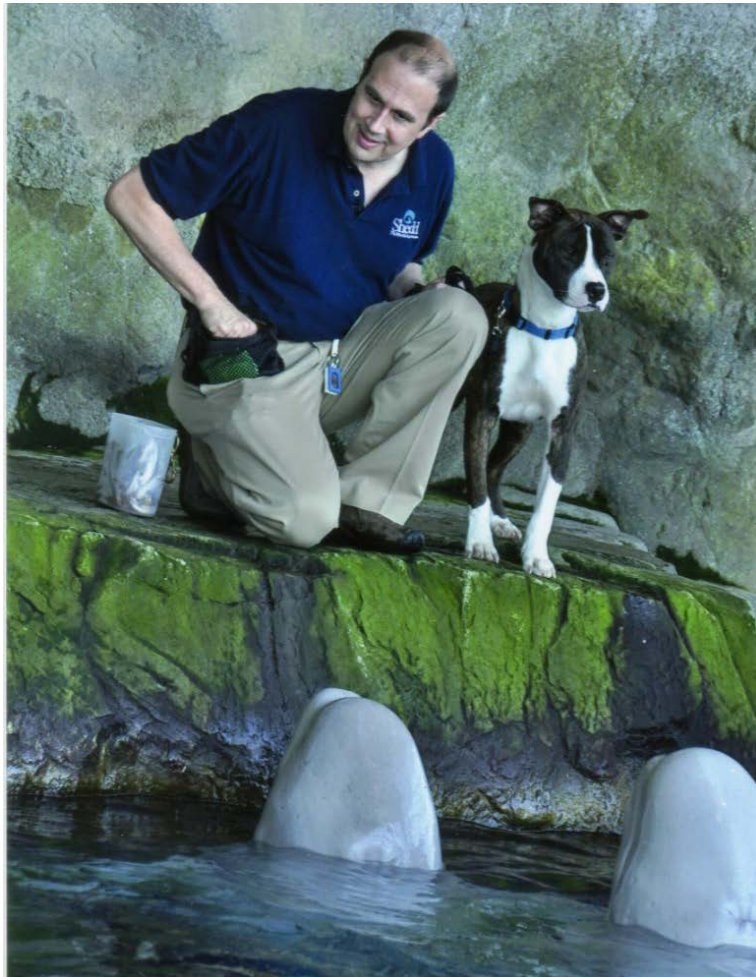


Taking Your Skills to the Next Level:



A Seminar with Ken Ramirez presented by PuppyWorks

Join Ken Ramirez for a seminar that will examine a variety of advanced training tools. He will begin with a look at reinforcement strategies and explore how to develop and use non-food reinforcers in your training program. This will be followed with a discussion of Complex Tools, a random variety of seldom discussed training tools. On day 2 Ken will share his favorite aggression reduction techniques and review other popular aggression treatment strategies. To wrap up the weekend he will talk about working with multiple animals at one time and share a case study in which he had to introduce 3 very aggressive dogs to each other.

Personal Philosophy

Goals of Seminar

- Why training matters! Personal philosophy
- Discuss science of operant conditioning
- Share basic practical applications
- Developing a Shaping Plan

Define Training

- Training = Teaching

Cornerstones of Animal Care

- Health Care – VETERINARY PROGRAM
- Nutrition – FOOD & VITAMINS
- Environment – INCLUDES SOCIAL STRUCTURE
- Behavior Management – TRAINING & ENRICHMENT

Primary Reasons for Training

- Physical Exercise
- Mental Stimulation
- Cooperative Behavior
- Animal Welfare – These things all directly benefit the individual animal and assure that animal welfare is the top priority

Secondary Reasons for Training

- Education
- Research
- Conservation
- Entertainment
- Work Animals
- Sport
- The list goes on . . .

Philosophical Foundation

- Laws of learning apply to all animals
- I am first and foremost a practitioner – but I also believe in the importance of the science
- Training is not a luxury – it is a key component to good animal care

REINFORCEMENT STRATEGIES

Most experienced trainers recognize the value of finding reinforcers other than food or treats. However, not every trainer knows how to establish new reinforcers nor how to evaluate their effectiveness. Ken will share his perspectives and experience with non-food reinforcers and explain his approach to implementing them into a good training program.

Introduction

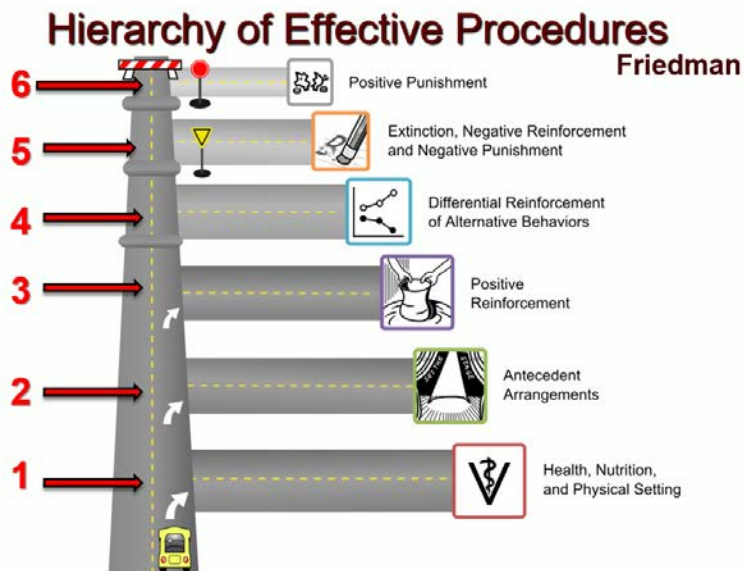
- What do I mean by a non-food reinforcers?
- Why are they important?
- Notes about my unique perspective
- Secondary Reinforcers
- Variable schedules of reinforcement
- Evaluating reinforcers

Non-Food Reinforcers

- Conditioned or learned reinforcers
 - Clapping
 - Toys
 - Tactile
 - Play
- What about natural reinforcers?
 - No distinction at start (beginners)
 - Important distinctions later (experience)

Positive Reinforcement Training

- What does that mean?
- Are aversives never present?
- If a punisher is used, are you no longer a positive reinforcement trainer?
- Hierarchy of effective procedures (Friedman)



- Positive reinforcement trainer only gets to punishment when there are no other options.
- Trainers move down the ladder because their use of reinforcers is not as effective as it could be.
- Goal: Systematic approach to reinforcement alternatives so they're not sub-standard choices.

