Understanding and Preventing Aggression in Dogs

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In today’s session

- Defining aggression
- Categorising aggression
- Understanding fear and aggression
- Why does aggression develop
- How can we prevent aggression
- Predicting an aggressive incident
- Finding further support

Defining aggression?

"Aggression is defined as threats or harmful actions directed toward another individual and can include threat displays, lunging, growling, snarling, snapping, and biting. In animals, aggressive behaviours are a means of communication. Dogs and cats use aggressive displays, threats and attacks to resolve competitive disputes over resources (territory, food) or to increase their reproductive potential, or to escape threatening situations."

(Horwitz & Landsberg, nd)

Categorising aggression

Overall (2013)

- Fear-induced aggression (unknown people/dogs, physical threats, threat to young)
- Resource guarding (food, territory, people)
- Disease/pain induced aggression
- Conflict related aggression
- Redirected aggression
- Predatory behaviour

Categorising aggression

Overall (2013)

Fear related behaviours

- Fear-induced aggression (unknown people/dogs, physical threats, threat to young)
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Categorising aggression

Overall (2013)

- Fear-induced aggression (unknown people/dogs, physical threats, threat to young)
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Potentially fear related behaviours

- Predatory behaviour

Aggression is a good strategy to eliminate fear

What might cause a dog to experience fear?

- New unknown people or dogs
- New unknown objects or stimuli (objects, sounds, lights, smells)
- Familiar people behaving in a threatening way (actions, movement, sounds)
- Risk of losing resources (food, water, territory, humans, dogs)
- Pain and disease

What might cause aggression to develop?

Genetics
- Breed differences
- Sex differences
- Breeding line

Learning history
- Previous learning
- Past trauma
- Training technique

Development
- Maternal stress
- Attachment figures
- Socialisation

Biology
- Neutering status
- Emotional regulation

What might cause fear to develop?

Genetics

- Breed differences – German shepherds are more likely to start experiencing fear responses at a younger age, around 5 weeks (Morrow et al. 2015).
- Sex differences – male dogs tend to be rated as marginally more likely to develop aggressive behaviours than female dogs (Hart & Hart, 2016).
- Breeding line – aggression is heritable. While this is not a big effect, it is still relevant.

What might cause fear to develop?

Development

- Stress during pregnancy – maternal stress during pregnancy can lead to an enhanced stress response in pups (Weinstock, 2008).
- Quality and quantity of maternal care – more time with mum and higher quality care affects stress and aggression levels in later life (Dietz et al., 2018).
- Socialisation – careful and controlled socialisation to ensure the pups are introduced to dogs, humans, handling, and other stimuli can have a protective effect against behavioural problems including aggression (Dietz et al., 2018).

What might cause fear to develop?

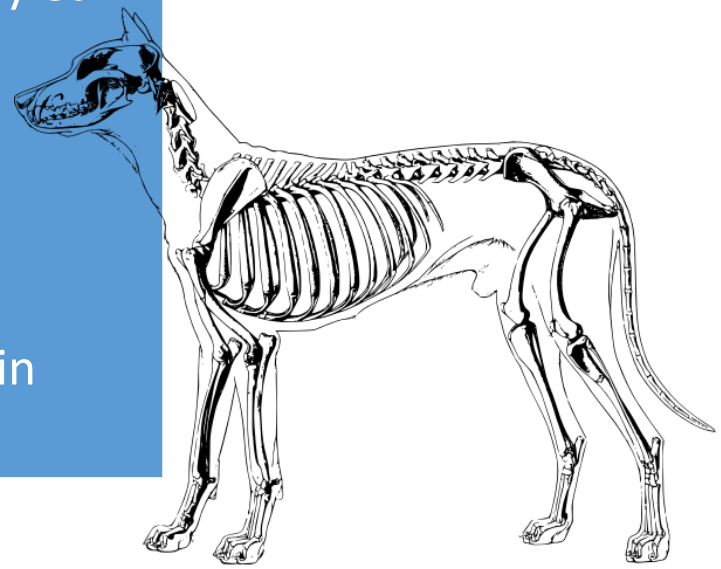
Learning History

- Previous learning – classical conditioning can result in dogs forming negative associations with particular stimuli. The dog may develop a conditioned emotional response when faced with the same or similar stimuli in future (Overall, 2013).
- Dogs with previous trauma were more likely to develop fearfulness, aggression towards humans, and aggression towards other animals (Wallis et al., 2020).

