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Center for Shelter Dogs at the Animal Rescue League of Boston

***Presentation to MAC “All About Dogs” Meeting
January 10, 2010***

Amy Marder, VMD, CAAB

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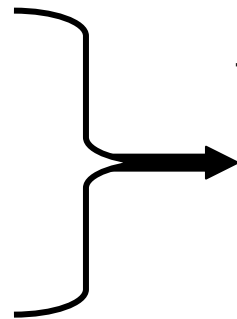
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Overview of the Center for Shelter Dogs

Working Plan for the Center for Shelter Dogs: 'DVD'

"Develop, Validate, Disseminate"

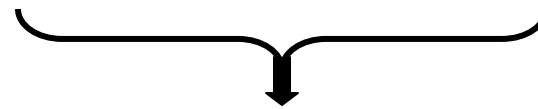
- Intake history
- Evaluation
- Point system
- Rehab training
- Matching
- Post-adoption support



✓ Assess predictive value through formal data collection and research

✓ Refine based on results

✓ Validate predictive value



Build excellence in shelter staff across US

National impact in veterinary practice

Publication of research findings

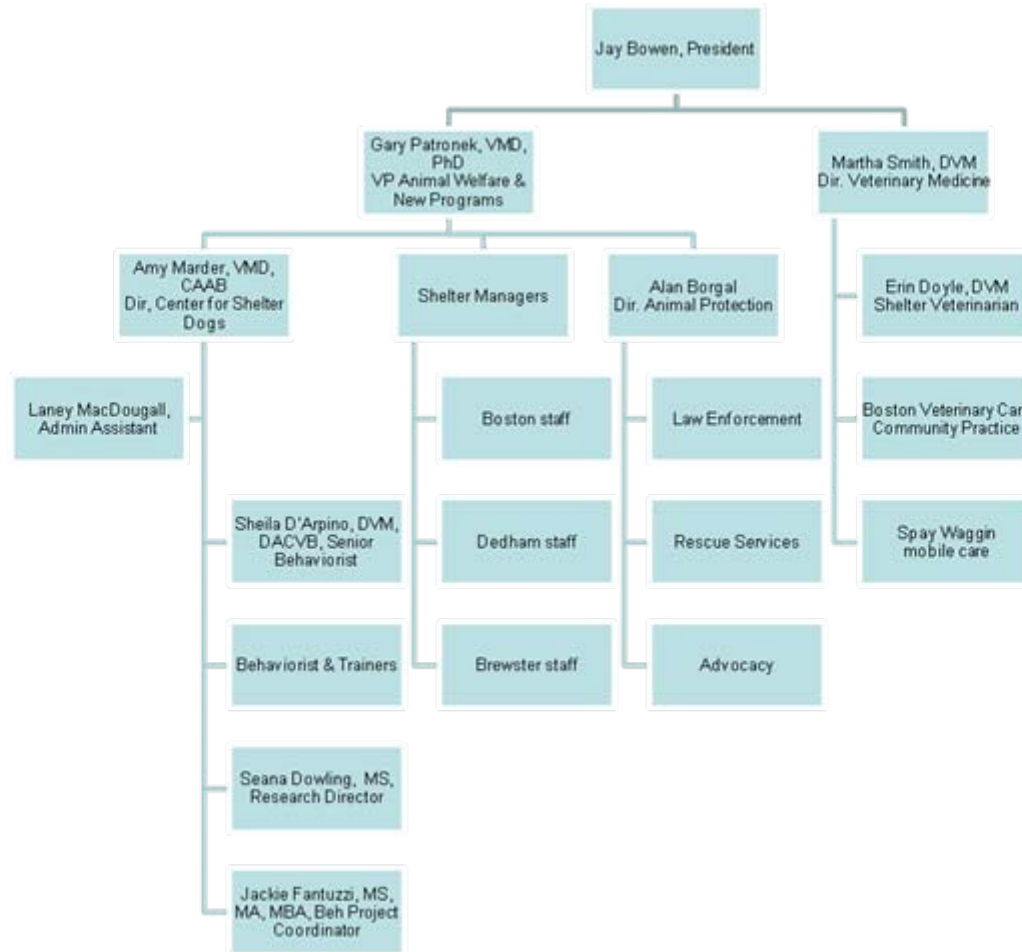
Outreach conferences / Summer Institute

National model for best practice

- ARL employee training
- Formal DVM student training
- Expanded outreach to other shelters



