

Beyond Training: Key Considerations in Puppy Education

Helen Zulch BVSc(Hons)
 DipECAWBM(BM) CCAB FHEA MRCVS
 Head of Professional Development
 Dogs Trust



Our Expectations of Dogs

- Confident
 Social and non-social stimuli



Our Expectations of Dogs

- Confident
 Social and non-social stimuli
- Resilient
 Appropriate coping skills
- Adaptable
 Able to switch on and off
 Tolerate restrictions



Which is more about managing underlying emotions and motivations

than simply eliciting learnt responses for behaviours humans think are important.

It's about education, not just training...



How?



Overview

- What influences adult dog behaviour?
 Nature vs Nurture
- What do we know about pre-weaning influences?
 What does this mean for us?
- What do we know about post weaning influences?
 What does this mean practically?
- Taking a holistic approach to puppy behaviour problems
- Some final thoughts



A Word About the Literature

What has it told us?

- Sensitive periods
- Puppies benefit from certain early experiences
- Certain early experiences may predispose to later problems
- There may be a ceiling effect for benefit from some interventions (?)



How Reliable is This Information?

• Things to consider include

- Small sample sizes
- Experimental design e.g.
 - Esp v early studies
 - Questionnaires
 - Self selection
 - etc etc

• Needs critical appraisal



How Reliable is This Information?

• Need to be sure that when we base decisions on it we can trust it

Correlation is not causation

• Science moves on too ...

• Need to be aware that much of what we do has not been scientifically evaluated

Believing is not knowing



Remember ...

• Also, literature cites the means - we don't deal with populations, we deal with individuals!

- Timelines may be of more importance to some individuals than others



What do we Know About Behavioural Heritability?

- Belyaev fox experiment – 1950s
- Nervous pointers – Murphree et al 1969

More recently

- Working dog community – a range of traits (Svartberg 2006)
- Laboratory beagles (human interactions) Persson et al 2015 and 2016
- Compulsive disorders (Dodman et al 2010)
- Ongoing work investigating anxiety and impulsivity



But ... it's Complicated

- The lack of standardised definitions and measures for traits
 - Difficult to then compare things
 - Difficult to replicate

- A heritability measure pertains to one population in one environment

- We need more than just measures of heritability – correlations between validated measures and variations at the genome level

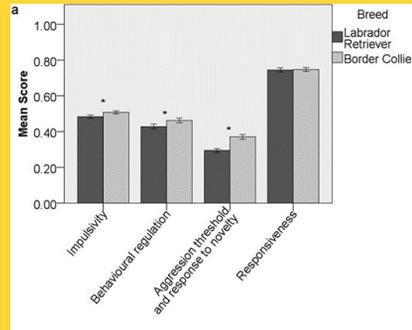


And What About Breed?

- Breed selection for specific traits
- Vs breed differences in broad behavioural traits? Svartberg 2006



DIAS Score for 2 Breeds (Fadel *et al* 2016)



- Normal population for labradors
 - 0.3 - 0.66 (mean +/- 2SDs)
- Normal population of collies
 - 0.31 - 0.76 (mean +/- 2 SDs)
- Note the overlap!
- Clinical significance?



The Risk of the Self Fulfilling Prophecy

- Well of course it does X – it's a Y



The Risk of the Self Fulfilling Prophecy

- Seksel 1999 – puts forward the possibility
- Clark *et al* 2013 – perceptions of dog breeds
- Appetite and Obesity in Labradors - Raffan *et al* 2016



So What Does This Mean?

- There is likely to be a genetic influence on a range of behaviours
- We should therefore be selecting the best possible temperament (behaviourally sound) individuals to breed from
- We need to be careful of stereotyping breeds as it may get in the way of doing the best for the dog
- We need a great deal more data regarding genes and behaviour & the links between genes and environment
 - Better behavioural assessment tools
 - Longitudinal studies



How Does Puppy Behaviour Develop?

- Sensitive period – 3-12 weeks
- Adolescence
- Social maturity
- Adulthood



Neurological Development

- Cerebral gyrrification by 2 weeks
- Brain growth stops by 16 wks
- EEG mature by 16-24 wks
- Ongoing myelination at 36 weeks



Sensory Inputs

Sense	Age
Warmth/touch	0
Olfaction	0
Hearing	21-49 (adult like)
Sight	10-14 (28 visual orientation)



Sensory Inputs

Sense	Age
Warmth/touch	0
Olfaction	0
Hearing	
Sight	10-14 (28 visual orientation)

Variation – genetic and environmental



So What Does This Mean for the Pre-Weaning Period

But First, When Should We Wean?