Definitions

- Primary reinforcer – Inherently reinforcing, satisfies a biological need
- Secondary reinforcer – acquires its reinforcing value through association with primary reinforcers

Types of Conditioned Reinforcers

- Event marker – Bridging stimulus (clicker, whistle, “good”, etc.)
- Keep going signal, intermediate bridge, tertiary reinforcer
- Secondary reinforcer – a learned reinforcer used in place of primary reinforcement from time to time
- Note: Technically a conditioned reinforcer and a secondary reinforcer are synonymous. Today, when I refer to a secondary I am referring to reinforcement substitutes

My Unique Perspective

- Began as a dog trainer – I knew nothing – learned traditional methods including old beliefs about reinforcement
- Exotic animal trainer for 30+ years – different approach to “learned” reinforcers – originally assumed it to be difference between domestic and exotic animals
- Returned to dog world over 15 years ago – recognized that differences were minimal – only the context was different

Secondary Reinforcers – Reinforcement Substitutes

- Train them like a behavior
- Success depends on four main factors
 - Reinforcement history
 - Relationship
 - Implementation
 - Experience & observational skill (evaluation)
- At times misused – making assumptions about what an animal likes

Training Step-by-Step

- Pick stimuli that will be useful in training
 - Something easily available
 - Can be something the animal already seems to “enjoy”
 - May also be novel or insignificant stimuli
- Train each new “future reinforcer” as a behavior
- Present new stimuli, follow with primary (no click needed)
 - No marker signal used
 - Continue until it is clear animal accepts new stimuli
- Easy well-established behavior, click, new 2^{ndary}, primary

- Behavior, click, new 2^{ndary} only (max 3x per session)
- Harder well-established behavior, click, new 2^{ndary}, primary
- Hard behavior, click, new 2^{ndary} only (max 3x per session)
- Increase use in session gradually (never allow % of 2^{ndary} to outweigh primary – 20/80 max)
- First steps toward “variable schedule” of reinforcement

Rules for Beginners

- Never use 2^{ndary} after two consecutive behaviors
- Avoid using same 2^{ndary} twice in succession (if you have multiple options)
- Always ask for behavior followed by primary more often than 2^{ndary}
- Continue to use 2^{ndary} as a behavior more often than as a reinforcer

Notes on Premack

- Premack Principle – high probability behavior can be used to reinforce low probability behavior
- My translation – an easy behavior can reinforce hard behavior
- In essence that’s what we are creating when we train secondary reinforcers

Advanced Reinforcement Notes

- Can a secondary reinforcer become a primary reinforcer?
- How do you choose an appropriate reinforcer?
 - Individual
 - Time of day
 - Satiation level
 - Task difficulty
 - Health
 - Many other factors
- Experience needed to evaluate well
- Never take reinforcement for granted

Reinforcement: Context Specific

- Reinforcer value change based on context.
- High value at home may be nominal value in the field.
- Understanding the relative value of your reinforcers will help you improve motivation!
- Regularly rank and evaluate all available reinforcers.
- New Book: Fenzi & Jones, 2014. *Dog Sports Skills, Book 2: Motivation.*

Schedules of Reinforcement

- Looking at it simply
 - Continuous (consistent)
 - Intermittent (variable)
- Advantages to the use of variable schedules of reinforcement
 - Potential to strengthen behavior (misconception)
 - Work long duration without treats
- Disadvantages to using variable schedules
 - Can lead to frustration
 - Not effective unless systematically introduced

Implementing a Variable Schedule

- Every program implements it differently – 4 basic steps I recommend:
 - STEP 1** – Each new trainer (and animal) begins with a continuous and fixed schedule of reinforcement. Variety is still provided through:
 - Behavior selection not fixed
 - Multiple trainers with each animal
 - Duration of behaviors vary
 - Type & quantity of primary reinforcement varies
 - STEP 2** – Condition and establish secondary reinforcers (refer to previous discussion on this topic).
 - STEP 3** – Approximate use of secondaries so that they are not always followed by primary. Steps:
 - Use for simple, easy behaviors first
 - Incorporate with more complex behaviors
 - Eventually use while training new behaviors
 - STEP 4** – The use of other well-established behaviors (those not previously conditioned as secondaries) as a reinforcer.
 - How long does the process take?
 - Experienced trainer and animal
 - Naïve trainer and animal
 - Variety is the goal!
 - Reinforcement variety if implemented systematically is not technically a variable schedule – it is simply reinforcement variety
 - Examples of successes and failures
 - Search & Rescue Dogs; Agility Dogs; Narcotic & Explosive Detection Dogs
 - A brief look at behavior chains
 - Systematic introduction essential to success – approximations like any other training goal whether you use:
 - Reinforcement substitutes
 - Behavioral clusters (2, 3, 4, etc.)
 - Trained behavior chain

A Note about Frustration

- My preference: train without frustration
- However, real work environments often filled with unavoidable frustrations
 - Taking larger approximations or use of a less systematic approach can build small frustrations into training system
 - This builds a tolerance for frustration
 - Advantage of true variable schedule
 - Requires careful planning and experienced eye to avoid too high a level of frustration

Back to Secondary Reinforcers

- Systematic introduction of variety = secondary reinforcement
- An established relationship is critical
- Experience at reading your animal = evaluation of reinforcers

Notes about “Natural Drives”

- How do natural reinforcers fit into this?
 - Play

- Prey
- Social interaction
- Aren't they primary reinforcers
 - The "drives" are primary
 - But the object of the drive must be learned (or tested)
- Can be either trained or evaluated quickly

Natural Reinforcer Summary

- Toys – Discover and understand what makes each toy reinforcing – constantly maintain the value
- Activities – Regularly evaluate whether the activity is reinforcing and whether access is enough
- Tactile – Understand how and where to provide touch and make sure it's working
- Social – There is value in your relationship, but be careful not to over-estimate it's value
- Natural reinforcers MAY be primary, but to make them effective:
 - Understand what aspect of the reinforcer is truly motivating
 - Don't confuse the object or delivery mechanism that allows the natural reinforcer to work with the actual reinforcer.
 - Make sure to always pair that object or delivery mechanism with the primary reinforce, regularly.