Key Organizational Relationships



CSD 12 Month Strategic Goals

- Shelter dog behavioral assessment
 - Validation
 - Outside of the cage screening test
- Understanding dogs as individuals
 - Identification of dogs by personality not breed
 - Matching adopters and dogs
- Behavioral interventions
 - In shelter
 - After adoption



CSD 12 Month Strategic Goals

- **Stress/enrichment in shelter dogs**
 - Measurement of stress
 - Impact on behavior and personality
 - Reduction of stress through enrichment
- **The Role of the Adopter**
 - Characteristics important to adopter when looking for a dog
 - Influence of breed on adopter expectations
 - Tolerance of behavior problems



National Center for Excellence

- Through research, behavioral solutions, shelter role model
- Dissemination is critical
 - Summer Institute
 - Student externships
 - Publications
 - Presentations
 - CSD Website
 - ARL Excellence shelters



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Visual Breed Identification and DNA Analysis of Dogs of Unknown Parentage

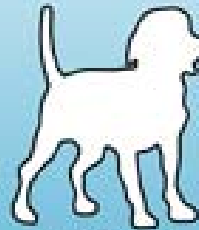




Cocker
Spaniel



Shiba
Inu



Labrador
Retriever



Trace
Amount

Significant Amount



DO YOU KNOW A LABRADOR RETRIEVER MIX WHEN YOU SEE ONE?

EACH OF THESE DOGS WAS GIVEN A BLOOD-BASED DNA TEST* TO DETERMINE MIX OF BREEDS

One has a SIGNIFICANT amount of Labrador Retriever, and one has SOME Labrador Retriever



*Tested with Mars Wisdom Panel™ MX by their owners: www.wisdompanel.com
Significant 50% or more, Some 25%-49%, Distant 12.5%-24%

www.nationalcanineresearchcouncil.com

1, some Shetland Sheepdog 2, significant amount of Labrador Retriever, some Siberian Husky, distant traces of Silky Terrier 3, significant amount of Beagle and English Springer Spaniel 4, some American Staffordshire Terrier and Great Pyrenees, distant traces of Dalmatian and Alaskan Malamute 5, some Labrador Retriever and Chinese Crested, distant traces of Nova Scotia Duck Tolling Retriever 6, some Australian Cattle Dog and Rottweiler, distant traces of Afghan Hound 7, significant amount of Chesapeake Bay Retriever with some Chihuahua 8, significant amount of Rottweiler and also includes distant traces of English Springer Spaniel 9, significant amount of Golden Retriever with some Chihuahua and Chow Chow

NCRC National
Canine
Research
Council
Preserving the Human-Canine Bond

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DO YOU KNOW A "PIT BULL" MIX WHEN YOU SEE ONE?

EACH OF THESE DOGS WAS GIVEN A BLOOD-BASED DNA TEST* TO DETERMINE MIX OF BREEDS

One has a SIGNIFICANT amount of a breed commonly labeled "pit bull", one has SOME "pit bull" and one has DISTANT TRACES of "pit bull".



*Tested with Mars Wisdom Panel™ MX by their owners: www.wisdompanel.com
Significant 50% or more, Some 25%-49%, Distant 12.5%-24%

1, significant Boxer with some Bulldog 2, distant traces of Smooth Fox Terrier 3, significant Chihuahua with some Cocker Spaniel 4, some Rottweiler and Boston Terrier 5, some German Shepherd Dog and distant traces of Afghan Hound 6, some Chinese Shar-Pei and distant traces of Rottweiler 7, some American Staffordshire Terrier and Australian Cattle Dog 8, distant traces of Bassett Hound, Dalmatian and Pug 9, significant American Staffordshire Terrier and distant traces of Boxer 10, some German Shepherd Dog and distant traces of Bassett Hound, Norwegian Elkhound and Samoyed 11, distant traces of Bassett Hound, Dalmatian, Glen of Innes Terrier, Staffordshire Bull Terrier and Wire Fox Terrier 12, some Rottweiler and distant traces of Clumber Spaniel, German Wirehaired Pointer and Newfoundland 13, some Boston Terrier and distant traces of Bulldog 14, distant traces of Borzoi, Brussels Griffon, Dobermann, English Cocker Spaniel and Samoyed 15, some Boxer and distant traces of Bernese Mountain Dog, Border, Dalmatian and Welsh Springer Spaniel 16, distant traces of Beagle, Boxer, Bulldog, Chesapeake Bay Retriever, Dalmatian, Mastiff and Whippet



Animal Farm Foundation, Inc.
www.animalfarmfoundation.org

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Scott & Fuller, 1965

What are our Primary Breeds?

