BEHAVIOR ASSESSMENT TOOLS FOR DOGS IN A SHELTER SETTING

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Outline

- Temperament Tests
  - Why do we need behavior assessments?
  - What is temperament?
  - What are we testing?
  - Test classification
    - Requirements for useful test
      - Validity
      - Reliability
      - Standardization
      - Feasibility
  - How do we use the data?
- Performing behavior assessments
- Examples of a few behavior assessments

Why Do We Need Temperament Tests?

- Behavior problems, including aggression, most common reason for dogs to be relinquished to shelters
  - 3772 owners interviewed
    - 28.8% due to behavior of dogs (non-aggression)
    - 9.8% aggression to people
    - 7.8% aggression to animals
    - 11.9% of dogs had bitten a person
- Need for shelters to identify relinquished animals at risk for behavior problems if adopted into a new home

Why Do We Need Temperament Tests?

- Select dogs for use
  - Working dogs, service dogs, quality breeding stock
  - Prevent adoption of aggressive dogs
    - Major public safety concern
- Identify at-risk dogs
  - Make educated adoption recommendations
  - Set up rehabilitation if an option
  - Screen for specific behavior problems
- Diagnostic tool
  - Look for indicators of disease (cognitive dysfunction) or poor welfare.

What is Temperament?

- Temperament
  - Pet’s natural or innate responses to its environment, its emotional responses
  - Considered stable over time
  - The foundation of personality
  - Character can influence it but cannot change it
- Behavior, character, temperament or personality?
- Terms used interchangeably
  - Leads to confusion, inconsistency

What is Temperament?

- Influenced by:
  - Genetics
  - Prenatal environment
  - Mother-offspring relationship
  - Early experience
  - Learning capabilities

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1. Diederich, Giffroy AABS 2006
2. Jones, Gosling AABS 2005
3. Segurson BSA V A 2009, artofmanliness.com
What is Temperament?

- Assume that characters identified, however classified, are:
  - Present at an early age
  - Relatively stable over time
  - Expect the same response would be elicited in a similar set of situations

Definitions

- Temperament test is a form of behavior assessment tool
  - Tests that are used as evaluation tools to classify individual animals
  - A tool to help determine a dog’s overall temperament and its threshold for aggression
  - Tests that take a measure of a dog’s behavior and use it to describe various behavioral traits in an attempt to predict the dog’s behavior in another but similar situation

What is Really Being Tested?

- Simplest form:
  - Test a behavioral response
  - To a specific stimulus
  - At that time
  - In that environment
  - By that individual dog
  - It is a behavioral evaluation, a snapshot in time
  - A “known”

1 Bollen, Horowitz AABS 2008, 2 Taylor, Mills JVB 2006
3 Diederich, Giffroy AABS 2006
What is Really Being Tested?

Extrapolation:
- Attempt to correlate that specific response in that situation as a predictor of how that same animal may act or respond in a similar situation at another time
- Therefore predicting temperament and/or personality

Predictive or external validity
- Not always a "known"

Things we do not know:
- What is the effect of stress of the shelter environment on the displayed behavior?
  - Cortisol, a hormone elevated during stress, is elevated at least initially in dogs when entering the shelter environment
  - Dogs should be given a period of adjustment prior to testing
  - Testing a dog when stressed will be more likely to identify aggression in those individuals at risk for showing it

Things we do not know:
- Are we testing behavior, character, temperament, or personality?
  - Evidence that some studies showed constructs (behavior responses) are stable over time
  - Theoretically could measure temperament
  - Can a valid assessment of temperament ever be determined in the overwhelming and unnatural environment of a shelter?
  - Term “temperament test” falling out of favor

1 Bollen, Horowitz AABS 2008
10 Segurson BSA V A 2009
11
5 Jones, Gosling AABS 2005
2 Taylor, Mills JVB 2006
What is Really Being Tested?