How to Read Your Animal

- Testing for interest in secondaries (refrigerator test)
- Immediacy of response
- Animal focus
- Maintenance of behavior
 - Animal should respond well 3rd – 6th – 10th request
 - Eagerness should remain high
 - Behavioral reliability should increase

Environmental Reinforcers

- When using reinforcers, we must remember that the environment presents reinforcers to our animals daily
- We call them distractions
- But the smart trainer figures out ways to use these reinforcers

Objective Evaluations

- Data driven not subjective
- External evaluator (or video tape)
- Evaluation form helpful tool
- Different types of assessments
 - Effectiveness of single reinforcer
 - Effectiveness of reinforcement strategy
 - Comparison over time
 - Impact of new variables

Reinforcement Evaluation Score

Date: _____ Trainer: _____
 Evaluator: _____ Time: _____ Animal: _____
 Other Info: _____ Location: _____

Behavior Attempted	Cue Response 3-Immediate 2-Slight Delay 1-Long Delay 0-No response	Behavior 3-Perfect 2-Attempt 1-Wrong 0-No Attempt	Reinforcer Describe what is offered & quantity	Focus 3-Excellent 2-Distracted 1-Left briefly 0-Gone	Score Add score of cue, behavior & focus

Interpreting Evaluations

- What if you are using an intermittent schedule & your animal seems fine with it?
 - Are you sure it is a variable schedule?
 - Are you seeing frustration?
 - If not – it is working because:
 - Training has become reinforcing and without trying on purpose you have created a consistent schedule of reinforcement (with variety)
 - Animal enjoys the game

The Game Analogy

- If game is fun, you may accept frustration:
 - Kids and Video Games
 - Sports
- KR and Scrabble – love the game
 - On computer played easy – too easy
 - Expert was too hard
 - We must approximate to complexity (tic tac toe)
- We must monitor our animals for that type of frustration – get away with it with dogs, but not large exotic animals!

Expectations

- Animals will develop expectations about reinforcement
- Learned based on how and when trained
- Often based on value to animal vs. difficulty of behavior
- Expectations can be changed
 - Must be systematic in reshaping
 - Easiest if planned from start
 - Variable use of reinforcement reduces specific expectations
- If you want reinforcement variety – you must teach the animal to accept that.

Avoiding Reinforcement Pitfalls

- Don't take any reinforcer for granted
- Constantly maintain strength of 2ndary reinforcers (condition/recharge)
- Evaluate reinforcer effectiveness constantly

- Variety in reinforcement helps as long as expectations are met
- Control access to reinforcers
- Always look at behavior – key to everything

Summary – Conclusion

- Non-food reinforcers are valuable to every trainer
- Maintenance & vigilance are keys to success
- Relationships are a big part of effectiveness
- Once you understand reinforcers – the difference between primary and secondary reinforcers becomes less critical

Simplifying Complex Training Tools

Course Description

The e-lists about clicker training are riddled with long discussions of particular operant methods that may or may not belong in your toolkit. Examples include the keep-going signal, the no reward marker (NRM), differential reinforcement of incompatible or other behavior (DRI/DRO), the least reinforcing stimulus (LRS), jackpots, timeouts, and a myriad of others. Many of these tools are useful only in very specific circumstances such as highly advanced stimulus-control projects. Casual or incorrect use can be confusing to the learner or, worse, punishing. Ken Ramirez, highly experienced in the teaching of clicker trainers, takes away the mystery and confusion.

Introduction

- What are complex training tools?
- The science behind the concepts
- Practical applications of the tools
- Should I use them?
- Understanding the “tool box” analogy

Exploring Advanced Concepts

- Concepts that require experience to apply
- All trainers define differently
- Training that ventures past the premise:
 - Reinforce desirable behavior
 - Ignore unwanted behavior
- Easy as 1-2-3 or A-B-C
- Cautions regarding advanced concepts
 - Trainer as teacher
 - Understanding the theory

Science vs. Practical Applications

- Getting Past Semantics
- Laboratory Tests & Theory
 - Testing
 - Replication
 - Proof
- Real world trainers adapt concepts
 - Adapt to animal, mix techniques
 - Desired behavior is the goal

Tools to be Discussed

- KGS – Keep Going Signal
- Jackpots
- NRM – No Reinforcement Markers

- TO – Time Outs
- LRS – Least Reinforcing Scenario
- DRA – Redirection strategies
- Recalls
- Behavior Chains
- ESS – End of Session signals

Keep Going Signal (KGS)

- Useful, Non-existent, Controversial (Ramirez, 2009)
- A conditioned reinforcer
- Goes by many names:
 - KGS (Pryor, 1999; Bailey, 2007)
 - Intermediate Bridge (Cover, 1991; 2002)
 - Tertiary Reinforcer (Bostow & Tompkins, 1999; Pryor, 2009)
- Science of 2° and 3° reinforcers well documented
- KGS not in science, but well documented practical application

KGS Applied

- Guide Dogs (Landeman, 1971)
- Military Dogs (Bailey, 2007)
- Circus Sea Lion (Kelley, 1946)
- Husbandry practices (Ramirez, 2009)

Training a KGS

- Actively condition neutral stimuli to be reinforcing
 - Verbal praise
 - Clapping
 - Rubbing or petting
- Passively condition during other training
 - Use desired KGS just prior to click
 - Gradually increase time between KGS and click
 - KGS always leads to eventual reinforcer
 - Never used to actually mark behavior

KGS Challenges & Science

- Cue – if animal needs KGS to continue
 - Conditioned Reinforcer – if it strengthens what preceded it & paired with strong performance
 - Delta – ongoing signal makes behavior continue, thus KGS is reinforcing, but cessation of KGS serves as a warning, and thus a punisher (delta signal).
 - Crutch – used so often by trainer that animal becomes dependant on it, despite its original lack of purpose or meaning
 - Superstitious Behavior – it reinforces the trainer more than the animal
 - My opinion – not needed, does work, often established without trying
-

Jackpots

- Definition – Unexpected large or high value reinforce (Ramirez, 2009)
- Timely delivery imperative for effective results
- Immediacy is critical, while behavior is happening
- Varied applications; often used incorrectly – seldom harmful, but not always accomplishing desired result

Challenges of Jackpot

- Drawn out delivery – reinforces other behaviors
- Sloppy delivery – potentially aversive
- Too novel – can be aversive
- Too frequent – no longer as effective, creates expectation for large reinforcement
- Misuses of these types create belief by some that they are not real or that their effectiveness is overstated.