(F1-Offspring of Purebred Parents)



Mated pair—basenji ♂ and cocker ♀ .



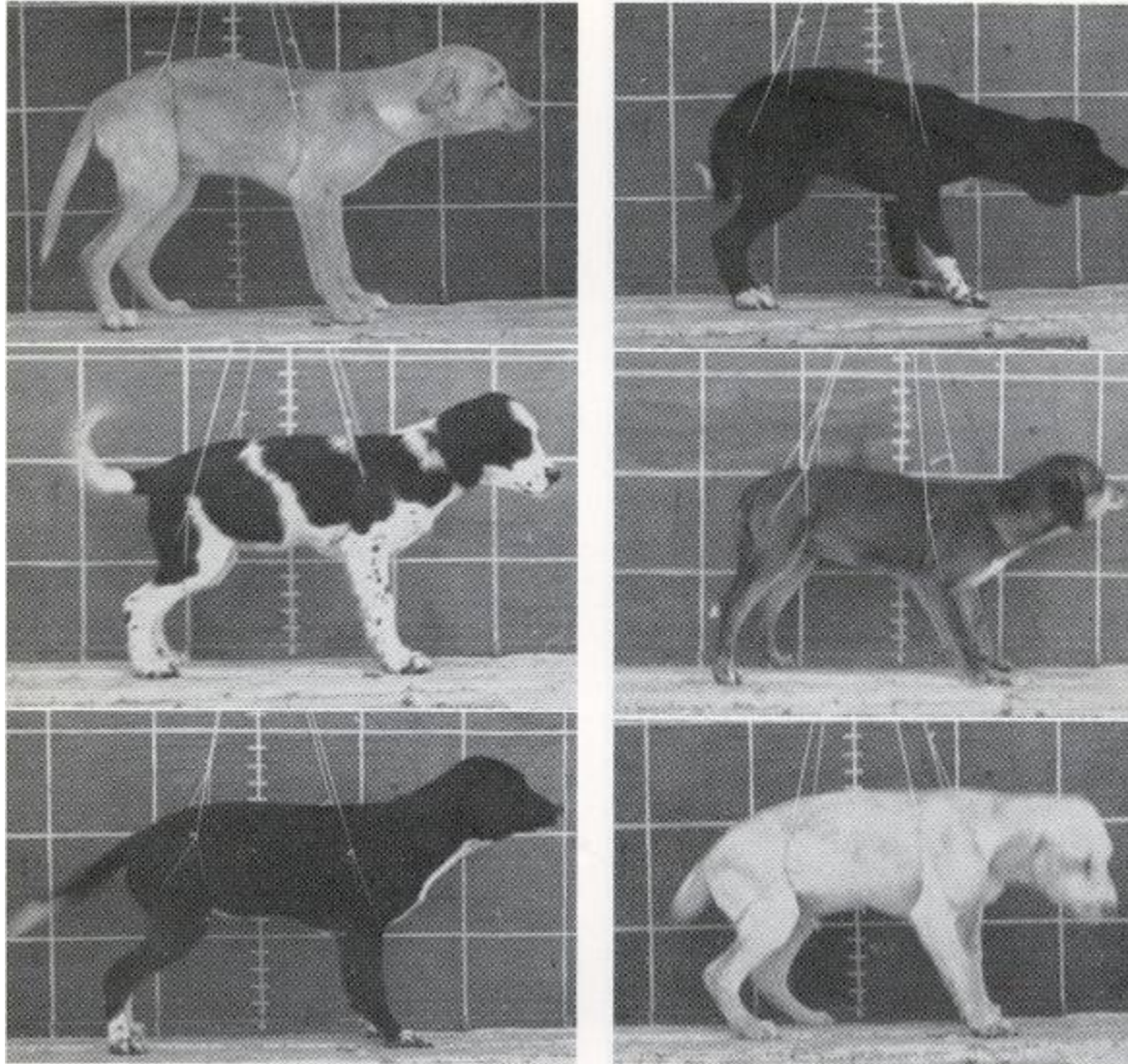
Answer:
Basenji and Cocker Spaniel

Scott & Fuller, 1965

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What are our Primary Breeds?

(F₂-Offspring of Mixed Breed Parents)



Scott & Fuller, 1965

BCS F₂ litter 3193-3200. Note the great variety of form and color in these animals.

