GET*

Integrated Canine “Fear” Toolbox

by

Leonard “Buzz” Cecil

*Graduated Exposure Techniques

Containing both the theory and practical examples of evidence based techniques to help dogs better deal with their fears and fearful situations. Included is an extensive bibliography and links to explanatory and demo videos.

Preface

My newest paper, and it's more like a book, is in two parts:

The theoretical part, Part 1: (if you don't feel you need the "science", skip these pages of annotated references, cites and quotes and go right on to Part 2: the practical application)

1) How did Counterconditioning (**CC**) get started and what's happened to it in terms of research since those beginnings? How effective is it compared to "other" techniques? How is it done today in human fear, anxiety and phobia treatments?
2) How did Systematic Desensitization (**SD**) get started and what's happened to it in terms of research since those beginnings? How effective is it compared to "other" techniques? How is it done today in human fear, anxiety and phobia treatments?
3) What is **SD&CC**, how did it get started and what's happened to it in terms of research since those beginnings? How effective is it compared to "other" techniques? How is it done today in human fear, anxiety and phobia treatments?
4) What OTHER evidence based behavior change techniques are there that we could tap into and how effective are they compared to **SD** or **CC**?
5) What other aspects of behavior change have been investigated by science with what evidence, and how could they effect/help what we're doing?
6) The results of an informal on-line survey looking at the "real-life" effectiveness of the myriad fear reduction protocols. The goal was NOT to compare the effectiveness of the one with the others or to set up a competition to show which one is more effective. The goal was to within given parameter defining "what works", how many achieved a "cure" and how many achieved improvement.
7) Since this book has to do with evidence based techniques, you'll find extensive cites of original peer reviewed literature. That being the case, there is an extensive bibliography showing the sources of the references, be they articles, studies, meta-studies, collections or textbooks. Where the sources can be obtained on-line, links to these sources are given.

The practical application part, Part 2:

> Showing how the product of all of the above can be transferred for use in so-called canine fear reduction/coping strategies. Lots of "new" (for many of us) ideas, steps-by-steps and demo-videos.

If you are only interested in the practical applications, please understand, the justified mantra

"Show me the data"

is fulfilled, but in the first theoretical part. And you may be surprised, what it does and doesn't show. Feel free to skip the theoretical part, but be advised: That data for everything that is claimed in the second practical part is in the heavier first theory part. So "This seems to me to be ..." is a rather empty reaction, because it's explained exactly what it is, where it came from as well as it's relative effectiveness and efficacy with other techniques - in that longer, more involved first theoretical part.

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Integrative Canine “Fear” Toolbox, v. 4.5

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Table of Contents

1 – General Introduction

This book is an attempt not to criticize, but rather show how we might do what we do even more efficiently. To do that, I decided to expand upon and add to what I've previously written, plus add actual suggestions of evidence based techniques which could make our work even more effective.

As I will later show, since at least the late 1970's, animal behaviorists and therefore also many dog trainers and behavior consultants have written articles, books and even studies mentioning a behavior modification procedure which is alternately called **D&CC** or **DS&CC** or **CC&DS** or **CC&D** or **SD&CC** or **Systematic Desensitization and Counterconditioning**. Many more or less rightly identify the originator of respondent **Counterconditioning** as being Mary Cover Jones (1924) and the originator of respondent **Systematic Desensitization** as being the South African Joseph Wolpe (1958), and even more or less (in-)accurately describe the original procedures (often leaving off important bits). **SD&CC** has taken on almost magical properties of being able to "cure" dogs of fear and fear aggression, with some people claiming, that all that is necessary for it to work is, that it be done competently. I'd done some initial research and had come up with a problem that seemed to be well known outside of dog training, but pretty much unknown at the time in our ranks: **Return of Fear**[1], a phenomenon known, but not so named in his 1927 book by Pavlov himself. This in and of itself should have been enough to dispel any such claims of such remarkable effectiveness. But it wasn't.

> In interviews with a couple of psychologists, I learned, that the combination of **SD** mashed up together with **CC** is ... not only unknown outside of dog training, as opposed to what is claimed by trainers and trainers' trainers, but it would make no clinical sense to try to do them together. That being the case, they couldn't even provide a guess as to what "we" really mean when we say we're doing this, what it's supposed to accomplish or where we got this idea from. And of course, the idea, that ANY psychological therapy works 100%, the only criteria being that it be "competently" done, is absurd.
>
> As Ms. Sylvia Bodenheimer informed me, even Freud didn't figure on more than a 30% success rate.

And to a certain extent, we see herewith one of the problems of how "we" portray what we are doing. We identify the originator of a therapy, take an already edited version of what exactly this originator did – edited according to the editor's training and school of psychology or approach, and assume this is how this procedure is done today after much research into this particular therapy PLUS, that this is also freely combinable with anything else. No one would think to define modern cars by explaining that in 1886 Karl Benz invented the Benz-Patent Motor-wagon[2], nor would anyone define modern air travel by explaining the first gliders (1902) or even first powered airplanes (1903)[3] and claiming this is how we still drive or fly today. Yet this is what we dog people, for the most part, do when describing "our" working protocols and how they function – if we even make that historical association.

So I decided to write a more detailed paper, which turned into a book, to address the following points:

- ➔ The history and scientific development of **Systematic Desensitization** (**SD**) as a procedure, first tracing this in human therapies to the present date, while also examining the attributed underlying process going on during said **SD**. Only after doing this, will I examine how it is done in animal behavior treatments and compare the two application areas.
- ➔ The history and scientific development of **Counterconditioning** (**CC**) as a procedure and as an underlying process to procedures, first tracing this in human therapies. Only after doing this, will I examine how it is done in animal behavior treatments and compare the two application areas.
- ➔ The history, research concerning and scientific development of **SD&CC,** that there is no

1 Rachman, (1989)
2 https://en.wikipedia.org/wiki/Car
3 https://airandspace.si.edu/exhibitions/wright-brothers/online/fly/1903/

consistency in how it's done by animal behaviorists or consultants and why ... and that there is no research on what is called **SD&CC** in the animal behavior world, to be found -outside- of animal training circles. This, by the way, is NOT to say, that this procedure called **SD&CC** as done by the same animal behaviorists or consultants is ineffective, just not as 100% effective as claimed. This does however mean, that in my opinion, we're labeling **SD&CC** incorrectly and my excerpts/cites show why that is. And a suggestion for a more accurate "label" and why.

- ➔ Some different "other" evidence based techniques for dealing with fear based issues, some of which involve completely different **conditioning paradigms** and even different **Learning Theories**, showing their effectiveness and efficacy, also compared with other ones.
- ➔ Some additional factors, empirically shown to be absolutely necessary for successful treatments of fears, anxieties and phobias.
- ➔ Some recommendations concerning how we might optimize what we're already doing (see above) and introducing some of these "other" optimization techniques, which some are already doing and which I believe may otherwise be relatively unknown.

The book is organized such, that if you already know, that a respondently performed **SD&CC** is NOT a real thing in the empirically based world of human psychology, you can skip right to the discussion about the comparative efficacy and effectiveness of different therapies. Or if that doesn't interest you, you can skip further all the way to the discussion of what other less known (to "us") techniques are good for and how they have been found in terms of efficacy and effectiveness. Or perhaps all that is not so interesting, you might be more interested in reading about how these "new" and empirically based techniques might be able to be applied, possibly slightly reconfigured, to canine behavior modification.

The further along in the book, the fewer direct annotations you'll find, mostly because that background information will already have been provided previously in the book. This means, the further along in the book, the easier it'll be to read – but you'll have to assume that the evidence based data has already been presented. If anything included is strictly my opinion, I'll label it as such. The first pages will be more difficult, because I'm not just relying on my summary of research, I will be quoting under the international Fair Usage Laws, short excerpts to support or illustrate the points made by the researchers. And in this theoretical section, I've severely limited the number of sources I cite and/or quote – there are many, many more.

Although this is not a scientific book in and of itself, I do try to present a "true" picture of the available science, sometimes giving conflicting sources because the science of behavior itself is inconclusive – as we'll see. And since I'm not a scientist, I welcome any additional sources of primary peer reviewed studies, which may expand upon what I've written or even present another viewpoint. What I'm trying to do is avoid arguing beliefs. They're fine and yours are yours, just as mine are mine. If you don't "believe" what I wrote, that's a non-starter, because unless I say I'm expressing my opinion, the statements made are not mine, I'm just reporting the information and giving the sources. What you do or don't do with that information is your business. And most certainly, what I will not do, is enter into a discourse with someone who has not taken the trouble to read the book. If you disagree so heartily, that you cannot be bothered to read the book, then why take the time to make objections to something that ... you can't judge about? And if you want to argue, that it's too long and therefore too difficult to read ... just don't. If you really want difficult and long, read Marshall McLuhan.

One general comment: I will often use the term from the vernacular "fear", such as "fear based behavior". We cannot really know if a dog is experiencing "fear" or if she is experiencing any number of related emotions such as anxiety, concern, dread, horror, panic, suspicion, terror, unease, worry, abhorrence, aversion, consternation, distress, fright, misgiving, revulsion, trepidation to name a few. What they all have in common is a general tendency for the dog to seek distance from this "object of fear" through one or another tactic. So what I would actually be talking about would be an agonistic/aggressive stress response, which is a mouthful to write every time. Panksepp's **FEAR/RAGE**[4] Affects would also be a better group description than "fear".

4 Panksepp & Biven (2012)

So, why the title "**Integrative Canine "Fear" Toolbox**"? **Integrative Psychotherapy**[5] in human psychology is an evidence based eclectic (no, that's NOT a dirty word) collection of different therapies based upon different principles garnered from different types of psychologies, which have proven themselves effective in their application for different psychological difficulties. We'll be looking at the definitions and practical applications of the following which will be observable as results along the way in our dealings with fear / fear responses: **Self-Efficacy** & **Internal Locus of Control** which, with other effects combine to afford both caretaker and dog what is called **Empowerment** – and how this can effect existing and strengthening **Resilience** against future socially unacceptable and unwanted fear responses, while also to a certain extent, helping to "immunize" against those very responses . **Social Referencing**, **Secure Base** & **Attachment Theory**, as well as **Orienting Response**. And we'll look at the differences between **Pavlovian** (Classical or Respondent) and **Evaluative Conditioning**.

After clearing up what **SD&CC** and it's individual parts are, where they came from and to what they've developed as a result of decades of extensive research, we do NOT simply throw **SD&CC** away, once we know what it can accomplish, what it can't, why, how often and how often not. It could join several actual evidence based techniques, based upon empirically sound processes, in a much larger "**Integrative Canine Fear Toolbox**". But not without conditions; mostly that **SD&CC** can be more accurately described as canine **Graduated Exposure Techniques**. As with **Integrative Psychotherapy**, the idea is, there is no set procedure. Since all the individual procedures are based upon solid scientific ground and certain unifying underlying processes we'll discuss later, the therapist, or in this case the canine behavior consultant, can chose the techniques which are most appropriate for the client(dog), human and situation/problem, and apply as much or as little of that procedure as is beneficial to both. You can, but you do not need to, start each procedure from A and go through Z. I show how this is/can be done in human **Integrative Psychotherapy** and I then take the human based procedures and show how some may be applied with our dogs and their people.

I'd like to thank some friends who are psychologists, practicing various forms of therapeutic assistance, who, in the course of their studies, learned about behavior oriented exposure type interventions, but chose to practice other therapeutic methods instead. My thoughts were, that "we" are not the only ones working successfully with behavior modification, so why do most psychologists familiar with so-called behaviorism oriented techniques NOT choose those, instead going to totally other therapeutic methods, and what could we possibly learn from them?

Ms. Sylvia Bodenheimer, (Basel, Switzerland) pca.acp Swiss Association for the person-centered approach according to Carl Rogers, which is one of many "Humanistic Psychotherapies[6]". http://www.sylviabodenheimer.ch

Ms. Regine Stutz, (Switzerland) lic. phil. psychologist (ret.), Integrative therapy[7] for children and integrative motion therapy according to Hilarion Petzold, specialist for psycho-motor problems and special needs children

Univ. Prof. Dr. Irmtraud Tarr, (Rheinfelden, Germany) psychotherapist, music therapist, concert organist and Professor for Performance Science at Mozarteum, University of Salzburg, Austria http://www.irmtraud-tarr.de/en/index.html. In terms of her psychological training, she has experience in psychoanalysis, gestalt therapy and integrative therapy.

Jane Miller, (USA), LISW, CDBC, AABP-CDBT, Executive Director, Healing Companions, Inc. (she was also extremely helpful in generally copy editing, thanks so much Jane)

5 http://www.integrativetherapy.com/en/integrative-psychotherapy.php

6 https://en.wikipedia.org/wiki/Humanistic_psychology

7 As opposed to being exclusive like radical behaviorism, it strives to unite many different therapies according to ... "our ability to select the best treatment for the person and the problem…guided primarily by data on what has worked best for others in the past". Norcross, J. C. (2005). A primer on psychotherapy integration. In J. C. Norcross & M. R. Goldfried (Eds.), Handbook of Psychotherapy Integration (2nd ed., pp. 3–23). New York: Oxford.

2 – Part 1: Theory

How evidence-based is "our science" as we know it, teach it and apply it? How "proven" is the idea of reinforcement and punishment, no matter if according to Thorndike or Skinner? Estes (1970) summarizes the actual state of research at the time:

> *...the frequency with which animals and men in non-laboratory situations repeat punished acts and fail to repeat rewarded ones is so great that, as a statistical generalization, the empirical law of effect is all but vacuous.*

which is very much in line with what Dr. Susan Friedman repeats, that science in the lab is neat, but in real life it's messy. This is not something "we" like to hear, especially not when "we" make generalized statements, that we employ "science-based" methods, yet in fact, misrepresent what science has actually found out about these very methods we claim to be doing.

Kirsch et al (2004) wrote from another perspective, into which we'll later delve, inasmuch as, as we'll see, we can actually see the product of these processes in play in many secondary attributes of the animal during behaviors and will even be able to chart these, if one were aware of them and was will to lend them the attention due to them:

> *Kuhn (1970) noted that scientists can "agree in their identification of a paradigm without agreeing on . . . a full interpretation of it" (p. 44). This particularly is clear with respect to classical and operant conditioning. There can be no doubt that these procedures result in learning and that they have inspired treatments that have been shown to be effective in clinical trials. However, almost since their inception, their interpretation was the focus of intense theoretical debate. The central issue at the core of this debate was the following question: Are these phenomena automatic, mechanistic processes, in which higher-order cognition, if present at all, is merely an epiphenomenon (e.g., Hull, 1943; Pavlov, 1927; Skinner, 1953; Watson, 1913), or are they processes that are mediated cognitively (e.g., Bolles, 1979; Rotter, 1954; Tolman, 1932, 1948)? In recent years, a consensus has emerged that cognitive processes play an important role in learning (Miller & Oberling, 1998; Rescorla, 1988, 1991).*

The idea of being a science based trainer is, if it really is science we base our training upon, it is not science to simply limit ourselves to one science, while ignoring the others. We've all been fascinated by the results of cognitive experiments coming from Duke University[8], Yale University[9], University of Lincoln (UK)[10], Eötvös Loránd University (Hun)[11] and others, and even use them in discussing things like what dogs can do, what dogs are, especially with those who do not share our training philosophies. But often, when it comes to hands-on training or behavior change, we either don't reference these, don't think they are applicable, or simply ignore them. But, how does science work? Do you know? Someone gets an idea. They test it. It works so they write it up. That's science, kind of.

Except that's not always how it works. Sometimes it doesn't work. So they look at it again. And they change something and look at it again. They test. It works better. So they publish results and keep working on it.

But there is still another way. Sometimes they just chance onto something and ... it works, even most of the time, but they have no idea why. So they spend years and years, making one hypothesis after another, ruling out one explanation after another. And they may never come up with an explanation other than it works – anywhere from sometimes to a lot of the times. Pretty much never all of the time.

8 https://evolutionaryanthropology.duke.edu/research/dogs
9 http://doglab.yale.edu
10 https://www.lincoln.ac.uk/home/lifesciences/research/abcwelfare/
11 https://familydogproject.elte.hu/about-us/our-research/

Can I give you some examples?

1) SNRI[12] (Serotonin–norepinephrine reuptake inhibitor) Originally developed as an anti-depressant, this works well when it does. Of course some of the side effects can be rather horrific. Some people get suicidal urges, not the best thing for depression. Many people with various forms of the neurological disorder Neuropathy become depressed because of the life-changing nature of the symptoms of this condition. Neurologists discovered, that many of those who took SNRI class drugs such as Cymbalta or Effexor as anti-depressants reported an easing of the neuropathic pain. No one knows why to this day. But now SNRI class drugs are commonly prescribed for neuropathy patients for pain, first considered an off-label application, now first line. It helps when it helps, but not all and not the same amount and not all without side effects. Why? No one knows. Under investigation.
2) Just recently[13], it was discovered by accident, that vigorously pedaling a bicycle can reduce the muscular symptoms of Parkinson's, sometimes to no symptoms for hours at a time. Why? No one knows. Under investigation.
3) Pretty much all psychological therapies, be they verbal or non-verbal, Freudian, Jungian, Behaviorism, person-based, CBT work to one extent or another. NONE work all the time. It also depends upon the definition of “work”. For some, cure=”works”. For others, gotten better=”works”. And no one really knows why they “work” when they do and more importantly, no one can explain why they don’t “work” when they don’t. That also goes for, for example ... **Systematic Desensitization**[14] and **Counterconditioning**[15]. And scientists are still trying to work out how they “work” and why they don’t when they don’t.

12 https://en.wikipedia.org/wiki/Serotonin–norepinephrine_reuptake_inhibitor
13 http://www.medicalnewstoday.com/articles/253197.php
14 Tryon (2005)
15 ditto

2.1 – Systematic Desensitization (SD) and Counterconditioning (CC) .. as Separate Entities:

The reason to examine these two once again is because I want to look at the "why" behind the differences we find between sources. Before we get into looking at the distinct differences in the definitions or operational implementations, let's clear up the meaning of two different terms I'll be using:

> **technique/procedure**: a set of steps used in a therapy.
>
> **process/mechanism**: the underlying principles which explain why those techniques/procedures work.

The reason for this will be apparent. In some cases the terms **Counterconditioning**, **Extinction**, **Habituation**[16] and even **desensitize** are used either to describe step-by-step techniques/procedures and/or the psychological processes upon which certain, sometimes completely OTHER techniques/procedures rely, that they function as intended. And THIS will become very important when we begin to look at what "we" say we are doing (supposed techniques/procedures) as opposed to what may actually be happening (processes).

Two other terms which will come up[17]:

> **efficacy**: success in the lab.
>
> **effectiveness**: success in non-lab clinical settings.

I had originally wanted to write about **SD** and **CC** completely separately, but as we'll see, they've been intertwined at the very latest, from the time Wolpe first published about **SD** in 1958. Whilst drafting this part, I'd started discussing the two separately, but found myself going around in circles. The only way to avoid that was to try to present the material mostly chronologically.

Unfortunately, we see right away that there is little consensus in what the terms mean by definition, how the techniques are applied, if at all, what processes they rely upon to work, if they are even in common use today, and if not, why not. Note: direct quotes are in *italic Arial typeface*.

These two definitions / descriptions have gained almost biblical levels of "truth" amongst dog trainers as THE definitive definitions / descriptions of what **CC** is as a technique. Associative learning – one forms new positive associations to a formerly negative stimulus. Unfortunately for the reductionists amongst us dog-people, science didn't stand still with this definition or description of the processes. Scientists have wanted to understand more about how this procedure worked and are today **not** in agreement over this, as we will see!

CC lay dormant until Wolpe (1958) developed and published his method known as **Systematic Desensitization (SD)**, but using "**Reciprocal Inhibition**" (**RI**) as the driving process underlying the technique – see the title of his book. But even phrasing this previous sentence as it is, shows a particular bias, for example that one would accept the process underlying **SD** as being **CC**, not **RI** as Wolpe declared it to be.

Where almost all are however in agreement is, how Wolpe originally conceived the technique:

> *Derived from the principles of respondent conditioning, systematic desensitization consists of three basic components: (a) progressive relaxation training, (b) development of a fear-producing stimulus hierarchy, and (c) the systematic, graduated pairing of items in the hierarchy with relaxation (Wolpe, 1958)[18].*

when it is formulated like this, without naming the underlaying process.

16 Rankin et al (2009), Sripadaa & Rauch (2015)
17 Spiegler & Guevremont (2010)
18 Wolpe republished his 1958 work in 1968

The idea, that **CC,** as portrayed above, is the same underlying process as **RI** came later (see below), after further investigation of this underlying process. Wolpe preferred doing his method in terms of visualizing (**in vitro**) the hierarchy in the clients mind while being in a state of deep muscle relaxation according to the method by Edmund Jacobson published in 1938[19], instead of performing the procedure in "real life" (**in vivo**). Later, after much research concerning how **SD** works, many scientists came to the conclusion, that **SD** is simply one of several forms of respondent **CC**[20] [21] [22] [23] [24], and not **RI**! But by that time, they'd also changed the basic definition of **CC** – see below.

As seen below, **CC** can be seen as a class of therapy to which **SD** belongs. Yet still others[25] believe, that it is a separate therapy with it's own "rules" which either are completely different from, or which may or may not include aspects, mechanics or functions of, **SD**.

The American Psychological Association writes about **CC**:

> ***Counterconditioning*** *A technique used in therapy to substitute a new response for a maladaptive one by means of conditioning procedures*[26]***.***

One of the "classical" descriptions or definitions of **CC** is, but which differs importantly from the above one in that a specific procedure is defined:

> *A conditioning procedure that reverses the organism's response to a stimulus. For example, by pairing the stimulus with a positive event, an organism may be conditioned to respond positively to a stimulus that would otherwise conditionally or unconditionally elicit fear.*[27]Lieberman (2000) includes **SD** in his section of his book under Conditioning:
>
> *... but for reasons that are still obscure, there was little further research into this area for almost 30 years. The next significant development was not until the mid 1950s, when Joseph Wolpe (1958) reported a therapy he had developed called* ***systematic desensitization****. Wolpe's technique was similar to that of Jones*[28]*, except that his* ***counterconditioning procedure*** *used relaxation rather than eating as the response. In addition, instead of actually presenting the fear stimuli, he asked his patients to imagine the stimuli. A therapist using Wolpe's technique would ask patients to describe situations that frightened them and then would arrange these stimuli in a hierarchy based on their aversiveness.* (**bold** type face L.Cecil)

So in this case, we have the author above procedurally placing **SD** as using **CC**, although Wolpe himself had attributed the effectiveness of his **SD** to **RI** – and Lieberman does NOT even mention the **RI** process in his entire book! Already we have a pretty non-consensual ... mess.

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19 Wolpe (1958)
20 Davison (1968)
21 Spiegler et al (1976)
22 http://www.scienceofbehavior.com/lms/mod/glossary/view.php?id=408&mode=letter&hook=S&sortkey=&sortorder=&fullsearch=0&page=25
23 http://www.associationofanimalbehaviorprofessionals.com/glossary.html
24 Craighead and Nemeroff (2004)
25 Tryon (2005)
26 http://www.apa.org/research/action/glossary.aspx?tab=3
27 http://sites.sinauer.com/bouton/glossary.html#C
28 See **Counterconditioning**. She was one of the earliest developers, besides Watson of counterconditioning

2.2 – Systematic Desensitization (SD): the Procedure(s)

Ever since Wolpe (1958) published his work on **Reciprocal Inhibition (RI)** as the driving process of **Systematic Desensitization** (**SD**), other scientists have been trying to figure out exactly, how important the specific steps in the procedure were. They examined, if one step could be left out, if that changed which underlying processes were in play as a result of that or the effectiveness.

When speaking of the steps of a **SD**, if we hold to those set forth by Wolpe (1958) we have [29]:

> *Systematic desensitization based on relaxation (Wolpe, 1958) is used to provide anxious individuals with opportunities for non-anxious imaginal "exposure" to increasingly aversive forms of the cue stimuli for their anxieties. Aside from procedures used to assess antecedents and consequences of the patient's anxious responsivity, the technique entails three basic steps. First, the patient is trained in the skill of muscular relaxation using "progressive relaxation" exercises patterned after those developed by Jacobson (cf. Berstein & Borkovec, 1973). Second, the patient and therapist construct one or more desensitization hierarchies: lists of clinically focal aversive cue descriptions that proceed in small increments from minimally to intensely frightening situations and/or activities. Third, the therapist instructs the patient to practice muscular relaxation and simultaneously to visualize at his or her own pace the increasingly aversive scenes within the hierarchy. Sometimes the therapist encourages the patient to track the imaginal hierarchy in vivo by performing calmly in real life the same activities or confrontations that are hierarchically represented. Detailed analyses of the fine grain of clinical desensitization treatments are beyond the scope of chis paper. Several valuable sources for this kind of information are available (e.g., Goldfried & Davison, 1966; Marquis. Morgan, & Piaget, 1961; McGlynn. 1978; Wolpe, 1973).*

There is no indication in this description or any other I've found in terms of human research literature, that **SD** -must- be combined with any other procedure(s) to be effective. In fact, when evaluated, either individually or comparatively with other procedures, it is always done alone and it's effectiveness was calculated as an isolated independent procedure.

Here are some of the procedural combinations of performing **SD**, that have been looked at. For no specific variation is there any agreement whatsoever as to relative effectiveness or even the processes involved. Just so you get an idea how UNCLEAR this all is, here are <u>just a few</u> of these investigated procedural combinations – there are just too many to cite all the sources:

- **SD** as per Wolpe's instructions, with deep muscle relaxation, done only **in vitro** (imagery)[30]
- **SD** as per Wolpe's instructions, with "other" relaxation, done only **in vitro** (imagery)[31]
- **SD** as per Wolpe's instructions, with hypnosis, done only **in vitro** (imagery)[32]
- **SD** as per Wolpe's instructions, with deep muscle relaxation, only **in vivo** (in "real life")[33]
- **SD** done first in vitro as per Wolpe's instructions, with deep muscle relaxation, and then afterwards in vivo, usually without deep muscle relaxation[34] shorter or longer duration of exposure than prescribed by Wolpe[35]
- **SD** done with verbal encouragement or positively formulated instructions (similar to modern graduated exposure methods in **Exposure Therapy** or **CBT**)[36]
- **SD** done as an operant graduated exposure – client is instructed to go closer and is rewarded for having done so[37] (or some variation of hierarchy) – more later

29 McGlynn et al (1981)
30 Wolpe (1958), Folkins et al (1968), Waters et al (1972), Baker et al (1973) self-directed, Birk et al (1973), Davison & Wilson (1973), Marks (1975), Horne & Matson (1977)
31 Rachman (1968), Davison & Wilson (1973), Marks (1975),
32 Wolpe (1958), Bandura (1961), Marks (1975), Bourgeois (1982),
33 Wolpe (1958), Birk et al (1973),
34 Wolpe (1958), Davison & Wilson (1973), Marks (1975)
35 Sue (1975), Marks (1975),
36 Folkins et al (1968), Davison & Wilson (1973),
37 Davison & Wilson (1973), Marks (1975)

SD done with drugs as relaxation method[38] [39] (see the section later on relaxation)

SD done with no specific relaxation technique whatsoever [40] (see the section on relaxation)

One large variation, found in almost all of the above has to do with Wolpe's (1958) stipulation concerning "deep muscle relaxation" techniques being an integral part of **SD**. There has been a lot of research done on this aspect of the effectiveness of **SD** alone, such that I've devoted a sub-section to relaxation alone, showing some of the research concerning what kind of relaxation is necessary, works or if it's even necessary.

In all of these studies, **SD** was performed and evaluated alone, and not coupled to any other respondent or operant procedure!

