

Introducing Aggressive & Highly Reactive Dogs Teaching Them to Live Together A Case Study

Ken Ramirez

Author's Notes – This is not a typical seminar that I give to the public. I will share a case study that is being prepared for presentation to a group that funded this study. I have introduced aggressive exotic animals to each other over the years and successfully trained many different species to live together. This project was an attempt to use these same techniques with three aggressive and highly reactive dogs. Because this is a pending study that has not yet been published I am not able to share detailed notes at this time. Here is the basic outline of the information that will be discussed. Most of the presentation will be in the form of video clips outlining each step in the process.

Train animal cooperation – reinforce animals on opposite sides of a fence or a gate so that they learn to work together. Food and other reinforcement is contingent on the other animal being there.

Recreated this procedure with 3 rescue dogs – each had different reactivity issues, one had been trained as a fighting dog.

By 5 months into the project the three dogs had learned to live together, but the time and resources need to accomplish this was far more than would be realistic for most rescue dogs. We had 9 professional trainers working 24 hours per day, 7 days per week.

At the one year mark a 4th dog was introduced to the group. He mixed well with the females, but it took several months to introduce him to the male. Followed the same procedures for introducing these dogs.

The procedure continued with several additional dogs and two of the most reactive dogs have now found a permanent home living with other dogs peacefully. However, the time and effort to make this successful was enormous and not something that most people could afford to recreate.

This case study is presented as food for thought to other professional trainers. The procedure was designed as an animal introduction protocol NOT a treatment for reactive dogs. However, I hope you will find the case study of interest.

Complex Training Tools

Ken Ramirez

Experienced trainers seem to enjoy debating complex tools. Internet discussions 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, chained behaviors, and a myriad of others. Some of these tools are useful only in very specific circumstances while others are useful in more common training scenarios. Casual or incorrect use can be confusing to the learner or, worse, punishing. This seminar will attempt to take away the mystery and confusion by looking at the science and the practical applications of these diverse sets of tools. Please note that each seminar may not cover all of the tools listed in these notes, depending on available time.

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

Brief Overview of Tools

- Introduce name of tool
- Common mythology regarding concept
- What does science say about tool
- Practical applications for concept



- **Tool:** Keep Going Signal
- **Myth:** Skeptics say: "Serves no real function"
- **Science:** Conditioned Reinforcer (not a "bridge" or end marker)
- **Practical Application:** Let's animal know they are doing well but not finished, useful during long duration behaviors.



- **Tool:** Jackpots
- **Myth:** "Big reinforcers are always better!"
- **Science:** Magnitude of reinforcement can impact behavior
- **Practical Application:** Well timed use can increase animal motivation, if used sparingly in right situation



- **Tool:** NRM
- **Myth:** "Saying 'NO' isn't really a punisher, it is just information."
- **Science:** Conditioned Punisher
- **Practical Application:** Skilled trainers can shape behavior faster, but if poorly used it can lead to frustration (or worse).



- **Tool:** Time Out
- **Myth:** "My animal knows what he did wrong - a time out will teach him!"
- **Science:** Negative Punisher
- **Practical Application:** If trainer controls reinforcers, properly timed removal will lead to extinction of unwanted behavior .



- **Tool:** LRS (Least Reinforcing Scenario)
- **Myth:** "Never heard of it" or "Too complicated"
- **Science:** Neutral response (data is still emerging)
- **Practical Application:** Most positive technique for dealing with incorrect responses – a form of redirection.



- **Tool:** DRA (Redirection Strategies)
- **Myth:** "Just operant jargon, not a practical tool"
- **Science:** Differential reinforcement is at the root of most successful training
- **Practical Application:** Used in many training situations; trainer looks for reinforceable options.



- **Tool:** Recall Signal
- **Myth:** "Good for bringing animal back after an error."
- **Science:** Simply a cue for a specific behavior
- **Practical Application:** A basic behavior that brings the animal back to trainer; helpful in keeping either the animal or the trainer safe when used correctly.



- **Tool:** Chained Behaviors
- **Myth:** "Chains utilize a variable schedule of reinforcement."
- **Science:** Behaviors used as conditioned reinforcers.
- **Practical Application:** 1. String of many behaviors w/o treats.
2. Builds and maintains complex groups of behaviors.