What might cause fear to develop?

Biology

- Neutering status:
  - Male dogs – fear based aggression is significantly and positively linked with lower age at castration (McGreecy et al., 2018)
  - Female dogs – higher incidence in fearful behaviour, aggressive behaviour, and excitability in dogs with less exposure to gonadal hormones (Starling et al. 2019).
- Emotional regulation – a dog's ability to regulate their own emotions is linked to a number of factors including serotonin levels, nutrition, gut microbiome, cortisol levels and more.



Dominance and aggression?

- Dominance hierarchies can sometimes be observed within groups of dogs. However, this is not something the dogs are consciously aware of, it is simply a reflection of their decision to either defer or not defer to another dog.
- There is no evidence dogs understand the concept of status, and their actions are not an attempt to gain a dominant position in the household, and therefore there is no need to implement harsh dominance reduction training techniques e.g. alpha rolls, as this will most likely confuse your dog and risk you getting bitten.
- Hierarchies are most often seen when resources are limited, which is not typical of the average household.
- **Do not try to dominate your dog, it will not help with any issues they are having!**

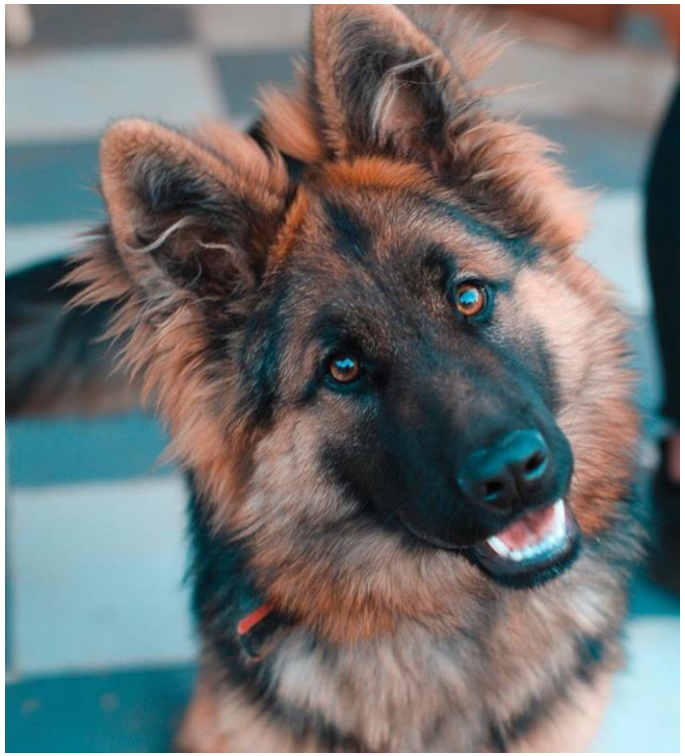
The fallout of punishment

1. Increased vigilance and over pleasing of the owner.
2. Trying to avoid the owner – poor recall, spending less settled time with owner around the house.
3. Higher cortisol levels – more prone to stress related disease, increased barking, increased mounting, more frequent abnormal behaviour development.
4. Attachment bonds likely to be less secure.
5. Dogs trained with exclusively positive reinforcement have been found to be the most obedient.
6. Greater risk of redirected aggression – towards other dogs, people, or towards the owner.

Preventing aggression

- Promoting a healthy happy dog
- Meeting the dog's needs
- Understanding antecedent triggers
- Reading your dog's body language
- Addressing the emotional response

Promoting a healthy happy dog



- Keep your dog healthy – health conditions are often linked to aggression.
  - Regular vet checks
  - Healthy diet
  - Meet their exercise needs
- Meet their behavioural needs
  - Make sure they feel safe
  - Appropriate enrichment activities – chewing, foraging, playing
  - Strong attachment figure using compassionate training methods
  - See *Reducing Stress in Dogs* for more.