- Do we need to home 6-8 weeks?
 - Early studies recommended for relationship development
 - Number of correlational studies – difficult to interpret
 - Quality of evidence?
- Slabbert & Rasa 1993
Westgarth *et al* 2012



The Reality - Dogs

- Puppies homed 6-8 weeks

Whelping box / room until then?

Wolf pups leave den at 3 wks, weaned at 8-10 weeks

Feral puppies leave nest site by 3 weeks, suckled up to 11 weeks

- Vaccinated 8-10 & 12-14 weeks
(last vac)



Pre-Weaning Environment is Important

- MacMillan et al (2013) - Pet shop puppies

Multiple correlations

- Pirrone et al (2016) – Pet shop puppies

Aggressive behaviour towards familiar people

Examined confounding factors

More robust?

Genetics or environment?



Maternal Environment & Behaviour

- Maternal environment

- Appleby 2012
- Aggression towards and avoidance of unfamiliar people correlated with
 - Non-domestic maternal environments (also vet agr)

- Foyer et al (2013) & Foyer et al (2016)

- Maternal environment & maternal care
- Multiple correlations with behaviour as an adult

- Guardini et al (2016)

- Maternal care
- Isolation test
 - Exploration & vocalisations



Handling

Battaglia 2009



Gazzano 2008 Schoon 2011

- Gazzano

Handling / non-handling and domestic / non-domestic treatment groups

Interactions between environment and gentling

Different levels of effect by both

- Schoon - working dogs (mine detection dogs)

No effect of Early Neurological Stimulation (control group were handled)

Tested at 10 weeks (long term follow-up)

Ceiling effect?



What Can Other Species Teach Us?



Enrichment

Handling

Stressors

Google Images



Environmental Enrichment

- **Pigs**
 - Straw
 - Better memory on maze test
 - Straw & peat & branches
 - More appropriate interactions
 - Better coping with stress of weaning
 - As long as enrichment maintained?



Environmental Enrichment

- **Rats**
 - Improved maze learning performance
 - Improved coping (swim test)
- **Mice**
 - Reduced emotional reactivity
 - Anxiety



Handling

- **Rats**
 - Handling
 - Reduced anxiety

Interaction between handling & enrichment
Improved maze tests & open field test



Stressors

- **Rats**
 - Separation
 - Little vs lots – long term effects on stress response
 - Interaction between handling and maternal care



Do These Outcomes Have Value for Dogs?

- **Increased exploration / problem solving ability**
 - Increase control
 - Increase adaptability?
 - Increased resilience?
- **Improved coping**
- **Reduced reactivity**
 - Better coping?
 - Increased resilience?
- **Improved memory**
 - Increased resilience?
 - Better coping?



So What Should we be Doing?

- Carefully assessing our pre-weaning environment
 - Ensure sufficient enrichment
 - Ensure appropriate handling
 - Ensure we don't protect against all stress
- } Of course – we don't have specific data on this



And Now Post Weaning



Experiences in New Home

- Data from new owners about first taking out / first vaccinations / early experiences with dogs
- Not always clear cut
 - Jago 1994
 - Appleby 2002
 - Wormald 2016
- Serpell & Duffy 2016
- Wilsson et al 2016



Jago 1994

- Early illness and later fear and aggression
- Age at first vaccination
 - Earlier – fewer behaviour problems
- Age when first taken out
 - No effect
- Possible interpretations?



Appleby *et al* 2002

- Dogs showing avoidance and aggression compared with those not showed correlations with
 - Lack of early exposure to urban environments



Wormald 2016

- Dog exposure per week
- Restriction due to behaviour
- Aggressive behaviour as adult
- Taken out later = better?
 - Amount of time in contact, no difference



Wormald 2016

- 32% of dogs agr as adult restricted aro behaviour as puppies
 - Puppy classes = reduction in aggression risk
-
- Physical discipline = increased aggression risk



Some Working Dog Literature

- Serpell & Duffy 2016 (Guide dogs – 12 months)
 - Scared by unfamiliar dog } Fear
 - Scared by person }
 - Inexperienced puppy raiser – less successful training
- Wilsson 2016 (military working dogs)
 - More experienced / ambitious fosterers helps increase dog's "engagement"



What About "Classes"?