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Answer:
These are our parents!

Scott & Fuller, 1965

BCS F_1 hybrids—♂ and ♀ pair.

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Identification by Breed

- Licensing
- Veterinarians/Rabies certificates
- Animal Shelters/lost animals
- Petfinder
- Chameleon
- Media



Misidentification by Breed

- Few people know breeds (labs, shepherds, pits)
- Breed often changes over time
- Poor interrater reliability
- Behavioral expectations
- DNA



Comparison of Adoption Agency Breed Identification and DNA Breed Identification in Dogs

- Journal of Applied Animal Welfare Science, 12:3, 253-262
- Victoria L. Voith, Elizabeth Ingram, Katherine Mitsouras, Kristopher Irizarry
- College of Veterinary Medicine
- Western University of Health Sciences



Results

- 20 dogs of unknown parentage
- 17 different adoption agencies
- Adoption agencies identified 16 as specific breed mixes,
- 4/16 (25%) of the dogs were correctly identified by the adoption agency by predominant breed
- 5/16 (31%) of the dogs were correctly identified by the adoption agency by any named breed
- 14/16 (87.5%) of the dogs DNA identified breeds not proposed by adoption agency



Conclusion

- The assignment of breed identification to mixed breed dogs is complex
- Public health and private policies that depend on identification of dog breeds must take these issues into account



Viewpoint

Breed labeling dogs of unknown origin

It is impossible to breed label dogs of unknown history and genetics solely on the basis of their appearance. There is so much behavioral variability within each breed, and even more within breed mixes, that we cannot reliably predict a dog's behavior or his suitability for a particular adopter based on breed alone. Each dog is an individual.

We must take the lead and free ourselves from stereotypes that imply simple solutions to complex issues, in order to better serve our animals and society.



Amy Marder, VMD CAAB
Animal Rescue League of
Boston



Bernice Clifford, CPDT
Animal Farm Foundation



I'M AN AMERICAN SHELTER DOG!

The staff here has taken their best guess at my breed, but often size and color are not the best indicator of my actual background. One thing they can tell you is that I'm a very special mix of dogs! Through our ARL series of behavioral tests, the staff can tell a lot about my unique personality!

If my adopters are curious about my breed, they will be happy to know that Boston Veterinary Care at the Animal Rescue League of Boston offers DNA testing for mixed breed dogs like me. This is a blood test called the "Wisdom Panel." To find out more information on this please speak to a staff member.

No matter what my breed background is, my personality speaks for itself! Knowing my true genetic make up won't change who I am. If you are interested in adopting a prestigious American Shelter Dog, please ask the staff to visit with me!

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Behavior Evaluations: *What Do They Really Tell Us?*

Why measure personality?

- **Need:** Shelters & rescues need a tool or technique which accurately measures a dog's "temperament" in order to make safe and successful placements
 - **Personality:** characteristics of individuals that describe and account for consistent patterns of feeling, thinking and *behaving*
 - **Temperament:** inherited, early appearing tendencies that continue throughout life and serve as the foundation for personality
 - **Behavior:** actions
- **Goal:** to measure stable personality traits that produce consistent behavioral reactions or tendencies in similar situations in order to understand and predict a dog's personality and behavior in a home
 - In order to make safe and successful matches!



Other Benefits of Assessing Shelter Dogs

- Identify dogs who have difficulty coping with stressful situations
- Identify dogs suited for working (guide, hearing)
- Identify dogs prone to behavioral problems so that preventive measures can be taken



Assessment Tool Requirements

- **Any assessment should be:**
 - **Reliable:** a reliable instrument measures consistently over time and across evaluators as well as demonstrates internal consistency; standardization is a requirement of reliability
 - **Valid:** a valid instrument measures what it's supposed to be measuring, not something else
 - **Practical:** any evaluation must be practical for use in shelters & rescues: easy, limited need for training, feasible to implement



Methods

- Various methods of measuring a dog's personality & behavior:
 - Behavioral tests (aka, test batteries; most common in shelters)
 - Observation in “normal” environment
 - Survey of people most familiar with the dog (owners, shelter workers)
- Different methods of coding as well
 - Behavioral coding
 - Behavioral rating
 - Combination
- Pros & cons to each approach
 - Generally, test batteries are used in shelters, based on behavioral coding or combination of approaches (behavioral rating scales)
 - Test batteries = behavioral evaluations: focus is understanding behavioral tendencies in common situations



Common Sub-Tests

- Taylor & Mills, 2006, reported the 20 most common sub-tests in 6 tests for “pet dogs”:

Object play	Restraint
Novel room test	Approach dog in kennel
Other dog	Behavior on leash
Doll test	Noise stability
Petting	Skin sensitivity
Basic commands	Novel object test
Ignore	Threaten handler
Threatening approach	Stare at dog
Umbrella test	Collar
Food guarding	Running loose

Common Behavior Evaluations Used in Shelters

- Assess-A-Pet
- Safer
- Meet Your Match
- Match-Up Behavior Evaluation
- Others?