ANIMAL BEHAVIOUR KENT

Canine Hierarchy of Needs

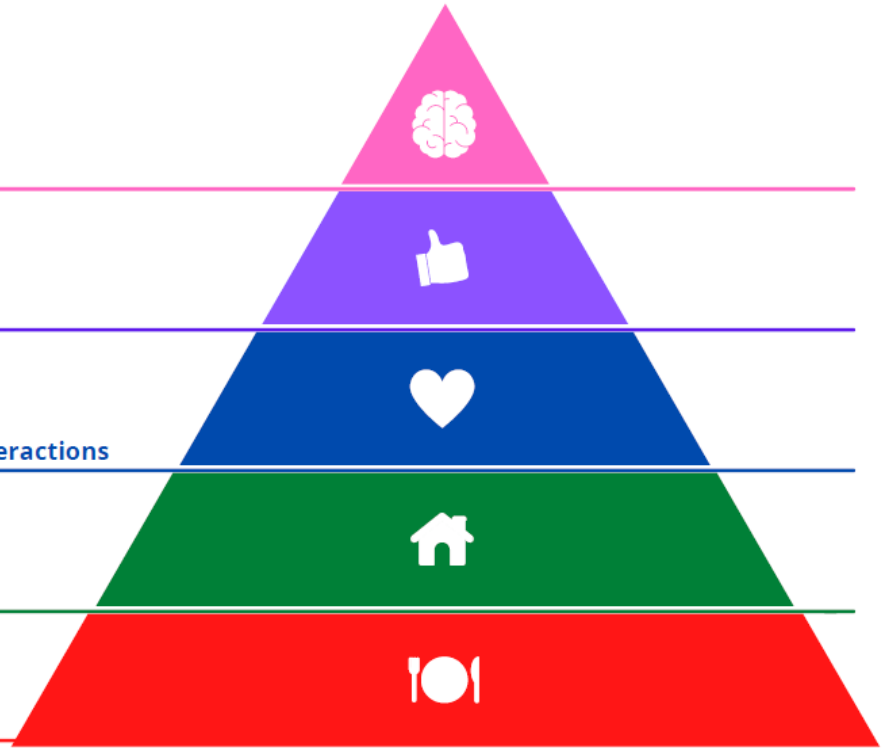
Cognitive Needs
Frustration free puzzles, scent games, novelty, choice

Reinforcement Based Training Needs
Counter-conditioning, desensitisation, relaxation

Social Needs
Bonding to people and other dogs, play with friends, positive interactions

Emotional Needs
Love, trust, consistent environment, predictability, affection

Biological Needs
Safety, eating, drinking, grooming, sleep



Orginally created by Linda Michaels, *Do No Harm Dog Training*

Understand how the environment influences aggression

Some key chemicals

- GABA – a neurotransmitter that has an inhibitory effect on the amygdala (the fear centre of the brain).
- Serotonin – a neurotransmitter key for managing the emotional systems in the brain and helping the brain cope with stressors.
- Cortisol – a hormone that prepares the body for stressful situations.

Getting the chemicals right

- Gentle exercise and sleep to promote serotonin transmission
- Chewing opportunities to promote GABA transmission
- Low energy exercise, calm times, foraging and smell based games to help manage arousal and reduce cortisol levels.
- Regular meals to regulate blood glucose.

The benefits of a strong attachment bond

- A secure attachment grows a dog's confidence, especially when in the presence of the owner.
- This will have a protective effect against: fear based aggression, separation anxiety, resource guarding, and much more.
- Dogs in the presence of their owner are more confident and will explore novel stimuli for longer (Horn et al., 2013).

Building a strong attachment

- Sensitivity to the dog's needs
  - Respond when they need help
  - Reassure
  - Do not put them in scary situations
- Be a predictor of good things
  - Play calm games with them
  - Explore with them, point out exciting things
  - Provide love and affection (aggression is rare for dogs, especially in group)
  - Do not punish the dog!

The Puzzle of Aggression

Early Experience

New things being poorly introduced during puppyhood and early trauma can both contribute to future development of fear reactions. Puppies also learn a great deal from the temperament of their parents..

Arousal Levels

An excited or aroused dog (even if during rough play) will have more adrenaline and cortisol in their system which means difficulty in assessing situations, poorer mood control, and a greater chance of disproportionate reactions.

Social Context

A dog is much more likely to react aggressively on lead, or in an enclosed space because it is more difficult to escape. Similarly, a dog's reaction can be very dependent on the behaviour of other dogs and people. For example, staring and invasions of personal space can both be seen as threatening and may lead to an aggressive response.

Past learning

If a dog has had a negative experience around a certain type of person, animal, movement, or object, then they are more likely to react to the same stimuli in the future. If they are punished by their owner after reacting aggressively, that can increase their fear further, and lead to more aggression in the future.