King et al (1990) wrote:

> *Not unexpectedly, many variants of systematic desensitization have been reported. Freeman et al. (1976) extinguished the phobic response of a boy with intellectual disabilities to physical examinations. A hierarchy of requirements for the physical examination was established, and the comfortable Relationship the boy had with a nurse on the ward was used as the anxiety inhibitor. Jackson and King (1982) employed laughter as an anxiety inhibitor in the in vivo desensitization of an autistic child's phobia of noises associated with toilet flushing. As the child loved being tickled to the point of laughter, this activity was introduced during the toileting and flushing procedure (with no adverse effect upon urination or defecation). However, being uncontrolled case studies, these findings cannot be viewed as scientific evidence for the effectiveness of systematic desensitization.*
>
> *Obler and Terwilliger (1970) examined the effectiveness of a "modified version" of Wolpe's systematic desensitization with children who were neurologically impaired and suffering from phobic symptoms (excessive fears of buses or dogs). Fifteen children were assigned to the treatment group, while another 15 served as controls and were matched with the treatment group on age, sex, intellectual functioning and phobia. Treatment (***Reinforced Practice***, an operant approach – L.Cecil) *consisted of a 5-hour session per week for 10 weeks, and was described as follows:*
>
> > *Prior to exposure to the real phobic stimulus, Ss were asked to look at pictures or models of the fear-inducing stimulus (bus or dog).... When S's behavior indicated a tolerance of the picture or model, he was then exposed to the actual fear-producing stimulus (bus or dog). The therapist continuously rewarded S through encouragement for moving closer and closer to the object. Eventually, Ss were able to move up the scale to more anxiety-producing stimuli (e.g.,touching the bus or dog). At this point, S was given the option of exposure to the stimulus without the presence of the therapist. A new reward was offered at this time which included toys, books, pets, and candy chosen by S at an earlier session with the therapist.*
> >
> > *These rewards were dispensed immediately at the time of successful completion of the defined task (e.g.,talking to the bus driver, putting a token in the box, staying in the room with a dog). If a S overcame the phobia prior to completion of the tenth session, he continued to be reinforced by the therapist for his success. Successful handling of the fear-inducing stimulus was considered to be its generalization to S's daily life without the presence of the therapist. This was measured by apparent report scale administered to all E and C group members prior to and at the completion of the treatment period. (p. 316)*

Wilson (2007) in an historical overview wrote that, much to Wolpe's disapproval, research had shown, that his **RI** was not the underlying process and that no specific procedural steps other than exposure were necessary for **SD** to be effective.

Sticker & Widriger (2003), when writing about the development of treatments of various phobias,

38 Davison & Valins (1969), Wilson & Mivart (1973), Birk et al (1973),

39 Wolpe (1969), in a reply to an article by (Davison & Valins 1968) specifically rejected the use of drugs because he believed, that the relaxation must be a "effort" performed by the client and not simply supplied him.

40 Rachman (1968), Watts (1971), Waters (1972), Marks (1975)

fears etc. mention Wolpe as being the developer of **SD**. In current subsequent treatments, especially in the realm of CBT, -aspects- of **SD** (below), namely **in vivo** exposure and a graduated increase of intensity in exposure to the object of fear is combined with the presence and accompaniment of the therapist, through modeling, which of course was contributed by Bandura and his **Social Learning Theory**, but is **not** an **Operant Counterconditioning**! It is interesting to note, that the term **Counterconditioning**, neither as an operant nor as a respondent technique nor as a process is mentioned in the entire book, and therefor he does not consider it to be not an integral part of a **desensitization** for fear!

> *Systematic desensitization comprises three procedures: training in progressive muscular relaxation; development of a hierarchy of stimulus situations ranging from those that trigger very low levels of anxiety to the one (e.g., flying in a plane) that elicits the phobic reaction; and sequential visualization of the hierarchy of situations while remaining relaxed in the therapist's office. Early BT research demonstrated that systematic desensitization was effective in reducing anxiety associated with social interactions, public speaking, and a variety of phobic situations (Paul, 1969). Progressive muscular relaxation continues to be widely used as a part of BT/CBT treatments for virtually all anxiety disorders. Systematic desensitization is primarily used for treatment of those disorders for which exposure-based treatments (described in the (next paragraph) are not appropriate or as a first step in an exposure treatment program.*
>
> *With in vivo exposure, the phobic individual, frequently accompanied by the therapist, is gradually placed in the presence of the phobic object. The person is asked not to avoid or escape the situation until the anxiety is habituated or significantly decreased. Although some anxiety situations (e.g., anxiety regarding sexual interactions) necessitate the use of imaginal exposure as used in systematic desensitization, in vivo exposure has generally been found to be the more efficacious of the two procedures (see Barlow, 1988). Consistent with his social learning model of therapeutic change, Bandura added a cognitive component (e.g., self-instruction training) to both systematic desensitization and in vivo exposure and suggested that the therapist model both the behaviors and the cognitive component as part of the therapy (see Bandura, 1977).*

As we can read, it is an encapsulated procedure which they indicate is done **in vitro** BEFORE doing an actual exposure (**in vivo**) therapy. Note: above – BT=Behavior Therapy, CBT=Cognitive Behavior Therapy. But, there is no mention here of what the underlying process involved is except some kind of respondent conditioning, but not specifically **Counterconditioning**.

Miltenberger (2008) is very specific, what one can expect from a **SD** alone, with no coupled or following procedures, such as a respondent or operant **CC**:

> *Once the client can maintain the relaxation response while imagining every scene from the hierarchy, the systematic desensitization is complete. The client should then be free from the fear responses (anxiety and avoidance behavior) when the client encounters the fear-producing stimulus in real life.*

But as we will see later, in both **CBT** and **Exposure Therapies** – with **Exposure Therapy** generally considered to be part of **CBT** – also see Craske (2010) – what was called **CC** both as a procedure and a process disappeared as such, having been replaced with a **Graduated Exposure Technique** that has taken some procedural aspects of both, while also leaving procedural aspects out, adding a few more and relying on a combination of **Extinction** and **Habituation**[41] as accessed processes (Craske 2010, 2014).

41 Rankin et al (2009), Sripadaa & Rauch (2015)

Concluding Thoughts:

Wolpe himself preferred doing the **SD in vitro** (as mental imagery, not in real life). First he drew up, together with the client, a hierarchy of intensity of aversiveness of the object of the fear, anxiety or phobia. Then he taught the client deep muscle relaxation techniques. Only after these had been mastered, did he begin with a level of the hierarch, first having the client induce the deep muscle relaxed state, then having the client imagine the first level of the hierarchy and staying there at that level until any anxiety felt dissipated due to that deep muscle relaxation state. Only when no more anxiety was felt, did he repeat the process with the client at the next level of the hierarchy. This is the basis for his idea of **RI**, which some later called **Counterconditioning** (**CC**), because according to his theory of **RI**, this total relaxation cannot exist autonomically together with anxiety or fear. This explanation is also one of the reasons why some consider **SD** to be a kind of **CC** with **CC** as it's underlying process. But ... many do not agree. Levin and Gross (1985) wrote

> *While SD is the first and most thoroughly studied behavior therapy technique used to treat phobia (Leitenberg, 1976), its underlying mechanism(s) and the role of relaxation in the procedure remain controversial issues.*

As we can see, there is not just one standard method of performing **SD**. But none of the ways of doing a **SD** demand coupling it with another therapeutic procedure in order for it to be effective in human therapies! And some were labeled as being **SD** when they were actually only a related procedure, such as above. Almost all the different ways of doing it are about equally efficient, none of clearly superior to the others.

2.3 – Systematic Desensitization (SD): the Process(es)

Ever since Wolpe (1958) published his work on **Reciprocal Inhibition (RI)** as the driving process of his procedure which came to be known as **SD**, other scientists have been trying to figure out exactly if **RI** really is that driving process; most now say no. There is no agreement whatsoever on any specific variation as to comparable effectiveness or even if the process claimed to be involved, actually is!

Often in studies, where describing the processes and techniques used, **SD** will be explained by the researcher(s), either as part of a historical perspective, which already reflects their position concerning the state of the research up to the point in time in which they are writing, OR as part of a hypothesis they are trying to show. Here are just some of these:

SD as strictly done by Wolpe (and as a process, explained as **Reciprocal Inhibition**)[42]
SD as strictly done by Wolpe (and as a process, explained as **Counterconditioning**)[43]
SD as strictly done by Wolpe (and as a process, explained as **Extinction**)[44]
SD as strictly done by Wolpe (and as a process, explained as **Habituation**)[45]

The conclusion by David Sue (1975), which is still more or less held by many (but also rejected by some), is that in his snake phobia study, with controls, of 2 groups of students using **SD** of different exposure lengths and 2 groups of students using **Extinction** techniques of differing lengths of exposure:

> *It is not possible from this study to delineate the process or processes involved in eliminating fears. The question of whether the phenomenon of systematic desensitization is better understood using the counter conditioning model or the extinction model cannot be answered. It is possible that either one, or both, or a combination of the two may be involved.*

He's the one of the first to suggest looking at a possible combination of processes being responsible for the behavior change in **SD**. This comes up again later[46]. Let's first back up a little and look more closely at some of these (if you're already convinced, you can skip this section) individual processes and the research done on them, if they individually are the active processes of **SD**:

Nawas et al (1971) rejected a study by Davison (1968) which claimed that **SD** is based upon the process of **CC** because they claim Davison did not provide for a group which received "relaxation only" but also no group received aversive imagery and relaxation non-contingently, which they say would have been necessary to prove the hypothesis of **CC**. They posited instead with their experiments that **SD** is based upon a combination of **Extinction** together with **Operant Conditioning**! On the other hand, Agras et al (1971), who did compare results between subjects receiving relaxation and subjects not receiving relaxation, questioned the concept of **RI** being the underlying factor, because their study showed, that relaxation was not a relevant part of **SD**. It could therefore not be necessary, as established in **RI**, to have an incompatible emotional state opposed to fear or anxiety. Their hypothesis was, that just the description of the procedure to the client before the beginning of the therapy was highly effective and alone enough to produce satisfactory results!

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42 http://www.psychologyconcepts.com/reciprocal-inhibition/, Wolpe (1958), Rachman (1965), Wilson (1967), Levin and Gross (1985)
43 Wilson (1967), Davison (1968), O'Brian and Borkevec (1977), Gross & Brigham (1979), Levin and Gross (1985), Chance (2008), Shunk (2012), http://phobialist.com/treat.html,
44 McDonald & Koresko (1972), Waters et al (1972), Levin and Gross (1985), Oest et al (1998), Craske et al (2014)
45 Lader & Wing (1966), Wilson (1967), Lader & Mathews (1968), Watts (1971), Levin and Gross (1985), Deacon & Abramowitz (2004),
46 Craske (2010), Craske et al (2014)

Wilkens (1971) added to this about **SD**:

> *The effectiveness of the procedure does not appear to be due to the traditionally stated mutual antagonism between muscle relaxation and anxiety, but rather to social variables in the patient-therapist Relationship and cognitive variables involving (a) expectancy of therapeutic gain, (b) information feedback of success, (c) training in the control of attention, and (d) vicarious learning of the contingencies of behavior.*

So besides not finding that relaxation was procedurally necessary to access the underlying process of **RI**, he says that the social aspects of the **Relationship** between therapist and trainer to be of primary importance. See the section on **Relationship** later in this . To further confuse the issue, there are many psychologists, for example Evans & Wilson (1968) who make the case, that in terms of processes, **Counterconditioning** and **Extinction** are essentially the same.

This confusion and inability to agree upon the underlying processes still has not been resolved. Davison & Wilson (1973) while examining all literature to date concerning **SD**, were unable to find any proven underlying processes, meaning that cases had been made against all such proposed individual processes, nor were they able to find any specific procedural steps that were absolutely necessary for effectiveness. Kazdin & Wilcox (1976) in their meta-study also found, that no specific "ingredients" account for the associated behavior change. Tryon (2005) wrote in a review of the **SD** literature with the intention of *facilitate inquiry into empirically supported principles by reviewing possible mechanisms responsible for the effectiveness of systematic desensitization and exposure therapy.*, that the following mechanisms may **all** be responsible for the workings of **SD** and **Exposure Therapy**: *Reciprocal inhibition, counterconditioning, habituation, extinction, two-factor model, cognitive changes including expectation, self-efficacy, cognitive restructuring, and informal network-based emotional.*

So one can ask: "How can this be?" We only know, that we don't know what the processes are underlying the different **SD** procedures and that while effective, no one procedural method seems to be clearly more effective than another. That being the case, a simple one-or-two line description of **SD** for canine behavior modification is ... simply inadequate and can and will be contested by "real" psychological professionals.

McGlynn (1981) offers one explanation as to why the different perspectives and understandings of the underlying processes:

> *The experimental psychology of learning during the 1930s and '40s was a collage of theoretical systems, each of which sought to accommodate the available data better than could its competitors (see Guthrie,1935; Hull, 1943; Tolman, 1932). There was not much disagreement at the level of experimental results. The major facts of behavior acquisition, extinction, generalization, discrimination, and the like were, with a few exceptions, consensually endorsed. Nonetheless, there was spirited argument at the seemingly basic levels of "what" was being learned, "what" was being unlearned, etc. Hull spoke of psychological "habits." Tolman spoke of sign-Gestalt expectancies. Guthrie spoke of S-R bonds.*
>
> *When Wolpe (1958) turned to experimental learning theory for explanations of his early results, he inherited inadvertently this legacy of controversy. By choosing to couch his ideas in the construct language of Hull he invited rejoinders in the languages of Guthrie and Tolman. Once Wolpe's formulations gained some notoriety, these rejoinders did not take long to appear. Guthrie's language was used in Davison's (1968) assertion that desensitization is a "counterconditioning" process. Tolman's language was used in Wilkins' (1971) contention that desensitization effects are mediated partially by the patient's "expectancy" of a successful therapy outcome.*
>
> *In the late 1960s and early '70s there appeared scores of experiments intended to address the theoretical questions made outstanding by the experimental lineage and clinical matrix of Wolpe' s formulations. Is muscular relaxation necessary to therapy success? Must the imaging instructions proceed along a graduated, increasingly noxious hierarchy? Must the patient be*

permitted to govern his or her own rate of progress along the imaginal hierarchy? What will happen if you tell to-be-desensitized subjects that treatment will succeed or fail? What will be the effects of desensitizing operations when the recipient of them does not know they constitute an anxiety-therapy technique? Will training in muscular relaxation serve to diminish steady-state levels of autonomic flow or serve to attenuate the magnitudes of autonomic responses to stressful stimulation? Will training in muscular relaxation speed the rate of GSR habituation to a repetitive phobic stimulus? Unfortunately, the substantive yield from these scores of studies has been confusing and contradictory. Most of the questions raised have been answered in more than one way. To the extent that confusion has existed at the data level, theorists have been free to "'pick and choose" experimental support for the diverse explanatory formulations offered by learning and psychotherapy theory.

Even though for these reasons and others the state of desensitization theory is not as tidy as we would like, some accounts of "why desensitization works" have gained relative ascendency. Among the major theories are those based on reciprocal inhibition (Wolpe, 1958), on habituation (Lader & Mathews, 1968), on counterconditioning (Davison, 1968), on extinction (Wilson & Davison, 197I), and on social-cognitive factors (Wilkins, 1971).

This means nothing else than, as is usual in science, at the time the procedures as described were formulated and investigated, these descriptions reflected the scientific biases of whatever school of thought the designer of that procedure belonged to, i.e., Hull, Guthrie or Tolman. If we don't look any further than Wolpe, neither where his ideas sprang from, nor how they've developed to date, we are stuck in a version of a procedure seen through a specific set of colored glasses of his times and influences, without realizing it. And if we don't realize it, and don't look to see how others have questioned and researched it, we get stuck, in this case, in the science of the late 1950's and the competing schools of that time period.

For a more modern perspective, Richard & Lauterbach (2006) wrote:

As noted earlier, the operational mechanism initially proposed for systematic desensitization was reciprocal inhibition. Two physically incompatible responses cannot be simultaneously elicited in the same organism (Wolpe,1958). By presenting the anxiety-producing stimuli when they cannot elicit anxiety, the associational bond is broken and the anxiety is alleviated. Since Wolpe's original conceptualization, numerous other mechanisms have been proposed to account for the effectiveness of systematic desensitization (see McGlynn, 2005;Taylor, 2002). Counter-conditioning is similar to reciprocal inhibition but does not require a physiologically antagonistic response. In counter-conditioning, the anxiety response is reduced because it is gradually replaced by a different response, generally relaxation. Because it is difficult to distinguish between reciprocal inhibition and counter-conditioning, they are frequently mentioned together (Dickinson, Mellgren, Fountain, & Dyck, 1977; Marshall, 1975). Others have argued that the relaxation response does not function in either an inhibitory, reciprocal mode or as incompatible replacement response. It simply serves to keep the client engaged with the stimulus long enough to allow extinction or habituation of the anxiety-eliciting stimulus function to occur (see McGlynn, 2005). This is the basis of the view that desensitization is actually a form of graduated exposure and response prevention.

while Craske et al (2014) later wrote:

Exposure therapy, wherein an individual is repeatedly exposed to fear provoking stimuli in the absence of repeated aversive outcomes, is the clinical proxy of extinction and indeed exposure therapy, first proposed by Wolpe (1958) in the form of systematic desensitization, was derived from early models of extinction learning.

Inhibitory learning is regarded as being central to extinction (Bouton, 1993; Miller et al., 1988; Wagner, 1981), although additional mechanisms, such as habituation, are likely to be involved (Myers & Davis, 2007). Within a Pavlovian conditioning approach, the inhibitory learning models mean that the original CS-US association learned during fear conditioning is not erased during extinction, but rather is left intact as new, secondary inhibitory learning about the CS-US develops specifically, that the CS no longer predicts the US (e.g., Bouton, 1993; Bouton & King, 1983). Research into the neural mechanisms underlying fear extinction support an inhibitory

model, since the amygdala, which is particularly active during fear conditioning (Shin & Liberzon, 2010), appears to be inhibited by cortical influences identified as occurring from the medial prefrontal cortex as a result of extinction learning (Milad et al., 2007, 2009).

As Craske above pointed out, fear conditioning is not erased, nor does it disappear during **Extinction**. Joseph LeDoux, who's one of the leading neuroscience researchers involved in fear responses within the brain, explains in lectures[47] from 2012 and 2015, that your brain reacts to a danger stimulus by releasing the hormones necessary to prepare the body for the fight/freeze/flee response, but only after that analyses the situation and if there is another available learned response to that situation, may choose an alternative behavior that shows no outwardly fear behavioral response AND you don't feel fear despite the first physiological response analog to a defense response. LeDoux gives an excellent summary in about 45 seconds of the history of fear theories, starting with Freud in his 2015 video. This is also shown and explained very well in this following short video: https://www.youtube.com/watch?v=gmwiJ6ghLIM (see section in this book on **The Brain and Fear Structures**)

The **Exposure Therapists**, amongst others, have long known about this research of how the fear responses in the brain work and have therefore designed various techniques, no longer to reduce fear, but rather through **Habituation** and **Extinction** as well as **Reconsolidation** – which we will not delve into here - to teach the clients how to better **cope** with the fear through those new learned responses through putting them in exposure positions which show, that those expected dangerous situations are not really dangerous, what they call working with **Expectancy Violation**[48].

The next huge problem with "our" old techniques has to do with our implied claims of effectiveness. When you make the claim as a "science based" trainer using the "most modern science based methods", for example, that **CC** changes the emotions of the dog towards another dog or object of fear, you need some science to back up that statement. The problem is, the science speaks of different results. If, as we see, the original fear responses are not erased, then the fear responses are at best not being outwardly manifested, but may, and do, still come to the fore (Craske video 2014) at later points in time in the phenomenon called **Return of Fear**. Bouton (2002) writes extensively of the different manners in which everyday classical conditioning, for example both **SD** and **CC** and their related processes, do not work as perfectly as "we" expect them to, and even outlines the research history of this going back to Pavlov. For one thing, as Rescorla (1996) wrote, that although **Extinction** used to be conceived of as a process of unlearning of a previously acquired association, numerous other findings have led to a new understanding of the mechanisms of **Extinction**. He and other researchers have demonstrated, that although original ("undesired") conditioned responding is gradually reduced, a lot of what has been learned during acquisition remains unaffected by **Extinction**. This same research shows that **Extinction** does not abolish the original CS–US association, and can even leave this CS–US association fully intact.

Concluding Thoughts:

There is no general consensus as to which individual processes is activated when **SD** works, when it actually works. It has been empirically shown, that neither **Reciprocal Inhibition**, **Counter-conditioning**, **Habituation** nor **Extinction** alone are those working processes. Research going back to 1981 indicate however, that **Extinction**, **Habituation** as well as **Expectancy Violation** together are held to be responsible for it's effectiveness, but that this effectiveness is not in changing emotions as "we" presume. These processes allow a client to cope better with the presented stimulus without showing outwardly the internal emotion. This has not only been shown with clinical results but also shown from within the brain in the lab.

47 https://www.youtube.com/results?search_query=LeDoux+Karolinksa
https://www.youtube.com/watch?v=3C6kU_bNCGI

48 Craske et al (2014)

2.4 – The Role of Relaxation in Systematic Desensitization (SD)

As already presented, Joseph Wolpe's procedure for **SD** as he conceived it, was based in terms of underlying processes, on the theory of **Reciprocal Inhibition**. This means in terms of autonomic functions/reactions, one cannot experience two contradictory and competing emotional states at the same time. So if you can introduce an appetitive state that can be stronger than the aversive one, you won't experience the aversive one. He chose a deep muscle relaxation technique developed by Edmond Jacobson[49] to provide this appetitive state. Although he also used other methods, this stayed his preferred method of relaxation. He reiterated this in numerous occasions, for example in his article exchange with Davison (1968).

But many scientists were not convinced, neither that deep muscle relaxation was necessary, nor that it was the only type of effective relaxation, nor that even any type of relaxation was necessary. There has been no conclusive evidence for ANY of the proposed variations of relaxation / non-relaxation.

Farmer & Chapman (2008) wrote:

> *Several applied studies have also indicated that it is not necessary to pair an incompatible response (e.g., relaxation) with exposure to a feared stimulus to reduce anxiety to the feared stimulus (e.g., Cooke, 1968).*

Wolpe (1958) is cited in Birk et al (1973):

> *After the patient learns the relaxation technique, desensitization proper commences with the deeply relaxed patient being asked to imagine the least disturbing item. Even the slightest degree of tension or discomfort must be eliminated before successive items in the hierarchy are presented. The patient is asked to signal if scenes prove disturbing, whereupon they are immediately withdrawn, relaxation is reinstituted, and the imagined scene is presented again and again [or in a "diluted" form) until the patient can report continued relaxation. If the patient in the clinical setting can picture the most subjectively distressing scene without reporting anxiety, usually he will also report successful transfer to the real life situation.*

Drugs have also been used as a relaxing agent[50] but Wolpe was not in favor of their use[51], because as he saw it, the client must make an effort to relax, not only before the exposure, but specifically during it, otherwise there was no benefit through **RI** of two competing emotions.

On the other hand, in the course of the last almost 60 years, as part of investigating both the procedure of **SD** as well as the underlying processes, researchers have reached all of the following conclusions about just the relaxation part of **SD**:

Deep muscle relaxation is absolutely necessary for **SD** in vivo to succeed[52].

Using other kinds of appetitives are just as effective as relaxation[53].

Relaxation was no more effective than not using relaxation[54].

Relaxation was no more effective than not using relaxation, which means also, that **RI** was not the underlying process[55].

There is no consensus, as to whether relaxation is necessary[56].

Relaxation is certainly not appropriate for *in vitro* procedures for mentally retarded people,

49 https://en.wikipedia.org/wiki/Edmund_Jacobson

50 Davison & Valins (1968), Wilson & Mivart (1973)

51 Wolpe (1969), in a reply to an article by (Davison & Valins 1968) specifically rejected the use of drugs because he believed, that the relaxation must be a "effort" performed by the client and not simply supplied him.

52 Wolpe (1958), Levin & Gross (1985)

53 King et al (1990)

54 Marks (1975) – 16 of 19 studies examined concluded, that relaxation was no more effective than not using relaxation

55 Agras et al (1971), Waters et al (1972)

56 Levin & Gross (1983), Farmer & Chapman (2008)

because they can't do deep muscle relaxation. This infers however, doing an in vivo procedure without relaxation is ok[57].

This all of course begs the question, if Wolpe was convinced that the **client** must make a concerted effort to relax, such that drugs are not suited as a relaxing agent, how is anything we induce in training getting the dog to "make an effort" to relax in line with Wolpe's method of **SD**? Certainly simply feeding the dog is not the same as deep muscle relaxation. For example, a dog exhibiting food-guarding behaviors while eating is certainly NOT relaxed. But if Wolpe was not correct about deep muscle relaxation being key, because of the effort the client needed to expend in order to consciously relax, and it therefore shows he was also incorrect about the underlying process being **RI**, and as we'll see, **SD** is done in modern **Exposure Therapies** completely differently than in 1958, what are "we" to take away from all this? Certainly not that we simply continue to do what has been proven as no more effective than not doing anything other than being exposed to that object of fear. And certainly not arbitrarily declaring, that feeding the dog is analog to Jacobson's deep muscle relaxation technique, that has been shown to be not necessary.

And as Tryon (2005) writes:

> *While a few studies have provided empirical support for the view that relaxation is a necessary component of systematic desensitization (Davison, 1968; Kass & Gilner, 1974) others have not (Miller & Nawas, 1970; Nawas, Welsch, & Fishman, 1970). Agras et al. (1971), Cooke (1968), Craighead (1973), Crowder and Thornton (1970), Freeling and Shemberg (1970), and Waters, McDonald, and Koresko (1972) reported that phobic anxiety is reduced whether or not relaxation training is used. It does not appear necessary to pair relaxation with imagery during desensitization (Aponte & Aponte, 1971).*

57 Waranch et al (1981)

2.5 – But What About Counterconditioning (CC)?

The history of **CC** DOESN'T start with Mary Cover Jones who counterconditioned a boy's (Little Peter) fear of rabbits by gradually moving rabbits closer to him while he was eating his favorite foods, as many claim. It actually started in 1920 with John Watson and his Little Albert experiment[58] where he conditioned the child to be afraid of rats. Mary Cover Jones heard of this and then wondered how she could change a similar phobia, and that was when she started her Little Peter experiment. At the time, this experiment of hers was not well received. It had been intended to be part of her PhD dissertation, but then was not included[59].

CC as a procedure has all but disappeared from the human therapist's toolkit, one of the reasons being, that there has been confusion concerning whether one is speaking of the procedure called "counterconditioning" with it's very specific steps as outlined by Jones (1924) or whether one is speaking of an underlying process "counterconditioning".

When one looks up the definition of **CC**, we often see:

> *In Counterconditioning, a particular response to a certain stimulus is replaced by a new response. This new response is supposed to deter the person from the stimulus. For example, a person may feel positive feelings towards smoking. Through a behavioral therapy technique they would learn to feel negatively about their smoking.*
>
> *Two techniques that are used in Counterconditioning are aversion therapy and systematic desensitization. In aversion therapy the client is taught to experience negative in the presence of the stimulus, with the aim that the client will eventually feel repelled by the stimulus. In systematic desensitization, the therapist seeks to help the client fight anxiety and other troublesome responses by teaching the client a set of relaxation techniques[60].*

This is not very helpful figuring out either what the procedure or the process is ... and we see, that the writer belongs to the school, that sees **CC** as the process underlying **SD**, but exactly how it works, he/she doesn't say.

