Learning Behavior and Search Optimization
Dr. Angela Bartels
Bundeswehr School of Dog Handling

Introduction

Each dog handler should have fundamental knowledge about learning behavior (classical / instrumental conditioning):

to make them aware of the little pitfalls that might occur during training in order to avoid them.
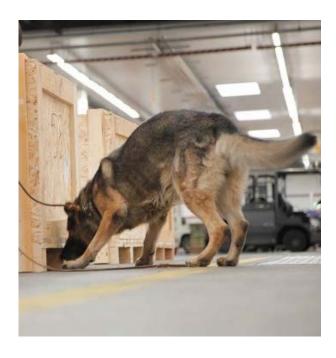
Introduction

At the latest when a dog is unable to render its best possible performance, the question must be:

How can I optimize my training as trainer/dog handler to achieve the desired result?

Introduction

How can we make use of findings about a dog's learning behavior to optimize search behavior for most types of material?

STREITKRÄFTE
BASIS

Classical Conditioning

- This form of conditioning is about deliberately uncontrollable responses of the body (reflexes, emotions) that are associated with certain causes and learned in this way.

- Conditioning is done by closely linking in time an initially neutral stimulus to an unconditioned stimulus.

- And, finally, the originally neutral stimulus itself becomes a -learned- stimulus that can trigger a reflex.

http://upload.wikimedia.org/wikipedia/commons/2/2a/Ivan_Pavlov_nobel.jpg

Iwan Pawlow

STREITKRÄFTE
BASIS

Classical Conditioning

- In the context of dog training classical conditioning are applied in all fields where behavior is controlled by "reflexes".

- Every emotional response is subjected to classical conditioning.

- The best results are obtained, if the unconditioned stimulus is preceded by 0.5 seconds by the conditioned stimulus.

http://www.bt24.de/galleries/stream/gallery/106916/image/13725105/size/gallery

Characteristic features of classical conditioning:

- largely independent of location

- not controlled through reflection

- swift and reliable implementation after successful conditioning process.

STREITKRÄFTE BASIS

Classical conditioning of smells.

Presentation of Odor - food

Instrumental Conditioning

- Also referred to as operant conditioning.

- Refers to learning processes that are controlled via deliberate action or via the principle of "trial and error".

- In processes of instrumental conditioning there is leeway for action for the dog.

- The dog may choose whether to show a behavior or not.

- Depending on whether it will be rewarded or punished, a behavior is shown more or less often.
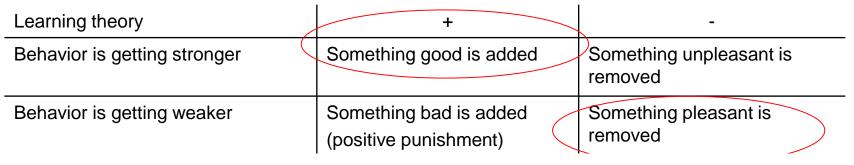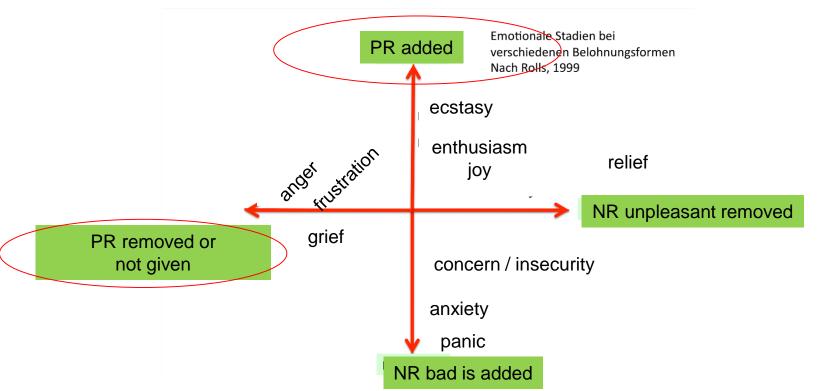
Reward and Punishment

Learning theory	+	-
Behavior is getting stronger	Something good is added	Something unpleasant is removed
Behavior is getting weaker	Something bad is added (positive punishment)	Something pleasant is removed

PR added

Emotionale Stadien bei verschiedenen Belohnungsformen
Nach Rolls, 1999

ecstasy

enthusiasm

joy

relief

anger

frustration

NR unpleasant removed

grief

PR removed or not given

concern / insecurity

anxiety

panic

NR bad is added

What are the determining factors for the degree of reinforcing a behavior?

- Time lag!

- Location of administering the reinforcer!

- Type of reinforcer!

Video

The longer the delay
in administering the reinforcer,
the less effective the reinforcer!

directly

reliable

valuable

Response Cost

- The animal must work harder to get a reinforcer, if the behavior shown has not been optimal

- Clicking and rewarding are different things

- To achieve a high rate of reward, it is possible to click in one place and reward in another

- In case an animal must work more and harder to get a reinforcer, the value of the reinforcer is minimized…

STREITKRÄFTE
BASIS

"Errorless Learning"

How do I cope with errors?

Errorless learning.

Why errorless learning – what is the advantage and how do I design errorless learning?

"Errorless Learning"

Studies have shown that the training objective is reached faster, if no errors are made during learning.

Theory

- The memory is busy with processing the error. No capacity!
- Errors are demotivating. Negative emotion!
- Even if it is not rewarded, the unwanted behavior is learned

STREITKRÄFTE
BASIS

Errorless Learning

Start the training with something the animal is capable of achieving.

- What is the animal capable of achieving?
- Training atmosphere is important – SAFE!
- Always only one training criterion

- Analyze the behavior / analyze the behavior of the trainer
- To change the behavior of your opposite, you have to change your own behavior!

STREITKRÄFTE
BASIS

Conclusion

- To know about learning theories are important for dog handlers.
- All dog trainers should regularly train themselves in dog training.
- To train with different animals is beneficial for dog handlers / trainer.
- Good documentation and a good plan is important for good training.

Dr. Angela Bartels

Bundeswehr School of Dog Handling, Germany

angelabartels@bundeswehr.org