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)
- Circus Sea Lion (Kelley, 1946)
- Husbandry practices

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 reinforcer
- 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

- Marker signal counters effect – creates variety, thus has beneficial impact, but not what trainer intended (Pryor, 2007)
- 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

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
- Delta (Ramirez, 1999)
 - “Last Chance”
 - Warning prior to application of an aversive stimulus
- Non-scientific or not defined – seen in use by other trainers
 - “Not now” – acceptable behavior in other context
 - “Almost” or “Good Try” – on the right track but not reinforceable
 - “Keep Trying” – like a KGS only opposite effect (serves as delta)
 - Can be learned but may be far too much for most animals

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.
- Scientifically speaking it is a negative punisher

TO Challenges with Use

- It is a punisher and has the same baggage associated with most punishers
- If not timed properly, will punish 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)
- 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

LRS Practical Applications

- Proper Use
 - Brief and immediate
 - Looking for calm response (acceptance)
 - Immediate, easy opportunity for new reinforcement
- Challenges
 - Not a fixed posture
 - Not related to eye contact
 - Don't be tempted to extend length

- Why it works
 - Due to positive history
 - Rhythm of reinforcement is interrupted
 - Opportunity to continue and earn more reinforcement present

LRS Final Thoughts

- Proven practically and scientifically
 - Most positive reinforcement trainers use it naturally
 - Key is having a default position for animal to return to, doing so earns reinforcement
-

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)
- Could be said to be 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 solid 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
-

Behavior Chains

- 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.

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

Fixing a Broken Chain

- Prevent it from the start
 - Maintain individual behaviors
 - Reinforce different behaviors within the chain from time to time
- 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?

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

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.

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
- See reference list in your notes for more information
- 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

References

- Bailey, Bob. (2007). "Marian & Keller Breland: Pioneers of Applied Animal Psychology," supplemental presentation at 35th Annual Conference of the International Marine Animal Trainer's Association.
- Bostow, D. and Tompkins, B. (1999). *University of South Florida Behavior Analysis Glossary*. Website: <http://www.coedu.usf.edu/abaglossary/main.asp>.
- Chance, Paul. (1999) *Learning and Behavior, 4th Edition*. Brooks/Cole Publishing Company, Pacific Grove, CA.
- Cover, Kayce. (1991). *The Syn Alia Series on Animal Training, Volume 1: Bridge and Target Techniques Made Easy*. Syn Alia Animal Training Systems, Sarasota, FL.
- Cover, Kayce. (2002). "Introducing the Intermediate Bridge," in *American Animal Trainer Magazine*. October, 2002.
- Kazdin, Alan E. (1994). *Behavior Modification in Applied Settings, 5th Edition*. Brooks/Cole Publishing Company, Pacific Grove, CA.
- Kelley, F. Beverly. (1946). "Prima Donnas of the Circus." Reprint from Liberty Magazine in *1946 Ring Bros. & Barnum & Bailey Circus Program*. Circus Lithographs, Sarasota, FL.
- Landeman, Merrill L. (1971). *Training Protocols: Instruction Manual for Guide Dog Trainers*. Institute for the Blind Publications, Bloomington, IN.

Parsons, Emma. (2005). *Click to Calm: Healing the Aggressive Dog*. Sunshine Books, Waltham, MA.

Pryor, Karen. (1999). *Don't Shoot the Dog*. Bantam Books, New York, NY.

Pryor, Karen. (2006). "Jackpots: Hitting it Big." Website:
<http://www.clickertraining.com/node/825>

Pryor, Karen. (2009). *Reaching the Animal Mind*. Scribner, New York, NY.

Ramirez, Ken. (1999). *Animal Training: Successful Animal Management through Positive Reinforcement*. Shedd Aquarium Press, Chicago, IL.

Ramirez, Ken. (2009). "Keep Going Signals: Semantics, Myth, and Practice" in *Canis* (Scandinavian Dog Training Magazine), No. 2, 2009

Scarpuzzi, M.R., Lacinak, C.T., Turner, T.N., Tompkins, C.D., & Force, D.L. (1991).
"Decreasing the Frequency of Behavior through Extinction" in *Animal Training: Successful Animal Management through Positive Reinforcement*, ed. K. Ramirez 1999, Shedd Aquarium Press, Chicago, IL.