Understanding Jackpots

- Attempts to study Jackpots proved challenging (Rosales-Ruiz, Muir, 2009)
 - Project to study jackpot effectiveness at UNT
 - Results were impacted by the way it was used that did not replicate some practical aspects of those who use jackpots
 - The study was redesigned to make delivery of the reinforcers (and thus jackpots) cleaner and more direct, but that resulted in confusing the dog

Practical Uses of Jackpots

- Jackpots in a casino: we know they work. A few key aspects:
 - They are at times large (or of high value)
 - But the amount/quantity varies
 - The timing is unpredictable
 - And they are delivered sparingly
- Marker signal counters effect – creates variety, thus has beneficial impact, but not what trainer intended (Pryor, 2007) (1971 shaping study)

Jackpot Final Thoughts

- Jackpots not specifically in literature – practical development
 - High value or novel reinforcement can increase learning
 - Proven useful tool – but only if used with care
-

No Reinforcement Markers (NRM)

- Marks the moment animal makes a wrong or incorrect move
- Opposite of a clicker
- Conditioned punisher (Chance, 1999)
- Few skilled trainers can use them well

NRM Varied Uses & Applications

- NRM
 - “No” or “Wrong”
 - Marks incorrect response
 - How about a passive “Oops”?
 - Just info for the animal
 - Hard to be mean when you say, “oops”
 - “My animal responds well to it”
- Delta (Ramirez, 1999)
 - “Last Chance”
 - Warning prior to application of an aversive stimulus
 - Effective, but can become the new cue for the behavior
- What about a “Stop” cue?
 - Growing question among R+ trainers
 - If a trained cue means stop or freeze, and that action is reinforced, you are then using a form of redirection – not an NRM.
 - Redirection a key tool for dealing with problem behavior

NRM Final Thoughts

- Never used one, don’t plan to
 - Serves as a punisher
 - Can assist in shaping behavior, but can also create frustration
 - Only skilled and disciplined trainers can use well
-

Time Outs

- Definition – Removal of opportunity for reinforcement (Kazdin, 1994)
- Standard application:
 - When animal exhibits inappropriate behavior, trainer leaves training area or turns back on animal making reinforcers unavailable. Length of time out not defined and varies greatly from trainer to trainer.
 - Or, animal removed from training area
- Scientifically speaking it is a negative punisher

TO Challenges with Use

- It is a punisher and has the same baggage associated with most punishers
- Often not timed properly, which punishes wrong behavior
- Does not assist animal in knowing what behavior is desired
- Only effective if animal is reinforced by your presence or your reinforcers
- Overused by many trainers

TO Science & Opinion

- Properly used, it will punish behavior
- Scientific literature plentiful regarding time outs (Kazdin, 1994)
- I would avoid them in all but the most specific situations – such as animal giving you a timeout.

- Ending a session to take a break or manage frustration is not a technical time out; you are making a management decision not applying a training technique.

LRS

- Least Reinforcing Scenario/Stimulus (Scarpuzzi, 1991)
 - Challenging concept for dog trainers because they often have not heard of it
 - Developed in the zoological training community as a way to operationalize “ignoring unwanted behavior”.
 - Some people are not fans of the use of the term “least reinforcing scenario”
 - It is a practical tool that most people already use to some degree
- Designed as most positive approach to incorrect responses
- 3-5 second neutral response
- Goals:
 - Step towards extinction
 - Effort to provide the least reinforcing consequences without causing frustration
 - Giving animal immediate opportunity to earn reinforcement afterwards
- I have used tool for most of my career

LRS Practical Applications

- Proper Use
 - Brief and immediate
 - Looking for calm response (acceptance)
 - Immediate, easy opportunity for new reinforcement follows
 - Not truly neutral, but an effort to provide least reinforcing option and redirect to a more desirable response
- Challenges
 - Not a fixed posture
 - Not related to eye contact
 - Don't be tempted to extend length
 - Don't turn it into a timeout
 - Refrain from emotional response
- Why it works
 - Due to positive history
 - Rhythm of reinforcement is interrupted
 - Opportunity to continue and earn more reinforcement is available – keeps animal in the game (redirection)
 - Behavioral momentum used to encourage correct response

LRS Practical Applications

- The goal of this procedure, the intention, is to increase calm response or return of focus to trainer



- Those who do not use a marker signal have one less tool to make LRS effective
- Having animal return to a default behavior, (stationing), increases LRS effectiveness

LRS Final Thoughts

- Proven practically and scientifically
 - Most positive reinforcement trainers use it naturally
 - Designed as structured way to ignore un- wanted behavior (to teach young trainers)
 - Often confused with a time out or an NRM, but has been proven that animal's perception and reaction is very different!
-

DRA - Redirection Techniques

- Alternate response training
- Differential Reinforcement of _____ (Alternative responses)
- DRI (Incompatible behavior)
- DRO (Other behavior)
- DRL (Lower intensity/rate behavior)

Alternate Response Training

- Differential reinforcement is at heart of most training (Kazdin, 1994; Chance, 1999)
- Realistically part of every shaping decision
- DRA strategies developed to assist in focusing problem solving
- Gives animal alternative to undesired behavior
- Gives trainer something to reinforce (while combined with extinction)

DRI

- Train incompatible behavior in place of undesired behavior
- Active form of alternative response training (Ramirez, 1999)
- Excellent technique for dealing with aggression
- Useful for many types of problem behavior

DRO

- Reinforce any behavior other than unwanted behavior
- Shape absence of behavior (Pryor, 1999)
- Passive form of alternative response training (Ramirez, 1999)
- Useful for resolving unwanted behavior taking place outside of a session

DRL

- Reinforce desired change in intensity of behavior
- First used with self-injurious behavior with children
- Technique employed in *Click to Calm* (Parsons, 2006)
- Shaping away from unwanted behavior
- Requires greater skill than other DRA; still reinforcing unwanted behavior

DRA Final Thoughts

- Scientifically valid technique (Kazdin, 1994; Chance, 1999)

- Don't let acronyms and initials scare you away
 - Every trainer uses differential reinforcement regularly
 - Focused types of DRA assist in problem solving
 - One of three most useful and essential tools in our discussion today
-

Recall Signals

- A signal or cue that brings the animal back to the trainer
- Trained to manage an animal more effectively; used to increase either animal or trainer safety
- A behavior not a scientific training tool
- Included in lecture because of frequency of misuse

Effective Recalls

- When cue sounds, animal should stop everything and come immediately back to trainer (or pre-determined location).
- Most common uses:
 - Dog safety when off leash or lost
 - Trainer safety with dangerous animals in free contact
 - Falconry; Open ocean work with dolphins
- High value or high rate of reinforcement a key

Recall Problems & Challenges

- Not reinforced often or well, thus not reliable
- Used when animal doing something incorrectly, thus aversive
- Followed by end of session or change in activity; can be perceived as aversive
- When used in tough situations, inexperienced trainer can have difficulty in determining proper response.

Recall Final Thoughts

- Excellent behavior, useful in multiple situations
 - Always be aware of reinforcement and animal perception
 - Careful to not misuse
-

Chained Behaviors

- Two types of chains:
 - Technical
 - Common
- Technical: Advanced concept in which completion of one behavior cues the start of the next, and each subsequent behavior reinforces the previous behavior.
- Common Chains
 - Many trainers refer to any sequence of behaviors that does not use primary reinforcement to maintain the sequence as a chain.

