Canine Behavior and Acoustics

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Does this sound familiar?

The noise level in shelters has been found to regularly exceed 100 dB.

(95 dB is a subway train
110 dB is a jackhammer)

The Effect of the Soundscape on Health and Behavior

Sound Has a Profound Effect on Health and Behavior

Sound affects mammals in terms of their:

1. Physiology
2. Psychology
3. Cognition
4. Behavior

Of course, all of these things are inter-related.

[see TED Talk, Julian Treasure]

Physiological Responses

Effects on Physiology

1. Respiration Rate
2. Heart Rate
3. HPA axis stimulated or de-activated
4. Parasympathetic or sympathetic system stimulated
5. Muscle contractions to loud, abrupt sounds; muscle relaxation to other types of sounds

OSHA: High levels of noise can result in stress, ulcers, hypertension, tinnitus, difficulty concentrating, absenteeism & accidents.

Psychological Effects

1. Inherently affects internal affect:
   soothes or stimulates

2. Classically conditioned or operant reactions:

   Positive:
   bird song = safety

   Approach of caretaker at dinner time = arousal

   Negative:
   Dentist's drill to people, other dogs barking to many dogs

Cognitive Effects

1. Can’t understand vocal communication if noisy (Speech degrades through the environment much more than some other sounds)

2. Difficult to think, make decisions, listen or respond if the environment is noisy

   (A noisy environment decreases human productivity by 66% in “open plan” offices.)

Behavioral Effects

1. Dogs & Cats:
Animals move away from unpleasant sounds.
But what if they can't?

2. Potential Adopters:
People also move away from unpleasant sounds.

(Retailers lose 28% of their business because of aversive sounds)

3. Staff & Volunteers:
There is a reason that OSHA has developed standards regarding maximum levels of sound.

OSHA STANDARDS

Duration per day, hours	Sound level dBA
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

Coppola et al (2010) found that, in one new shelter, sound levels were over 100 dBA over 30% of the time in some areas.

How Much Attention Do You Pay to Sound in Your Shelter?

How loud does it get?

Are the sounds aversive or pleasant?

(And to whom?)

What can you do to improve the sound scape of your facility?

What Can We Do?

- Learn to use your voice most effectively.
- Modify the physical environment to decrease aversive environmental sounds and increase pleasant ones.
- Do all you can to decrease vocalizations, both in frequency of occurrence and amplitude.

I. Your Voice – The One Thing You Can Control!

It’s not what you say,
it’s how you say it.

How to use your voice to best advantage…

Acoustic Structure and Receiver Response (McConnell 1990, 1991)

> Recorded over 110 professional animal handlers

> Analyzed their “vocalizations”

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> Recorded Evoked Potential Responses of puppies before and after training

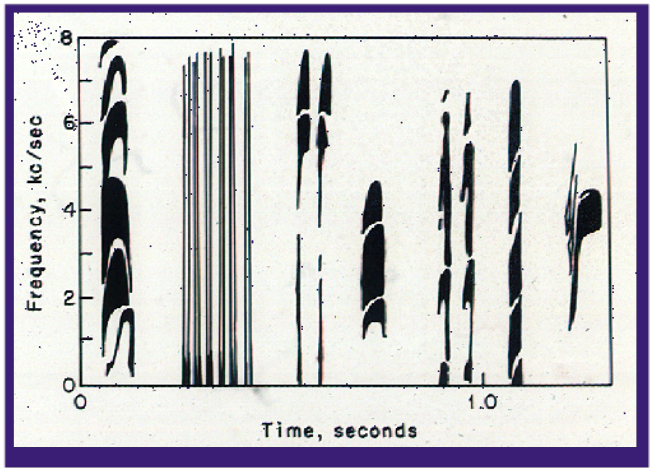
> Taught puppies to Come or Sit to one of two sounds:

- Long, descending whistle
- Four short, rising notes

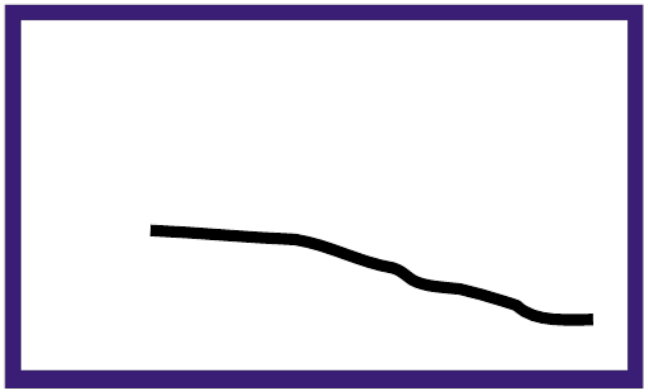
Four short notes
INCREASE
MOTOR ACTIVITY

See Lost in Translation DVD for more on this topic.

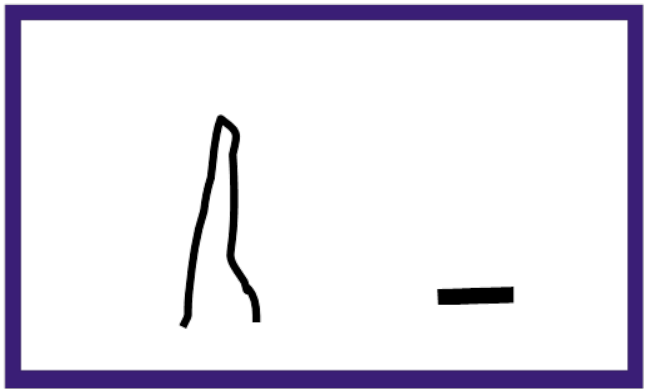
Summary of Results



CLAP, CLICK, SMOOCH, PUP PUP
Move, Move Faster, Get Excited
SHORT, ABRUPT, REPEATED



LONG, SLOW SINGLE NOTE:
Whistle, “Eeeeeeasy”, “Whooooooooooa”
Slow down, calm down
LONG, NARROW BAND, SINGLE



SHORT SHARP WHISTLE or “WHOA!”
“HEY!”, “AH!”
Stop instantly, Pay attention
SHORT, BROAD BAND, SINGLE

II. Modify Environmental Sounds

Analyze the environment, look for things you can do now and in the future:

> Are the kennels noisy to open and close?

> Can you add a door between rooms?

> Request children use quiet voices

Modify Environmental Sounds

> Add in pleasant or calming sounds?

Kogan et al (2012) found that “classical” music increased sleeping time.

Wells (2002) found that “classical” music increased resting postures and decreased barking, while heavy metal increased barking.

Through a Dog’s Ear CDs:
Many shelters find helpful, Kogan did not…

Relevant Features Aren't the Classification of Music

> Longer, continuous notes tend to calm; short, staccato ones stimulate.

> Pure tones and regular rhythms are associated with positive states; harsh, noisy ones with negative states. (Compare the whine of a puppy with a growl of an adult.)

> Tempos matching heart rates tend to be calming.

III. Decrease Vocalizations

- Decrease visual & acoustic stimulation:
  - Solid walls between kennels (to ceiling?)
  - Dutch doors in front of kennels?
  - Private apartments?

- Provide comfort: Sleeping off the floor, higher in space, comfortable pads to sleep on
- Keep busy: Stuffed Kongs, lots of exercise
- If possible, move problem barkers/meowers to another area

WHAT DO YOU DO?

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Decrease Vocalizations

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WHAT DO YOU DO?

Decrease Vocalizations

- Train quiet?

  All staff treat each dog as they walk down the aisle. (What is your experience? Does this reinforce barking, or eliminate some of barrier frustration and decrease barking?)

- House dogs and cats socially

- Dampen decibels with appropriate ceilings, baffles, etc.

WHAT DO YOU DO?

Canine Vocalizations?

Another webinar perhaps!

Meanwhile, see *Farago et al* (An Beh 79. 2010. pp 917-925) for a fascinating study of the interpretation of dog growls.

References

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THANK YOU!!!

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