- **False positive results**
  - Dogs are getting condemned needlessly

- **False negative results**
  - Dogs that pose a true public safety risk are still getting adopted out \(^{10}\)

Test Classification

- **Test battery format most frequently used in shelter medicine**
  - 2 different categories:
    - Evaluate a response in situations or interactions that are commonly done by the average pet owner or would be found in the average home
    - Try to provoke a pet in a highly challenging or stressful situation \(^{10}\)

- **Some types of aggression may not be identified through test battery in shelters** \(^{11}\)
  - Intra-species, predatory, and territorial
  - Tests of young puppy behavior not been shown to be a good predictor of adult behavior \(^{5,12,13}\)
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Validity

- Are we really measuring what we think we are measuring?
- Validity
  - External (predictive) validity
    - Is the test a measure of the predicted behavior? 3
      - Is an animal going to show a fear response in a similar situation in real life?

- Internal validity
  - How well do the different variables of the test represent the desired trait to be evaluated? 3 and to what extent? 3
  - What is the extent to which a scale measures what it claims to measure? 3
  - Does the frightening stimulus you are exposing the dog to create a fear response?
  - Do all dogs tested show fear? Or just a subset of them?
A Word on Models

Repeated exposure to a threatening animal can be stressful and dangerous
- Lead to learned fear and possibly aggression
- A welfare issue

Can we use a model to test for reaction to various stimuli?
- Stuffed dog
- Stuffed cat
- Toddler or infant doll
- Rubber hand on a stick

Models

- Statistically significant correlation between behavior history and aggression to a model
  - Child directed aggression and stranger directed aggression with aggression to a doll device and overall avoidance
  - Dog directed aggression/ fear with aggression to a fake dog (at a distance)

Models

- 88% (34) of dogs aggressive to children showed same behavior directed to doll
- 65% (37) dogs historically good with children showed no negative reaction to doll
- Dogs with fear aggression more likely to show fear to doll
- Dogs with fear aggression or owner directed aggression more likely to show aggression to fake hand
- Still high level of false positives and false negatives
Models

- Reid and Collins. 2012 AVSAB/ACVB Veterinary Behavior Symposium
  - ASPCA Anti-Cruelty Behavior Team, Urbana, USA
  - Missouri dog fighting raid
- Lifesize plush dog that looked like a Labrador retriever
- The fake dog turned out to be a valid stimulus
  - Dogs that reacted with aggression towards real dogs highly likely to display aggression toward the fake dog
  - Testing with model dog then dog of opposite sex identified ~90% of aggression

Reliability

- Reliability
  - Test-retest reliability
    - Is the same dog scoring the same at a different time? ³
    - Do you get the same result if the test is repeated?
    - Measure the dog’s behavioral response
    - Objective description of the behavior rather than a subjective interpretation of the dog
      - Ideally an ethogram

- Reliability
  - Inter-rater reliability
    - Is there consistency between observers? ²
    - Different people simultaneously scoring or watching video of the test¹
  - Intra-rater reliability
    - Does the same person scoring the same test at different times get the same or similar results? ²
    - This person watching video back at a later date
Standardization

- The only variable is the animal being tested
  - Everyone is performing the tests the same way
  - Same equipment
  - Same environment

- Scoring systems
  - Correlate with anticipated behavioral responses
    - Pass/ fail
    - Numerical scoring (1-5)
    - Letter scoring (A-F)

Most shelter tests aimed primarily at predicting aggression

- Look at different traits
  - Sociability
  - Handle-ability
  - Playfulness/ play style/ arousability
  - Food or possessive aggression
  - Reaction to a stranger and/or a child
  - Reaction to another dog and/or another animal species

Feasibility

- Time to perform
  - Efficient application in busy shelter setting

- Resources needed
  - Inexpensive
  - Easily obtained
  - Safe for dog and handler
Feasibility

- Scoring system
  - Clear and straightforward
  - Objective using ethogram
  - Not so simple lose vital information
- Staff training
  - Easily accessible
    - Training seminars, handbooks, video, webinars
  - Certification

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How Do We Use This Data?

- No tests so far have been published in a peer reviewed journal that have passed all of these qualifications
  - Validity
    - Predictive Value
    - Internal validity
  - Reliability
    - Test- retest
    - Inter- rater
    - Intra- rater
  - Standardization
  - Feasibility
- Important area for future research
How Do We Use The Data?

- Tests used in shelters
  - Untested permutations of other tests
  - Unvalidated
- Tests not being performed in a standardized fashion between staff members or organizations
  - Who, what, when, where, how scored
  - Australian shelter survey

How Do We Use The Data?