> *Counterconditioning: A technique used in therapy to substitute a new response for a maladaptive one by means of conditioning procedures[61].*

...can mean just about any procedure or process. In this sense, any procedure, whether operant or respondent can qualify as counterconditioning if one conditions the subject to respond differently to the same stimulus. The subject was in some way conditioned to stimulus CS-A and responded with CR-A. But now after either a respondent or operant procedure CS-A produces CR-B! And the following is not really much more helpful and is in fact semantically very unclear. We can therefore have respondent or operant counterconditioning. However some animal-oriented people globally assume, that counterconditioning is a respondent conditioning[62]:

> *Counterconditioning. Describes the process and/or procedure of countering previous respondent conditioning with new respondent conditioning.*

Plus, as we saw, scientists were trying to work out exactly what the underlying processes in **SD** were, one of which was, depending upon researcher, called **RI** or **CC**[63], as well as asking if what some also called *Progressive Approach* was necessary or if relaxation was necessary (see below), Interestingly, when you read Goldstein (1969), although he writes about Wolpe's *technique of reciprocal inhibition*, there is no relaxation used and one of the things he tested for was, if while using food as the appetitive stimulus, the *Progressive Approach* was necessary or even more effective – it was. But, it is not even clear, if he's testing a **CC** or **SD** procedure, which is often the case in studies from this time period – most of which, if at all, identify themselves as doing a procedure similar to

58 https://en.wikipedia.org/wiki/Mary_Cover_Jones
59 https://en.wikipedia.org/wiki/Mary_Cover_Jones#.22Little_Peter.22_experiment
60 http://www.psychologycampus.com/behavioral-psychology/counterconditioning.html
61 http://www.apa.org/research/action/glossary.aspx?tab=3
62 http://www.associationofanimalbehaviorprofessionals.com/glossary.html
63 Goldstein (1969)

Wolpe (1958), not Jones (1924). If you do a search in Google Scholar, you'll find very, very few studies concerning **CC** and if so, most concern themselves with **CC** as that underlying process to some procedure, not necessarily the procedure itself of **CC**. And as we've seen, many still hold **SD** to be a **CC** procedure[64]. Craske (2010) outlines the present state of consensus concerning the underlying process of all **Exposure Therapy** types:

> *Several mechanisms are believed to underlie extinction and thereby exposure therapy. One such mechanism is habituation (or decreased response strength simply as a function of repeated exposure). Another mechanism, inhibitory learning, is considered to be even more central to extinction (Myers & Davis, 2007). Inhibitory learning means that the original association between a CS and aversive event is not erased throughout extinction, but rather a new inhibitory association (or expectancy) is developed. ... Interestingly, basic research by Bouton and colleagues (reviewed in Bouton, Woods, Moody, Sunsay, & Garcia-Gutierrez, 2006) indicates that context is important in determining which set of associations is evoked. If the previously feared stimulus is encountered in a context that is similar to the extinction-exposure therapy context, then the inhibitory association will be more likely to be activated, resulting in minimal fear. However, if the previously feared stimulus is encountered in a context distinctly different from the extinction-exposure therapy context, then the original excitatory association is more likely to be activated, resulting in more fear. Following the example of dog phobia, assume that the exposure treatment was conducted in a dog training center. Then, once treatment is over, a dog is encountered on a neighborhood sidewalk, a context that is distinctly different from the dog training center. On the sidewalk, the original excitatory fear association is more likely to be activated than the new inhibitory association that was developed throughout exposure treatment, resulting in the expression of fear.*

We see here not only, that one now sees a combination of **Habituation** and **Extinction** as being the underlying processes instead of **CC**, but also a completely different type of learning is taking place - *inhibitory learning*, one that places the context of the old fear responses in competition with the context of the new experiences with the old fear stimulus. This goes a long way also in explaining how and why the concept of **Return of Fear** works and that simply performing a procedure "competently" is no guarantee, that that fear will no longer re-appear.

Farmer & Chapman (2008) write:

> *From a Counterconditioning perspective, systematic desensitization teaches the client to use manifestations of anxiety (e.g., somatic responses) as cues to substitute replacement behaviors (e.g., those associated with relaxation). Several laboratory-based observations, however, are inconsistent with a Counterconditioning explanation of systematic desensitization for reducing fears (Wilson & Davison, 1971).*

Although not explicitly called operant counter-conditioning, **contingent reinforcement** is by definition the same thing. Richard & Lauterbach (2006) write:

> *Contingent reinforcement and distraction can be added to exposure therapy, usually with beneficial effects (Agras, Leitenberg, & Barlow, 1968; Boer & Sipprelle, 1970; Ellis, et al., in press; Grayson, Foa, & Steketee, 1982, 1986; Leitenberg & Callahan, 1973; Leitenberg Agras, Thompson, & Wright, 1968; Leitenberg, Agras, Edwards, Thompson, & Wincze, 1970; Leitenberg, Agras, Allen, Betz, & Edwards, 1975; Leitenberg, Rawson, & Mulick, 1975). Reinforcement is usually presented to the subject for maintaining contact with the fear-producing stimulus. In one study, for example, performance of math problems by a child with an insect phobia was assessed during verbal descriptions of crickets and in the presence of crickets in an exposure-therapy procedure (Jones & Friman, 1999). Contingent reinforcement was given for completing the math problems. The authors reported no effect of the exposure component alone but a large reduction in fear when exposure was combined with contingent reinforcement.*
>
> *As for contingent reinforcement in animals, the original counter-conditioning procedure of Wolpe (1952) and Masserman (1943) used food reinforcement to induce nonfearful behavior. Of course, adding contingent reinforcement of an incompatible behavior to extinction is a standard and highly effective procedure for reducing problem behavior in applied behavior*

64 Chance (2008)

analysis (see, e.g., Martin & Pear, 2005; Miltenberger, 2001).

As a small but important note to the above quote, the mentioned source of "Wolpe 1952[65]" is NOT to be confused with his later work on **SD** from 1958! So as such does not indicate, that some kind of operant **CC** procedure, or as Richard & Lauterbach (2006) call it "**contingent reinforcement and distraction**", must be added in order for **SD** to be effective. They simply mention this "**contingent reinforcement and distraction**" as a variant that had been clinically investigated. In point of fact, even when describing individual cases, nowhere does he say, that these operant procedures had been coupled with any kind of **Respondent Conditioning** procedure, neither graduated nor static.

To summarize:

Variant of CC Nr. 1 – Counterconditioning can mean the use of conditioning to substitute respondently one behavior for another[66]. The term "respondently" is either expressed or implied through the context of the text. (This definition is the most commonly found one in glossaries and dictionaries concerned with human psychology, when the term "counterconditioning" is even included.)

Variant of CC Nr. 2 – Counterconditioning can describe an underlying process of Systematic Desensitization[67].

Variant of CC Nr. 3 – Of course some say and use it in a purely operant manner, especially in the animal-world[68].
Case (2009), Borchelt & Voith (1996) call the operant style of **CC** "counter-commanding" or "countercommanding" – both of whom distinguish this from **CC**, which they describe as being respondent, but I was unable to find either of these 2 terms in any glossary.

Variant of CC Nr. 4 – Some see counterconditioning to mean using either operant or respondent methods to achieve the behavior change[69]. Dr. Patricia McConnell writes:

> *I suspect that's because I don't tend to use the term "counter operant conditioning." Rather, I talk about "training an incompatible behavior" which is basically the same thing.*

Variant of CC Nr. 5 – Taking a second conditioned response to counteract an already conditioned response[70]. This makes no stipulation as to whether respondent or operant or any other conditioning paradigm.

And what we see here by looking at the sources cited is, that **Variants Nr. 1, Nr. 2** & **Nr. 5** are the originals found in human psychology, whereas **Variants Nr. 3** & **Nr. 4** are *only* found in animal related papers. **Variants Nr. 1, Nr. 2** & **Nr. 5** are only sporadically found in animal related papers!

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65 Wolpe (1952)

66 http://www.associationofanimalbehaviorprofessionals.com/glossary.html
http://www.alleydog.com/glossary/definition.php?term=Counterconditioning Davison (1968), Kirsch et al (2004), Waltround-Skinner (1986, 2013), Kellerman (2013)
http://www.associationofanimalbehaviorprofessionals.com/glossary.html
Bandura, Albert, (1961) (reporting on the work of others), Davison & Wilson (1971), Hart & Hart (1985), Borchelt & Voith (1996), Craske (2010) (reporting on the work of others), Chance (2008), Farmer & Chapman (2008), Case (2009), Walrond-Skinner, Sue (ed.) (1986, 2013), Jones-Smith (2011), Roberts, Kellerman (2014), Gordon (2014)

67 See also section about "Systematic Desensitization (SD): the Process(es)" from p. 11 in this book,
http://psychology.jrank.org/pages/152/Counterconditioning.html, http://www.psychologycampus.com/behavioral-psychology/counterconditioning.html
Bandura, Albert, (1961) (reporting on the work of others), Davison (1968), Nawas et al (1968), Kirsch et al (2004), Farmer & Chapman (2008), Craske (2010), Jones-Smith (2011), Helmut et al (2012)

68 Overall (2013)

69 http://www.patriciamcconnell.com/theotherendoftheleash/counter-classical-or-counter-operant
Lindsay (2000), Bompadre & Cinotti (2011), Horwitz & Pike (2014), Tighe, & Brown (2014)

70 http://www.apa.org/research/action/glossary.aspx?tab=3 http://www.medilexicon.com/medicaldictionary.php?t=20959 http://psychologydictionary.org/counterconditioning/ http://phobialist.com/treat.html

2.6 – Systematic Desensitization with Counterconditioning (SD&CC)

When taking into consideration what we've seen of the history and development of both **SD** and **CC** as procedures as well as what the underlying processes have been shown NOT to be, it's no wonder, that

there is no research on the two mashed together into a therapy as we dog people have done,

that is ... outside of the animal behavior world. In spite of searching Google Scholar as well as all of my various psychology texts[71], and online glossaries[72], I have been unable to find even one description of this combined technique we dog people call **SD&CC** being performed with humans, nor have I found either **non**-animal related (dog, cat or horse) or animal behavioral or vet behavioral peer reviewed controlled studies in which this combined technique has been described procedurally **and** examined for relative effectiveness or efficacy. Moreover, it must be mentioned again, that no one in human research on behavioral procedures or processes ever cites **SD, CC** or combined studies done from the behavioral veterinary world. If the animal-world versions of **SD**, **CC** or **SD&CC** had any foundation in actual psychological research in the form used by "us", why isn't it ever cited as further applications of these techniques in human psychology research after the 1970's? Human psychologists have used animals in research for decades, and yes, when investigating **SD** and **CC** by themselves. Why not consult these animal behaviorist clinical case write-ups or teaching texts? On the other hand, direct historical references concerning **SD** or **CC** in human literature are rarely if ever found in animal behaviorist, veterinary behaviorist literature or texts and almost no reference is made to the current state of human psychological research in **SD** or **CC**.

Furthermore, I also need to interject here, that human studies of **SD** were done without any other coupled procedures, such as an operant or respondent **CC**. There were a couple of clinical trials in which **SD**-similar procedures were coupled with operant procedures, but these are the exception and not the rule. (see section on **Systematic Desensitization** (**SD**): the Procedure(s), p.9)

> ***None** of the psychologists with whom I'd spoken, had ever heard of this combination during or since their own psychological training.* – Jane Miller, LISW, CDBC, CDBT presented to *Over a few 100 psychiatrists attending a grand rounds presentation at the Cleveland Clinic and they had never heard of SD/CC or DS/CC and were totally perplexed by the two terms referred to together. They had no idea what this meant and had never heard these two terms linked together and did not know the scientific meaning of these terms* (in this context-L.Cecil) . More on my interviews with these psychologists later.

So we are left with one or more procedure(s) that have been named after existing procedures in the human psychological world, but do not necessarily relate directly or even indirectly to these human procedures. What we can extrapolate is, that at very best, **SD&CC** is simply a label for a procedure – actually without any consensus as to how it should be done amongst animal behaviorists or veterinary behaviorists – that at best only has a semantic common root, with perhaps one or two shared procedural steps, but not really sharing any common or from human psychological research recognized underlying process(es).

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71 Wolpe (1958), Bandura (1961), Bandura (1971), Hersen (1975), Mikulas (1978), Burch and Bailey (1999), Lieberman (2000), Moore (2002), Newman et al (2003), Craighead & Nemeroff (2005), Chance (2008), Mittenberger (2008), Reber et al, (2009), Spiegler et al (2010), Craske (2010), Abramowitz et al (2012)

72 http://www.apa.org/research/action/glossary.aspx, http://www.scienceofbehavior.com/lms/mod/glossary/view.php?id=408, http://www.associationofanimalbehaviorprofessionals.com/glossary.html, http://www.alleydog.com/glossary/terms.php?letter=A, http://www.itseducation.asia/psychology/, http://allpsych.com/dictionary/

A **SD** depends upon the CS being of such a low intensity, that the CS is barely noticed and deep muscle relaxation can be held and if not already obtained, it can be achieved or re-applied. A **CC** however, depends upon the CS being of enough strength that the fear response as such be present, but NOT evoking the unwanted behavior. You cannot, by definition of **reciprocal inhibition** (original theorized underlying SD process), be both "bothered" by the CS (**CC**) but not react to it in the old manner, while at the same time being relaxed (**SD**) and staying relaxed. During a **CC** procedure, this avoidance of anxiety is not necessary, perhaps not even what one wants - one should feel some of the previous anxiety. (see section on **CC**). So alone from the differing allowed/expected levels of felt anxiety/relaxation, the two procedures simply are not compatible with each other, and therefore cannot somehow be mashed together if both are considered to be used as two respondent procedures!

To give you an idea how this situation may have come about, here are some examples of animal behavior papers, many of which are even those cited by other behavioral vets as references for the procedures they themselves were investigating or describing. In animal-oriented (dog, cat or horse) studies, if source material is cited at all, it is often only cited for **SD** and/or **CC** as separate entities, but not actually the two done together. In some of those animal-oriented cases, where both are mentioned together, upon further reading, we see mistakes having been made in the identification of procedure being discussed or used or only bits and parts of one or the other procedure being implemented:

1) Kunkel (2011):
   However, there are some inconsistencies in using counterconditioning techniques. A study by Butler et al. (2011) used counterconditioning as well as desensitization, exercise and positive reinforcement training to help treat dogs with separation anxiety. ... There are numerous resources available suggesting a variety of treatments. Because owners often implement numerous procedures at once, identifying the most effective treatment is nearly impossible.
   In that cited study by Butler et al (2011) itself, only **SD** was used, not **CC** and certainly not as a combined **SD&CC**.

2) Another example is Orihel & Fraser (2008) who write in the abstract:
   Rehabilitation consisted of desensitizing and counter-conditioning dogs to the approach of other "stimulus" dogs.

   But the word "desensitizing" doesn't appear again in the rest of the entire text and the procedure was described as a "counter-conditioning", was actually an operant procedure using rewards:
   To replace undesirable behavior with appropriate behavior (counter-conditioning), dogs were commanded to sit or make eye contact with the handler. Dogs were rewarded intermittently for relaxed behavior (positive reinforcement) with verbal praise and food treats (Jerky Treats1, DLM Foods Canada Corp, Ontario, Canada). Aggressive signals (e.g. direct staring and growling) were interrupted by using the head-collar to direct the dog's head and body away from the stimulus dog. To standardize the training between dogs, the trainer and stimulus dog handler alternated roles daily for each dog.

   In other words, they performed a **non-graduated operant procedure** consisting of positive reinforcement and positive punishment, contingent upon the dog exhibiting non-agonistic behavior, not a respondent **CC**.

3) Shull-Selcer & Stagg (1991), often also cited as having used **SD&CC**, describe it so:
   This technique is called desensitization and counterconditioning. The technique exposes the

dog to the phobic sound stimulus on a hierarchy of increasing intensity while concurrently rewarding the dog for non-fearful behavior.

...and refer to Wolpe as the creator of this procedure – **SD/Wolpe**=yes, this procedure=no – as well Voith and Borchelt, Hothersall & Tuber, and Tuber et al., held as cites for scholars having investigate and used **SD&CC**, described totally other procedures they name **DS&CC**, for example a **Graduated Operant Procedure**. The word **Counterconditioning** is used only one more time by Shull-Selcer & Stagg (1991), thereafter they only refer to this procedure as a "desensitization", not a **SD&CC**. As we can see, if the dog is being "rewarded" for, this is then not a respondent procedure, but rather a **graduated operant procedure**.

4) Crowell-Davis et al (2003), in testing the effectiveness of drugs, "behavior modification" or both in treating dogs with storm phobia, wrote of using *specifically, desensitization and counter-conditioning (DSCC)*. Their methodological description was however of playing a recording of a thunderstorm progressively louder, while allowing the dogs to eat, play or be petted, as long as they showed no signs of anxiety. If they did show anxiety, these things were withheld for 1-2 minutes. They were then given these appetitive stimuli again unless anxiety was shown. This is certainly neither a **CC** according to Jones or even the above listed possibilities, unless this is a variation, albeit an inconsistent one according to their description, of an operant one, nor a **SD** according to Wolpe.

When one starts reading the animal behaviorist studies in which people state they are using **SD&CC**, and in which they cite others as sources of the procedure, it may be, that they themselves did not read how those people who they cited, actually performed what was called a **SD&CC**, for it was often called **SD&CC**, but performed as a respondent **SD** or respondent **CC** OR it was not performed as either, but rather some **graduated operant procedure** involving rewarding for good behavior at increasing intensities of contact with the trigger., which would conform, if actually done so with it might conform to **Variant of CC Nr. 3**, p.21 (operant counterconditioning). No one actually in these cited studies did more than at most write "(systematic) desensitization and counterconditioning" but then did one, the other or something that is neither, for example an operant procedure., which as we saw in the previous chapter on counterconditioning, would make sense. For they might see counterconditioning as an operant procedure, although in some cases they quote Cover-Jones as the originator and she used it as a respondent one. Just seen operationally, the movement through an intensity hierarchy alone does not automatically qualify the procedure as being a **SD**, especially inasmuch as a **CC** as a respondent procedure, is also done with such a step-by-step hierarch, but differently concerning the relationship to the CS.

It's also clear from the semantic usage of **DS&CC** (same as **SD&CC**) above and similarly in the other animal behaviorist studies already cited which use this abbreviation, that this is a **generic procedural name** , without necessarily having anything to do with Wolpe's **SD** as he described it nor with Cover Jone's **CC** as she described it, and only, if at all, referencing them as the source of what they are doing. There is generally no implicit or explicit reference to the any of the possible (or NOT possible according to the studies already cited in this) underlying processes of **Reciprocal Inhibition**, **Counterconditioning**, **Extinction** or **Habituation**.

Since **SD&CC, DS&CC** and/or **Systematic Desensitization and Counterconditioning** have become a generic and inconsistent short-hand, it would probably be more accurate, although just as generic, to simply say **Graded** or **Graduated Exposure Technique** and I propose using the initials **GET** if we need some catchy marketing label, to replace **SD&CC**:

> Any **Graded** or **Graduated Exposure Technique** with an animal which may or may not entail the use of a appetitive (food or otherwise) US, paired with an aversive stimulus.

If one needs to go into the exact processes in play, and we'll look at this later, one can say:

> As found, researched and used to described the same processes in human **Exposure Therapy**, both **Extinction and Habituation** are the processes being accessed.

On the other hand, some animal researchers DO actually write about using either **SD** or **CC** without trying to mix the two[73] which shows, that these specific human psychological applications of **SD** or **CC** are actually known to at least some animal behaviorists and are sometimes even used as conceived or used today in human psychological treatments.

Where did this term **SD&CC** come from? As a supposed combined procedure, it appears to be an artificial construct of animal trainers which has taken on a life of it's own. **SD&CC** was mentioned as one of the earliest examples by Hothersall & Tuber, (1979) as well as Tuber et al (1982), and so that they are often cited as the earliest in vet behaviorists' papers, outlining for the first time, what "we" call **SD&CC**. But as we will see, while in these two papers, they wrote **SD&CC**, they then went on to describe the actual procedures done as being either **SD** -OR- **CC** -OR- an operant procedure which is called CC.

Hothersall & Tuber (1979) discussed certain behavioral problems, their general etiologies and how they dealt with them:

1) The first case that they dealt with was one of separation anxiety. They outlined a procedure they call **desensitization** (p. 244) – "desensitization" is also known as "systematic desensitization"[74] - for dealing with separation anxiety: *a graded series of departures and absences by the owners, which gradually increase in intensity.* They combined this with cues for the leaving and discriminately reinforced behaviors (operant) associated with these cues, which were other than the undesired ones (DRO[75]). This is not **a respondent SD&CC** as we think of it, nor did they label it as such. It is an operant procedure, not respondent. It also could fulfill the criteria of being an operant CC and therefore also fulfill the criteria procedurally of a **Graduated Exposure Technique** (**GET**).
2) When discussing another case of noise phobias they write: *Once we are convinced we can elicit the fear, we embark upon a counterconditioning or desensitization procedure to overcome the fear.* Notice the preposition used: "**or**", not "**and**". They then go on to specifically mention Mary Cover Jones as the first to use a **CC** procedure in 1924 and mention Wolpe and his **SD** from 1958. The first procedure they named as being "desensitization" had to do with playing recordings of recordings and *the owner rewarding Cindy for remaining calm on the rug during each clap of thunder.* The Nominal Fallacy[76]. Just calling something A doesn't make it A, so just calling this a "desensitization" does not make it one. This is an operant procedure, called **Reinforced Practice**[77], which is also graduated like a desensitization, but is not a respondent procedure like **SD**. It also -could- however fulfill the criteria procedurally of a **Graduated Exposure Technique**.
3) They described a similar situation with another dog with the same procedure/result, using cheese and pepperoni as the reward (**operant** procedure). They once again referenced Jones and Wolpe, but only to underline the importance of multiple trials, stating that Jones wrote of doing **CC** with 45 repetitions, while Wolpe doing a **CC** (NOT a **SD**!!), needing 30 with his cat-**CC**-experiment. Nowhere do they speak of **SD&CC** as a procedure with any of their case studies. It also -could- however fulfill the criteria procedurally of a **Graduated Exposure Technique**.

73 Butler et al (2011), Bompadre & Cinotti (2011), Orihel (2002)
74 Colman (2015)
75 http://www.associationofanimalbehaviorprofessionals.com/glossary.html
76 http://kspope.com/fallacies/fallacies.php
77 Leitenberg & Callahan (1973)

In fact, nowhere at all in the entire paper do they speak of the procedure they used as being a **SD&CC**, and the fact remains, that when doing procedures with contingencies being set up, such as for DRO dealing with separation anxiety or for remaining calm on the rug during recordings of thunder, they are **not** reporting on a respondent therapy as **SD&CC** has been described, but rather on **graduated operants** ones, as described by Leitenberg & Callahan (1973) as being **Reinforced Practice**. This means that citing this particular study as one having to do with the procedure of "**Systematic Desensitization and Counterconditioning**" is simply not accurate, a misnomer.

Tuber et al (1982) in a paper about fears and phobias in dogs, wrote about how **CC** alone works:

> *The chief requirements for such conditioning are clear: the attractiveness of the appetitive stimulus must be, on balance, stronger than the aversive qualities of the feared stimulus.*
>
> *The effectiveness of counterconditioning procedures in overcoming fears has been demonstrated in a variety of species and settings. Wolpe successfully counterconditioned experimentally induced fears in cats .[46] This research led directly to development of systematic desensitization procedures used with human phobics.[47] Counterconditioning procedures have also been used in treating fears in companion animals[12, 42] and in overcoming the extreme sensitivity of a genetically shy strain of Pointers to gunshots. [18]*

The term "systematic desensitization" is only mentioned once in the entire paper to explain where the process of **CC** came from an historical perspective, not that it is still done so today. But even this historical perspective is questionable as they wrote about Wolpe's cat-counterconditioning study from 1952, not his actual **SD** book from 1958. While Wolpe does identify the procedure with the cat as "counterconditioning", he identifies the procedure in 1958 as **SD** based upon **RI** – not "counterconditioning" and both procedure and process are not the same thing. After having written the term "systematic desensitization" that one time, they then go on to describe doing a *graded exposure*. They then write:

> *Despite its apparent simplicity, implementation of counterconditioning poses many difficulties because of constraints of a dog's home environment and the owner's time and patience. Tailoring procedures to accommodate idiosyncrasies of particular fears imposes other difficulties. In the following sections, procedures will be described that have been developed to treat fears commonly seen. While the procedures themselves are necessarily different, they are conceptually similar and all based on the counterconditioning model.*

And what they then describe as a procedure, is procedurally similar to a **SD**, based upon the idea of **CC** as the process (**Variant of CC Nr. 2**, p. 21), in that they plan and perform a hierarchy of intensity of exposure to the aversive stimulus or situation. They also recommended increasing the **valence** (not their description, but rather mine) by turning the radio before leaving in the case of separation anxiety. They write that they wish to turn the ritual of leaving into a "game" and that the turning on of the radio is the signal to start the game. But ... we've seen, that **CC** has empirically been ruled out as the one driving process in **SD**. It also -could- however fulfill the criteria procedurally of a **Graduated Exposure Technique**.

Sherman et al (1996), one of the first papers to catalogue types of canine aggression in terms of type, cause, effect and applied techniques, list many different techniques, but give no further information as to how these were carried out, listing only those animal behaviorists who are known to have discussed these. They do not mention any sources of human psychology, but their other cites are all from animal behaviorists/behavioral vets who themselves detail procedures, which do not conform to how **SD** or **CC** were originally developed or through actual research, further developed. When we however begin to actually read the works of those listed, we see large discrepancies, between what Sherman et al (1996) wrote that these behaviorists wrote and what the cited behaviorist actually wrote.

For example, Campbell (1975) is said to have described using **SD&CC**. But he doesn't describe either procedure alone, nor together. In fact, he only mentions **DS** alone as not being sufficient to

deal with a fear of thunder and as to **CC**, only writes:

> *An animal behaviorist who advises a dog owner merely how to counter-condition the act of flank-sucking, on its own, is as unethical as a child psychologist who simply advises topical repellents for children, who chew their fingernails to the quick.*

Sherman et al (1996) also list Hart & Hart (1985) as using **SD&CC**, who in their book describe how **SD** can be applied in the case of a dog having fear of a strange man in which the dog stays stationary but the man retreats and reappears, gradually decreasing the distance to the dog as long as the original fear response is not shown – which in and of itself is simply not a **SD**!

Hart & Hart (1985)

> *The conditioning techniques include systematic desensitization, to eliminate learned phobias or habituate innate phobias; counterconditioning, to establish a new response that is incompatible with the performance of the undesirable behavior; affection withdrawal, to get an animal to approach and obey people that were previously disliked; and extinction, to eliminate some objectionable behaviors that were acquired through prior learning such as attention-getting behavior.* p. 208

indicate, that they consider **CC** to be a separate conditioning process than **SD** and that **Habituation** is considered to be the process used in **SD**. They cite no sources for these associations, neither from human psychology, nor from animal behaviorists.

> *The therapeutic approach to unhabituated fear and anxiety reactions in adult animals is gradual habituation. If we present the stimulus that evokes the reaction at full force repeatedly (flooding), as we might with a puppy, the emotional state produced may be so intense that it is aversive itself and reinforces the fear reaction. This can prevent the reaction from being habituated. If we present the stimuli that produced the fear reaction in a mild fashion, and this is done repeatedly, then the fear or anxiety can be habituated at that mild level. Once this is accomplished, we can increase the intensity of the stimulus and repeat it again, accomplishing habituation at the new level. Over a series of stages the stimulus intensity is gradually increased until we have, in fact, habituated the animal to the intensity at full strength. This process is called systematic desensitization.* p. 210

One method they attribute to Voith (1980b) actually recommends using **SD** with **CC**. They go on to write (p 219):

> *Systematic desensitization is almost always paired with a counter conditioning technique to accomplish the most effective therapy for phobias. The use of counter conditioning as described simply potentiates the desensitization process, but these two techniques are discussed separately because they each utilize different conditioning principles.*

It's not clear, what they mean, with the terminology "principles". And they do not go further into this. They go on to actually describe a **SD** with a **CC**!:

> *Both counter conditioning and systematic desensitization are conducted simultaneously. As an illustration, take the example of a dog that is very fearful of the sound of gunshots. This fear may be an unhabituated emotional reaction or could be a classically conditioned response if the dog had been, in fact, shot with a gun at one time. Regardless of the actual diagnosis, the therapeutic approach is the same. We can arrange training sessions of 10 trials to expose the dog to the sound of gunshots that are muffled with several layers of cardboard boxes. One might use a starter pistol that fires .22 caliber blank cartridges and muffle the gunshots by a series of nested cardboard boxes as shown in Figure 4-1, page 63. If the gunshot is sufficiently muffled, the dog can be called over to sit near the box and when a shot is fired, its emotional disturbance will be mild. We then start the counter conditioning by giving the dog a bit of favored food after each shot of the starter pistol. It is common practice for a training session to consist of 10 gunshots. The food will create an internal appetitive emotional reaction that is classically conditioned to the muffled gunshot since food follows the stimulus, and after a couple of training sessions the stimulus itself will come to produce an appetitive emotional reaction. This reaction is incompatible with the aversive emotional reaction associated with the*

fear response. In our training sessions the fear response is evoked only mildly, if at all, because the stimulus is too weak. As the nested cardboard boxes are removed, the muffled gunshot becomes louder but the degree of aversive emotional reaction produced is weak. With each session the animal's emotional response to the gunshot is desensitized while the appetitive emotional reaction is continuously conditioned to the stimulus. At each new level in which the muffling is removed, desensitization continues and counter conditioning is maintained. Eventually the gun can be fired close to the dog with no muffling and instead of evoking the fear reaction as in the past, an appetitive emotional reaction is produced.