Nutrition

Some foods can better support dogs with managing anxiety and aggressive responses. Additionally, if a dog is hungry, they are more likely to react aggressively due to low blood sugar.

Neural Activity

Serotonin is an essential brain chemical for regulating mood. Evidence suggests lack of sleep, constant anxiety, chronic stress, and aging can all lead to serotonin levels decreasing. Pain can also be a big cause of aggression in some dogs so a full health check is essential.

Identifying distant antecedents

Location
- Park vs road vs home
- Familiar vs unfamiliar
- How busy?

Sensory input
- Sights/smells/sounds
- Harness/collar/lead
- Food being used?

Time of day
- Morning/afternoon/evening
- Warm/cold

Social context
- Training session
- Alone?
- In the presence of humans

Managing the behaviour and preventing rehearsal

- Every time an unwanted behaviour is practiced, the neural pathways associated with that response will strengthen, so to change a behaviour, prevention has to be the first step.

<u>Identify Triggers</u>

- Aggression towards the postal worker
- Aggression towards strangers

<u>Plan for Avoidance</u>

- Outside post-box
- Plan walks at quiet times, use scenery, “anxious leads”, and distractions to help prevent the dog seeing strangers.
- Work on emergency U-turn
- Drive to enclosed fields

Identify early signs of fear and stress

- Over pleasing – hyper-greetings
- Inability to settle
- Pacing
- Tense posture, freezing
- Shaking excessively
- Self harming
- Increased panting, dribbling
- High levels of respiration
- Increased lip licking
- Licking/grooming excessively
- Whining, crying, whimpering
- Can include tail wagging
- Whining
- Picky eating
- Poor sleeping
- Poor learning capacity
- Aggression (including growling, snarling, lunging, biting) – human/animal directed
- Abnormal repetitive behaviours (ARBs)
- Withdrawal
- Pupils dilated, sclera visible