- Australian shelter study
  - 75% (26 staff members from 11 shelters) received some type of training
    - Confidence in ability to accurately assess a dog and suitability of test not related to experience/training
  - Improvements
    - Expand test to assess more behaviors
    - More time for assessment
    - 2 people present for assessments
  - 100% wanted scientifically validated and standardized protocol

How Do We Use The Data?

- Used as an ancillary tool added to information from other sources
  - Owner relinquishment questionnaires
    - Public vs confidential
    - Confidential: owner directed aggression, fear of strangers
  - Staff experiences with the animal
    - Informal observational test
    - Better at predicting absence of a problem
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Performing Behavior Assessments

- Basic requirements
  - Environment
    - Large quiet room
    - 10’x10’ minimum best
    - Free of clutter
      - Or things the dog may find distracting
    - White noise machine if available and needed
    - +/- Place to tether a dog

Performing Behavior Assessments

- Personnel
  - Free of breed bias
  - Clear understanding of canine body language
  - Humane and safe dog handling skills
  - Physically healthy
  - Familiar with the assessment being used
Performing Behavior Assessments

- **Items**
  - Armless chairs (minimum two)
  - Buckle or martingale collar
  - No slip lead or choke collars
  - 6 foot leash
  - 2 or 3 toys- different types, easily disinfected
    - Tennis ball, squeaky toy, rope toy or other tug
  - Dry and canned food
    - Preferably 2 types of canned
  - Treats- variety of value
  - Food bowls

Performing Behavior Assessments

- **Items**
  - Fake plastic hand
  - Rawhides- type dependent on which assessment performed
  - Video recording equipment (camera, tripod)
  - Clipboard for recording
    - Or protection
  - Emergency items to diffuse aggression
    - Citronella spray, bucket of water, air horn
  - Trench coat, glasses, hat, cane for ‘stranger’
  - Lifelike doll, stuffed dog model

Performing Behavior Assessments

- **Tips to perform assessments safely and fairly**
  - Pick up chair, do not drag on ground
  - Watch your body, especially upper body
    - Don’t lean or loom over dog
  - Kneel on one knee and toes with small dogs
    - Be ready to get up/ push away quickly
  - Don’t push or pull dog into position
    - Use voice or hand motion to coax dog into position before you sit/ kneel
  - Give dog time to “own” item before taking it away
Performing Behavior Assessments

- **Loose Leash!**
  - Excess leash and collar in one hand at side of neck when in position for subtests
  - Loose leash during movement but be ready to gain control if necessary
    - Gather up leash with both hands and hold at arm's length until he calms down
  - Observer be ready with clipboard
  - If dog gives you warning signs, stop!
    - Freeze, hard eye, growl, lip lift

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Performing Behavior Assessments

- **Key to safe handling:**
  - Before proceeding with the subtest-
    - Think about what you are about to do
    - Think about where the dog's head and teeth are most likely to go if he does not like what you are going to do
    - Position yourself and the dog so that the dog's teeth will go away from your face, and you can push the dog away

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Performing Behavior Assessments

- **Body positioning between handler and recorder**
  - Person holding leash should have leash at full length but not tight
  - Other person should be 180 degrees from dog and holder
  - Keep body, face and hands out of leash length
  - Have person holding leash move dog away before you bend down to pick anything up
Performing Behavior Assessments

- Retrieving a high value item from the dog
  - Wait for dog to drop, then move dog away using leash and voice
  - Trade up:
    - Drop a few high value treats a few feet away and when dog drops item to go to treats, move dog away from item and pick up as dog eats treats from a distance
  - Use a high value toy:
    - Engage dog with toy, toss a few feet away and repeat as above
  - Use the fake plastic hand to swipe item away as dog moved away
    - Keep yourself out of leash distance

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Disclaimer

- This is not intended as a training or certification session to perform Match Up II or any other behavior assessment
- Goals:
  - Help participants become more familiar with commonly used subtests found in behavior assessments and how to perform them safely and fairly
  - Become more comfortable observing, reading and recording canine behavior, using an ethogram
Examples of Behavior Assessments