Now the problem with this above described technique is, that Hart & Hart (1985) have now decided, that **CC** as a procedure has -no- hierarchal framework, but **SD** does. This is their basis for saying they are doing the two procedures together. But we know from Cover Jones (1924), that her version of the classic counterconditioning procedure was also set up to go from hierarchal intensity to hierarchal intensity.

In this case we have a clear misunderstanding of what differentiates a **CC** procedure from a **SD** procedure. In the **SD**, the intensity is raised when the subject has habituated (if you wish to use this explanation as a process, which they do) to the previous intensity. There is no expectation of **Habituation** to the CS described or inferred by Cover Jones. If food is used at all, it is as a form or **RI** and therefore a **SD**, which they do not say they are doing. They also do not write of any kind of relaxation necessary, for example to use **RI** as the process, but rather specifically state, the dog is habituating. But **Habituation** itself is a different process and as such, begs the question, of how you can habituate to a stimulus while learning a new response to it based upon a now appetitive response? **Habituation** means, that the subject is now longer is effected by the CS at that intensity. But they then claim, that the dog IS effected through the food. These are conflicting processes, which also explains why, these were never considered to be two processes happening at the same time in either human **SD** or human **CC** – see above.

Hart & Hart (1985) also write, that **CC**, seemingly alone without **SD**, can be used for dogs who do not like people. They don't offer much of an explanation as to how exactly they can tell if the dog is afraid of this person or doesn't like him/her. Quite the opposite, because the case the mentioned was of a dog who "didn't like" the wife, "challenged her authority" and the dog was punished by the husband. I think we can agree, that in that case, there would be a good case to make for a number of emotions along a fear and dislike spectrum. The **CC** procedure described was:

Counter conditioning was employed when the husband was instructed to withdraw all of his affection and attention from the dog for a two-week period. The dog could obtain only praise, affection, and favored food treats from the woman. Often in such instances a 24-hour food deprivation is useful. This placed the woman in a much more favorable position. Since it was she who administered the rewards, she acquired the advantage of evoking the appetitive emotional response normally associated with these rewards. When the dog approached the man for some attention, he simply turned away so that the dog would approach the woman. The woman was instructed to take advantage of these opportunities to gain the upper hand by requiring the dog to respond to some commands, such as "sit" or "lay down," before giving the dog reinforcement.

...which did not entail any kind of recognizable hierarchal structure. As we can see, this procedure is however not a standard respondent **CC**, but that besides the operant procedure, the underlying process may be more of an **Evaluative Conditioning** based upon the US-revaluation effect[78] instead of a respondent counterconditioning! Hart & Hart cite no sources whatsoever for their definitions and applications of the techniques, neither from human psychological literature, nor from animal research literature. Sherman et al (1996) cite Campbell (1975) as a source for the technique of "**SD&CC**", but Campbell (1975) does not describe any such procedure or process in his book!

78 Rescorla (1974, Walther et al (2009)

Borchelt & Voith (1996), Askew (1996 p. 90-92, 313), as did Hart & Hart (1985) before them, write, that **Habituation** is the underlying process in **SD**. Askew (1996) also more often than not lists **SD** separately from **CC**, i.e. Not as some mashed together combination, nor does he deem that the two even be done in any manner together. He goes one step further to write, that it's most important to look for the underlying principles necessary to reach behavior change and then apply those techniques which work via those principles, rather than just apply globally one-size-fits-all techniques! For example he describes multiple effective ways to use methods using **Extinction** (non-reinforcement of previously reinforced behavior) as an underlying process to effect behavior change. Borchelt & Voith (1996) as Overall (2013) state that **SD** is most often done together with **CC**, but they do not agree as to techniques, inasmuch as Borchelt & Voith (1996) still describe **SD** and **CC** as being respondent conditioning techniques not using "rewards".

Overall (1997 / 2013)[79] is often mentioned as describing using **SD** as well as **CC**. While she does on the one hand write, that **CC** is to be coupled with **SD**, meaning in addition to **SD**, she also writes:

> *Remember that with desensitization techniques we wish to teach dogs that they will be rewarded if they do not react to the person or animal approaching them. If we start at a level below that at which they will react, we can gradually work up to more challenging interactions.*

She goes on to define **SD** (**DS**) with no cite of any external source whatsoever, as being:

> *Desensitization (DS) is a decrement in response to a certain stimulus that is obtained by gradually exposing the dog or cat at a sub-threshold level to the stimulus that elicits the concerning response. An external reward is not necessarily involved in Desensitization, but it may help speed the process if the person giving the reward is correctly rewarding a calm response rather than just sitting and not reacting.*

Which then makes **SD** an operant procedure when a "reward" is used (although I do not understand, why the difference is made between non-reacting and calm reacting), for example also in Hart & Hart (1985) and see that **SD** was, however, never intended to be be an operant procedure, but rather a respondent one, according to Wolpe (1958)! If comparable to any specific fear reduction or coping procedure, this application would be closer to a graduated **Reinforced Practice** as explained later in this book.

Although Lindsay (2000) sometimes mentions **SD** and **CC** as "systematic desensitization and counterconditioning", it's difficult to know if he's recommending doing both at the same time, since he doesn't actually describe such a combined procedure. He does however describe a **Graduated Counterconditioning** of his invention.

> *Most common procedures used to control excessive fear in dogs involve some element of counterconditioning (Hothersall and Tuber, 1979; Voith and Borchelt, 1985; Shull-Selcer and Stagg, 1991). Graduated counterconditioning is performed by exposing the dog to a gradual progression of increasingly feared stimuli while simultaneously evoking emotional arousal incompatible with fear (see Counterconditioning in Volume 1, Chapter 6).*

But then, if he has a progression of intensity that increases, while *evoking emotional arousal incompatible with fear ,* this fulfills approximately the expectations of how a **SD** works according to the underlying process of **RI**, NOT a **Counterconditioning**. See my reference to Hothersall and Tuber, 1979 above. He mentions both Cover Jones and Wolpe by name. This is important, because as we saw, some people today (Chance 2008) still consider **SD** to be a **CC** procedure. But Lindsay does not now name this **SD&CC**! He calls it a **Graduated Counterconditioning**. What he does however write:

> *The best counterconditioning results are achieved by presenting stimuli that either relax a dog or satisfy it appetitively while systematically exposing it to the fear-eliciting target. Relaxation and eating are incompatible with fear—that is, a dog cannot be simultaneously fearful while relaxing or eating. Some activities like playing, running, and even walking can be used as counterconditioning stimuli to reduce mild fears and anxieties.*

79 My source is predominantly the 2013 Kindle edition

The confusion comes above in that he first induced the relaxed state and then introduced the aversive, but such, that the dog remains relaxed. This as described IS **SD**, not **CC**, while he calls it a **Graduated Counterconditioning**, NOT **SD** – he's got it backwards and inside-out. When he does mention **SD** & **CC** together with Wolpe's name, it's clear he's referring to **SD** as the respondent procedure with **CC** as the respondent process (**Variant of CC Nr. 2**, p. 21):

> *Since Wolpe's discovery, many studies have been carried out to evaluate the therapeutic efficacy of the desensitization and the counterconditioning process.*

Notice that he seems to imply that **desensitization**, as he understands it, relies on the **CC** underlying process NOT the **RI** underlying process. But he then casts doubts on his own conclusion when he writes (Book One, p.. 230):

> *In fact, according to Delprato's study (1973), simple extinction proved more effective than both systematic desensitization (graded counter-conditioning) and graded exposure.*

...but which also shows he's, in this instance, looking at procedure/process, not as two combined procedures.

(Lindsay, Book 2, Chap 3, p. 161): He lists **SD** as a procedure and goes on p. 162:

> *The first step in the desensitization by counterconditioning is to determine whether the audio storm recording elicits a fearful response.*

Notice the preposition "by"? Procedure=**Desensitization**, process=**Counterconditioning**. This again hints to the procedure being a respondent **SD**, based upon the respondent process of **CC** (**Variant of CC Nr. 2** p. 21).

(Lindsay, Book 2, Chap 3, p. 166):

> *Desensitization by counterconditioning or habituation follows the same basic procedures as already described.*

The problems arise, when he himself uses the preposition "and" connecting **SD *and* CC**, but then goes on to describe procedurally **SD *by* CC**. Or he names the procedure *systematic desensitization and graduated counterconditioning,* but describes neither what the **SD** part is, nor the **CC** part, one only sees a **Graduated Exposure,** which in itself is common to both a respondent procedure SD as well as to a respondent CC. Typical of how he mixes meanings through unclear use of prepositions as compared to how he separates the two terms earlier in the book as separate procedures and separate process. (Lindsay, Book 3, Chap 3, p. 213):

> *The underlying premise of such training is based on systematic desensitization and graduated counterconditioning. The owner is instructed to leave the dog for progressively longer periods, starting with a few seconds and gradually building the dog's tolerance for longer and longer periods of separation.*

In the excerpt above, there is no indication of how this fulfills either the procedural requirements of opposing arousal stimulus to the fear with an appetitive one, nor what he considered to be **SD** and what *graduated counterconditioning.* Since there no relaxation to compete with the aversive stimulus (leaving), this cannot be a respondent **SD**. But there is also no operant contingency in play, something for which the dog can be reinforced for wanted behavior, so it's also not an operant procedure. I'd make a guess, that simple **Habituation** in a graduated setting is what's going on.

Or he even says it's a **Graduated Counter Conditioning**, but then goes on to describe an **operant** procedure (DRO), for example (Lindsay, Book 3, Chap 3, p. 174) – which would be either **Variant of CC Nr. 3** or **4**, p. 21):

> *Graduated counterconditioning and interactive exposure can be staged in places where high levels of foot traffic can be found. City parks can be useful for this. Relaxed exposure can take place as the owner s on a bench with the dog on a limited-slip or halter collar, depending on need. During outdoor exposure, a hip-hitch and control lead can be extremely useful for maintaining control while freeing up the hands to deliver petting and massage, squeaks and clicks, food treats, and so forth. As passersby approach, the dog can be prompted to sit,*

thereby obtaining various social and tangible rewards. The delivery of non-contingent rewards (priming) or rewards delivered on a DRO schedule can be very useful. During DRO training, a brief period (e.g., every 10 to 20 seconds) is set at the end of which the dog is rewarded, provided that it does not exhibit avoidance behavior during the period. Over a number of trials, a variety of prosocial behaviors will be adventitiously reinforced.

It appears rather "unusual" to claim without any cites, that there is no difference in conditioning processes between non-contingent and contingent "rewards". It's a complete mish-mash of scientific with non-scientific nomenclature and ... it's kind of what "we" do, but found in his book in the section of "**Systematic Desensitization**".

All of them however would procedurally qualify as portrayed in the actual case reports as: **Graduated Exposure Techniques**. Fully accurate, no confusion with existing terminology.

Not only does Lindsay not describe one specific procedure he calls **SD&CC** as a respondent procedure consisting of two mashed up respondent ones, he mixes up his own definitions as opposed to his own procedural implementations, between procedural **CC**, procedural **SD** and procedural **operant** techniques, while deciding, that the underly process, despite the research to the contrary he himself cites, being **CC**. He therefore attributes the processes of all aforementioned procedures to **CC,** which frankly ignores the distinctions that have been shown in the research by scientists since the middle 60's, that while similar, **reciprocal inhibition**, **Habituation**, **Counterconditioning** and **Extinction** are probably not the same processes and neither being individually responsible for the effectiveness of the procedure. This mixing and matching of terminology is frankly, what has confused us in our own applications of dog-related protocols. The biggest problem for "us" is, his inconsistent use of prepositions and other connecting words, sometime using "**SD *and* CC**" sometimes using "**SD *by* CC**", sometimes "**SD *using* CC**". The wonder is, that they work!

As we've seen, there is no direct link between how animal-clinicians and human-clinicians/researcher understand these or do these procedures, although the originators of **CC** (Cover Jones) and **SD** (Wolpe) are sometimes mentioned from an historical perspective, giving rise to an anticipation of using these two procedures respondently as their originators did. What we also see, as shown above, there is no uniform opinion as what is "correct" and what is "incorrect" between these different examples, inasmuch as these authors all do their **DSCC** differently from each other, I assume from their perspective "correctly", which also infers, that others doing it differently are doing it "incorrectly". So, in none of the sources mentioned below are there any direct or indirect cites of original peer-reviewed papers in human clinical trials or lab research psychology to support the use of their own preferred combinations as presented in their protocols.

This means, simply using the terminology without defining what parts of a procedure are supposed to represent what process sounds great, but is not a help in knowing what's going on. For example, Dr. McConnell would use the term "Desensitization and Counterconditioning" but the procedures would actually be a combination of desensitization and as she writes, a **DRI**. Dr. Overall (2013) writes often "Desensitization and Counter-conditioning" and means something similar to a respondent desensitization while perhaps allowing for rewards, but including also any operantly trained alternative behavior as being the **CC** in **DS&CC**. Horwitz & Pike (2014) write that **DS** is used with either an operant or a respondent **CC**. On the other hand, Borchelt & Voith (1996) write about operantly used **CC** or as they call it, **Countercommanding** and described as what we would call an incompatible behavior or DRI:

Countercommanding works for a well trained dog and a relatively unmotivated behavior and in a context of control but will probably be insufficient to prevent a motivated behavior or a behavior out of the context of obedience (e.g., not in training class, off leash, or not in the presence of the trainer).

Once again as seen above, no agreement between animal behaviorists as to what **SD** is or how it should be done as a procedure, little agreement as to the underlying processes and what role **CC** plays as well as what kind of **CC** (operant or respondent) should be or needs to be applied.

CARE[80] makes great pains to separate the training of a DRI from "**Desensitization and Counterconditioning**" and describes "**Desensitization and Counterconditioning**" as being respondent procedures/processes. While writing about changing the dog's emotional content towards the trigger with a CER, they do not identify further what part of the procedure is the **CC** and what is the **SD**, but do lump them together specifically as respondent conditioning procedures. But we know, these two are not compatible to each other, when both are respondent procedures. Yet this text is on the page: *DS/CC is a simple procedure; remain under threshold and create a one-to-one contingency, i.e. Trigger=Treat.*, i.e. which would mean ... that the author sees the entire process to be contingency driven meaning an operant procedure, since there are no "contingencies" in respondent conditioning – but has also clearly labeled both **DS** and **CC** as being respondent procedures. This is a confusion of terminology.

Where **DRI** is discussed in CARE, there is no reference as to when in the work, this should take place. And the questions must be asked: If through a desensitization program, the dog no longer reacts agonistically due to fear, since a new association with the trigger has been established (CER), why a **DRI**? Incompatible to what? Theoretically, there is no longer an undesired behavior towards the trigger because of the **Respondent Conditioning**, which has "desensitized" the dog towards that trigger.

Roberts (2014), in his book, lists **SD** and **CC** separately and describes them as two different respondent treatments that can still be combined as two different techniques, not one mashed together. His descriptions are similar to standard ones, **SD** being based upon hierarchal exposure relying on **Habituation** (getting used to…), while **CC** is described as allowing the dogs to participate in pleasurable activities while exposed to their trigger, which makes this also a respondent method.

In other words, why stick together **SD** as procedure with **CC** as the process, when we should know, that the process is not **CC**, but rather **Extinction** together with **Habituation**? We could do procedurally an effective **SD** or procedurally an effective **CC** and leave it at that. We don't need to either infer doing 2 procedures stuck together that were designed to work differently OR label both procedure & process, when the attributed process (**CC**) is not accurate. Or we could simply call the procedure a **Graduated Exposure Technique**, which gives leeway in using the steps we feel most likely to be successful, without using a label that is scientifically untenable.

There have been many claims as to what **SD** accomplishes when working with dogs. For example: *that is makes the dog feel safe*. That it *desensitizes the dog to the other dog* (sounds more like **Habituation**). And the claims about **CC** are no less unsupported – and certainly, as far as actual science is concerned, not conclusively "proven", what with the many investigations as to what kind of conditioning is or is not involved in any one procedure/process .

"We" claim that respondent conditioning in the form of **CC** changes the emotion felt towards the other dog (or generic trigger or CS), but the study done by Brimer & Dockrill (1966) shows, that a CER toward a previously aversive CS in a **CC** could actually be an operant reaction to the anticipation of an appetitive stimulus newly resulting from that CS[81]. We cannot rule this possibility out, especially since there is no way to specifically and definitely know otherwise in the field in real life and actually OBSERVE what new emotion the dog now has towards the old CS. Skinner (1953) also writes, that we cannot simply separate operant conditioning from respondent conditioning since they are often occurring simultaneously, so that it's not possible to simply ascribe one behavior to

80 http://careforreactivedogs.com/thecareprotocol

81 Brimer and Dockrill (1966)

the one or the other. The anticipation of something positive in conjunction with the CS may actually mean, that the basic feeling towards the CS has not changed at all. It may actually mean, that the emotional response is towards the **FOOD**, not the old CS.

Another example of how to look at this, with which the interviewed psychologists agreed:

> Mary can't stand Paul, because he's mean, loud, aggressive and she's afraid of him.
>
> Just as Paul enters the room with Mary, Linda comes and brings Mary a hot coffee and a sweet roll. This repeats itself every morning. If Linda is a couple of minutes late, Mary eagerly looks forward to seeing Linda, because she always brings her her coffee and sweet roll. This always picks up her spirits – which haven't changed a bit towards Paul, even if Linda and Paul enter the room at the same time. She loves, Linda, the coffee and the sweet roll, but still can't stand Paul.
>
> The psychologists I'd interviewed remarked, that Linda may not show any signs of ill-feelings towards Paul, but the assumption that his appearance also means a change in her feelings toward him, is just not justified. So it may not be the case in a dog either – and actually, we have no way of knowing for sure.

Nawas et al (1971) posited, that **SD** was a procedure containing both **Extinction** as well as **operant conditioning** which reminds us of what Skinner stated above. What was that, about Skinner being on one shoulder, but Pavlov on the other?

Zener (1937), at a time right before Skinner came out with his first book on **Operant Conditioning**, questioned the entire process of **Respondent Conditioning**. It was Zener's contention, that something very similar to **Operant Conditioning** was going on during **Respondent Conditioning**, in that now a desire, pure and simple, for that US has now been awakened as a response to the object of fear, not that that object of fear is no longer fearsome. This introduced, already in 1937(!), a possibility of choice due to "wanting" instead of a simple, unthinking reaction. And that "wanting" is established through at least one pairing of a CS with a US. So again, the US is not necessarily associated with the CS per se, but rather with the expectation of something good coming and wanting that something good, NOT however in terms of now liking that formerly fearsome CS because of the good thing coming. This was then further examined starting in the late 70's concerning **Evaluative Conditioning**[82] and more which we'll take a look at later.

As already shown above, no particular parts of either **SD** or **CC** are necessary, nor in what order, in order to change behavior, nor if that changed behavior does actually signal a change in the emotional content towards the object of fear or fearsome situation. While we DO know that often – not always as has been claimed – a change in behavior does take place, at least short term and maybe only with "help", and why that "help" might be necessary – **Operant Conditioning**? Cognitive influences? We don't know why. And therefore we don't know why NOT when it doesn't work or stops working. More over, one of the main weaknesses in the idea of respondent conditioning is, that there is no explanation why some people or animals can be exposed to a traumatic situation and become immediately traumatized, yet others do not (Rachman, 1991), and therefore why some will learn to cope with that fear and others not.

We now see how "our" so-called, inaccurately labeled **DS&CC** or **SD&CC** took on a life of it's own as a procedure, receiving a name that had very little to do with the origins:

1) One or more animal behavior/veterinary behavior researchers/research teams used some

82 Martin & Levey (1978); Hofmann et al (2010)

variation of **Graduated Exposure Techniques** to deal with certain kinds of canine fear, anxiety or phobias.

2) Some noticed that both Cover Jones (1924) and Wolpe (1958) also used **Graduated Exposure Techniques**, and noticed that, depending upon who you read, these procedures were called **SD** or **CC** and used **RI** or **CC** or even **Habituation** as the underlying process.
3) The first couple of animal behaviorists/veterinary behaviorists applying these **Graduated Exposure Techniques** were not consistent in their use of basic terminology, but referred backwards in time, as is usual in science, to previous users of the same terminology, without looking more carefully at the obvious discrepancies between procedural steps and names of these procedures as done in these earlier animal behaviorists'/veterinary behaviorists' clinical studies.
4) At the same time as researchers in human psychology discovered, that neither actual procedural steps nor supposed individual processes were responsible for the effectiveness of the Jones/Wolpe procedures as originally done and therefore developed these two procedures further, animal behaviorists/veterinary behaviorists stayed in their earlier-research versions with the pre-human-psychology-research names from those times.
5) In the meantime, generations of human psychologists have grown up learning historically the names Jones and Wolpe, but learning completely different explanations, if any, as to underlying processes, as well as completely different procedural steps which are built upon these <u>individual</u>, not combined, processes.

All the above leads us to the conclusion that:

1) The Jones as well as the Wolpe procedures were never done mashed together. Jones was the inspiration for Wolpe to develop the procedure further in a different procedurally and process oriented direction, which the vet behaviorists seemingly did not further research.
2) Although there are **Graduated Exposure Techniques** based upon operant processes in human psychology, these had little to do directly with either Wolpe or Jones. They only shared the graduated-approach procedural style, with different supposed underlying processes.
3) Because of the confusion of earlier animal behaviorists/veterinary behaviorists in the 70's/80's/90's concerning terminology vs origins of the terminology vs procedural steps vs underlying processes, we have today "our" misnomer procedure **SD&CC**. Misnomer because, as passed on from vet behaviorist to vet behaviorist and from trainer to trainer, it's procedural description and promises of effectiveness have reached epic, mythical proportions, none of which have to do with Wolpe, Jones or the further research in their methods – and with no clear consensus between practitioners as to how SD&CC should be done, as we'll see.
4) When modern human psychologists, who've learn the names Jones and Wolpe from the historical perspective, and know what research has developed these two into today, see this nominal description **SD&CC**, they have no idea what that could be, but are even more astounded in hearing what we claim it to be, as it makes absolutely no sense to them.
5) When reading about **SD&CC** as done by animal behaviorists, when individual steps are given, how it is to be performed, we see, that these steps are neither the original **SD** nor the original **CC**, but more often than not some mixture of the one or the other with some operant aspect(s) added in, such as rewarding for desired behavior. When looking at videos of trainers performing this **SD&CC**, we see a multitude of procedures lumped under this name, all of which work to a degree. We never however, see or hear, when it doesn't "work" as promised, whatever the word "work" means.
6) This video material is however, in line with the basic findings, that there are no individual steps in either **SD** or **CC** which are absolutely necessary, and also that there is no one

specific individual underlying process being accessed by the procedure, that is responsible alone for behavior change happening. There is also no empirical evidence for an emotional change going on, neither from the trainers, nor the animal behaviorists/veterinary behaviorists – there can't be, because neuroscience[83] has shown rather clearly, that this just doesn't happen, certainly not as "we" claim it does.

7) Inasmuch as neither names nor procedures accurately reflect the perspective of what "we" do according to science, when we say we're doing a **SD&CC**, it would be more accurate to say that we are doing a **Graduated Exposure Technique**.

Part of the problem lies with how "we", based upon some very influential people in the animal field use the terminology, are not consistent in our own use of it. As we've seen:

- The term **Counterconditioning** in human psychology nomenclature is normally held to be a respondent procedure or underlying process of a respondent procedure[84]. But it can also be a simple, generic term to describe the process of conditioning one response to another response[85]. **Counterconditioning** is also considered by many to be a class of procedures which include, for example **Systematic Desensitization**, as they have the process of **Counterconditioning** at their core[86].
- In animal behavior, the term **Counterconditioning** can be used to mean a solely a respondent technique[87], solely an operant technique[88] or either operant or respondent[89], dependent upon what is being done at the time.
- Not all animal oriented people writing "**Desensitization**" mean "**Systematic Desensitization**"[90], but most do. Or they write " **Desensitization and Counterconditioning**", but mean a respondent (desensitization) procedure together with **Operant Counterconditioning**.
- Some animal behavior consultants identify the main parameter of **Systematic Desensitization**, **Counterconditioning**, **Operant Conditioning**, **Respondent Conditioning**, yet in the application of their protocols, we see, that while identifying **Counterconditioning** as a respondent procedure, their version of **Counterconditioning** is nonetheless an **operant** one, speaking of rewarding behavior. More confusing yet, when they then wish to train using a differential reinforcement scheme.

Just because "we've" named **SD&CC** as being one thing, doesn't mean it exists as one specific thing – see Nominal Fallacy[91] as well as the Bandwagon Fallacy[92], the later meaning, that just

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83 https://www.youtube.com/watch?v=gmwiJ6ghLIM

84 http://www.alleydog.com/glossary/definition.php?term=Counterconditioning Davison (1968), Waltround-Skinner (1986, 2013), Kellerman (2013) http://www.associationofanimalbehaviorprofessionals.com/glossary.html Bandura, Albert, (1961) (reporting on the work of others), Davison & Wilson (1971), Hart & Hart (1985), Kirsch et al (2004), Craske (2010) (reporting on the work of others), Chance (2008), Farmer & Chapman (2008), Case (2009), Walrond-Skinner, Sue (ed.) (1986, 2013), Jones-Smith (2011), Roberts, Kellerman (2014), Gordon (2014)

85 http://www.apa.org/research/action/glossary.aspx?tab=3 http://www.medilexicon.com/medicaldictionary.php?t=20959 http://psychologydictionary.org/counterconditioning/

86 http://psychology.jrank.org/pages/152/Counterconditioning.html, http://www.psychologycampus.com/behavioral-psychology/counterconditioning.html http://phobialist.com/treat.html Chance (2008), Walrond-Skinner, Sue (ed.) (1986, 2013), Jones-Smith (2011), Helmut et al (2012)

87 http://www.merckvetmanual.com/mvm/behavior/behavioral_medicine_introduction/treatment_of_behavioral_problems.html, http://www.associationofanimalbehaviorprofessionals.com/glossary.html Hart & Hart (1985), Case (2009), Roberts (2014)

88 Overall (2013), Tighe, & Brown (2014)

89 http://www.patriciamcconnell.com/theotherendoftheleash/counter-classical-or-counter-operant Lindsay (2000), Bompadre & Cinotti (2011)

90 Coleman (2015)

91 http://kspope.com/fallacies/fallacies.php

92 http://grammar.about.com/od/ab/g/bandwagonterm.htm

because it's general opinion, doesn't make it so. There are several different procedures propagated solely within the animal training world, The only thing we know is, whatever **SD&CC** (or **DS&CC** or **D&CC** or **CC/DS**) really is, it works when it works, just as do the old Wolpe **SD** or Cover-Jones **CC** alone. But why? No one knows.

Concluding Thoughts:

Another example: **My Benz/VW, your SD&CC**

I -can- say, that I drive a Benz/VW. Why? Because Karl Benz invented and patented the first automobile in 1886 and VW makes some of the parts in my car that make it go. **BUT**

I can't go and simply look in the yellow pages for a Benz/VW dealer when I want a 20,000 mile service. And if I did go to a mechanic and ask "Where is the nearest Benz/VW dealership, where I can get mine serviced?" He/she would just say: "Never heard of it." If I returned and asked "Where is the next Skoda dealer, where I can get my Yeti serviced?" He/she'll say "Here we are, when do you want to pick it up."