Published Behavior Evaluations

- Behavior evaluations for “pet” dogs published in peer-reviewed scientific journals:

6!

- How many commonly used in shelters?
None!



Assessing the Assessments

- **Reliability**

- Test-Retest: rarely reported

- Taylor & Mills found only 1 of 6 tests reported it
 - Jones & Gosling found 2 out of 51 assessments reported it in a quantified and consistent manner
 - And 1 of these was the same test!
 - The good news? Reliability was moderately strong so encouraging
 - But far more research is needed

- Interrater: rarely reported

- Taylor & Mills found only 2 of 6 tests reported it
 - Jones & Gosling found 4 out of 51 assessments reported it in a quantified and consistent manner
 - The good news? Reliability was moderately strong so encouraging
 - But varied widely by sub-test and assessment so far more research is needed



More Assessing

- **Validity:**
 - Various Forms
 - Criterion Validity: how well does the assessment predict behavior when compared to a “gold standard”, usually **owner report** of dog’s behavior in the home
 - Taylor & Mills found 4 of 6 tests reported it
 - Jones & Gosling found 8 out of 51 assessments reported it in a quantified and consistent manner
 - Results varied widely but some evidence of moderately strong predictive ability for some sub-tests & assessments
 - More research is needed!

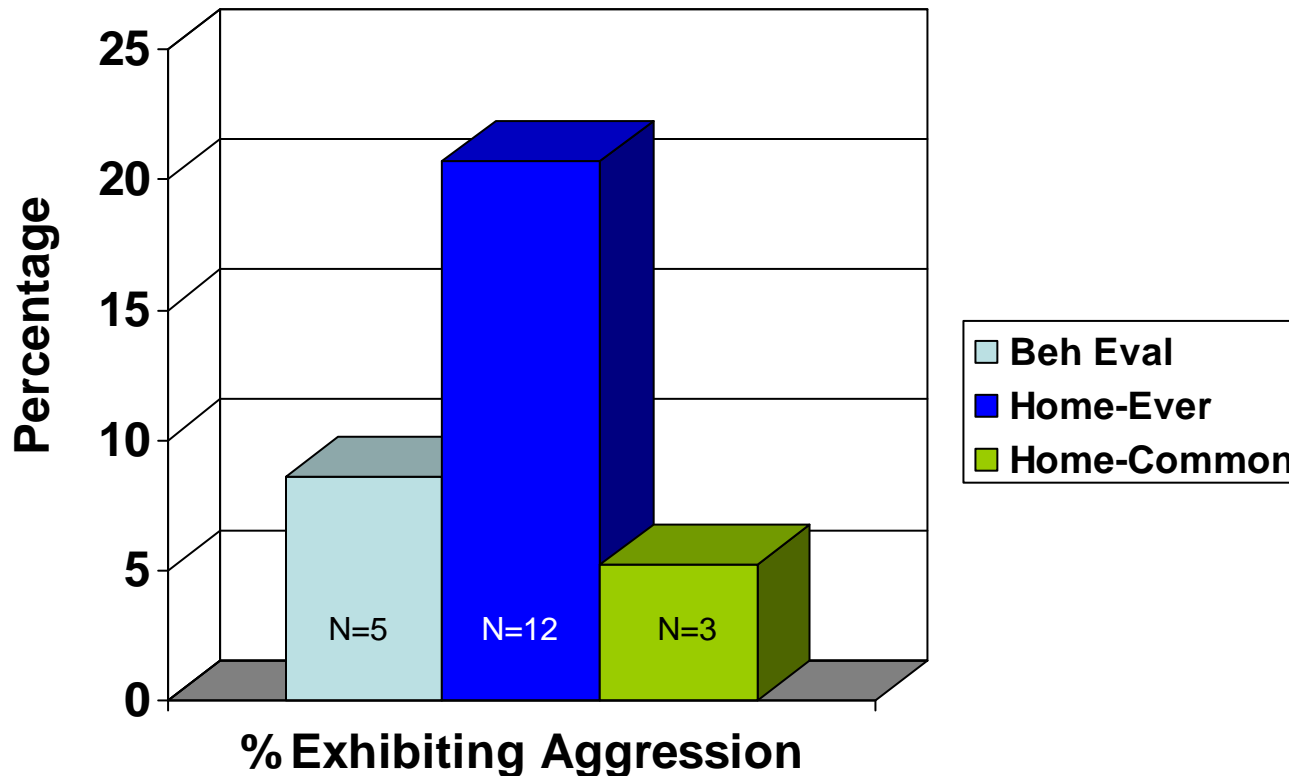


CSD Adopter Follow-Up Survey