- Not defined in the scientific literature, but commonly referenced in popular literature.
- Scientists tend to use the term “sequence” for this concept

Building a Chain

- Forward-chaining – Can build a sequence
 - Behavior is not serving as a reinforcer
 - Could be a variable schedule
 - Can test animals tolerance
- Back-chaining – Builds a stronger chain:
 - Because animal moving toward strength
 - Subsequent behavior does serve as reinforcer as it is conditioned in the training process

Using Conditioned Reinforcers

- Training conditioned reinforcers regularly prepares animals to accept new reinforcers
- Behaviors can become reinforcers
- Makes a chain stronger
- Most behaviors are small chains
- Complex chains are simply building duration or length through approximations

Most Behaviors: Simple Chains

- Example: Retrieve
 - Go to object
 - Pick up object
 - Bring it to you
 - Release it to your hand
- Depending on how finely you slice behavior, most behaviors are small chains

Fixing a Broken Chain

- Prevent it from the start
 - Maintain individual behaviors
 - Reinforce different behaviors within the chain
- Biggest breakdown – animal eager to get to end, takes a short cut
 - Interrupt the chain when error occurs
 - Redirect animal to correct behavior
 - Reinforce when completed
 - Doing it right the first time becomes the quickest way to reinforcement

Final Thoughts on Chains

- When chains are trained properly they use reinforcement variety (conditioned reinforcers) not a true variable schedule
 - Powerful tool that reduces reliance on primary reinforcers and treats
 - Requires advanced skills to maintain solid behavior chains
 - Could be a full course on its own!
-

End of Session Signals

- Signal indicating training session has ended (Ramirez, 1999)
- Great debate about its use (even among very skilled trainers)
 - Some swear it is an essential and helpful tool
 - Others claim it to be unnecessary and ultimately harmful
- Why the disparity?

Anti End of Session

- Cues removal of reinforcement; timeout; thus aversive
- For dangerous animals working in free contact, cueing end of session can be dangerous
- For social competitive animals, end of session cues animals they can interact with each other; for low animals in hierarchy can pair aggression from dominant animals with cue from trainer.

Pro End of Session

- Let's animal know that they can do their own thing
- Reduces anxiousness from animals eager to please
- Personally seen it used well in several situations
 - Service Dogs – “at ease” no need to keep focus, we’ll return to working later
 - Show Sea Lions – “take a break”
- Many trainers use an end of session signal

Science & Opinion

- End of Session Signals are not really part of scientific literature
 - Use or lack of use does not make or break a training program
 - Decision should be based on animal's response – usually easily observed
 - Animals will eventually know when session is over, but does not need to be specifically cued
 - Not indicative of good or bad training
-

Tool Box Summary

- All tools exist for a reason
- Many tools are very specialized and seldom needed
- Don't use a tool just because you have it
- Successful use of complex tools depends on understanding them completely

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Aggression Reduction Strategies

This class will explore the causes of aggression and techniques for reducing it. This will be a broad overview of the concept and will assist in directing attendees to appropriate resources for solving aggression problems.

A Natural Phenomenon

- Aggression is part of an animal's natural repertoire
- Aggression can help an animal cope with:
 - Fear
 - Nervousness
 - Dominance
 - Sexual activity
 - Protection of young
 - Illness
- Aggression usually falls into three categories:
 - Reactive
 - Innate
 - Learned

Go Back to Basics

- Remain calm – emotion clouds good judgment
- Looking at it from operant perspective
 - Success is reinforcing
 - Failure is aversive
- Recognition of these basics can prevent an aggressive situation from escalating

General Rules about Aggression

- Animals that have the opportunity to aggress, will do so more often. (*Johnson, 1972*)
- Use of punishment or aversive control will cause aggression. (*Kazdin, 1984*)
- Aggression can be shaped by accidental reinforcement – also deliberately. (*Skinner, 1963*)
- Animals may initially respond more favorably to a consistent environment, condition changes slowly and positively. (*Turner, 1999*)
- An animal that is food deprived will aggress more readily. (*Staddon, 1977*)
- Most all animals have some degree of aggressive repertoire. (*Lorenz*)

Turner's rules on reducing aggression

- Understand scenarios
- Recognize precursors
- Use of DRO & DRI
- Stop it before it starts
- Keep records

Dangerous situations (a few examples)

- Poor separations

- Numerous incorrect responses to S^Ds
- Feeding only one animal in a group
- Use of aversive control (punishment)
- A change in reinforcement contingencies
- Disruption of sexual activity (season)
- Pushing an animal too far or too long
- Every species and situation is different

Precursors

- Behavioral response announcing that aggression is imminent
- Learn precursors for your species
- Know precursors for individuals
- Have a list in advance of being in a situation
- Don't suppress precursors or you'll have "flash aggression"

Redirection

- Best option for dealing with aggression
- DRA – Differential Reinforcement of Alternative responses
 - DRI – Differential Reinforcement of Incompatible Behavior
 - DRO – Differential Reinforcement of Other Behavior
 - DRL – Differential Reinforcement of Lower intensity behavior

Intervention

- Trainer directed aggression
 - Prevention a key
 - Intervention a must
 - Redirection best
- Animal directed aggression
 - Choices not as clear
 - Healthy social behavior & dominance

Closing Thoughts

- This is only one approach to dealing with aggression
- Aggression is serious, make sure you know what you are doing
- Get more experienced help if you need it

Aggression Treatment and Context

Course Description

Dealing with reactive dogs, handling aggression, and working through problems with highly sensitive animals can be a challenge for even the very best clicker trainers. Over the years, many creative trainers have presented various alternatives to handling aggression and reactivity problems. The explosion in the number of approaches, combined with an array of new nomenclature, is often confusing for trainers seeking to choose an approach for themselves or to recommend to others. Today, some of the most discussed approaches include, but are not limited to, Counter Conditioning, Constructional Aggression Treatment (CAT), Click to Calm, Behavioral Adjustment Training (BAT), the “Look at That” game (LAT), and a host of others. How do these varied treatment approaches compare? What common or distinct scientific principles are being employed? Are certain plans better for certain situations than others? This Session is designed to help you sort out the choices. It will explore the science underlying the approaches, look at their known efficacy, and help you see what these approaches share, as well as their differences, so that you can make informed choices. Attendees at this Session will also learn to ask the right questions and listen/look for thoughtful answers to be well-prepared when the next approach makes its way forward.

Overview

- Goals and desired outcomes of class
- Nomenclature, science, and practical application
- My approach to aggression reduction
- A review of popular techniques
- An objective comparison/evaluation

Goals

- Share my approach to aggression reduction
- Most practical procedures worth keeping in the tool box
- Aid in understanding why each works
- Better enable trainers to determine tool right for them
- Share resources for learning more and improving skill at application
- This course is NOT the answer or explanation for specific problem solving it is meant as a starting point for determining the tools you might choose to use

Nomenclature

- First stumbling block is often terminology
- Many practical trainers don't have scientific background
- Teachers searching for best way to explain a concept use new terms and words to connect to their audience
- In field, we combine techniques creating hybrid concepts that don't have a scientific name
- When we talk about an idea, we get lost in the nomenclature
- I will share my perspective, my understanding, and direct you to resources

What is Aggression?