Now, my car runs, whether I call it a Skoda Yeti or a Benz/VW. In the meantime, all my friends know I prefer to call my car a Benz/VW, so it doesn't bother them. I also know, that there is now such a thing as a Mercedes-Benz which represents all the research that has gone into the advances now found in that car. VW also exists, but in a form, that is much different from my Skoda.

Up to this point, we've seen that after the conception of both **CC** and later **SD**, both techniques have been intimately studied, taken apart, literally every step analyzed and the following has been found:

1) While Wolpe's (1958) **SD** works when it does, it can be subject to relapse or **Return of Fear** which can be staved off if certain steps are taken to do so.
2) It was originally conceived as a respondent treatment.
3) None of the steps originally conceived by Wolpe (1958) are absolutely necessary for success except some manner of exposure to the object of fear.
4) After Cover Jones (1924) conceived of respondent **CC**, it is outside of the animal behaviorist world pretty much no longer performed as she conceived it.
5) There are at least 5 different main definitions and descriptions of **CC** covering procedures and underlying processes.
6) While some animal behaviorists do mention Cover Jones and/or Wolpe to introduce their mixed procedure of **SD&CC** (and all variations of labels thereof), there are no cites of such animal behaviorists' work in parallel work on either **SD** or **CC** in human psychology.

The above points lead to the conclusion, that there is no one "standard" manner to perform either procedure, neither **SD**, nor **CC** nor any of the variations of the animal behaviorist procedure **SD&CC**. Especially with the animal behaviorists' papers and textbooks, it's apparent that each of these people have developed their own version of **SD&CC** that "worked" for them, however they define the term "work". This means, that when attending webinars, seminars or reading articles or books on this subject, what you are reading is one person's interpretation of another's point of view, not necessarily a reflection of science as it is at the present moment.

> What does this mean to us? Since there is no one way to best do **SD** and no one way to best do **CC**, if you want to continue doing what you call **SD&CC** – go to it. Just ... please be aware, there is no real conclusive science behind what we call **SD&CC** in any form.

But, while we know that **SD&CC** works just as well as a Benz/VW, wouldn't it be more appropriate to call it by a name that is not only more accurate, but also shows that we too recognize the development of the science behind these two things? Something like:

Graduated Exposure Technique? (GET)

Granted, we lose one letter and a connecting character, but we gain accuracy in terminology and will not be snickered at by real non-animal oriented psychologists as being dilettantes.

What is the science behind **Graduated Exposure Techniques (GET)**? We'll get to that, but first on to the claims of effectiveness and efficacy made all over the scientific map, explained by, amongst other things, the Dodo Bird.

2.7 – Efficacy and Effectiveness

Before going on to look at other possible fear reduction or fear coping techniques, as well as looking at what has become of **SD** and **CC** in today's real world, we need to consider the topic of (comparative) efficacy and/or effectiveness. In order to even talk about either, one has to have data. You can only have data about evidence based therapies that exist and have been investigated using the "scientific method[93]". The methods used need to be explained as to the procedures used and where these came from, as well as the processes upon which they are based. There has to be a specific hypothesis set forth that will then be either confirmed, refuted or set open for further investigation – often all three, as we've seen when looking at the processes underlying **SD**. The results must be testable and falsifiable.

Have you ever heard of the Dodo Bird? Did you know, the Dodo Bird lives and has his own "theory" in psychology? The "Dodo Bird Verdict[94]" was first written about in 1936 by Saul Rosenzweig and posits, that most existing empirically investigated psychotherapies produce results with similar rates of success/failure, often with no reliable reason why that is. Since the results were all the same, Rosenzweig took a line from Lewis Carroll's book "Alice in Wonderland" in which a race of indeterminate distance was run, in which it was not possible to measure how far or fast anyone had run, so: "Everyone has won and all must have prizes". Or...all psychotherapies have been found to be basically equally effective.

This Dodo Bird Verdict idea lay dormant amongst researchers until Luborsky et al (1975) examined 100 different psychotherapies for their effectiveness and found ...

...they all more or less resulted in the same statistical outcomes.

None was significantly more effective than any other.

Smith et al (1977) in a study of 475 studies came to the same conclusion.

> *The results of research demonstrate the beneficial effects of counseling and psychotherapy. Despite volumes devoted to the theoretical differences among different schools of psychotherapy, the results of research demonstrate negligible differences in the effects produced by different therapy types. Unconditional judgments of superiority of one type or another of psychotherapy, and all that these claims imply about treatment and training policy, are unjustified. Scholars and clinicians are in the rather embarrassing position of knowing less than has been proven, because knowledge, atomized and sprayed across a vast landscape of journals, books, and reports, has not been accessible. Extracting knowledge from accumulated studies is a complex and important methodological problem which deserves further attention.*

Luborsky et al (2002) re-examined this Dodo Bird Verdict by looking at 17 meta-analyses (reviews which statistically compare the effectiveness or efficacy within a body of studies) of psychotherapeutic studies and found, that for the most part, meaning without greatly significantly differing results, the original concept set forth by Rosenzweig still held true. They gave the following reasons for the generally likeness in results of therapies: the different treatments did not differ that much from each other in the main aspects, processes involved.

1) Because many authors favored one or the other, these effectively canceled each other out when statistically compared.
2) There may be various methodological differences between studies and practices which evened out the statistics.
3) There tended to be the least difference in therapy results, where patient characters were not matched to the type of therapy.
4) Designers of procedures and fans of such had proportionally better success than those not using a procedure very often or disliking it. (Luborsky (1999)

93 http://www.livescience.com/20896-science-scientific-method.html
94 http://www.scientificamerican.com/article/are-all-psychotherapies-created-equal/

Tryon (2005), besides bemoaning the validity of Dodo Bird Verdict in **SD** and **Exposure Therapy** (interesting, that he did not include **SD** as an **Exposure Therapy**, while others do), went on to explain the research on the various explanations for how which underlying processes in **SD** work, but are lacking in conclusive empirical evidence for or against, often contradicting each other. He discussed the pluses and minus' of the following in terms of the studies outlining these, more to show, that there are no conclusive verdicts to be made about the comparative effectiveness of the following, especially because no one really knows how **SD** works:

> *Reciprocal inhibition, counter-conditioning, habituation, extinction, two-factor model, cognitive changes including expectation, self-efficacy, and cognitive restructuring, and emotional processing were considered as possible explanatory mechanisms for the effectiveness of systematic desensitization and exposure therapy.*

While he represents his own type of approach to psychotherapy for anxiety, phobias etc., his review is often cited when a researcher is summarizing the "present state of the art" or history of earlier therapies such as **SD** or **CC**. But he's not the only one who's looked at the existing therapies and their developments since their inceptions and their research histories.

Lilienfeld and Arkowitz (2012) concur with Tryon, after having looked again at several hundred studies, that there is no empirical evidence to support any claims that, generally speaking, any recognized **E**vidence **B**ased **P**ractice (EBP[95]) is any more efficient with better efficacy than any other. Of course all of this research only looked at recognized methods, those for which there was already existing primary non-clinical research, before going on to the clinical research stage. Tolin (2010) found some finer differentiation, in that certain therapies were better than some for certain conditions, but worse for others, but the differences were still greatly a matter of only a few percentage points.

These meta analysis have also been used to try to sort out, if some bits of a combined therapy are as or more effective than others. **Cognitive Behavior Therapy** (**CBT**) is an integrative therapy[96], or better explained, a combination of certain **Exposure Therapies** such as **SD** and others, with some cognitive techniques having to do with maladaptive thoughts, expectations. I'll be looking at aspects of both **CBT** and **Exposure Therapy** as it's developed up to today later. Ougrin (2011) did such a meta analysis of existing studies which showed, that there is no significant difference in efficacy or effectiveness between pure cognitive therapies and pure **Exposure Therapies** for PTSD, Panic Disorder or OCD, while there was some greater effectiveness of cognitive therapy for social phobia, thus being one such example showing how one or more therapies are effective, but not always to the exact same degree depending upon the type of problem.

Toomey & Ecker[97] have put together an online listing of the Dodo Bird Verdict related findings for the following major topics:

> *Psychotherapeutic: cognitive behavioral, cognitive, systematic desensitization, behavioral, interpersonal, psychodynamic, client centered, non-directive/supportive, focusing, process experiential, gestalt, supportive, and cathartic-emotive*
>
> *Psychopharmacological: SSRIs, MAOIs, tricyclics, benzodiazapines*
>
> *Other: Electroconvulsive therapy (ECT)*

95 http://sophia.smith.edu/~jdrisko/what_is_ebp.htm
96 http://integrativecbt.blogspot.ch/2010/05/what-is-integrative-cbt.html
97 http://coherencetherapy.org/files/dodo-bibliography.pdf

2.7.1 – A Small Survey

Here below are the results of a small informal survey I conducted in December 2015 and included in my 4th paper. The idea was to try to, through the reporting of owners and trainers, determine the relative success ratio of all used methods of fear reduction and fear coping. I was not so much interested with such a small sample in comparing the different commercial protocols with each other, but rather only to see if the survey could help define what these owners and trainers considered in terms of these protocols having been effective or not. Did they "work" and if so or not, to what degree.

> **Cat. 1:**
> Who has a dog-dog reactive dog, who has done XYZ such, that the dog is no longer reactive at all towards other dogs and needs no management or help in navigating meets and greets? In other words is no longer reactive at all. In other words: cured, no longer under any circumstance showing any reactivity and not needing any help or support in interacting with other dogs
>
> **Cat. 2:**
> Who has a dog-dog reactive dog, who has done XYZ such, that the dog is still reactive towards other dogs, but has improved such, that he/she often can get through dog encounters with little to moderate management? In other words is only still moderately reactive. In other words: greatly improved but still reactive under certain circumstances and/or needing help or support to avoid becoming reactive
>
> **Cat. 3:**
> Who has a dog-dog reactive dog, who has done XYZ but has not improved and still needs significant management in order to not have reactive episodes with other dogs? In other words: no improvement or even the dog had gotten worse.

I only put these questionnaires into non-protocol specific dog groups. The reason being, that I have been denied access to some, so putting into some where I do have access and not into others might have slanted in some way the results – but then, I do not break down the answers according to protocol. And in any case, most people in the protocol-specific groups are also in other non-specific groups.

I want to stress, that I don't consider this to be any kind of scientific research project. I did not do any selecting for specific kinds of "reactivity". I did not select for types of situations under which the training occurred. Not did I select for initial intensity of reactivity. I did not select for training goals. In other words, what you see above is what you get – this is nothing more than in informal questionnaire.

People answered anywhere from a simply "1" to a detailed history of the type of reactivity, progress made, types of problems encountered or still open and more.

I was looking for 2 basic types of responses.

1) a simple numerical classification according to the criteria I'd set forth, describing what their dog could do now after or since starting the therapy.
2) but I also wanted to see, if those who had not achieved "a 100% cure", for their dog, a dog who is no longer under any circumstance "reactive", where satisfied with the results.

One of the interesting things to notice was the basic optimism and joy the people still had despite not having reached their goal, when this was the result. It was such, that they often pumped up their initial estimation of the numerical category to be more optimistic than the actual results suggested. They would say their dog was a "1 most of the time, but still needed help now and again." Well, if

you read the criteria, that's a Cat. 2, not a Cat. 1. So I had to sometimes almost interview the people to get to this point.

The purpose of this questionnaire is not to show that one protocol is "better" than another. For that reason, I'm not naming the protocols I asked about and am not giving a break-down from protocol to protocol. I'm not doing this to "prove" that one is more scientific, effective or more humane than the other(s).

There can actually be great differences between how "purely" people applied the protocol and the relative success. Some did include bits of one while predominately doing another. Others started with one, then switched to another that they claim worked better. So the number of participants who answered the questionnaire will not correspond 1:1 with the number of categories claimed. But that's ok. The authors of the protocols all however, either actively or passively through their descriptions of the science they use, assure their customers, that their protocol will get rid of your dog's unwanted behavior, "using the most modern, human and scientifically proven" methods. The idea behind this questionnaire is to see if they do actually fulfill these claims. We've now seen, that their usage of the scientific terminology is questionable at best. There is also some questions as to if the processes they claim are set in motion by using these protocols really are what's going on.

Altogether, there were 5 different questionnaires. One for each individual protocol and one "combined" questionnaire for those who either used a protocol not already asked about OR a mix and match of different ones.

Total number of participants answering the questionnaires = 30

Total number of dogs covered in the questionnaires = 59

Total number of responders who claimed their dog was now a Cat. 1 = cured, no longer under any circumstance showing any reactivity and not needing any help or support in interacting with other dogs = 5

Total number of responders who claimed their dog was now a Cat. 2 = greatly improved but still reactive under certain circumstances and/or needing help or support to avoid becoming reactive = 48

Total number of responders who claimed their dog was now a Cat. 3 = no improvement or even the dog had gotten worse. Some of these then switched to (an-)other protocol(s) with better results = 6

What do these results show us?

1) If we operate under the assumption that reactivity is a fear based set of behaviors, then we have to also see, that the protocols, whether operant or respondent based do not generally, over long term, alleviate the fear behind the fear responses.
2) But we learned that from the results of the science above, when considering how memories are stored and retrieved in the brain, that this is the norm. In other words, the original fear responses which are otherwise known as "reactive behaviors", are stored and do not get unlearned and can return at any time, and also do.
3) And we already learned that claims, that **Counterconditioning** replaces the fear with good feelings for the former scary thing were not true from the conception of the process of **Counterconditioning**, as well as not true in terms of the physiology of the brain.
4) And we therefore confirm findings already cited, that replacement behavior strategies only give the dog new possible behaviors that will compete in the brain memory storage mechanism and will stand in competition with already successful so-called reactive behaviors. In everyday life, the deciding factors are distance to trigger, intensity of trigger, amount of supportive help given in conjunction with exposure to the trigger, even frequency

of training.

5) None of the individual protocols can cure a dog of reactivity, nor change emotions, nor guarantee, that the unwanted reactive behavior doesn't come back. While the protocols might have been at least partly responsible for this "cure" in the case of a couple of dogs who now show no more "reactive behaviors", there is no empirical fact that that was due to which parts of which protocols, the protocol as a whole entity, or not due to other influences, which had nothing to do with the said protocols.
6) They coincide with the statistics presented in, for example Vervilet (2013), as well as the reports in Dunsmoor et al (2015); Goode & Maren (2014); Craske video (2014).

It was apparent in this small informal survey, that most people reporting did NOT use a pure form of any of the protocols asked about, preferring instead to mix and match individual aspects from different protocols to reach the desired results. All who responded did so with a positive expression of feeling for their dog, despite not having reached a "cured" state. This would suggest, that we can actually be just as effective with our clients by NOT trying to impress them with passive or active claims of "curing" the problem behavior, but rather that we can show clients how to effectively reduce the numbers and intensities of such incidents, in some cases to the point where they may never re-occur. This would not be an exaggeration of any real-world expectations. It would also not need to be supported by the present state of science.

What is also apparent from this small sample is, that while these protocols most probably do not "cure" a dog of reactive behavior, most can be used very successfully to manage and to help the dog get through difficult social situations where reactive behavior would not be appropriate in our society. They all include individual tactics that DO give the dog alternative behaviors to perform, even those claiming to only use respondent conditioning. This only shows, that the more of these protocols we learn, the more the authors refine them, the more we can actually help our dogs and our clients' dogs, even if we can't "cure" them.

These very limited questionnaire results could also help show that these protocols, in whole or in part, are effective in HELPING establish replacement behaviors which CAN successfully withstand the competition from the original fear responses under certain circumstances – to a certain extent. In other words, with the appropriate amount of accompanying management of potentially fearsome circumstances, the dog can now have a better chance of not needing to display unwanted so-called "reactive behavior responses".

N.B. .... Quadrants (excepting Extinction):

None of the texts[98], glossaries[99] or studies I've consulted which had anything to do with **Exposure Therapies** in general or specifically with **SD** or **CC** ever as much as mentioned quadrants and if at all, only mentioned positive reinforcement in conjunction with operant techniques I'll be covering later – and then only in terms of using reinforcement, usually not differentiating between positive or negative reinforcement. One notable exception: Craske (2010) writes of a possible danger of positive reinforcement in a very specific circumstance:

> *In terms of depression, it is further recognized that the negative mood may elicit positive reinforcement from others in the form of concern, resulting in the individual receiving*

98 Wolpe (1958), Bandura (1961), Bandura (1971), Hersen (1975), Mikulas (1978), Burch and Bailey (1999), Lieberman (2000), Moore (2002), Newman et al (2003), Craighead & Nemeroff (2005), Chance (2008), Mittenberger (2008), Reber et al, (2009), Spiegler et al (2010), Craske (2010), Abramowitz et al (2012)

99 http://www.apa.org/research/action/glossary.aspx, http://www.scienceofbehavior.com/lms/mod/glossary/view.php?id=408, http://www.associationofanimalbehaviorprofessionals.com/glossary.html, http://www.alleydog.com/glossary/terms.php?letter=A, http://www.itseducation.asia/psychology/, http://allpsych.com/dictionary/

reinforcement for behaving in a depressed manner. Such reinforcement may contribute to the maintenance of the depressed behavior.

Thusly seen, positive reinforcement is not only and exclusively good. It can lead to undesired results. Reinforcement is useful only when it actually serves to increase the -desired- behavior. If it doesn't or, as seen, increases undesired behavior, it's going in the wrong direction. It is still interesting to notice, how little a role quadrants play outside of behaviorism. Just something to keep in mind. Don't worry about how water-pressure resistant your windows are, if you're not building a submarine.

What does this mean for "us"?

1) Despite claims to the contrary, there is no one psychological therapy that is significantly better than all others. Not even psychoanalysis, which is not something we'd do, but it IS included in this category.
2) Despite claims to the contrary, the success or failure of a certain method is not assured when it is simply performed "competently". If you wanted evidence of this, just check out the Dodo Bird. It would not only be ironic, but also rather ... arrogant (?) to claim, that all that's missing with all those professionally trained psychologists is ... competency.
3) Only evidence based practices (EBP) were included in the reviews. If there was no research done with your favorite protocol, then it cannot be considered an "evidence based practice", not even if the individual bits of your protocol have been individually investigated. Many of the EBPs DO consist of bits and pieces stuck together, but they HAVE been researched and trialed using the accepted scientific method in that stuck-together form. There have been no comparative peer reviewed controlled studies comparing **SD&CC** to any other existing animal or human therapy.
4) Fortunately there are 50 or more EBPs from which we CAN actually draw, many of which, most of us have either never heard of or never heard of in conjunction with canine behavior modification.

Bandura (1961) wrote:

> *The predominant approach in the development of psychotherapeutic procedures has been the "school" approach. A similar trend is noted in the treatment methods being derived from learning theory. Wolpe, for example, has selected the principle of counterconditioning; and built a "school" of psychotherapy around it; Dollard and Miller have focused on extinction and discrimination learning ; and the followers of Skinner rely almost entirely on methods of reward. This stress on a few learning principles at the expense of neglecting other relevant ones will serve only to limit the effectiveness of psychotherapy.*

in our case in canine behavior modification using "only" Behaviorism or Behaviorology.

2.8 – Modern Therapies and Their Applications

Where are **SD** and **CC** now?

If we are going to refer to ourselves as "science-based" trainers and not "antique quasi science-based trainers", we have to look at the state-of-the-art science as it is, not as we'd like it to be. This means looking at how "real" therapists do treatments, for then we can ask ourselves, according to the newest science behind these techniques, are these even techniques we can still use with our dogs? What if studies were to show, that a technique we now use is 3:1 inferior to one we've never heard of? Would we simply reject that new one, because it doesn't come from procedures designed in 1924/1958? What can we take over and what simply cannot be applied to dogs, although, who knows? Maybe someone WILL find a way? If what we thought we were doing isn't really what we're calling it, what is it? So first a short recap:

1) What we call **SD&CC** has nothing to do with even the original **SD** or **CC**. **SD&CC's** application today as we dog-people do it, is all over the board in terms of how we do it – you see videos of it being done operantly and respondently or mixed - and the explanations we use as to how we think it works have simply been disproven. It's a wonder it works as often as it does, which is NOT 100%, as is claimed by some.
2) **CC** is pretty much NOT being practiced any more in the original Cover Jones (1924) form. Do a YouTube search for "**Counterconditioning**" and if you find anything, it will be some form of **Exposure Therapy** called **Graduated Exposure** or even **desensitization**, but procedurally, it will not be what Cover Jones did in 1924. In fact, Chambless & Ollendick (2001) in their seminal compilation of empirically supported psychological interventions, do not even mention **CC** at all. Both **Graduated Exposure** and **desensitization**, according to Craske (2010), are based upon the working processes of both **Habituation** and **Extinction** together. See page 21 for a breakdown of how the term "**Counterconditioning**" is used today.
3) **SD** is still being practiced today, but is hardly recognizable procedurally. When done, as with **CC/ Graduated Exposure** above, it will usually be done by some kind of **Cognitive Behavior Therapist** (**CBT**). Some people who are not **CBT** therapists, or those using **Exposure Therapy** will either include **SD** as one of their **Exposure Therapies** OR say they do **SD** in addition to **Exposure Therapy**. And to further complicate it, most **CBT** therapists say they do **Exposure Therapy** which may or may not include **SD**. Also, some **CBT** therapists tend to lean more towards giving the behavioral aspects of therapies more emphasis, others lean more towards giving the cognitive aspects of therapies more emphasis[100]. What the therapist uses in what ratio is not set down in any general rules.

Cognitive Behavioral Therapy (**CBT**) is one of several **Integrative Psychotherapies**[101], which means it includes evidence based procedures from several schools of psychological theories and techniques, consisting not only of Applied Behavior Analysis techniques, but also of cognitive ones and others, which help expand the therapeutic benefits, making it not as limiting as is pure Radical Behaviorism. Here a succinct description of CBT:

> *A well-established, highly effective, and lasting treatment is called cognitive-behavioral therapy, or CBT. It focuses on identifying, understanding, and changing thinking and behavior patterns.*
>
> *In this type of therapy the patient is actively involved in his or her own recovery, has a sense of control, and learns skills that are useful throughout life. CBT typically involves reading about the problem, keeping records between appointments, and completing homework assignments in which the treatment procedures are practiced. Patients learn skills during therapy sessions, but*

100Craske (2010)
101http://integrativecbt.blogspot.ch/2010/05/what-is-integrative-cbt.html

they must practice repeatedly to see improvement[102].

Below is a link to a short explanation of, in layman's terms, what **CBT** is all about, what some of the elements are. Before going on, I'd highly recommend viewing this. From the standpoint of exposure to the actual trigger of undesired behaviors, it's not that much different from the ideas we use with our dogs. The scientific ideas behind why it works are more current than those "we" use to explain what we do. The cognitive part is done through talking, through mental imagery and there are problems applying that with dogs – I'm not convinced this is however totally impossible. More about that later. The reason for viewing this video and the others is simply to get a first hand overview from real experts, doing it daily, who are familiar with the real evidence behind it. https://www.youtube.com/watch?v=ds3wHkwiuCo.

A more involved explanation, both historical as well as scientific is here: https://www.youtube.com/watch?v=OvgtwMCaIcU – Interesting – yet another "ABC" conceptualization – with hard scientific evidence! The question remains, how does a **CBT** or **Exposure Therapist** design a successful therapy? https://www.youtube.com/watch?v=ikBeDCSFpqs Also here, there are certain aspects we cannot do one-to-one with our canine clients, but they can be adapted for use with them and their humans.

Exposure Therapy is another subset of therapies within **CBT**. Since **Exposure Therapy** is a subset of **CBT**, it too has it's aspects of cognitive psychology and therefore cognitive related techniques. The therapist however decides how much actual **in vivo** exposure is used and how much cognitive techniques. This is different from client to client and therapist to therapist. Some use more cognitive strategies, others use more exposure. Most mix to some extent[103].

As we'll see, or you already have by watching the videos above, as opposed to more "traditional" therapies, the cognitive aspect of **CBT** or **Exposure Therapy** has to do with what's going on at the moment one experiences that anxiety. There is no delving into the relationship you had with your mother or if your father never said he loved you. There IS however some history taking, but more to try to find out if the client can identify a key episode which might be a basis for the negative expectations of similar situations today. No, we can't sit down with our canine clients and reminisce about when they were surprised and attacked by a large pointy ear dog, and that now Rover has the expectation, that upon getting close to another pointy-eared dog, he will be attacked again. But ... Rover's caretaker can tell us about this if known. The more important question is: what an **Exposure Therapist** does with this information. I will later adapt some important parts taken from **CBT** and **Exposure Therapy** – and put them into a section of our canine behavior modification tool box and for simplicity sake, I will refer to this as:

Graduated **E**xposure **T**echniques or **GET**.

But before we look at what's happened to **SD** and **CC** and their new home in **CBT** and **Exposure Therapy**, we need to look as some other evidence based Learning Theories and therapies built upon them, some of them you may be familiar with, some not (yet).

102http://www.adaa.org/finding-help/treatment/therapy
103Abramowitz (2012)

2.8.1 – How Systematic Desensitization (SD) Looks Today

A disclaimer right at the beginning. "Truth is truth – you can't have opinions about truth"[104]. The way psychotherapists do **SD** today is NOT how Wolpe envisioned it way back in 1958. According to the research we've seen, covering the different aspects of it, **SD** has reached another state of being than it once had, and all according to the empirical evidence uncovered through the "scientific method". So some of the current generation of **Exposure Therapies,** as organic continuing developments of the old **SD,** may also not look like things we would want to adopt one-to-one. That is NOT the intention of presenting them as they are done today.

The intention is simply to present them as they are, not as we wish they were. But then to look at them from another perspective. When speaking about Cover Jones' **CC** or Wolpe's **SD**, we looked at primarily the procedure and then the explained underlying process as best we could if necessary. And then we have taken them unfortunately out of context and out of intentions in use with our canine clients. I'm going to propose we look at the following procedures in another order. Instead of looking at procedures and then explaining how and why they work, I'd like to first consider upon which process(es) "change" can be accomplished, and then ask the question:

> Based upon the necessary underlying processes which need to be addressed for change to take place, what if anything, can we adapt from these human procedures to our work with our canine clients?

This will require some rather imaginative thinking, which I will address AFTER we've simply gotten to know the procedures that are done today, based upon ... what.

To recap, **SD** as envisioned and practiced by Wolpe (1958), consisted of 3 basic steps:

- ➔ teach the client deep muscle relaxation
- ➔ set up a fear hierarchy from lowest to the highest
- ➔ start the procedure in a relaxed state, introduce the first hierarchy level and don't leave the one step in the hierarchy until completely relaxed and no anxiety is felt. This was based upon Wolpes idea of **RI**, that you cannot autonomically experience two conflicting emotions at the same time.

To explain how this is done today, I will summarize the salient points as outlined in *Using Exposure Therapy to Treat Anxiety Problems (Systematic Desensitization)* by Clyde M. Feldman, Ph.D. (2012). As we'll see, this procedure relies very heavily upon the cognitive aspects of **Cognitive Behavioral Therapy (CBT),** which itself is an **Integrative Psychology**, working with catastrophic expectations then contrasted with actual situations, etc. **SD** according to **CBT** has to do with process oriented points we've discussed: **Extinction** / **Expectancy Violation** together with **Habituation**. As outlined by Feldman, a basic **SD** therapy as part of **CBT/Exposure Therapy** contains these points:

1) Find out exactly what the anxiety or fear consists of. In his book he formulates lists according to the different types of anxieties. He recommends noting things like if the panic attacks are spontaneous, how often per month they occur, what the physical symptoms are, if there are any behavior patterns attached to these panic attacks, what the exact trigger(s) are and more. One could say, this is very similar to the non-observational parts of what we know as a **Functional Assessment** and this part of this intake process is also often called the **Functional Assessment** in **CBT** [105].
2) Choose the specific and appropriate therapy target depending upon the problem at hand.