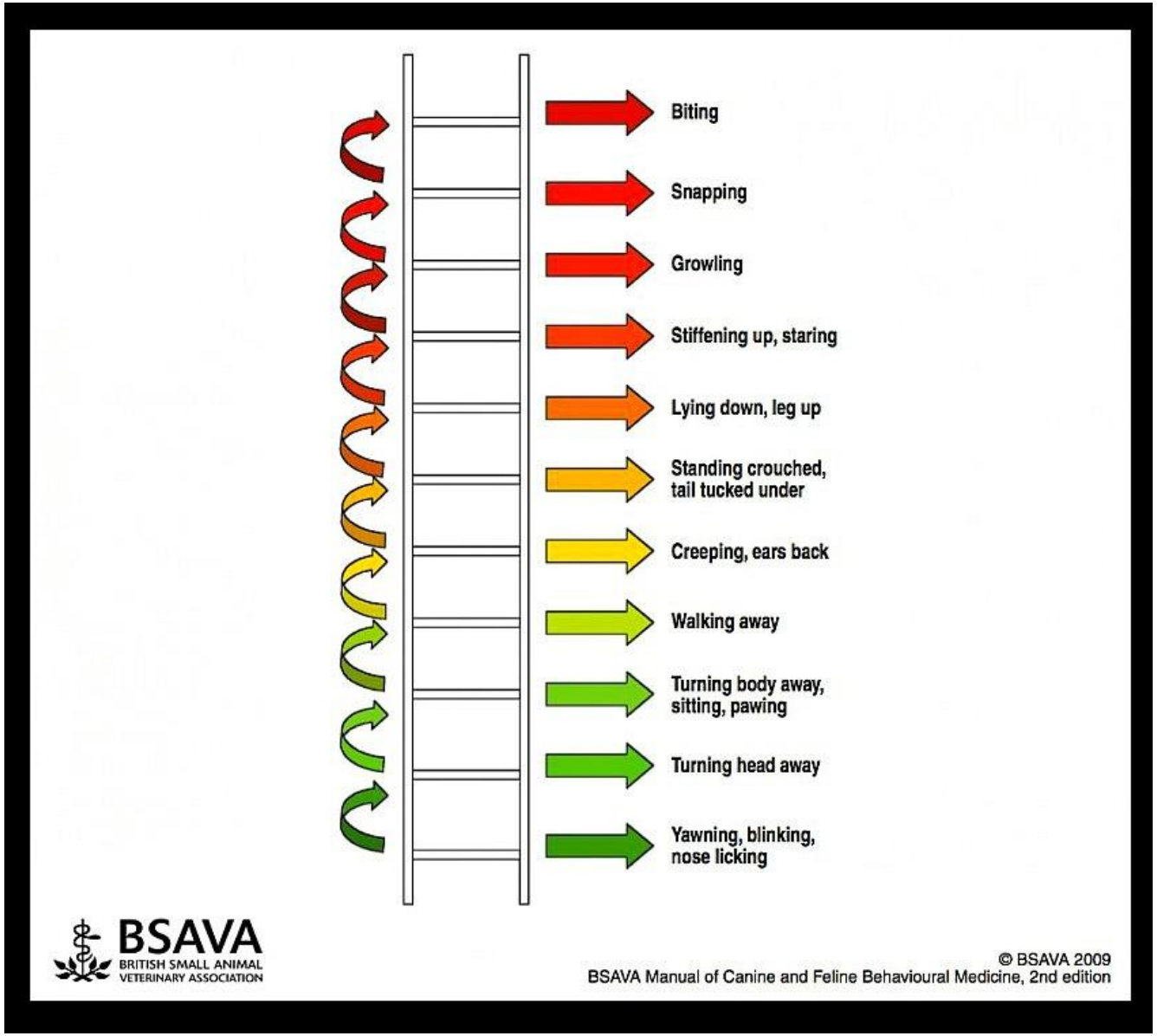
The four Fs

1. Fight
2. Flight
3. Freeze
4. Fiddle about
    I. Displacement
    II. Appeasement

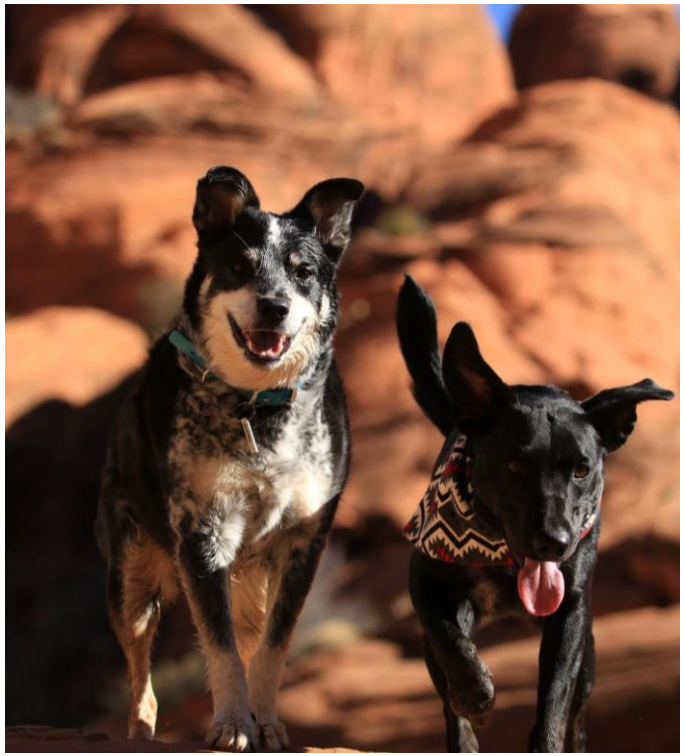
How aggression escalates

Ladder of Aggression

Kendel Shepherd (2004)



How to respond to a fearful dog?



- **Offer reassurance – you cannot reinforce fear**
- Reduce or remove the threat
- **Don’t punish** the dog
- Temporarily avoid things that trigger the dog’s fear – e.g. cross the road, yellow “anxious” jackets
- Recognise early signals of fear e.g. ear’s back, cowering, yawning
- Support from a behaviourist may be needed to address the fear longer term

Seek professional support

- Start with a veterinary opinion to account for any medical factors.
- Seek support from a behaviourist to work out a behaviour plan
  - IAABC (International Association of Animal Behaviour Consultants) - https://m.iaabc.org/consultant/
  - APBC (Association of Pet Behaviour Counsellors) – https://www.apbc.org.uk/find-an-apbc-member/
  - Animal Behaviour Kent – covering Kent, South London, Surrey, and East Sussex. https://animalbehaviourkent.co.uk/

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Thank you for listening

- Any Questions?
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