- Even trying to define the topic creates concerns for what we call it
- Today, I am referring to any type of unwanted agonistic behavior

Reactivity	Biting
Resource guarding	Barking
Possessive behavior	Growling
Protective behavior	Lunging
- Diagnosis, Causes & Triggers are important in dealing with aggression, however those are dealt with in more detail in the individual procedures we will discuss and beyond the scope of this short seminar.

Sorting through the Confusion

- At first glance, scientific terms, practical procedures, and hybridized names are all given equal place in the list of options – this is where the confusion begins

CAT	DRI	Habituation
Operant Conditioning	BAT	DRO
Click to Calm	Flooding	Counter-conditioning
Classical Conditioning	DRL	U-Turn
Abandonment training	Look at That	Negative reinforcement
Train incompatible behavior	Positive punishment	Shape behavior absence
Correction	DRA	Negative punishment
- This partial list, gives the impression that all are equal or similar – but they are not
- Three separate types of terms in that list
 - Broad scientific approaches to learning
 - Scientific principles
 - Practical procedures, strategies, or descriptions
- My attempt to better organize the terms is in the chart below (explained in more detail throughout seminar). The chart is not a comprehensive list of aggression treatments or terms, just the ones that will be discussed in this seminar

Science of Learning	Operant Conditioning	Classical Conditioning
Proven & Tested Scientific Principles	Reinforcement Punishment Redirection (DRI, DRO, DRL)	Habituation Counter conditioning Flooding
Practical Applications & Strategies	CAT Click to Clam BAT Abandonment Training	Look at That
	Watch Me U-Turn Recall	

Broad Learning Approaches

- Classical Conditioning
 - Pavlovian Conditioning
 - Respondent Conditioning
- Operant Conditioning
 - Skinnerian Conditioning
 - Instrumental Conditioning
- All animals learn both ways all the time – we may consciously choose to use one, but animals are still learning in both manners. Thus the observer of our training may choose to focus on a different aspect of what they see our animal doing.

Scientific Principles

- Concepts tested and named in operant and classical labs (Chance 2009; Kazdin, 2001)
- Desensitization techniques
 - Habituation
 - Counter-conditioning
 - Flooding
- Consequences to behavior
 - Punishment (positive, negative, primary, secondary, etc.)
 - Reinforcement (positive, negative, primary, secondary, etc.)
- Redirection techniques – Differential Reinforcement of Alternative behaviors (DRA) which include:
 - DRI – differential reinforcement of incompatible behavior
 - DRO – differential reinforcement of other behavior
 - DRL – differential reinforcement of lower intensity behavior
- There are many others, these are just a few of the examples we will focus on in our discussion today

Procedures & Strategies

- Each trainer who must deal with aggression finds a way to apply the science and a way to describe it to others.
- Most use one or more of the previously listed scientific techniques
- A few popular examples:
 - CAT - Constructional Aggression Treatment (Rosales-Ruiz, Snider)
 - Click to Calm (Parsons)
 - U-Turn (McConnell, London)
 - BAT – Behavior Adjustment Training (Stewart)
 - Abandonment Training (King)
 - Look at That (McDevitt)
 - Train an incompatible behavior
 - Watch Me
 - Recall
- Each is a way that a skilled and talented trainer has operationalized the science to deal with aggression

Aggression Management (Donaldson)

- In general there are 4 primary ways of dealing with aggression
- Treatment requires that something must be changed:
 - Consequences = operant
 - Associations = classical
 - Access = management
 - Brain chemistry = medication
- We will focus primarily on training options today (consequences & associations)

Aggression Management (Ramirez)

- All animals have aggressive repertoire
- Helps animals cope with a variety of life's challenges
- Develops in 3 main ways
 - Reactive
 - Genetic
 - Learned
- Learning principles always at work
 - Success is reinforcing
 - Failure is aversive
 - Keeping these basic facts in mind will aid in aggression reduction or in choosing an appropriate training plan
- Always have an aggression reduction strategy in place

Rules for Aggression Reduction (Turner & Tompkins, 1999)

- Understand scenarios
- Recognize precursors
- Use Redirection and/or Apply appropriate training strategy
- Stop/Avoid it before it starts
- Keep records

Punishment

- There are many traditional approaches to dealing with aggression that use punishment
- By definition, and if properly applied, punishers will decrease behavior (Chance, 2009; Kazdin, 2001)
- There are a number of studies that also point out the risks, challenges and fallout of punishment (Sidman, 1989).
- Punishers will not be discussed today, because I avoid their use and prefer not to advocate for their use
- Skilled trainers need to understand punishment and its applications – it is something that exists in every trainer's toolbox, but I would like to think it is in that spare tool box that is collecting dust on the shelf.

Classical Conditioning

- Many excellent trainers employ classical conditioning techniques (Sdao, Reid, McConnell, Donaldson).

- Desensitization, Habituation, and Counterconditioning have all been studied, tested, used and written about on numerous occasions.
- Many uses do not have specialized names or unique operationalized procedures that are controversial or debated.
- They are effective, powerful techniques that work.
- As positive reinforcement trainers, we frequently look for operant tools, but we should not ignore nor forget about classical conditioning
 - Operant conditioning (Response-Reinforce) – Animal reinforced for giving correct response.
 - Classical conditioning (Stimulus-Stimulus) – Animal learns a new pleasant stimulus will replace or follow an unwanted or disliked stimulus – no specific task required
- Resources
 - See resource list at end: Donaldson, Jean (1996; 2002; 2004; 2008); McConnell, Patricia (2005); Reid, Pamela (1996); and Sdao, Kathy (2009).

Look at That Game (McDevitt, 2007; 2009)

- Counter conditioning procedure
- Teaches dog to look at “trigger” or cause of concern
- Changes emotional response to trigger by converting trigger into a positive event
- Doesn’t compete with the desire to orient toward offending dog/person/object, allows it and reinforces it
- With time, animal relaxes around trigger and actually does pay more attention to trainer so that it can get its reinforcement.
- Not a complete strategy on its own, must be used in conjunction with other tools

Look at That Analyzed (Ramirez)

- Science
 - A classical counter conditioning procedure, but it is operationalized to gain control of and get a desired behavior
- When to use it?
 - In any scenario prior to the animal having an intense reaction to the potential trigger. Obviously the “Look at That” game will have had to be trained first so that it is a behavior in your animal’s repertoire.
- Disadvantages
 - Can only function if you take time to train it below threshold (which is true of most techniques) – but otherwise, very few disadvantages
 - Not a standalone strategy in most cases, usually good to be able to follow it up with other tools, part of a bigger plan or program.
- Advantages
 - Changes animal’s perception (emotional response) of problem situation. Excellent tool that can be used in so many different situations once trained.
- Resources
 - McDevitt, Leslie (2007) and (2009). See Resource list at end.