- 668 dogs were evaluated using the Match-Up Behavior Evaluation over three years at 4 sites of ARLB
- List of 550 adopters was compiled, 138 completed telephone interviews
- 124 owners either still had the dog or had had the dog within 6 months so completed all scenarios of the questionnaire
- Questionnaire asked about frequency of specific behaviors exhibited by the dog in certain situations
 - Never, Rarely, Sometimes, Frequently, Always



Match-Up Predictive Ability: Food Aggression



Aggression: Growl, Show Teeth, Snap, Bite, Attempt to Bite

Behavior Evaluation: Wet or Dry Food Sub-Tests

Home: Owner report when touched while eating;

Common=frequently or always, Ever=rarely, sometimes, freq, or always



Food Aggression

		Home (Owner Report of Frequent Aggression)		
		Yes	No	Total
Behavior Evaluation	Yes	3	2	5
	No	0	53	53
Total		3	55	58

60%

100%



Food Aggression

- **Summary**

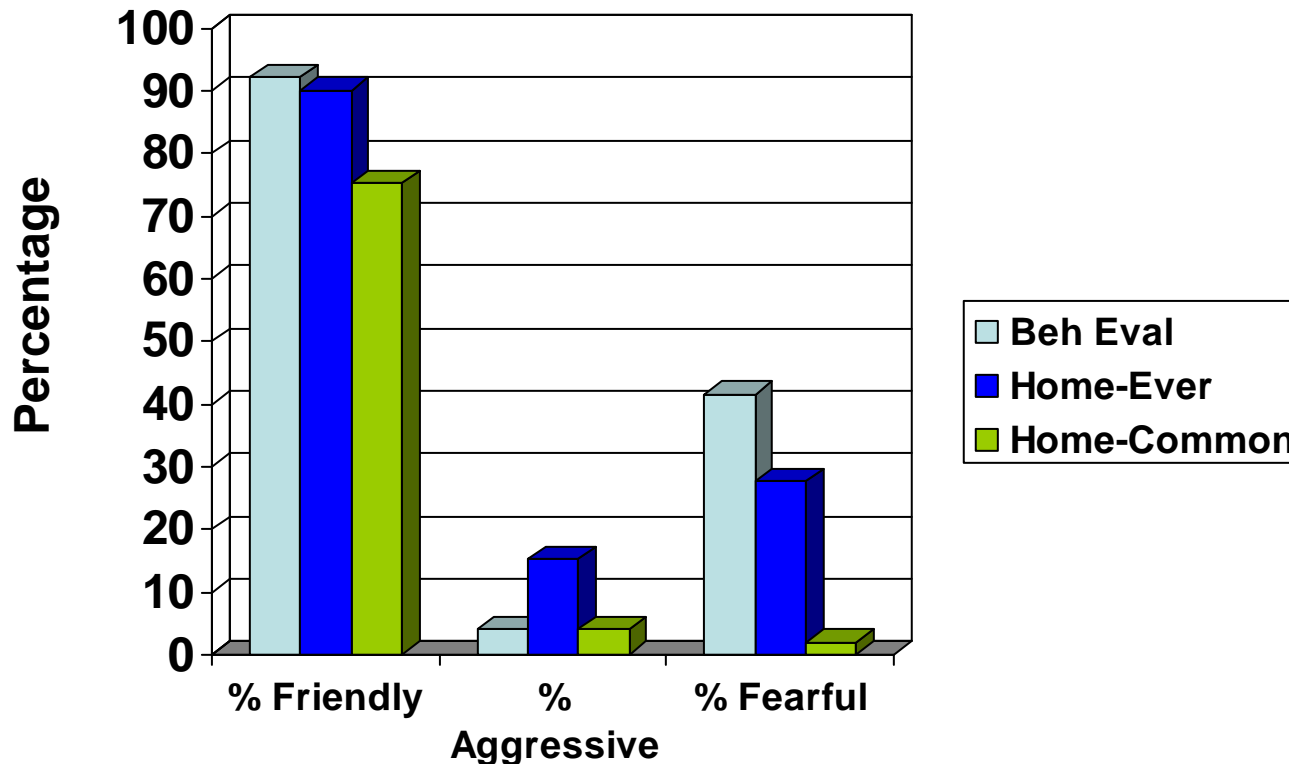
- Not so great at predicting any instance of food aggression: many more dogs showed at least once instance of food aggression in the home than on the test
- Much better at predicting frequent food aggression: 3 out of the 5 dogs exhibiting food agg on the test were frequently aggressive over food in the home
- But 2 out of 5 dogs who showed food agg on the test didn't show it frequently in the home
- And 9 dogs who didn't show food agg on the test were aggressive at least once over food in the home