Seksel *et al* 1999

- 58 puppies - 5 groups
 - Socialization & Training
 - Socialization
 - Training
 - Feeding
 - Control
- Tested
 - response to novel stimuli
 - response to social stimuli
 - response to handling
 - response to commands



Seksel *et al*

- Only significant finding – response to commands
- Very interesting findings
 - Best predictor of response to novelty was initial interaction
- Sociability
 - Initial response best predictor
- Handling
 - Breed (gundogs vs utility)
 - Size as confound?



Sterry 2015

- Attending puppy classes, correlated with decreased
 - Agr to vets
 - Avoiding people outside home
 - Agr towards visitors
 - Agr towards and avoidance of dogs outside home
- Specific handling beneficial
 - Touch all over, handled by different people
 - Meeting people wearing different clothes
 - NOT handling on a table
- Earlier attendance better



Duxbury 2003

- Grouped for attendance at Humane Society classes, other classes, no classes
- Specific curriculum – more about owner education
- Showed better in home retention



Gazzano 2008

- Advice given in vet clinic at first vaccination
 - And control group
- Survey 1 year later
 - Those given advice significantly fewer problems
 - Biased owner reporting?
- Type of advice given



Some Unpublished Data

- Training success in dogs using Life Skills approach



So Where Does This Leave Us?

- We should be carefully managing early experiences
 - Particularly those with other dogs?
- We should be taking note of early responses and tailoring our advice to deal with these
- We should we be carefully considering what we are educating owners about?
 - Normal behaviour
 - Reading dogs
 - How learning happens



So it is Less About “Training”

- Education for life in life
 - Learning to be a dog in a human world
- Adaptability and resilience
- Tailoring advice to the individual



And What do We do When Puppies are Demonstrating Behaviour Problems?



And What do We do When Puppies are Demonstrating Behaviour Problems?

- Remember – a problem is in the eye of the owner
- Some behaviours will need training advice alone
- Some behaviours will need a consideration of additional factors

they need more than training advice



How do we Decide?

- Not a full behaviour consultation, but quickly consider...
- Medical component?
- Motivation for the behaviour?
- Emotion behind the behaviour?
- Ask a few key questions to determine these
- THEN give advice
 - Which may include referral to a vet and / or for a behaviour consultation



Example

- Owner concern: puppy biting
- Differentials?
 - General mouthiness (largely just playful / exploratory)
 - Mouthiness that may be related to specific triggers (for example when denied access to something or when overaroused)
 - Biting in the context of defending an item
 - Constant chewing of things including people (pain in his mouth/GI tract?)



Example

- Rule in / rule out
 - Is there a medical component (e.g. painful mouth)?
 - What is the motivation? } Need to ask questions about contexts, sequences, body language etc
 - What is the emotion? }



- Motivation
 - Distance increasing
 - Distance decreasing
 - Conflicted / displacement response
- Emotions
 - SEEKING (engagement, investigation, attention, object play)
 - Fear / anxiety
 - Frustration
 - Mixed?
- Only once you have narrowed it down can you advise
 - And even if the advice is largely training, still need to consider the wider implications
 - Are the pup's needs being met? Does the emotion manifest in other ways? etc



And ...

- Even when advising owners on teaching new behaviours think holistically
- What are all the things this pup is learning on any given day in any given interaction
- What may be going on that may be influencing this individual pup's responses and learning
- Are we optimising this individual pup's opportunity to grow into the best dog he can be?



Remember

- Take every opportunity to educate owners about
 - Body language
 - Normal dog behaviour
 - How dogs learn



General Summary

- We need to know more about the heritability of behaviour
 - Interactions between genetics and environment
- We have windows of opportunity to influence behaviour
 - Individual specific?
- We have some knowledge of what matters
 - But little specific detail
 - Especially relating to mechanisms, causations & timings
- There are gaps in our knowledge
 - Specific exercises for shaping behaviour
 - How much and when?



We Need to Remember This

And approach every puppy with an educated but questioning mind.

Never forget

First do no harm!



Thank You & Questions

