (30 mins) Chew (10 mins)  Kong for 1 meal | NO attention seeking behaviours  Slept mostly upstairs |
| 14/4 | Walk | Walk with LLW training (45 mins) Turn taking agility in garden (30 mins)  Kong for 1 meal | Attention seeking behaviours: licking, waving – 1 time  Restlessness  Stayed primarily downstairs |
| WEEK TWO |  |  |  |
| 15/4 | Walk | Walk with Lee (45 mins)  Food dispenser for 1 meal | Attention seeking 3 times: barking, whining, waving  Reactive to noises - barking |
| 16/4 | Walk | Walk with Keris (30 mins)  Food dispenser for 1 meal | Noise reactive to people outside window whilst in bed – unusual  Restlessness |
| 17/4 | Walk | Walk with Peanut (45 mins) Scent toy (15 mins)  Kong for 1 meal | Significant restlessness – minimal dozing  Attention seeking: barking & whining – 5 times  Significant whining when another dog is being worked with Following me around home |
| 18/4 | Walk | Walk with Keris and Bean (45 mins)  Kong type feeder for 1 meal | Noise reactive to people outside Restlessness Resorted to chewing Following around home |
| 19/4 | Walk | Walk with Peanut (45 minutes) Kibble fishing (10 mins)  Lickimat for 1 meal | Very noise reactive to people and bangs Restlessness, even after last chew at night Attention seeking via barking and whining – 3 times  Following me around home  Air-licking stress behaviour |
| 20/4 | Walk | Walk with Keris (30 mins)  Sprinkles on walk (15 mins) | Attention seeking – whining and pawing  Following around home Air-licking stress behaviour  Noise reactive  Restlessness |