- Bollen and Horowitz
  - Modified Assess-A-Pet
- Dowling-Guyer, Marder, D'Arpino
  - Match-Up II
- Netto and Planta; Van der Borg et al
  - Dutch Socially Acceptable Behaviour (SAB) test
- Weiss
  - SAFER

Modified Assess-A-Pet

- Sue Sternberg’s Assess-A-Pet
  - 19 subtests, complicated scoring system
  - Modified to 9 subtests
  - Groups divided into high risk and low risk breeds
  - Retrospective behavioral history collected
    - Owner interview
      - Categorized: unknown history, no aggression, positive aggression, stray dog
  - Behavior assessment
    - Categorized: pass, unsocial, borderline, fail

Modified Assess-A-Pet

- 9 different subtests
  1. Cage presentation
  2. Sociability
  3. Teeth examination
  4. Handling
  5. Arousal
  6. Food bowl
  7. Possessions
  8. Stranger
  9. Dog introduction
Modified Assess-A-Pet

- More likely to get failing score:
  - Dogs with previous aggression history
  - High risk breeds
  - Males
- Unsocial dogs higher risk to show aggression in new home
- Eliminated failed dogs
- All aggression in one category

Bollen, Horowitz AABS 2008

Cage Presentation

Cage Presentation

Cage Presentation
Dutch Socially Acceptable Behaviour Test

- Claim to be validated, did not look at predictive value
- Very complex and time consuming
  - Car rides, 1-2 hours, multiple people needed
  - Unrealistic for shelter setting
  - Limited time and financial resources
- Identify different types of aggression in a population of dogs with a high prevalence of aggression
- Extremely provocative to the average dog
  - Unacceptably high percentage of false positives (93%)
- 112 dogs: 38 non biters, 51 dog biters, 23 man biters
  - Only 3 dogs showed no aggression at all


SAFER

- Safety Assessment For Evaluating Rehoming
  - Emily Weiss and ASPCA
    - Specific list of required resources
    - Clear instructions for test performance
    - Standardized straightforward scoring system
    - Recommended plan of action based on scores
    - Certification program for evaluators
    - Goal to take 7 minutes to perform
    - External validity, test-retest, inter-rater reliability performed but not published

SAFER

- 7 different subtests
  - 1. Look Test
  - 2. Sensitivity Test
  - 3. Tag Test
  - 4. Squeeze Test
  - 5. Food Behavior Test
  - 6. Toy Behavior Test
  - 7. Dog to Dog Behavior Test

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16 More ASPCA WFM
SAFER: Tag

Dog to Dog Behavior

Match Up II

- Marder-Animal Rescue League Test for Canine Homing Using Personality - II
- 11 subtests (originally 19)
  - Behaviors scored as present or not present
    - Ethogram
    - Manual or computerized scoring systems
- Intent is to gather information about the dogs
  - Calculate personality score
  - Calculate triage points
**Match Up II**

- Broad personality dimensions
  - Useful when matching dogs to new homes
  - Fearfulness, friendliness, aggressiveness, trainability, excitability, playfulness
  - Three similar to those identified by Svartberg
- Incorporate behavior history and within shelter observations in evaluation
  - History predictive of many nuisance behaviors in future home
  - Shelter observations identify behavior towards men, children, public places, other animals
- Recc assess every 30 days, after an incident, after return

**Match Up II**

- 11 different subtests
  1. Leash manners on a walk
  2. Room behavior
  3. Commands with delicious treats
  4. Handling feet
  5. Toys
  6. Run and freeze
  7. Introduction to a fake hand
  8. Possessive behavior
  9. Toddler doll
  10. Strange looking woman
  11. Dog-to-Dog Interaction

**7: Introduction to Rubber Hand**

- Recorder holds dog’s leash
- Hold fake hand with handle flat against arm
- Move fake hand near dog’s head, allowing him to investigate
- Note dog’s behaviors
  - Behavior indicating fear, play, aggression?
    - Fear of novel object
    - Think it is a toy?
Conclusions

- Have tools to measure a behavioral response
- Attempt to correlate it with a future response or personality construct of a dog
- At this time, the data can be used as additional information to help guide decision making process for ultimate plan for shelter dog
  - With prior history, staff observations
- First priority - Safety of handlers and dog
- Observe and record behavior, not interpretations

Thank You for Your Time!

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Why You Need to Always Handle for Safety