CAT (Rosales-Ruiz & Snider, 2007)

- Constructional Aggression Treatment
- A negative reinforcement procedure
- Appropriate (relaxed or polite) behavior will cause offending dog/person to leave
- Distance from offender is the reinforcer
- Set-up to allows animal to learn quickly with multiple repetitions
- Trigger and context must be known and understood

CAT Analyzed (Ramirez)

- Science
 - Operant technique focusing on negative reinforcement
- When to use it?
 - Useful when animal will or must be exposed to situation or trigger unavoidably on a regularly and frequent basis.
 - Must be able to set up the situation and control trigger during training.
- Disadvantages
 - Exposes animal to undesirable situation for continued periods of time during training (which is why I advocate this technique when the animal will face these situations anyway)
 - Treatment is context specific, thus must be retrained in new context (although this is true of most treatments).
- Advantages
 - When timed and set up correctly will work relatively quickly
 - Treats the root source of the problem
- Resources
 - Rosales-Ruiz, Jesus and Snider, Kellie (2009). Rosales-Ruiz & Rentfro (2009). See resource list at end.

Click to Calm (Parsons, 2005)

- Clicking for any minimal reduction, improvement, or absence of aggression; shaping toward a more desired behavior.
- Operant redirection procedure
- Concurrent, gradual counter-conditioning taking place which eventually changes emotional response
- Trainer focuses on any reduction in aggressive behaviors, clicks and treats
- Form of redirection referred to as DRL, DRO, and DRI – Differential Reinforcement of Lower intensity behavior, Other behavior, and Incompatible behavior.

Click to Calm Analyzed (Ramirez)

- Science
 - Integrated operant redirection strategy. DRL, DRO, and DRI (differential reinforcement strategies) that also capitalizes on classical conditioning effects of counter-conditioning.
- When to use it?

- When animal's reaction is so intense or so overly rehearsed that trying to work below threshold is difficult or impossible. Can also be useful tool when you do not have ability to control trigger (which is not an option with other techniques).
- Disadvantages
 - You are still, in many cases, reinforcing undesired behavior (although at a lower level of intensity)
 - Can be time consuming, not a quick fix (but aggression seldom is).
- Advantages
 - When shaped properly, can be a long-term and permanent fix to problem, completely changing animal's response to a specific trigger or type of trigger. Due to its integrated approach, goes beyond simple redirection.
- Resources
 - Parsons, Emma (2005). See resource list at end.
 - Parsons & Robitaille (2011). See resource list at end.

Train an Incompatible Behavior

- A group of operant procedures have been operationalized by many skilled trainers that focus on training an incompatible behavior.
 - "Watch-Me" – Many trainers teach their animal to look at them on cue when a trigger presents itself. In some cases, on a verbal cue or in other situations to simply react to a distraction or trigger by looking at the trainer. In both cases this earns the animal reinforcement
 - U-Turn – Patricia McConnell and Karen London describe a behavior in which the dog is cued to do an about face and move in the opposite direction away from the trigger, which earns immediate reinforcement.
 - Recall – Many trainers will teach the animal a signal that means immediately return to the trainer, which receives high value reinforcement.
 - There are many other incompatible behaviors that trainers teach; these are just a few examples and ones that are often referenced as techniques for dealing with aggression.
- In each case, the goal is to teach the animal a behavior that they can do instead of being aggressive, a behavior that is incompatible with barking, biting, lunging, or showing other signs of aggression.
- There is an element of classical conditioning taking place, but initially only in how they respond to the cue, not in a change to the emotional response to the trigger. Over time – the response to the trigger may be altered if timing of the incompatible behavior cue is properly used.

Watch Me/U-Turn/Recall Analyzed (Ramirez)

- Science
 - Operant redirection procedure referred to as DRI (differential reinforcement of incompatible behavior).
 - Classical conditioning is also taking place, but not the primary force at work initially. (O'Heare, 2007)
- When to use it?

- Anytime a trigger or situation presents itself, that the animal notices, but prior to the animal reacting adversely to the trigger.
- Disadvantages
 - Does not, on its own, relieve the underlying cause of the fear, anxiety, or aggression.
 - Not a standalone strategy in most cases, usually good to be able to follow it up with other tools
- Advantages
 - Useful in the moment to initially interrupt or stop a reaction and move the animal toward a more favorable response.
 - Focuses on what you want rather than what you don't want.
- Resources
 - See resource list at end Parsons & Robitaille (2011); McConnell, Patricia and London, Karen (2009); O'Heare (2007); Pryor, Karen (1999); and Ramirez, Ken (1999).

BAT (Stewart, 2010)

- A procedure that combines LAT with DRI and negative reinforcement
- Although similar to CAT differs in several significant ways
- My personal investigation indicates that it is an effective tool that works.
- Yet another example of a skilled trainer taking a procedure and operationalizing in a way that works in their system or environment.

BAT Analyzed (Ramirez)

- Science
 - Operant & Classical technique using counter conditioning, followed by DRI, followed by negative reinforcement, followed at times by positive reinforcement.
- When to use it?
 - In real world scenarios where you can set-up the environment or be reasonably sure of the distractors and options in that environment
- Disadvantages
 - Requires experience and good knowledge of animal to know when to move from one step to the other and which options to choose.
 - Treatment is context specific (this is true of most treatments).
- Advantages
 - When timed and set up correctly will work relatively quickly
 - Treats the source of the problem by giving the animal what it desires – distance
- Resources
 - Stewart, Grisha (2010, 2011, 2016). See resource list at end.

Abandonment Training (King, 2004)

- Example of one of many very specialized tools for specialized situations
- When trigger appears and your dog exhibits inappropriate behavior, trainer drops leash and immediately leaves dog and training area. An assistant has your dog on a separate long loose line to prevent dog from interacting with trigger or getting in trouble.

- In some versions of this training, the trainer will return and reinforce when dog stops exhibiting inappropriate behavior.
- Works primarily with dogs who's inappropriate behavior is a type of "owner resource guarding"

Abandonment Training Analyzed (Ramirez)

- Science
 - Operant procedure using negative punishment, commonly called a "time out"
- When to use it?
 - Unique procedure that is only designed for a specific type of dog in a situation where the owner/trainer is the main or predominant reinforcer.
- Disadvantages
 - Only useful for very specific situations and animals
 - Focuses more on unwanted behavior than desired behavior
- Advantages
 - Results should be relatively quick when used with the right type of dog and situation.
 - Note: Just one example of good, but very specific tools. Always look at tools and understand their intended use.
- Resources
 - King, Trish (2004). See resource list at end.