104The Definitive Biography of P.D.Q. Bach P.D.Q. Bach / Prof. Peter Schickle (1977)
105Cully, & Teten (2008)

3) In the initial sessions, go over once again the expectancies connected with the target, what the client imagines will be the symptoms felt and what horrible things supposedly will happen. We can't do this 1:1 with a dog.
4) Teach the client different relaxation skills in deemed appropriate, including deep muscle, abdominal breathing and others. Also, establish a safe place, either a real place or an imaginary one. Most of these are not applicable 1:1 for dogs, but can be, to a certain extent, adapted if wished. These are generally considered to be emergency tools, NOT a standard part of the technique, only to be used if absolutely necessary.
5) Prepare coping strategies. These also are not applicable 1:1 to our canine situations as described, because they have to do with **in vitro** mental images of people, places which could help or could master what the client needs to be able to do. (Nothing that is an **in vitro** procedure is directly applicable to our work, but we'll look at possible analog replacements for this). He points out, that whatever they are, their purpose is to counter the negative expectations. Self-praise, in other words being able to compare how it used to be and how it is now and what a good job one's done in coping, is an important tactic. We can however prepare other **in vivo** adaptive coping strategies!
6) Prepare an intensity hierarchy of exposure to the trigger. Distance, movement, complexity. How to, step-by-step, that trigger will be approached, up to and including target end-behaviors.
7) - 9) have to do with **in vitro** exposure, in other words mental imagery. Playing through the anxiety producing situation, in the above hierarchal graduated approach in the clients mind. Feldman gives procedures to judge the anxiety levels and how to get these under control through relaxation methods. He writes, that it's important, that the client initially feels some anxiety and that one remains at that level until the anxiety felt reduces itself through the various cognitive means by at least 50%. Each step of this hierarchy is to be repeated at least 5 times. This mean operatively, when the client feels this 50% reduction, one starts again at that same level. Although he doesn't specifically say it, this means either taking a short break or going back down the hierarchy and then climbing back in at that level, intensity. We can repeat a level in the hierarchy 5 times **in vivo**. This is called over-learning.
10) Only after these first 9 points, comes the **in vivo exposure** part that is run in the same manner, but in "real life". This is of course what interests us. And the question comes up, what to do if the client is completely overwhelmed at a certain hierarchal level?. In such a case, the client backs up to lower level and then goes upwards again, but in smaller steps.

Depending upon the therapists individual viewpoint, **SD** will be considered the same as **Exposure Therapy** OR the two will be two different but related therapies, meaning that they will write or discuss about **Exposure Therapy** and **SD**. Some will do a **SD** in the same manner as an **Exposure Therapy**. Some will make a difference between the two, mostly in that, in a **SD**, fear must reduce itself before going on, whereas in an **Exposure Therapy** the only criteria to move on is the clients willingness to do so, as in an **Intensive Exposure Therapy.** That willingness to move on shows an ability to better cope with the fear and this results in a reduction of experienced fear which in itself, allows even better abilities to cope – a circular effect. In the **Intensive Exposure Therapy** the entire procedure will take place in 1-3 or 4 sessions instead of taking many, many more sessions as with a modern **SD**.

Because of the added cognitive aspects in these techniques, both in **Exposure Therapies** and in **CBT**, at first glance the reaction could be, "Interesting, but no dog can ask herself these questions to facilitate the access of the **Extinction** process." And taken at face value, you'd be absolutely correct. Below is an example of a **SD** as it's done today. Interestingly, the speaker does not call it **SD**, but simply **Graded Exposure Therapy**. Yes, even today, there is no consensus as to what these

procedures are called. The example: **Graded Exposure Therapy** for Spider Phobia – Key idea "If it doesn't provoke anxiety, there's no potential for progress, no potential for gain." https://www.youtube.com/watch?v=Y59p6BaTUkY

The accompanying booklet to the above video:

http://cedar.exeter.ac.uk/media/universityofexeter/schoolofpsychology/cedar/documents/Exposure_&_Habituation_for_Specific_Phobia_Colour_.pdf

This procedure above, although called **Habituation**, is the same with the same steps as outlined in Feldman's 10-step procedure, but ... is not called **SD** by the speaker. Neither this, nor Feldman's procedures, in which **Extinction** and **Habituation** were the underlying processes, are designed to be an intensive type exposure, but rather one done in shorter trials with much smaller, slower graduated steps. **CBT** therapists generally and **Exposure Therapists**[106] specifically refer to both **Extinction** AND **Habituation** as being the underlying processes, the goals being the same: to realize, that your worst fears do not come to pass with the exposure, so .. they no longer make you feel as uncomfortable and that undesired behavior is no longer necessary.

In the next section I'll present some of the evidence upon which the concept of **Exposure Therapy** in it's various forms and combinations is based. I'll also link to "some" videos of actual therapies.

106 Craske (video 2014)

2.8.2 – Observational, Social and Social Cognitive Learning Theories

Albert Bandura (b. 1925) chose the University of Iowa to do his graduate work in order to be at the center of the then psychological world of behaviorism according to Hull's school of thought. Hull himself was at Yale, while Bandura studied under Hulls protege Kenneth Spence at Iowa. It was one of Hull's colleagues at Yale, Mark May, who is credited with taking the first steps towards developing a theory of **Social Learning** as we know it today. Also in that team at Yale were John Dollard and Neal Miller, whose work interested Bandura more, because he felt more attracted to the ideas presented by them concerning the transference of knowledge and experiences through **modeling** and **imitation**, because he couldn't ...

> *figure out how is it, that all our complex competencies and these complex social systems we created, how could this all be produced by sort of trial and error learning, rewarding and punishing*[107].

It is just at this intellectual point, that Bandura continued to work at Stanford, his first teaching/ research position after earning his PhD[108].

So, while Bandura may not have "discovered" **Social Learning**, he did extraordinary research in the further development of the ideas of **modeling** or imitative learning – and most of the techniques he either developed or supervised in their development are still in use today in human psychology. Unfortunately, many of the terms also here, get mixed. For example some equate **shaping** with **Reinforced Practice**. Others see these as two distinct procedures.

Bandura's theories can be seen from the perspective of extending and deepening Behaviorism without actually being Behaviorism. So instead of winding, complicated explanations for specific classes of behavior which just didn't fit in Radical Behaviorism, he took parts of the existing structure and, as he says "reinterpreted them", since Behaviorism is not without problems, and he set up different perspectives. So, while he speaks of antecedents, Bandura (1977) writes :

> *Stimuli influence the likelihood of a behavior's being performed by virtue of their predictive function, not because the stimuli are automatically connected to responses by their having occurred together. Reinterpretation of antecedent determinants as predictive cues, rather than as controlling stimuli, has shifted the locus of the regulation of behavior from the stimulus to the individual.*

And when speaking of consequences he writes:

> *Learning from response consequences is also conceived of largely as a cognitive process. Consequences serve as an unarticulated way of informing performers what they must do to gain beneficial outcomes and to avoid punishing ones. By observing the differential effects of their own actions, individuals discern which responses are appropriate in which settings and behave accordingly (Dulany, 1968).*

The type of learning that is occurring is called **Vicarious Learning** or **Vicarious Conditioning,** which is learning through observation of the actions of others[109]:

> *The learning of various attitudes, feelings, beliefs and emotions, not through direct exposure to a stimulus, but through observing how others react to it. For example, the child becomes afraid of an animal after watching an older sibling or parent show signs of verbal and nonverbal aversion and fear of this same animal.*

Behaviorists have tended to pooh-pooh this as semanticism, but have yet to come up with such elegant, simple, yet empirically supported explanations for such things as **Observational Learning** or **Social Learning** or **Social Cognitive Learning**. They fall victim to their own necessity of applying explanations for behaviors with structures which were never conceived to do so and

107 Video: Inside the Psychologist's Studio with Albert Bandura, https://www.youtube.com/watch?v=-_U-pSZwHy8
108 http://stanford.edu/dept/psychology/bandura/bandura-bio-pajares/Albert%20_Bandura%20_Biographical_Sketch.html
109 http://behavenet.com/vicarious-conditioning

thereby in violation the Occam's Razor principle (also known as the law of parsimony or " the simplest explanation is the best"[110]).

Bandura, after having first left **Behaviorism** and developing his first **Observational Learning Theories** and **Social Learning Theories**, worked on further examining, optimizing and adding to his theories and described his findings in a book concerned with what he then renamed **Social Cognitive Theory**: "Social foundations of thought and action: a social cognitive theory", © 1986, Englewood Cliffs, N.J.: Prentice-Hall. In a summarized form, Bandura (1999) describes amongst other things, the developmental process involved in going from the confines of Behaviorism up to and through **Social Cognitive Theory** as it is now understood. Bandura writes about Behaviorism:

> *The behaviorists gave us the input-output model linked by an obscure black box. In this view, human behavior is conditioned and regulated by environmental stimuli. ... One brand of behaviorism survived with an even more stringent orthodoxy in the form of the operant model of human behavior. Operant conditioners not only stripped human beings of any agentic capabilities, but imposed strict methodological prohibitions that even natural scientists reject.*

As opposed to this behaviorist view, cognition adds another dimension, control over ourselves, not just being a product of our environment:

> *In social cognitive theory, people are agentic operators in their life course, not just onlooking hosts of brain mechanisms orchestrated by environmental events, The sensory, motor and cerebral systems are tools which people use to accomplish the tasks and goals that give direction and meaning to their lives (Harre & Gillet, 1994),*
>
> *Cognitive processes are not only emergent brain activities; they also exert determinative influence.*

This of course is not limited to humans, just as much as behaviorism is not only limited to humans. Animals also have likes, dislikes, desires that are not solely attributable to operant or respondent conditioning. It would be easier if it were the case, but that's just not so. **Social Learning** has **Vicarious Learning Theory** as it's one of it's most important underlying process. This means, that not only can one learn simply by observing others (**modelers**) do a certain behavior, one can actually want to do the same behavior if the **modeler** is rewarded or enjoys it. Conversely, one can learn NOT to do a behavior, if the **modeler** is not enjoying it or it is dangerous/punishing to that **modeler**[111]. It is however not operant conditioning or respondent conditioning and would be as appropriate to try to fit **Observational Learning Theories**, **Social Learning Theories** or the later **Social Cognitive Theories** into **Behaviorism** or **Behaviorology**, as it would to explain Formula 1 race cars with the technology of horse-and-buggy-design of the 1900's. Related, technically further advanced through science, but also so much more than just that.

Although the original theories of **Observational Learning Theories** and **Social Learning Theory** have been replaced with the expanded **Social Cognitive Learning Theories**, the techniques we will look at were developed during the time before this extension was published in 1986, are still being done procedurally as they were in the 70's and nothing as changed in terms of the process driving these particular techniques, so they are still referred to as being techniques coming from **Social Learning Theory** and for simplicity sake will be so identified in the .

A brief, simplified description of the main differences between the three:

1) **Observational Learning**: the trainer shows the behavior to the student, but gives the student no further feedback.
2) **Social Learning**: same as **Observational Learning**, but the trainer does give input, such as identifying success.
3) **Social Cognitive Learning**: same as **Social Learning** but including cognitive aspects such

110 http://science.howstuffworks.com/innovation/scientific-experiments/occams-razor.htm

111 http://study.com/academy/lesson/albert-bandura-social-cognitive-theory-and-vicarious-learning.html; Bandura (1971)

as the trainer expressing expectations, encouraging **Empowerment**, and giving encouragement and support. **Empowerment** being defined as:

> *When individuals are empowered, their **personal efficacy** expectations are strengthened. However, their outcome expectations are not necessarily affected. They develop a sense of personal mastery or a "can do" attitude regardless of hopes for favorable performance outcomes*[112]*.* (**Bold** emphasis L.Cecil - = Self-Efficacy)

and is often coupled with the feeling of being in charge of the situation = **Internal Locus of Control**, (Rotter 1966) instead of the situation controling them = (Rotter 1966).

More often that not, both **Observational** and **Social Learning**, when speaking in generalities, are considered together simply as **Social Learning**. Only if it for some reason to more closely analyze and identify the exact procedure, such as putting it the one or other class, might it be called **Observational** instead of **Social Learning Theory**, for **Social Learning** has become the generic term and even **Social Cognitive Learning** as a "label" is not as widely known/used. What is more important to understand is, that underlying all these are the same basic principles and processes, just more finely defined with each incremental development of the theories. We'll see this later in the discussions of some of the studies later.

The Gale Group, (2005, 2015) list the main elements in **Social Learning** (and the other two) as being:

> *Bandura believed that the imitation of someone else's behavior was not a passive process. Instead, it was an active choice involving four different mental functions:*
>
> *Attention-This factor was affected mainly by characteristics of the person being observed and the situation.*
>
> *Retention-This factor was affected mainly by the observer's ability to mentally process the observed behavior and store it in memory.*
>
> *Motor reproduction-This factor referred to the observer's ability to turn the stored memory into physical action. It also included the person's capacity for mentally rehearsing the behavior.*
>
> *Motivation-This factor referred to the observer's desire or drive to copy the behavior. Of all the factors, this one had the greatest influence on whether an observed behavior was actually imitated.*

In this short example of a young puppy learning to enter the house through a cat-door, you can see all four of the above points above, including the older dog barking to attract the pup's attention, he's obviously retained what he's seen the older dog do, he then physically moves from the window to the cat-door and uses the motivation to enter the house to copy what the older dog had shown: https://www.youtube.com/watch?v=JFfYmjM5KvY

Craske (2010) speaking about Bandura and his ideas of motivation and **Self-Efficacy** wrote:

> *Social learning theory was first proposed by Rotter (1954) but made more popular by Bandura (1969) whose research on observational learning-learning behaviors through the observation of others' modeling such behaviors-pointed to the role of cognitive variables as powerful influences of behavior. Bandura proposed that motivation, a primary determinant of the activation and persistence of behavior, is influenced by cognitive processes of representing future consequences in thought, goal setting, and self-evaluation. As such, Bandura's work contributed to the paradigmatic shift from purely mechanistic models of learning to more cognitive models of learning, in line with Tolman (1948) and Rescorla (1968).*
>
> *A specific cognitive mediator identified by Bandura is self-efficacy, or "the conviction that one can successfully execute the behavior required to produce an outcome" (Bandura, 1977, p. 193). Self-efficacy is distinct from the more general term of self-confidence, because self-efficacy is a situationally specific belief in being able to carry out a specific act, such as the ability to approach a feared object under specified conditions. Self-efficacy also is theoretically distinct from outcome*

112 Conger, and Kanungo (1988)

expectancies, which refer to the perceived likelihood and valence of events. Outcome expectancies are the types of expectancies presumed to operate within classical and instrumental conditioning. Thus, Bandura's concept of self-efficacy was a new addition to expectancy-learning theory.
In a reciprocal determinism model, self-efficacy expectations are claimed to influence choice of behaviors and determine the degree of effort expended and persistence in the face of obstacles or aversive experiences. In other words, self-efficacy is believed to influence coping in difficult situations.

Social Learning itself also has a long history of research with animals, either looking at purely intraspecific[113] **Social Learning** or more recently **Social Learning** between humans and animals[114], which supplies us with the empirical evidence, besides just **Do As I Do**[115], that other types of behaviors can be and are learned in this manner. Jennifer Arnold (2016) describes a small trial in her book about her method based largely upon teaching method derived from **Social Cognitive Learning**:

> *We taught four eight-month-old puppies who had been trained using positive reinforcement and four eight-month-old puppies who had been taught using only Bond-Based Choice Teaching to match three objects (a pen, a glove, and a wallet) to both the spoken words and the written words for the objects. It took twenty-six repetitions on average for the positive reinforcement group to learn to match the objects with the spoken and written words, while it took the Bond-Based dogs only eight repetitions. There are several possible reasons for this result, including the fact that the positive reinforcement dogs appeared to be more focused on obtaining the reward for making the correct choice than on understanding the task. The positive reinforcement dogs also appeared more concerned about the potential of making the wrong choice, thereby not receiving the food reward and the praise of their handler, which limited their opportunities to learn from mistakes. In any case, we are continuing to test the difference that teaching methods appear to have on the receptive communication skills of our dogs.*

Let's back up and look at the history of research done with animals concerning **Social Learning**.

Just another of many examples of **Observational Learning**. A couple of decades ago, this was considered by most scientists to be impossible. Now it's almost impossible to NOT find such examples. Animals copying from human. https://www.youtube.com/watch?v=QUM2anIYf4I

Or a human-canine replication of Bandura's Bobo experiment[116], in which the human acts aggressively with the Bobo doll and then the dog does too.

We also know, that animals can learn from each other. Here is one octopus learning to open a container by watching another opening a container. https://www.youtube.com/watch?v=GQwJXvlTWDw

Here is an example of a naïve horse learning about having hoof trimming done by simply watching and self-investigation of an experienced horse getting this procedure done. https://www.youtube.com/watch?v=zJ6RYXaZqBc

What, if any, empirical evidence is there, that animals can, through **Observational** or **Vicarious Learning**, learn that a previously perceived aversive stimulus is really not aversive, solely by observing how a modeler reacts neutrally or positively to that stimulus? Bandura (1964) specifically mentions two studies in which this was shown as **vicarious fear extinction** to be the case. One study by Masserman in 1943 had to do with cats who had first been conditioned aversively to blasts on an air horn. However when observing a naïve cat who was eating calmly during the air blasts, they gradually themselves were able to eat as well. It was however noted, that the reluctance to eat

113 to cite just a few: Bandura (1965), Bandura (1971), Galef (1976), Adler &Adler (1977), Galef (1988a), Galef (1988b), Marks & Adolf, (1990), Heyes (1994) Kuczaj II & Yeater (2006), Range, et al (2007), Zental (2012)
114 to cite just a few: Kubinyi et al (2003), Miklosi et al (2003), Heyes (2011),Falcone et al (2012) and others from the Family Dog Project in Hungary: https://familydogproject.elte.hu/publications/
115 Fugazza & Miklosi (2014)
116http://www.simplypsychology.org/bobo-doll.html

returned (see **Return of Fear**) when, at a later point in time, the naïve cat model was not present. The second case was of Mary Cover Jones (1924) was more successful in extinguishing fear responses in children by having them observe peers in the presence of the conditioned aversive stimulus, such that the non-fearful children show no fear responses.

There is a whole spectrum of ways animals "use" **Social Learning**, i.e. **Observational** or **Vicarious Learning** to learn to do something OR to actively teach others to do something, not only having to do with acquired skills but also in coping with environmental factors which lead to learned behaviors to avoid danger or to facilitate positive acquisitions. Sometimes it appears to be more of a chance circumstantial situation, other times it actually is similar to a structured lesson with a specific goal set forth by the "teacher" and is modeled of the "learner". The motivations can be different. Sometimes it's to acquire a normal skill, but sometimes it can actually server to help one animal overcome what turns out to be an unnecessary fear. We of course are all aware of cases where a "hesitant" animal, loses this hesitancy to perform a certain behavior, when it observes a familiar animal doing the same behavior.[117] In another video example[118], the caretaker does give verbal encouragement, however it's not conclusive, that this alone was the motivating factor/reinforcement that would disqualify this as an example of fear extinction through observational learning. Taking Bandura's rules for **Social Learnin**g, it's even very clear, that the grown dog waits for the pup to be actively watching before going down the stairs herself. Here[119], an adult dog teaches a puppy how to enter the house through a cat-door. This is most probably NOT a case of over-coming fear (fear response extinction) but rather a simple "how to". Here[120] is an interesting video of a chimp actively teaching her baby to use a tool to get ants from a tree.

Besides the anecdotals, what evidence exists, that **Observational Learning** can effect emotional fear responses? Hall (1964) reports on various papers dealing with animals learning fear responses from conspecifics:

> *Church's (1959) study which demonstrated that rats experience fear, as indicated by behaviour inhibition, in the presence of other fearful rats, and that of Miller, Murphy & Mirsky (1959) who taught monkeys to operate a lever when afraid, and who showed that such behaviour can be activated by the mere sight of another monkey in a state of fear.*
>
> *In South-West Africa, the same young baboon readily ate live legless lizards, while, in the Cape, the wild baboons reacted with fear to similar creatures. One could multiply the examples of these studies which strongly indicate that at least some of the local feeding habits and aversions are conditioned in some way, probably through observational learning, by social example.*

In terms of **social facilitation**, Zentall (2011) reports on a study by Moore, Byers, & Baron (1981) showing that the mere presence of other non-fearful rats decreased general arousal and increase the exploratory behaviors of otherwise fearful rats. He also reported on a study by John, Chesler, Bartlett, and Victor (1968) in which cats, that had observed a cat-colleague jump over a barrier to escape a shock, learned to jump themselves faster, than those cats who had not observed this "modeler", which shows that avoidance of danger or aversive behaviors can be learned faster through observation than through trial-and-error reinforcement/punishment type learning, inasmuch as there was no reinforcement received by only observing. In going through the various types and situations in which some kind of **Social Learning** occurs, he gives both of observers learning appetitive responses through the behaviors of demonstrators, but also avoidance of dangerous situations being learned by observation of avoidance behaviors exhibited by demonstrators. So it's clear, that not only skill-oriented behaviors can be learned through Social Learning, but also the Relationship between the animal and it's environment as being dangerous or fearsome as well as

117 https://www.youtube.com/watch?v=_3MxbzZXNlo
118 https://www.youtube.com/watch?v=fDKDC_IUnOA
119 https://www.youtube.com/watch?v=JFfYmjM5KvY
120 https://www.youtube.com/watch?v=l3dxzRXADTQ

pleasant, even necessary to survival.

Social Learning in the form of **facilitation** has been often observed in animals. Nicol (1995) mentions a study by Tolman in 1968 in which the presence of non-feeding animals facilitated the feeding of others, which was posited to reduce feeding inhibitions in the feeding ones. She then goes on to **contagious social learning**, in which the behavior of one can be taken up by others, for example fleeing of one animal can move the herd to flee, or when one animal in a group feeds, the others begin to feed also. When however, one member of a group eats some novel food, this is more accurately classified as observational learning and not facilitative or contagious social learning. So true social learning through observation has to do with acquiring new information.

Nicol also posits, that using non-fearful animals in situations that are fearful for some animals would allow the fearful one to learn through observation, that that supposed fearsome stimulus is not fearsome at all.She also described other means of social learning, for example per olfaction. i.e. a rat can smell food on the breathe of another rat and then feed itself from the same food – this being described simply as another form of "observation". She also described how urine from a stressed pig around a potential food source was enough to cause the other pigs to avoid that food – once again, simply another form of observation.

Another strong factor as to whether **Social Learning** can take place is the **Relationship** between demonstrator and observer. Without mentioning **Attachment Theory**, she touches on the **Relationship** of mother-offspring in learning situations, although this may diminish as the young animal grows older and begins to learn more from peers:

> *For many young animals parents will provide the most important models. Ewes have a marked effect on the establishment and persistence of their lambs' food preferences (Mirza and Provenza, 1990). But as lambs age the mother's influence decreases, and the importance of peers in diet selection may increase (Provenza and Burritt, 1991). The identity of the best demonstrator may also vary with the nature of the problem. A young member of a long-lived social species, living in an environment where local ecological conditions are subject to frequent change may do best to acquire information about foraging opportunities from peers engaged in active exploration but social information and skills from elders within the group.*

Pallaud (1984), in a review of the work done with animals concerning their abilities to learn socially, wrote:

> *The definition of observational learning we shall use is that of Robert (1970):*
>
> > *"Vicarious learning exists when, after observing a sequence of events (stimuli appearing in M' s sensorial and perceptual field, performing of responses by M and the delivery of reinforcing agents as a function of the responses produced), O's response system of behaviour is modified, as if 0 itself was involved in that sequence of events".*
>
> *This definition clearly states that learning occurs during the period of observation. At the end of this period, the animal's level is null as to performance, but as to acquisition the level is unknown (Bandura, 1965). Indeed, the animal has not been able to undergo any reinforcement (whether positive or negative) or to perform the response to be acquired. At first sight, learning by observation raises the same questions as insight learning. The definition for this category of learning is as follows: insight learning is characterized by the sudden performing of a complete, correct and complex sequence of responses, following a period when responses are not oriented towards the solution of the problem (Beck, 1967). Thus, in both types of learning, there is a period during which something crucial occurs in the animal since his behaviour is about to be modified. Besides, in both cases again, everything seems to happen inside the organism since no behavioral change can be observed during this period to explain what follows.*
>
> *The fact that vicarious learning occurs without involving any motor response has an important theoretical consequence as it compells one to distinguish between performance and acquisition, which behaviorist theory has not dealt with separately.*

This last paragraph above is one that **Social Learning** theorists use in various sources to differentiate this type of behavior acquisition from behavioristic oriented types of behavior acquisition. In other words, that **Social Learning** is not to be globally understood as some kind of Skinnerian behaviorism! And more important to realize is, that **Social Learning** accounts for behavior change that is not immediately evident in that one trial, but may or can be displayed later in the same or similar context. In other words, the learning that takes place is not a result of a direct consequence of a behavioral trial, but rather of only observation of a behavior – direct reinforcement or direct punishment plays no role in the learning.

The knowledge necessary to perform a behavior have been acquired – whether or not it's successfully performed however is yet to be seen AND … since the knowledge necessary to perform that behavior doesn't in and of itself guarantee a successful performance, it can even come about, that multiple later attempts may be necessary to actually have success. And than means, there wll be unsuccessful attempts made which are not successful, meaning NOT being reinforced, yet … the subject will try and try again despite being "punished" through non-reward until the subject either gives up, observes the behavior again and is better able to modify his own attempts OR simply "gets it". This is a very different behavioral world than straight behaviorism.

Heyes (1994) divides learning into "Asocial Learning" which is what we know as operant - what she calls R-S - & pavlovian conditioning - what she calls S-S, and **Social Learning** … which doesn't. It's interesting to note, that concerning pavlovian conditioning there seems to be a split as to how it's portrayed. Some call it S-R and others, as Heyes does, call it S-S. As opposed to the above categories of Asocial Learning, Heyes writes, specifically concerning **Social Learning** in animals:

> *Varieties of social learning are distinguished according to the role of the demonstrator in generating matching behaviour on the part of the observer. Thus, the demonstrator's behaviour or its products (e.g. scent marks, excavations) may (i) increase the probability that the observer will attend to the stimuli with which it, the demonstrator, interacts (local enhancement), (ii) increase the probability that the observer will interact with stimuli of the same physical type as those with which the demonstrator interacts (stimulus enhancement), or act as (iii) an unconditioned stimulus eliciting a matching response (observational conditioning), (iv) a discriminative stimulus (matched-dependent behaviour), or (v) a model within a goal-directed (imitation) or non-goal-directed (copying) process (Galef, 1988;Whiten & Ham, 1993).*

What's especially interesting in this paper is, that the author first goes into the classical usage of the vocabulary, where it historically comes from, going back to individual observations from different branches of science up to the current uses at the time of this article. So we get not only a good explanation of how she classifies the behaviors, but also how this type of classification has developed into why it was at the time of publication. She even discusses the "problems" that have been brought up concerning social learning with animals and addresses them.

Observational Conditioning can be described and defined:

> *...was introduced by Cook, Mineka, Wolkenstein & Laitsch (1985), and is understood to be Pavlovian conditioning (stimulus-stimulus learning) in which an unconditioned response on the part of a demonstrator acts as an unconditioned stimulus (S2) eliciting a matching response on the part of the observer. The observer experiences this S2 with another stimulus, the one to which the demonstrator is responding (SI), and as a result of exposure to this Relationship, subsequently makes the same response to the SI as did the demonstrator (Galef, 1988; Whiten & Ham, 1993). Rhesus monkeys (Macaca mulatta) can acquire fear of snakes through observational conditioning (Mineka, Davidson, Cook & Keir, 1984; Cook et al., 1985).*

The question has been posed, if there was any reason to believe, if **Participant Modeling** done in the context of fear, and by the caretaker for the dog, would have any parallel effect to that seen in human fear therapy. What ties these all together, as opposed to respondent and operant conditioning,

is the **Relationship** between client and therapist. **Secure Base Effect**[121] as a part of **Attachment Theory**[122] [123], which we will look at later, ties this together**.** Another of the reasons why Bandura's **Participant Modeling** works is something called **Social Referencing**[124], which is the ability of one person or animal to get information from another person's or animal's reactions to an environmental stimulus.