- **Takeaway: If a dog is food aggressive on test, good chance it will frequently be food aggressive in the home**

- But we will miss some dogs and misdiagnose others
- Decent predictive power but not perfect



Match-Up Predictive Ability: Reaction to Children



Friendly on Eval Defined as: Lick, Paw, Sniff, Approach, Play Bow, Wag Tail

Aggressive on Eval Defined as: Growl, Show Teeth, Snap, Bite

Fearful on Eval Defined as: Move Away, Run Away, Tremble, Hide, Cower

Behavior Evaluation: Toddler Doll

Home: Owner rating of how often dog responds in that manner to unfamiliar children;

Common=frequently or always, Ever=rarely, sometimes, freq, or always

Friendly Reactions to Children

		Home (Owner Report of Frequent Behavior)			
		Yes	No	Total	
Behavior Evaluation	Yes	72	21	93	77.4%
	No	4	4	8	
Total		76	25	101	

94.7%



Aggressive Reactions to Children

		Home (Owner Report of Frequent Behavior)			
		Yes	No	Total	
Behavior Evaluation	Yes	1	3	4	25%
	No	3	92	95	
Total		4	95	99	

25%



Fearful Reactions to Children

		Home (Owner Report of Frequent Behavior)			
		Yes	No	Total	
Behavior Evaluation	Yes	2	40	42	4.8%
	No	0	59	59	
Total		2	99	101	

100%



Reactions to Children

- **Summary**

- Good job of predicting friendly reactions to children based on reactions to a toddler doll
- Not so good at predicting aggressive reactions to children
- Okay job at predicting fearful reactions to children
 - All the dogs with reported fear of children in the home showed fear of the toddler doll
 - But many more dogs who showed fear of the toddler doll showed no fear in the home

- **Takeaway:**

- If a dog reacts in a friendly manner to the toddler doll, good chance it will be friendly to kids too
- If reacts in an aggressive or fearful manner, need to be cautious in placing that dog but does not mean the dog won't do well with kids
- We will miss some dogs and misdiagnose others



Behavior Evaluations

- Before using results of any assessment, we must first understand the strengths and weaknesses of the test
 - Must be standardized in implementation and scoring
 - Should be reliable
 - Should be valid (predictive)
 - Should be practical & useful
- Few evaluations have demonstrated robust reliability and validity so any result must be kept in context

That is, no decision should be made based on any single piece of information, evaluation included.



What Next?

- When making placement, treatment, and euthanasia decisions, consider ALL information you have about the dog
 - Behavior evaluation (keeping in mind limitations of that test)
 - Intake
 - Behavior in the shelter
 - Other information

Each dog is an individual;
consider all the information you have about that dog.



Intake Information

- Valuable source of information about an incoming dog's medical and behavioral history
- But may not be entirely accurate or predictive of future behavior for a variety of reasons
 - Question wording may produce inaccurate or vague responses
 - Missing questions so don't know history
 - Owners may not see some behaviors as problems
 - Owners may lie for a variety of reasons



Accurate Intake Information

- Segurson, Serpell, & Hart, 2005
 - 2 group experimental design
 - Confidential group: Surrendering owners were told their intake info would be confidential
 - Non-confidential group: Surrendering owners were told their intake info would be shared with the shelter staff and used to make placements
 - Confidential group reported higher rates of owner-directed aggression and fear of strangers
 - No differences in other problem behaviors