Summary

- Every technique discussed works and has been proven effective if used correctly and understood by the trainer
- All aggression treatments are advanced – require skill and understanding to use properly – there is no "quick fix"
- It is easy to go wrong and apply a technique poorly – getting an unwanted result, which is why there is so much controversy about many techniques. Too often, criticism is leveled at particular methods due to mistakes in the application of a technique.
 - Poor observation by trainer – not seeing or recognizing the pertinent behavior
 - Poor timing of click and/or reinforcement
 - Sequence of execution is off
 - Working at too high a level of arousal
- Almost every technique requires set-up, a thoughtful training plan, and working below threshold using gradual approximations.
- Selecting the right techniques should be based on multiple factors:
 - Individual animals training history
 - Type of trigger
 - Specific circumstances or situation
 - Experience level of the trainer
 - Personal ethical hierarchy

Final Thoughts

- Keep an open mind when looking at aggression reduction strategies

- I don't believe that any one technique is the answer to every aggression problem or situation
- Good trainers keep many tools in their tool box and understand how to use them all, even if some are seldom used.
- Understand the science being used in any tool - it will help you recognize the intended mechanism at work and enable you to compare it to other procedures already out there.
- Learn as much as you can about a tool – look at the resources available to determine which most closely fits your training situation, style, and skill.

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Social Animals: Working with Multiple Animals

Seminar Description – Often we teach training by focusing on working one-on-one. But how do we train and work with multiple animals at the same time? In this Session Ken will share techniques and knowledge he gained from working in the zoological community, where working with groups of animals was the daily norm. He will translate that knowledge to working with animals of any type. Some of the key concepts that Ken will focus on include stationing, fairness, clicker use, and new animal introductions (a new puppy, shelter dog, a cat to a dog, or any species of animal).

Overview

- Training Approaches
- Maintenance Techniques
- New Animal Introductions
- Share a current case that we are working on

One-on-One Training

- Ideal training situations
- Spatial separation
- Physical separation
- Individual training not always the answer

Group Training

- Changing social situations
- Kenneling: Gating vs. Separation
- What if separation is not possible?

Stationing

- Location
- Position
- Target
- Choice
- Shuffle

Fairness

- Animal perception
- All animals are doing something
- Feeding strategies
- Animal indicator
- Goal: Avoid competition (food, attention, toys, etc.)

Marker Use

- Avoiding confusion
 - Audible
 - Visual

- Tactile
- Unison Behaviors
 - Group contingent
 - Individual

New Animal Introductions

- Trained Animals
 - Work cooperatively
 - Reinforcement is contingent on the other
 - Selectively mix, based on social structure & behavior progress
- Biggest Challenge: Natural Aggression
 - Working with animals that have an aggressive history or are pre-disposed to fight
 - In a zoological setting these techniques have worked with big cats, pinnipeds, elephants, zebras, primates, cetaceans, birds & many others
 - Naturally will sometimes fight to the death!
 - Yet, despite instinctive trait, can be taught to live together

Examine Special Project

- The following segment is NOT a how to seminar
- A 2.5 year project that was officially completed in June of 2015
- Report was shared with Granting Agency in Chicago in September of 2015
- This is new information being prepared for publication

New Project in 2013

- Brought dog program back to Shedd
- Working some aggressive court case dogs
- Challenged to “walk the talk”
- Training cooperation with aggressive, reactive, and problem dogs
 1. Basic individual training
 2. Cooperative training with barriers
 3. Strategic social introductions
 4. Repeat with new animals and in new contexts

Caution: A Disclaimer!

- What I am about to share are very early steps in using a protocol that has uncertain general applications in the future.
- The following was accomplished with a group of professional trainers working around the clock & without a fixed timetable.
- This is NOT a recommended procedure for dealing with aggression or serious reactivity – it is an animal introduction procedure

Week by Week: (Descriptions through videos)

- Dogs:
 - Coral – 3 year old female Airedale mix, highly reactive, very fearful of all dogs
 - Bruce – 3 year old male terrier mix, fighting dog, no bite inhibition
 - Dory – 4 year old female shepherd mix, assertive dog, never backs down
- Focus on Bruce/Coral process because they were the most difficult

Trained Introductions

- Same process used for all dog combos
- Success in all cases within 4 to 5 months
- 3 dog mixes – accomplished in month 5
- At month 4 began controlled introductions of unknown dogs (trainer's dogs)
- Next 3 months used dogs in public (careful controls)
- Plan now to replicate (2 or 3 dogs)

Intro of 4th Dog

- Marlin – 2 year old male Labrador Retriever mix, adopted 12-20-13
- Introduced to each dog one at a time using same protocols
- Female intros went smoothly and quickly
- Intro to Bruce, took more time due to intense initial reaction
- Process took 3 months this time
- Here are some of the steps

Week by Week: (Description through Videos)

Some Thoughts about Protocol

- Great care should be taken NOT to over-state the significance of what we have accomplished
- Excellent protocol for basic new animal intros
- However – not designed as a protocol for “difficult” dogs
- I had 9 professional trainers working 24/7
- I still do not leave Bruce in a new social situation unsupervised (that may never occur)
- Presented as food for thought: a look at what is possible with an “impossible dog”
- Much more work and replication to come before any conclusions can be drawn

Common Questions

- Why did I choose that particular protocol as opposed to many other options
 - I took on these dogs with the understanding that we would use that protocol
 - My training team is familiar with that protocol and are comfortable following it
- Would I adopt Bruce to a non-trainer?
 - Maybe, but only to one that didn't have a dog and that fully understood the maintenance and care needed.

Basic Data Shared

- Time intensive. Daily average over 3 months for Bruce:
 - 9 formal training sessions
 - 151 minutes formal training
 - 2.7 sessions focused on socialization
 - 55 minutes socialization training
- 189 total man hours over 3 months
- Could it have been done with less resources?
 - Maybe . . . Probably
 - Not willing to risk it

Post Protocol Next Steps

- December 2014 – introduced to another male, small breed
- January 2015 – introduced to a larger male
- Now living in 2-dog household, have been together for one year
- Still monitoring closely

Practical Applications of Protocol

- Mild challenges of living together
- Early introductions to prevent reactivity or social problems
- Walking and encountering strange or new dogs without reactivity
- General desensitization to new animals
- Leash or fence frustration

Final Thoughts

- Working with groups does have its challenges
- But with the right training tools – so much is possible
- The final case study was just an example, not a recommended approach for difficult animals, but a good introduction protocol and useful in other cases.