An example of social referencing, that Heyes (1994) calls "stimulus enhancing" that leads to "observational conditioning":

> *...rhesus monkeys that have observed a conspecific behaving fearfully in the presence of snakes subsequently also behave fearfully in response to snake stimuli (Cook & Mineka, 1988). In this case, the behaviour of the demonstrator may facilitate matching behaviour on the part of the observer by both enhancing the observer's exposure to snake stimuli (stimulus enhancement) and acting as an unconditioned stimulus for fear on the part of the observer (observational conditioning).*

This has shown to also exist between animals[125] as well dogs and owners[126] and is additionally necessary, besides Salter Ainsworth & Bowlby's (1991) **Attachment Theory/Secure Base Effect**[127] and Empowerment (see section on **Relationships** later in this book) :

> *The process of empowerment means a transition from a state of powerlessness to a state of more control over one's life, fate, and environment*[128]*.*

usually in the form of **Locus of Control** and/or **Self-Efficacy**, is a term one hears being used as a construct with which one can improve healthcare outcomes[129], worker satisfaction and efficiency[130], fear and related conditions[131], learning[132] and many other activities in which people are involved in processes in which they may not always have complete control over what is done, when, how or how much – and early research was first done … on animals such as rats, dogs, monkeys and others[133]. **Empowerment** as a term builds a kind of shell in which to hold the previous aspects of control already mentioned, which influence individual behavior[134]. **Locus of Control** as a term was first used by the father of **Social Learning**, Jules Rotter (1954) and **Self-Efficacy** was a term first coined by one of the most well-known theorists and researchers of **Social Learning**, Arthur Bandura (1977). **Empowerment** is also one of four constructs which make up one's perceived control of a situation[135]: **Locus of Control**, **Self-Efficacy**, **Causal Attributions**, and **Learned Helplessness**.

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121 Payne & Custance (2008), Horn et al (2013), Payne et al (2015)
122 http://www.simplypsychology.org/attachment.html
123 Topal et al (1998), Prato-Previde et al (2003), Gacsi et al (2013)
124 Klinnert et al (1986), Bandura, A. (1992)
125 Evans & Tomasello (1986), Itakura (1995)
126 Merola et al (2011), Merola et al (2012), Prato-Previde & Marshall-Pescini (2014), Duranton et al (2015), Payne et al (2015),
127 Gacsi et al (2013)
128 Sadan (1997/2004)
129 Wallston et al (1976a), Wallston et al (1976b), Schlenk et al (1984), Strecher et al (1986), Rosenstock et al (1988), Buckle, et al (1990), Waller and Bates, (1992), Roddenberry and Reno (2010)
130 Spector, Paul E. (1982), Barling & Beattie (1983), Judge and Bono (2001), Schaubroek and Merritt (1997), Spector et al, (2002), Kormanic and Rocco (2009), Kallmen, Hakan, (2011)
131 Hiroto (1974), Johnson and Sarason (1978), Kendrick et al (1982), Parks (1984), Lee (1984), Chorpita and Barlow (1998), Smith (1989), Ozer and Bandura (1990), Judge et al (2002), Benight and Bandura (2004), Archer (2010), Kallmen (2011)
132 Bar-Tao and Bar-Zohar (1977), Schunk (1981), Zimmerman (2000), Fazey & Fazey, (2001)
133Weinberg & Levine (1980)
134 Koelen & Linström (2005)
135 Skinner (1995)

An interjection: **Causal Attributions** have to do with a cognitive mental process , developed by Bernard Weiner in the **Theory of Causal Attributions**[136] which states:

> *...that when some negative or unexpected happens, people ask themselves why. The causes to which they attribute events can be arrayed along a number of dimensions, the most important of which are internality, stability, controllability, and intentionality. These dimensions predict many important outcomes, such as emotions, behaviors and motivations.*

While that all sounds very interesting, direct research on **Theory of Causal Attributions** was not done on animals, even if Weiner did directly hook this theory into existing **Social Cognitive Theory**. Dogs may or may not be cognitively advanced enough to also "do" these things, we just don't know. So we'll leave that out of our considerations.

Much has been made recently of animals being able to learn through observation. Predating this, it's been known since at least the early 60s, that many species are able to discern a dangerous situation or object simply through observing a conspecific's reactions to said situation or object (Olsson & Phelps 2007). They outline how this takes place on the physiological plane in the brain:

> *First, the US in observational fear learning is the perceived fear expression of a conspecific and, as such, is conveyed to the lateral nucleus through the sensory cortices and perhaps the sensory thalamus. The representation of the strength of the US in the lateral nucleus may be modified by MPFC input related to perception and interpretation of the learning model's mental state during the observed painful experience, as well as a cortical representation of empathic pain through input from the ACC and insular cortex. … The output mechanism for observational fear learning does not differ from that for fear conditioning.*

This is quite an interesting conclusion and is supported in the acknowledgement by Dr. Joseph LeDoux. Inasmuch as this is the case and we know how **Social Learning** is used in modern fear and phobia treatments, we also have good reasonable explanations as to why they are so effective – they work on the same physiological basis as so-called classically conditioned fear responses, which are not dependent upon observations, but rather on direct 1:1 experiences.

The relationship between **Locus of Control** and **Self-Efficacy** can best be described (Bandura 1968) as follows: A person with high **Self-Efficacy** generally feels to be in control (**Internal Locus of Control**) of his environment, while a person with a low sense of **Self-Efficacy** generally feels that he is controlled or is a victim of his environment (**External Locus of Control**)[137]. Pajares (1997) wrote:

> *Simply put, individuals gauge the effects of their actions, and their interpretations of these effects help create their efficacy beliefs. Outcomes interpreted as successful raise self-efficacy; those interpreted as failures lower it.*

Or the well known saying: "Nothing succeeds like success". This aligns very well with "our" motto of "Setting the dog up for success". When we do this, the dog experiences success in dealing with a fear situation, his/her **Self-Efficacy** – what we refer to in the vernacular as "self-confidence" - increases. Maddox (1995):

> *Performance experiences, in particular, clear success or failure, are the most powerful sources of self-efficacy information (Bandura, 1977). Success at a task, behavior, or skill strengthens self-efficacy expectancies for that task, behavior, or skill, whereas perceptions of failure diminish self-efficacy expectancy.*

All this theorizing and research is not just applicable to human psychology and humans dealing with stressful situations. Much of the basic research done on controlling one's environment was first carried out with animals and this research with animals has carried on today, delving also, amongst other areas, into the biological implications of **Self-Efficacy**. Weidenberg et al (1990) :

> *Recent investigations with animals identified controllability was a key organizing principle*

136 Weiner (1985)

137 https://en.wikipedia.org/wiki/Self-efficacy

regarding the nature of stress effects. Exposure to stressors with a concomitant ability to control them has no adverse effects. However, exposure to the same stressors without the ability to control them activates neuroendocrine and opioid systems and impairs various components of the immune system (Coe & Levine, in press; Maier, Laudenslager, & Ryan, 1985; Shavit & Martin, 1987).

Maddox and Rogers (1982) summarize the role **Self-Efficacy** plays in fear based behaviors:

*Self-efficacy theory maintains that all processes of psychological change operate through the alteration of the individual's **expectancies** of personal mastery or efficacy (Bandura, 1977, 1982). The theory also maintains that an **expectancy** concerning mastery or effective coping can be viewed as two independent expectancies: an outcome expectancy, the belief that a given behavior will or will not lead to a given outcome; and a self-efficacy expectancy, the person's belief that he or she is or is not capable of performing the requisite behavior. The work of Bandura and his associates (e.g., Bandura. Adams, Hardy, & Howells, 1980) and other researchers (e.g., Condiotte & Lichtenstein, 1981) have established that changes in behavior and changes in self-efficacy expectancy are positively correlated. suggesting that alterations in self-efficacy expectancy mediate the behavioral changes.* (Bold font as emphasis - L.Cecil)

The **Health Belief Model** (Rosenstock et al 1988) is one based upon various aspects of **Social Learning Theory** and other aspects of interaction between patients and the health care system. He summarizes Bandura's (1977) standpoint that self-efficacy is situational, having to do with a specific problem and the ability to succeed in dealing with it. **Locus of Contro**l on the other hand has to do with the expectations of results which take into consideration the influence the environment may or may not have over the situation in which the subject and the problem are found.

Once again, **expectancies**, as seen above, are built up through reinforcement of behaviors in the face of similar stimuli. What worked before. This is however different than the pure Skinnerian version of reinforcement which states that reinforcement globally maintains or increases behavior. **Social Learning** only sees reinforcement as an indicator that sets up expectancies for future encounters with the similar stimuli.

Ozer & Bandura (1990), in an experiment with women having to do with preparing them against sexual assault, through observation of behaviors and direct questioning after modeling and imitation sessions, found:

… modeling enhanced perceived coping and cognitive control efficacy, decreased perceived vulnerability to assault, and reduced the incidence of intrusive negative thinking and anxiety arousal. These changes were accompanied by increased freedom of action and decreased avoidant behavior. Path analyses of causal structures revealed a dual path of regulation of behavior by perceived coping self-efficacy,one mediated through perceived vulnerability and risk discernment and the other through perceived cognitive control self-efficacy and intrusive negative thinking."

It's clear, that we cannot interview our dogs to see if the perceived senses of control are increased though such techniques as **modeling**, but we can see over a period of repeated trials, in terms of a dog's body language and/or general willingness to participate further, if there has been a change in these behaviors, which could reference these findings. The idea of **Self-Efficacy**, that they can succeed in such encounters with the for them suggested solutions, i.e. engage or disengage.

As Ozer & Bandura (1990) further wrote:

Perceived self-efficacy is concerned with people's belief in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over given events. Self-beliefs of efficacy can have diverse effects on psychosocial functioning (Bandura, 1989). Judgments of personal efficacy affect choice of activities and selection of environments.

and

Threat is not a fixed property of situational events. Nor does appraisal of risk in social

transactions rely solely on reading external signs of danger or safety. Rather, threat is a relational property concerning the match between perceived coping capabilities and potentially hurtful aspects of the environment. People who believe they can exercise control over potential threats do not conjure up apprehensive cognitions and, hence, are not perturbed by them. But those who believe they cannot manage threats experience high levels of anxiety arousal. They tend to dwell on their coping deficiencies and view many aspects of their environment as hazardous. Through such inefficacious thought they distress themselves and constrain and impair their level of functioning (Beck, Emery, & Greenberg, 1985; Lazarus & Folkman, 1984; Meichenbaum, 1977;Sarason, 1975).

This also taps into the idea of **Internal Locus of Control**; *…and courses of action needed to exercise control over given events.*, meaning they can take control of the situation and no longer be a victim of external forces.

The **modeling** itself was of a graduated manner, first **showing** (as we'll see, as a technique, what **modeling** is all about) and teaching methods of escaping rapists' holds and then how to disable such an assailant. But then they were taught how to wait for most opportune times to apply such measures. Then came simulated "attacks" by male "assailants", which grew more and more "real" with progression from one level of ability to another. "Success breeds success" and therefore the feeling of being able to do this thing = **Self-Efficacy**. This is perhaps THE connection to using **modeling** with dogs, which we'll look at later: building up again an exposure hierarchy based upon acquiring new behavioral abilities step for step combined with ever increasing levels of intensities, going from success to success until "real life" becomes master able.

Locus of Control is set upon a continuum between the **Internal Locus of Control**, in which you feel like you're totally in charge of a situation, and the **External Locus of Control** in which you feel totally controlled by external influences[138]. Emphasis on "continuum" - it's not an either/or proposition. And because this is a continuum, the perceived states are also not stabile or fixed, but rather in a flux, dependent upon situation and reinforcement history[139].

Before we go further, it's important to point out, that we're entering a realm of psychological thinking that contrasts starkly with what we normally "use" in dog training. We generally associate our training and the processes we depend upon according to the teaching based on B.F. Skinner's and possibly some of his followers. According to many, including for example Lefcourt (1983/2014):

On the more personal level, the behaviorist B. F. Skinner argues that man must surrender his myths of freedom and will (Skinner, 1971). Despite the oppressive tone of Skinner's book, Beyond Freedom and Dignity, it has become a best seller, something unusual for the writings of psychologists. Whereas Norman Cousins' formulations of world order seem appealing to persons of liberal sensibilities, Skinner's derogation of free will does not. Carl Rogers, Rollo May, Arthur Koestler, and others view these Skinnerian pronouncements as totalitarian in nature (Time, 1971).

In Skinner's thinking, man must relinquish his belief in freedom and self-determination and come to accept the fact that he is controlled by forces outside himself. With such acceptance, Skinner believes, man will become more responsive to those controlling forces that reinforce what is more naturally acceptable to humans. Today's relatively random world, in which normalessness and unpredictability prevail, would thus cease to be, as man would avail himself of rewards for more orderly and mannerly behavior. The chance elements of childhood and social experiences that can come to produce psychotic assassins and deviates of all manner would be eliminated and most men would become altruistic and pleasant to one another. Would that such a world could be!

…

138 Hill (2011)
139Skinner (1995)

Whether people, or other species for that matter, believe that they can determine their own fates, within limits, will be seen to be of critical importance to the way in which they cope with stress and engage in challenges. In other words, what Skinner believes to be an irrelevant illusion will be shown to be a very relevant illusion, one that seems to be central to man's ability to survive and to enjoy life.

And, these "illusions", be they from Skinner or from other researchers, were also examined in animals – first. Some the precursors experiments of control over one's environment were done by Mowrer & Viek (1948), which showed that rats exhibited less fear of an aversive stimulus when they had control over ending it. In their famous experiments concerning **Learned Helplessness**, Seligman & Maier (1967, 1968) came to the conclusion also, that prior experience with "escapable shock" immunizes the dogs against the worst negative effects. In other words, they acted differently, less "helpless" than dogs that had only ever experienced inescapable shocks. Weidenberg et al (1990) also wrote of animals in stress situations showing fewer adverse effects when they can control their exposure to the stressors. This all points also to a perceived ability to effect a solution to the problem as being beneficial to the ability to cope with said situation..

One of the first things that separates **Social Learning** from **Behaviorism** is the different definition of what is reinforcing or rewarding. First of all, what you notice when you start reading about the history and development of **Social Learning**, the researchers themselves do not distinguish between the two words "reward" and "reinforcer". The next thing is, that reinforcement in **Social Learning** doesn't mean that behavior is maintained or increased, but rather that the **likelihood** or **expectancy** that it be maintained or increased is what it's all about[140]. The reinforced behavior may also not however be immediately performed – perhaps if at all, only sometime in the future, but the measuring scales developed to determine this likelihood can simply be used to make a statistical analysis[141].

In social learning theory, a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future. Once an expectancy for such a behavior–reinforcement sequence is built up the failure of the reinforcement to occur will reduce or extinguish the expectancy.

As an infant develops and acquires more experience he differentiates events which are causally related to preceding events and those which are not. It follows as a general hypothesis that when the reinforcement is seen as not contingent upon the subject's own behavior that its occurrence will not increase an expectancy as much as when it is seen as contingent. Conversely, its nonoccurrence will not reduce an expectancy so much as when it is seen as contingent. It seems likely that, depending upon the individual's history of reinforcement, individuals would differ in the degree to which they attributed reinforcements to their own actions.

As we see, reinforcement is reinforcement if and when the subject perceives that there is a direct "good" connection between what he's done and what happens. It can take on different levels or values of reinforcing effect, depending upon if the subject is in control of the situation or something/someone else or some other influence is in control[142].

As an example of what kind of difference the perceived **Internal Locus of Control** (one is in control) can make as opposed to the (**External Locus of Control**) one is being controlled), Rotter (1966) described an experiment by Phares (1957), who divided a number of subjects into two groups. Each group received the same task to perform, but one group was informed, that getting the job done correctly was only a matter of luck (**External Locus of Control** or "externals") while the other group was instructed, that the task was difficult, but many people showed great skill in successfully performing it (**Internal Locus of Control** or "internals"). Both groups were reinforced

140 Bandura (1977)
141 Rotter (1966)
142 ditto

with praise for proper steps accomplished within the task. The subjects, as part of the experiment, would bet on what they felt their chances were of completing the next step properly. As hypothesized, those subjects who'd received the instructions that skill was required, but the task was doable, i.e., the "**internals**", actually ended up betting more often on themselves that they would actually succeed than the "**externals**". This also showed, that they were also more convinced, that they could actually accomplish the tasks (**Self-Efficacy**) than the "externals".

During the course of further experiments, several different statistical measuring methods or "scales" were developed and tested to determine to what extent an individual may be more prone to attribute success or failure to his own abilities (**Internal Locus of Control**) or external influences (**External Locus of Control**). For example, one of the first analytical scales by Phares (1957) consisted of 13 items indicating **Internal Locus of Control** and 13 indicating **External Locus of Control**, the later Bialer scale, modified from the James-Phares scale, which consists of 23 yes-or-no questions, or the *Crandall, Katkovsky, and Preston (1962) developed a scale (Intellectual Achievement Responsibility—IAR) for "self-responsibility" in achievement situations*, and later Rotter, Liverant and Seeman extended this to 60 items. Tests using these scales showed interesting social results. For example Blacks, tested in the 60's show more tendencies to attribute behavior to external factors (which I don't think many today would find surprising, what with racial inequalities then and now) while women, with one exception show insignificant differences to men tested at the same time. Tests of members of different political parties showed no significant differences between Republicans and Democrats. These tests reflected how the individual viewed his/her own behavior, not as viewed by others, but still showed very interesting results. Rotter's own "Internal-External Locus of Control Scale (I-E)"[143] is still today and is one of the most used statistical tools to identify a person's or persons' tendencies to being "internal" or "external". These scales meant for human use, allowed for finer identification of the place along the continuum of **Locus of Control** a person occupied during a specific trial situation, as opposed to animal research where one could only estimate the same, based upon displayed behavior.

There were however attempts to apply the tests to different people behaving differently under similar circumstances. In a tuberculosis hospital, Seeman and Evans (1962) compared the behavior of patients who knew more about their own condition to those who didn't, comparing such things as how often they complied to instructions, asked their doctors or nurses questions, how satisfied they were with the information they received from those doctors and nurses. They found that those patients who they identified as "internals", i.e., more **Internal Locus of Control** "driven" people, knew more about their condition, questioned doctors and nurses more and were generally LESS satisfied with the amount and quality of the feedback they received from these questions, than the "externals". The "internals" however also showed more willingness to expend their own effort to get better as opposed to the externals. In fact, one of the most frequent uses of therapies to alter the **Locus of Control** can be found in hospitals dealing with patients' behaviors towards staff as well as basic co-operation with staffs' attempts to treat them for their health conditions[144].

> *Higher self-efficacy, which is amenable to change through education programmes, was associated with better health status and lower costs to the respondent and the health system in this cross-sectional study. Locus of control had less of an influence; however, the tendency was for those with higher external locus of control to have higher costs and worse health status. As the measurement of these constructs is simple and the outcome potentially affects health status, these results have implications for future intervention studies to improve quality of life and reduce the financial impact of arthritis on both the health-care system and patients*[145].

Locus of Control by Rotter (1966) and **Self-Efficacy** by Bandura (1977) are not mutually exclusive. Bandura (1977) himself stated, that **Locus of Control** is not the same as **Self-Efficacy**

143 Rotter (1966)
144 Brincks et al (2014)
145 Cross et al (2006)

but can either positively or negatively effect the perceptions of **Self-Efficacy**. And of course the opposite can also be the case. As we see above, the two, both **Locus of Control** and **Self-Efficacy** , are often intertwined. And the two are necessary processes which are addressed in such **Social Learning** fear coping therapies such as **modeling**. Not only do the subjects see the modeler being successful in interacting with their own object of fear, thus showing them that it can be done, they are also directly reinforced for their own attempts at interaction, i.e., the direct correlation between their actions and the reinforcement they receive for those actions in the sense of **Social Learning's** understanding of the term "reinforcement". They achieve a sense of being able to "do this thing, it's doable" as well as having their own control over the amount of interaction with that object of fear (**Internal Locus of Control**) as opposed to being simply acted upon and not being able to control their dealings with that object of fear (**External Locus of Control**).Cross et al (2006) also emphasis the quality of **Relationship** between health staff and patients as one of the most important contributing factors in raising the patients' willingness and ability to co-operate with the staff to increase effectiveness of treatment and lower costs.

> *Higher self-efficacy, which is the more amenable to change, was associated with better health status in this cross-sectional study. While there was no difference in health expenditure, respondents with high internal health locus of control in combination with high self-efficacy reported better health status than those with low internal locus of control and low self-efficacy. As the measurement of these constructs is simple and the outcome potentially affects health status, these results have implications for future intervention studies aimed at improving the quality of life and reducing the financial impact of arthritis on both the health-care system and to patients themselves.*

Empowerment is therefore the manipulation of a subject's perceptions of his/her environment as to how much he/she can effect or control it, which then in turn helps his/her own perception of the likelihood of success of achieving a positive outcome, this based upon previous reinforcement during trials or just viewing the modeler. Both the strengthening of **Internal Locus of Control** as well as the **Self-Efficacy** feelings, which are optimally developed and optimized as opposed to the pre-therapy/treatment time, profit greatly from the aforementioned **Attachment Theory/Secure Base Effect** and **Social Referencing**, which will be discussed later. Any and all techniques which are Relationship-building will deepen and broaden these elements.

Time is taken when considering using a **Social Learning** technique such as **modeling**, as with **Applied Behavior Analysis**, **Exposure Therapy** and **Cognitive Behavior Therapy**, to perform a **Functional Assessment**, in which a great deal of time is taken having the client explain exactly what he/she fears up to and including a worst-case scenario. The therapist, then as part of the briefings and debriefings, will ask about what the client is feeling and how the situation during the graduated exposure compares with the previous expectations. The therapist then points out the discrepancies. Through all this, a rather personal **Relationship** between the client and therapist develops, while the therapist also still retains a certain authoritative position. This is a crucial part of **Social Learning**, especially in the variations of **modeling**.

Resilience:

> *Psychological resilience is defined as an individual's ability to successfully adapt to life tasks in the face of social disadvantage or highly adverse conditions.*[146]
>
> *Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and Relationship problems, serious health problems or workplace and financial stressors. It means "bouncing back" from difficult experiences.*
>
> *Research has shown that resilience is ordinary, not extraordinary. People commonly demonstrate resilience. One example is the response of many Americans to the September 11,*

146https://en.wikipedia.org/wiki/Psychological_resilience

2001 terrorist attacks and individuals' efforts to rebuild their lives.

Being resilient does not mean that a person doesn't experience difficulty or distress. Emotional pain and sadness are common in people who have suffered major adversity or trauma in their lives. In fact, the road to resilience is likely to involve considerable emotional distress.

Resilience is not a trait that people either have or do not have. It involves behaviors, thoughts and actions that can be learned and developed in anyone.[147]

Bandura (1994, 2011) writes of **resilient Self-Efficacy**, that there are two ways of reaching the point of being able to accomplish to set-upon goal or activity, which previously had been stressful. One is to be often confronted with the stressful situation in a manner that one can master it. In other words, at low but always increasing levels of intensity. The other is, as we've seen, through various types of **modeling**, in which one observes a peer's successful completion of the targeted, previously problematic behavior.

One of the first things to understand about **resilience** is, that when speaking about this in terms of dealing with fears and their responses, we're not talking about cures, but rather with coping. As we've seen, modern psychology has come to realize, paired with newer empirical evidence from neuroscience, that fear of a stimulus is not unlearned, is not evaporated or dissipated[148], is not changed to joy or love of the former object of fear. The internal physiological responses to these stimuli remain at the outset of exposure. Newer learned coping mechanisms may be substituted for the original and unwanted responses as a result of much repeated and successful exposure to fear inducing stimuli in situations where the former responses were shown not to be warranted.

The existence and importance of **resilience** as well as it's "hook" into both **Self-Efficacy** and **Locus of Control** as mentioned above, has been subject for investigation for decades and this in turn brings us to **Social** (**Cognitive**) **Learning** and the procedures we'll look at together with these underlying processes.

Agaibi et al (2004) write in a literature review concerning **resilience** in trauma and PTSD:

In relation to other concepts identified in the traumatic stress literature, resiliency reflects a pattern of competence and self-efficacy in the presence of extraordinarily difficult events and raises critical questions. Are resilient individuals primarily characterized by having compe- tence in areas of psychological functioning? Competent performance indicates positive be- liefs about self, task performance, and problem solving (Weisaeth, 1995). Areas of personal competence extend to the successful mastery and ability to cope with traumatic stressors as trauma invariably taxes coping resources (Yehuda, 1998).

... Research findings suggest that effective parenting can increase self-efficacy by modeling so- lutions to stress. Self-esteem and self-confidence function as personality moderators of traumatic experiences and serve as protective factors. Self-efficacy increases with previous mastery of stressful situations (White, 1959).

... In studies of trauma, PTSD, and coping with extreme stress, the personality variable, internal locus of control, has been associated with effective adaptation to stress (Harel, Kahana, & Wil- son, 1993; Wilson, 1989; Wilson, Harel, & Kahana, 1989). Persons with an internal locus of control tend to exhibit less PTSD and psychopathology and have better overall adjustment than persons with an external locus of control.

As seen above, one area which has seen a lot of research encompassing **resilience** and it's importance in coping abilities with stress situations has been the military and PTSD. Pietrzak et al (2009) looked at veterans of two US military operations:

147 http://www.apa.org/helpcenter/road-resilience.aspx

148 With the possible exception of techniques and/or drugs which may interrupt the reconsolidation of fear memories – see for example by the administration of Propranolol: https://www.jove.com/video/52151/disrupting-reconsolidation-fear-memory-humans-noradrenergic

Results: Resilience scores in the full sample were comparable to those observed in civilian outpatient primary-care patients. Respondents with PTSD, however, scored significantly lower on this measure and on measures of unit support and postdeployment social support. A hierarchical regression analysis in the full sample suggested that resilience (specifically, increased personal control and positive acceptance of change) and postdeployment social support were negatively associated with traumatic stress and depressive symptoms, even after adjusting for demographic characteristics and combat exposure. Conclusions: These results suggest that interventions to bolster psychological resilience and postdeployment social support may help reduce the severity of traumatic stress and depressive symptoms in OEF/OIF veterans. Depression and Anxiety 26:745–751, 2009.

Social support may in many cases be associated with interpersonal Relationships with family, but also with in these cases with military agencies after discharge. We'll look at the importance of **Relationship** later, let it suffice, that with the above study we have an indication as to it's importance in the building of **resilience** towards the stress experienced in combat.

The most pronounced difference between the PTSD and no PTSD groups was on the CD-RISC subscale personal control, which assesses the extent to which an individual feels in control of his or her life, knows where to turn for help, and has a sense of purpose in their life. This finding corroborates previous reports showing that individuals with PTSD tend to have lower coping self-efficacy compared to individuals without PTSD.[21,22] Lower coping self-efficacy, in turn, has been linked to greater distress, intrusion, and avoidance symptoms,[21] even at 2 years posttrauma.[23]

Higher resilience and postdeployment social support scores were associated with decreased traumatic stress and depressive symptoms, even after controlling for demographic factors and combat exposure. The sub-scales personal control and acceptance of changes were the only two CD-RISC subscales associated with traumatic stress. This finding is consistent with Bandura's[24] social cognitive theory, which maintains that beliefs about one's capacity to manage and control events in life are important in determining behavioral and affective responses to highly stressful situations.

Although they do not mention the processes by name in the 2nd paragraph above, they are actually referring to **Internal Locus of Control** mixed together with **Self-Efficacy**, something Bandura was known to have posited, the two actually working together.

Ginzburg et al (2011) investigated battlefield veterans some with and some without PTSD and found that those would successfully participated in their duties (many of whom were decorated heroes), had lower instances of PTSD and in general a higher sense of **Self-Efficacy**. These also in general did not suffer from PTSD. The same was found with **Locus of Control**, with the sufferers of PTSD having the higher sense of **External Locus of Control** while the decorated veterans had the higher sense of **Internal Locus of Control**.