Accurate Intake Info

- **Marder, 2005**
 - 46 dogs with completed intake info were followed 3-12 months after adoption via telephone interviews with owners
 - Intake info predicted dogs who house-soiled or barked when left alone in the new home
 - However, MANY dogs with these behaviors reported on intake did not show the behaviors after adoption
 - Intake info predicted dogs who were NOT aggressive after adoption
 - However, MANY dogs with no history of aggression did show aggressive behaviors after adoption



Accurate Intake Info

- **Stephen & Ledger, 2006**
 - 40 dogs with completed intake information followed 2 & 6 weeks after adoption
 - Ratings between previous and new owners were variable
 - 8/20 behaviors correlated at 2 weeks
 - 6/20 behaviors correlated at 6 weeks



Intake Info Summary

- Presence of aggression on intake questionnaire should be taken seriously
- Utilize a behavioral questionnaire in shelters
- Utilize post-adoption follow up to determine accuracy of intake questionnaires in your community
- Intake questionnaires need to be written carefully to provoke honest, accurate responses
 - Open-ended, non-judgmental questions
 - ‘what does your dog do when you are not home’ is better than ‘does your dog have separation anxiety?’ (that means different things to different owners)



Perfectly Predictable?

- Remember, no one piece of information is perfectly accurate, reliable, and predictable
- Decisions should not be based on any one piece of information
- Pull together all the pieces of information to make as complete a picture as possible

Each dog is an individual;
consider all the information you have about that dog.



Pulling It All Together

- **What do we do with all this information?**
 - Gain a fuller understanding of dog's personality and behavior in multiple settings
 - Help in placement decisions
 - Identify dogs who may need additional services for behavior problems
 - Identify “at risk” dogs
 - Identify dangerously aggressive dogs
- **How can we use the information from the behavior evaluation, intake and time in shelter?**
 - By developing a standardized, systematic scoring that incorporates information from multiple sources
 - By creating a group to review and decide upon the proper course of action, using all the information at hand



Traits and Aggression Points

- ARLB uses the following system:
- 4 trait scores are calculated based on behaviors observed in the evaluation
 - Friendliness, Fearfulness, Arousal, Aggression
- Points are added for specific aggressive behaviors reported on the intake, seen in the behavior evaluation, and observed in the shelter; points are totaled.
 - High points suggests more of a problem and requires a more careful review

Points provide a common language across departments and sites.



Group Review

- Guidelines:
- 0-4 points and no aggression = ADOPTION
- 4-16 = grey zone
 - Adoption
 - Special adoption
 - Rehabilitation and retest
 - Breed rescue
- 16+
 - Animal Health and Welfare discussion



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Enrichment Strategies for the Shelter Environment

Instituting an Enrichment Plan

- Implement ONE enrichment tool at a time
- Track progress: success, failure, modifications (if needed)
- Start with an easy enrichment tool
 - Low cost
 - Able to implement by use of volunteers
 - High probability of improving canine welfare



Effective Enrichment

- Efficient
- Reduces undesirable behaviors
- Cost- inexpensive and durable
- Enrichment devices should not increase the spread of infectious disease



Steps

- Evaluate Stress
 - Enrichment will reduce stress but dogs won't engage with some enrichment activities until stress is lowered
- Start with the basics
 - Housing
 - Olfaction
- Add on 'problem specific' interventions
 - Quiet time
 - Feeding enrichment



Types of Enrichment

- **Housing/Environment**

- Predictable routine
- Kennel design
- Location of food, sleeping, bathroom areas
- Sleeping platforms, blankets
- Noise level/Calming music
- Seeing other dogs/multiple dog housing
- Scents

- **Social**

- With people & other dogs
- Playgroups

- **Training**

- Works the brain, gives a focus

Feeding

- Chew toys, rawhides, etc
- Many enrichment devices available use food



Playgroups

- Very enriching for the dogs
- Rewarding and valuable to the staff
- Efficient, multiple dogs exercised at the same time, fewer staff needed so more staff available for cleaning, other activities
- But NOT as simple as throwing all dogs together in the yard
- Safety measures must be used
 - Shake can, air horn, no food, 2 people in the yard at all times
- Protocols must be established
 - Leader, Assistant Leader, Assistants, Runners
 - Which dogs go and when, multiple groups based on activity level & play style
 - What happens if a fight develops
- Evolve protocols as situations develop
- Contact Amy Marder at ARLB and/or Aimee Sadler at Longmont Humane Society



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THANK YOU FOR
YOUR ATTENTION