The current findings indicate that exceptional functioning on the battlefield is also implicated in long-term adjustment. The better adjustment of the decorated heroes may reflect much the same resilience to the stresses of war that enabled them to act heroically in the first place.

As we've seen, both **Self-Efficacy** and **Locus of Control** are considered important processes in the health industry and have therefore been well investigated in terms of what happens when these are not optimally addressed and how one can go about doing this. Stewart and Yuen (2011) look at these two as possible determining factors for patients' **resiliency**, inasmuch as these may have effects in patient outcome. In other words, as they found, if there was a high level of Self-Efficacy and/or **Internal Locus of Control**, it was more likely that the patients would show more **resiliency** as defined, i.e., to cope with either their disease and/or the necessary therapies.

A total of 475 articles were retrieved and 52 articles met inclusion/exclusion criteria. Psychological factors associated with resilience were self-efficacy, self-esteem, internal locus of control, optimism, mastery, hardiness, hope, self-empowerment, acceptance of illness, and

determination. Social support was highly predictive of, and associated with, resilience. Self-efficacy (perception of one's ability to alter events) positively correlated with family and social functioning,18 self-care,47 physical,18,44 and psychological well being.13 However, one study, ranked "poor," on rheumatoid arthritis patients reported a negative Relationship between self-efficacy and physical disability, if the patient had attributed symptoms to an external and specific cause.22

Internal locus of control was usually found to be associated with better resilience and psychological adjustment.16,17,21 A sense of personal control and independence not only associated with resilience,35 but also with positive life orientation.5 However, one study on rheumatoid arthritis,22 rated poor, found external control to be more adaptive, and a study in India, also rated poor, found no significant differences between internal and external control.26

The idea that **resilience** is needed to help a subject cope with stressful situations is not limited to humans. Lyons et al, 2010 show how **resilience** can be built up in animals, in this case in squirrel monkeys by brief intermittent exposures to stress situations, *which promotes the development of arousal regulation and resilience.* They go on to then discuss the potential applications of these exposures in human stress coping therapies. One of the things their tests showed was that compared with monkeys who'd not experienced separation from their mothers before, those that had experienced such separations showed less stress as measured by relative levels of pituitary-adrenal stress hormones. While they called this difference the result of a *Stress inoculation-induced resilience*[149], with it's origins in intentional exposures before the actual testing, it does also show, that **resiliency** is something that is gained through experience, i.e. induced repeated exposures to stressful situation. Not that these need to be traumatic in nature, they were, quite the contrary brief and therefore for the subject of short and therefore not of a nature in which there was "no end in sight". This may offer an alternative explanation to classical "separation anxiety" treatment models of hierarchal increasing absences in terms of the underlying principle. Instead of being desensitized to the absence, they develop a **resilience** to the absence and the stress it causes. The stress remains, but how it is perceived through this **resilience** is then different.

Liberzon & Knox (2012) looked at the idea, that different individuals are naturally better or less well "equipped" to deal with stress situations, meaning that they react on the neurobiological level more or less sharply, depending upon type of subject. In order to investigate this more closely they examined this in animals, due to ethical constraints and did so using behavioral reactions to stress as identifiers:

Interestingly, until recently, the majority of translational research focused on neurobiological processes involved in the abnormal or altered stress response, on the vulner- ability to stress, or the negative consequences of stress. Only recently the field started focusing on the concept of resilience, exploring the possibility that, similarly to stress vulnerability, there could be unique mechanisms involved in resilience to stress. Defining resilience has not been easy and within clinical research, resilience often refers to the ability of an organism to deal with, or adapt to, the pathological effects of stress.

...

One promising approach for studying the neurobiology of resilience is the use of the cut-off behav- ioral criteria (CBC), as proposed by Cohen et al. This method, here applied to predator-odor-exposed animals that are later tested for startle and anxiety behavior, allows for identification of not only vulnerable groups (extreme behavioral response) but also resilient subgroups (minimal behavioral response). By examining experimental proce- dures that increase the incidence of minimal responders after predator odor exposure, neurobiological mechanisms of resilience can be explored.

In a recent study by Cohen et al. (2011), the authors used predator odor exposure with CBC to demonstrate that neuropeptide Y (NPY) expression in hippocampus, peria- queductal gray, and amygdala are associated with resilience to predator odor effects. The authors also report that

149 Katz et al (2009)

> *NPY infusion into the hippocampus, 1h following predator odor exposure, leads to a larger ratio of resilient animals whereas blockade of the NPY-1 receptor in the hippo- campus decreases the incidence of resilient behavior. These findings suggest that NPY-1 receptor activation in the hippocampus is involved in, or even critical for, the development of resilience after stress exposure.*

The above not only show, that **resiliency** in terms of coping with stress is possible and necessary for the development of the ability to cope with stresses, they also show, that we are beginning to understand the internal physiological mechanisms involved, and this ... done first on the experimental level in animals, in the case of Cohen et al (2011), this was with Sprague-Dawley rats!

The direct connection between the various processes in Bandura's Social (Cognitive) Learning has already been shown. The question can remain, why is **resilience** as present here so important. It's important because, when the feeling of **Self-Efficacy** and **Internal Locus of Control** is sufficiently present in the subject, **resiliency** is the measuring stick that shows how well that subject can cope with episodes of stress, fear, etc. This of course is not simply determined by a one-off encounter after a therapy, but rather in successive encounters, be they totally satisfactory or less so. Does the subject revert totally to the previous undesired behaviors or can the subject actually, with or without "help" in various manners, cope with the stimuli with which he/she had not been able to cope with earlier. This does not guarantee, that fear and fear responses now are gone, but rather are ... "coped with" in a manner that is neither disruptive for the subject nor his/her environment (Bandura 1994). But, this can only be achieved when that **Self-Efficacy** and **Internal Locus of Control** have been strengthened. Or to sum it up (Schwarzer and Warner, 2012):

> *Resilience, on the other hand, is mainly defined by coping adaptively with traumatic stressors. Hence, it is closely linked to the occurrence of demanding situations that one has to overcome. Resilient persons bend without breaking, and they quickly rebound from adversity, which reflects the "ordinary magic" of human adaptive systems (Masten, 2001).*

... and is also reflected in the canine adaptive ability.

Why is it important to "know of" **Self-Efficacy** and/or **Locus of Control** if we've already got **SD** and **CC**? Radical Behaviorists (Skinnerian) are not generally interested in what may or may not be going on in unobservable processes "in the mind". But wrapped up in the behavior we CAN observe are things we label like "confidence", "willingness", "joy" and more. These are all things we interpret based upon our observations but don't lend themselves well to ABA contingencies, but are indicators of an emotional "change" (way too simplified, but let's leave it there for the moment) taking place. Now we can ignore these and therefore not concern ourselves with them, just being interested in the statistical fact, that agonistic behaviors have decreased 79% over the course of 10 sessions. Or we can take an example on evidence based research conclusions, that we can also affect a change in the perceptions of the dog and through these perhaps also in the human-dog **Relationship** by considering factors first investigated with animals and then replicated and deepened with human research.

Bandura & Adams (1977) tested if, how and to what degree that **SD** effects changes in the personal expectations in further contacts with the targeted stimulus and found, that **Self-Efficacy** in the form of perceived abilities to master the stimulus was a great predictor as to the end effectiveness of the **SD** procedure. This indicates that since **Self-Efficacy** is an on-going underlying process, also to be found during a **SD**, and we should at least be aware of it. How and if we decide to deal with it within the rather strict framework of a traditional **SD** is another question. It would appear not to be something we can consciously "steer" within a traditional **SD** as much as we can with other techniques taken from the area of **Social Learning** itself, which we'll look at in the following section.

Here is a short film explaining more **Social Learning** through a short dramatization of it, an introduction to Arthur Bandura, then the most salient points and finally an explanation of his Bobo

Doll Experiment showing how aggression can be learned through observation. Aggression is not the only thing, of course that can be learned through observation as was demonstrated.

https://www.youtube.com/watch?v=TA6ktsN0jro&

What's Neurology Got to Do With It?

Social (Cognitive) Learning has at it's basis an interaction between at least two subjects dependent upon the actions upon something in the environment by the one that is in some manner, imitated by the other. As opposed to operant conditioning, this action by the other does not involve either direct reinforcement of the 2nd subject, nor must the imitated behavior be demonstrated at that particular time, but rather may be exhibited at another time, perhaps under the same or even slightly differing circumstances. The repetition of this imitated behavior does not depend upon immediate reinforcement, i.e. goal-oriented 100% success and may even NOT immediately lead to reinforcement, but will upon repetitions. This implies, that the observation of that first animal being successful stays in memory and is enough to allow for repetitions until the second animal "gets it right". This is so accepted, as we'll see, that it's not even considered to be something that is questioned (Jeon et al, 2010). The the question that then comes up is more, not "if" but rather "how". And here some neurological theory and research is called upon.

This puts us at looking at the research done on **Observational Learning** and brain activity, namely mirror neurons. Mirror neurons are structures in the brain, which have been observed firing not only when the animal observes an animal perform a behavior, but also when it performs the same behavior itself[150]. What exactly is going on when they fire, why the fire is not yet clear and as usual, the theories divide themselves into "schools of thought". Cognitive scientists believe, that mirror neurons provide the mechanism for observing and coupling those observations with actions. Others maintain, that these simulate what is seen in the sense of Theory of Mind, even going as far as to say, that they form the basis of empathy, inasmuch as one can form interpretations through mirror neurons as to the intentions of an action, that may have more than one behavioral outcome. Which in and of itself does NOT dispell the idea, that observation is coupled with action by the observer.

Jeon et al (2010), starting from the accepted hypothesis, that both animals and humans can learn fear through **Observational Learning**, after analyzing fMRI results of the neurological processes involved, set up a series of experiments with mice to see if the same neurological processes were involved in rats as with humans. The reason? If so, then they can ethically investigate these in mice more thoroughly than in humans. Not surprising, especially considering the wealth of pavlovian fear conditioning studies originally done with rats/mice and it's transference to human displaying parallel fear responses, observationally learned responses were exhibited due to the same neurological processes in rats as in humans.

> *For example, a higher primate can recognize fear by observing a conspecific's distressed face or a conspecific suffering from an enemy attack1,6–12. Previous studies using a bar-pressing protocol found that rats seeing a distressed conspecific (by electric shocks) display fearful behavioral responses, such as crouching or motionlessness13,14. A recent study found that C57BL/6J mice that observed unfamiliar mice experiencing classical fear conditioning displayed freezing behaviors when they were later exposed to the conditioned stimulus alone15. These findings demonstrate social transfer of fear in rodents. Unlike classical fear conditioning, however, the neural substrate and mechanism underlying observational social fear has not been well defined.*
>
> *ACC is known to receive sensory signals from the somatosensory cortices and other cortical areas, including the anterior insular cortex16–20. Brain-imaging studies in humans have shown that the neuronal activities of the ACC and the amygdala change during observation of others experiencing fear or others' fearful facial expressions6,8,10,11. In addition, animal studies have*

150https://en.wikipedia.org/wiki/Mirror_neuron

suggested that the ACC is involved in pain affection or emotion behavior, as well as pain sensation 21–23. Thus, the ACC is considered to be an important brain region for the convergence of sensory and emotional information and may mediate affective or emotional responses to noxious stimuli.

...

We found that mice (observers) developed freezing behavior by observing other mice (demonstrators) receive repetitive foot shocks. Observers had higher fear responses when demonstrators were socially related to themselves, such as siblings or mating partners. Inactivation of anterior cingulate cortex (ACC) and parafascicular or mediodorsal thalamic nuclei, which comprise the medial pain system representing pain affection, substantially impaired this observational fear learning, whereas inactivation of sensory thalamic nuclei had no effect. The ACC neuronal activities were increased and synchronized with those of the lateral amygdala at theta rhythm frequency during this learning. Furthermore, an ACC-limited deletion of Cav1.2 Ca2+ channels in mice impaired observational fear learning and reduced behavioral pain responses. These results demonstrate the functional involvement of the affective pain system and Cav1.2 channels of the ACC in observational social fear.

Setting this precedent was important when examining in more detail, how this learning takes place on both the molecular and cellular level AND that this takes place in a similar manner in both classical respondent fear conditioning as in **Social Learning** situations. The main difference being that in classical fear conditioning, the subject actually experiences the fearsome stimulus whereas in Social Learning, the subject "only" observes the experience of another subject, but does not directly experience that stimulus, in the above case, foot shock.

Cook et al (2014) write about mirror neurons:

Mirror neurons (MNs) were discovered serendipitously in 1992 and given their brilliant name four years later (di Pellegrino, Fadiga, Fogassi, Gallese, & Rizzolatti, 1992; Gallese, Fadiga, Fogassi, & Rizzolatti, 1996). The striking feature of many MNs is that they fire not only when a monkey is performing an action, such as grasping an object using a power grip, but also when the monkey passively observes a similar action performed by another. Neurons with this capacity to match observed and executed actions, to code both 'my action' and 'your action', were originally found in area F5 of the ventral premotor cortex (PMC) (di Pellegrino et al., 1992; Gallese et al., 1996) and the inferior parietal lobule (IPL) (Bonini et al., 2010; Fogassi et al., 2005) of the monkey brain. There is now a substantial body of evidence suggesting that MNs are also present in the human brain (Molenberghs, Cunnington, & Mattingley, 2012).

... MNs have captured the attention and imagination of neuroscientists, psychologists and philosophers, they have also been implicated in: embodied simulation (Aziz-Zadeh, Wilson, Rizzolatti, & Iacoboni, 2006), empathy (Avenanti, Bueti, Galati, & Aglioti, 2005), emotion recognition (Enticott, Johnston, Herring, Hoy, & Fitzgerald, 2008), intention-reading (Iacoboni et al., 2005), language acquisition (Theoret & Pascual-Leone, 2002), language evolution (Arbib, 2005), manual communication (Rizzolatti et al., 1996), sign language processing (Corina & Knapp, 2006), speech perception (Glenberg et al., 2008), speech production (Kuhn & Brass, 2008), music processing (Gridley & Hoff, 2006), sexual orientation (Ponseti et al., 2006), and aesthetic experience (Cinzia & Gallese, 2009). In addition, it has been suggested that MN dysfunction contributes to a number of disorders, including autism (Dapretto et al., 2006; Nishitani, Avikainen, & Hari, 2004; J. H. Williams, Whiten, Suddendorf, & Perrett, 2001), schizophrenia (Arbib & Mundhenk, 2005), Down's syndrome (Virji- Babul et al., 2008), multiple sclerosis (Rocca et al., 2008), cigarette addiction (Pineda & Oberman, 2006), and obesity (Cohen, 2008).

While Brass & Heyes (2005) wrote:

Imitation might well be one of the things that mirror neurons do; under some conditions, in some species, mirror neurons could be involved in the generation of imitative behaviour. However, mirror neurons could do imitation without being for imitation; they could be involved in generating imitative behaviour without imitation being the function that favoured their evolution by natural selection.

The above sources show, that the investigations on how exactly these neurons are activated is a matter of hot discussion and by no means settled. That, however, these neurons are involved in imitative learning through observation is pretty well accepted. These neurons themselves have been identified in humans and primates and it has been theorized, that they are involved in observational learning in dogs (Topal et al 2006) and have been theorized to play a role – missing or deficient – in possible dog autism (Dodman 2014) but then perhaps not in human autism Nadel et al 2011):

> *A general impairment of imitation and learning in autism has been widely claimed (DeMyer et al., 1972; Hobson and Lee, 1999; Rogers, 1999; Williams et al., 2004), reinforced by brain studies reporting dysfunction of the Mirror Neuron System (Iacoboni and Dapretto, 2006; Martineau et al., 2008; Oberman et al., 2005; Rizzolatti et al., 2009). Recent research stresses, however, that scores in imitation vary in autism as a function of the type of imitation performed (McDuffie et al., 2007). For instance, Bird et al. (2007) demonstrated that automatic imitation is intact in autism. Hamilton et al. (2007) reported similar performance in Mirror Neuron System tasks for children with autism and controls. Nadel and colleagues (Nadel, 2006; Nadel and Butterworth, 1999) documented the use of immediate imitation by low-functioning children with autism for non-verbal interaction. Moreover, several recent brain studies have yielded findings showing that individuals with autism exhibit equivalent mirror system responses to those of controls during observation and reproduction of action (Raymaekers et al., 2009; Dinstein et al., 2010). Therefore there is a need for a more discriminative description of the dysfunction claimed.*

Palagi et al (2015) demonstrated, that dogs show rapid mimicry of certain actions which may on the one hand be a result of these mirror neurons (mentioned, but not specifically examined, because that wasn't the goal of the experiment) and seemed to be dependent upon the type and intensity of the relationship between demonstrator and imitator, as well as, in their experiment, the type of behavior exhibited. This study then looks at imitation in terms of emotional content of that which is demonstrated and carried over to the imitator. We're beginning to see now, how things may in a larger sense, be tied together. The importance of relationship, the ability of not only intraspecific but also interspecific imitation to be accomplished by dogs, both in terms of the understanding through that demonstration/observation of simple behaviors as well as emotional content of those behaviors as well as the beginnings of explanations as to how this is done in a physiological manner. While fairly well accepted in humans, primates, birds and other animals, the only reason this has not, on thephysiological level been "proven" is, that it hasn't really been specifically investigated – yet, but has been set forth as being very likely[151].

151https://www.scientificamerican.com/article/do-dogs-have-mirror-neurons/

2.8.3 – Symbolic and Participant Modeling, Contact Desensitization

Being a part und **Social Learning** as introduced and researched by both Rotter and Bandura, the methods mentioned above involve usage of **Self-Efficacy** and **Locus of Control**. **Locus of Control** is the perception of the subject if he/she in in charge of the situation (**Internal Locus of Control**)) or if the situation is in charge (**External Locus of Control**). Pajares (1997) writes of **Self-Efficacy**, that there are basically two kinds:

1) The idea, that with success comes the perception of being able to do this based upon the reinforcement received by the prior successful trials.
2) But also the idea of watching others doing the behavior (**Vicarious Learning**) and therefore obtaining an expectancy of "if they can do it, so can I".

This idea of watching a behavior being performed is central to the technic of **Modeling. Modeling** was reported as early as 1924 by Cover Jones[152] [153], where she wrote that the presence of a non-fearful child during a therapy of a fearful child, facilitated the fear reduction in the fearful child. In other words, seeing, that another child can be in the presence of something that is fearsome to the client's child without experiencing fear herself. Bandura (1977) states, that as effective in dealing with fear responses as respondent therapies may be, respondent therapies ...

> *...may be of relatively little value in developing new habits. Primary and secondary rewards in the form of the therapist's interest and approval may play an important, if not indispensable, role in the treatment process. Once the patient has learned to want the interest and approval of the therapist, these rewards may then be used to promote the acquisition of new patterns of behavior.*

There are several variations on **modeling** used in fear therapies, such as live, imaginary or using film[154], but they all have something in common, in one way or another, a "model" interacts with an object of fear, while the subject watches. Generally, the subjects approach is in a graduated, voluntary manner similar to the hierarchal approach already seen in **SD**. As opposed to **SD** however, there is no requirement of relaxation or any competing activity or emotion. And as opposed to **CC**, there is no targeted **new** conditioned behavior except voluntary interaction with the object of fear so there is also no "new CER" established.[155] The modeler can be the therapist or simply another person, either known or unknown to the subject as we will see. Often one will simply find the generic term **modeling** instead of more precise terms identifying which type of **modeling** is used.

Geer & Turteltaub (1967) were amongst the first to have reported on research having to do with **modeling**. Their goal was however, to see if it has an effect at all and if positively or negatively. Their 60 subjects all suffered from fear of snakes. In order to test what effect simply watching the **modeling** had on perceived fears, a group of 20 subjects watched a model interact fearfully, another group watched a model interact with a snake in a calm, non-fearful manner and a control group observed no **modeling** whatsoever. Each member of each group made two attempts to approach the snake and between these attempts, the **modeling**/**non-modeling** took place. The results were, that observing calm interaction with the snake tended to decrease the fear behavior in those who had observed said interaction. If however the subject observes a fearful person interacting with a snake, the fearful subjects own fear behavior was not increased. They concluded, that this form of social learning is also effective in reducing fear behavior.

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152 Geer & Turteltaub (1967)

153 Jones, M. C., (1924), The Elimination of Children's Fears, Journal of Experimental Psychology, Vol 7(5), Oct 1924, 382-390. http://psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=1926-08204-001

> ***Abstract***
> *... Unqualified success in removing fear was achieved in only two cases. Generally a combination of methods was used, but the two which seemed most effective were those of direct conditioning and of social imitation.*

154 Mittenberger (2000)

155 Bandura (1977)

Ritter (1968) compared what she called **vicarious desensitization –** see **Vicarious Learning** above **–** (only observing contact with the snake, but not contacting the snake themselves) with **Contact Desensitization** (**CD**) with 44 adolescents and a 4 ft long gopher snake. The **CD** Group observed the therapist interacting with the snake as well as verbally and manually being helped to gradually approach and in the end, touched the snake themselves.

> *The following predicted results were obtained: (a) contact desensitization yielded significantly greater reductions in avoidance than did vicarious desensitization; (b) both desensitization groups demonstrated significantly larger avoidance decrements than did non-treated controls. During post-testing, 80 per cent of the children receiving contact desensitization 53.3 per cent of those in the vicarious desensitization conditioning and none of the control children successfully completed the stringent terminal task of the avoidance test.*

In the next experiment in the series, Ritter (1969) compared three different variations of **Contact Desensitization** in the therapy of 15 people with fear of heights:

1) **CD** in which the the end behavior is demonstrated and the therapist not only verbally but also manually guides these graduated steps toward the target of reaching the target height. First the therapist demonstrated the final behavior, of climbing to the eighth rung of the ladder. Then the subject went one rung at a time up the ladder. For example, the participant was allowed to touch or even hold onto the therapist in order to reach the target height. The subject remained at each rung until he/she only felt nominal discomfort.
2) Demonstration-plus-Participation (**DP**) which is the same as above except the participant was not allowed to touch the therapist. Also here, the therapist first demonstrated the ladder climbing, but only offered verbal encouragement.
3) Live Modeling (**LM**) in which the subject only watches the therapist reach the target height, but doesn't need to actually reach that height him/herself. Here the subject sat a distance away from the ladder and only observed, but was asked rung for rung as the therapist climbed, how he/she felt watching the therapist climb. The therapist only moved upwards when the participant indicated, that he/she felt little or no discomfort.

The point was to see if the contact with the therapist was of crucial importance to the effectiveness of the procedure. The subjects' target behavior was to reach the 8th rung of a building's penthouse roof ladder.

The results:

> *The therapeutic value of T-contact was implicated by the greater decreases in fear ratings and avoidance responses achieved by CD subjects during behavioral testing. As predicted, demonstration-plus-participation was superior to demonstration alone thereby indicating that subject response-rehearsal was also a significant variable.*

Bandura et al (1974) did an experiment comparing the efficacy of **SD** with various forms of **modeling**. In this experiment they divided 48 students with snake phobia into 4 groups. The first group was tested using **in vitro SD** (Bandura calls this "symbolic desensitization") with deep muscular relaxation, the second using **modeling** in which they observed contact with snakes in films, the third using **in vivo modeling** with **participant guiding,** and a control group. **Participant guiding** means giving verbal or manual encouragement during the therapy, in this case from the therapist who was interacting with the snake. Manual encouragement consisted of, for example, grabbing the therapists arm while the therapist stroked the snake.

> *Results of the present experiment provide further evidence that treatment approaches based on social-learning principles can be highly efficacious in producing generalized and enduring psychological changes. Of the three methods investigated, modeling combined with guided participation was most successful in eliminating phobic behavior, in extinguishing fear arousal, and in creating favorable attitudes. The generality of these findings is increased by the additional evidence that subjects who achieved only partial improvement through other treatments displayed substantial changes after a brief period of contact desensitization.*

It would appear from these laboratory findings that a powerful form of treatment is one in which therapeutic agents themselves model the desired behavior and arrange optimal conditions for clients to engage in similar activities until they can perform the behavior skillfully and fearlessly.

Comparison of symbolic desensitization and symbolic modeling shows both procedures to he equally effective in extinguishing avoidance behavior; however, symbolic modeling produced greater reduction in both fear arousal and negative attitudes, and the behavioral changes it achieved appear to be more generalized. Indeed, findings of the present study and those reported by Blanchard (1969) disclose that subjects who attain terminal performances through modeling alone show almost complete transfer on behavioral generalization tests.

Murphy & Richard (1973) examined, if there was a difference between the subject approaching an object of fear, in this case a snake, or having the object of fear approach the subject, as with Cover Jones (1924). The target behavior was to touch the snake. The approach was done in a graduated manner. So the children in the active group approached the snake and the children in the passive group were approached by the therapist holding the snake. Each group started the experiment sitting about 15 feet from the snake and watching the therapist handling the snake for about 2 minutes.

The results showed, that both approach directions were efficient with slightly over 86.9% of the non-control groups reaching the target behavior, that generally speaking one felt more fear when approached by the object of fear than when approaching it and that the initial amount of fear was not an indicator as to relative effectiveness of the therapy in either direction.

In another snake experiment, Bandura et al (1975) wanted to exam how important self-practice after the completion of a therapy is, compared to none. Two groups were formed from a total of 30 participants. Each group received a standard **Participant Modeling** therapy until completion of the target task of holding a large boa and letting it slither on hands, lap, etc. The mean completion time from initiation of the first graduated steps was 60 minutes. Those who only did this **Participant Modeling** where then taken to post-testing, which is a debriefing and interview about their feelings. The other group stayed together with the snake for an addition hour, alone if able or initially with a therapist together, who left after a short time. These handled not only the boa, but also a king snake. Most (96%) were able to handle both.

The present findings attest to the substantial therapeutic gains from self-directed performance after behavioral functioning has been restored through participant modeling. Compared to Ss who received participant modeling alone, those who had the benefit of independent mastery experiences exhibited bolder behavior toward an unfamiliar threat, weaker fear arousal, less apprehension of snake encounters, higher self-competency in coping with snakes, and less fear of threats not specifically treated. Because the induced changes were durably maintained, most of the advantages of self-directed performance persisted over time.

The participants above also reported on long lasting effects of the treatments. Almost 50% of those in the **Contact Desensitization** group had some kind of contact with snakes within the unspecified follow-up period and reported that they now experienced the same reduced amount of fear as achieved during the therapy. The others however who did not experience direct contact with snakes, reported that as opposed to before therapy, they did not experience anxiety when doing outdoor activities, where contact could have been possible.

This did not mean that generalization was not necessary, just that a continued exposure and contact after the initial completion of the target behavior is very beneficial. While it doesn't replace generalization, it does mean, that it's less necessary. What could not be determined through this study alone was, why this is. Smith & Coleman (1977) did however look into the question of why and came to the conclusion, that elements of cognitive self-assurance due to the mastery of the situation are probably responsible for the decreased necessity of generalization, since this can be achieved through practice immediately after the initial therapy is completed. Nothing is more successful than success itself.

Martin & Levey (1978) write about **modeling** and a possible underlying process:

> *Central to the cognitive theories however, by our descriptive definition, is the notion of some form of modeling of the external environment. This modeling may be in the form of means-end expectancies, the older concept of cognitive maps, or more recently the situation-act-outcome model proposed by Irwin (1971). For such a view it must be argued that in the representation of the external world, multiple models are formulated which overlap, interact and integrate in many and complex ways.*

Although coming from another side and theory, that of **Evaluative Conditioning**, they show also a strong relationship between the idea of seeing a behavior done and the ability to do it oneself. In their theory, this kind of **modeling** then changes the perception of the situation from a negative **valence** to a less negative one or even a positive one, as well as pointing back to **Self-Efficacy** being improved through the **modeling**. More later.

Clinically, **Participant** and **Symbolic Modeling** have been shown to be highly efficient and effective for claustrophobia[156], snakes[157], fear of dentists[158], sexual abuse prevention[159], and many more fear/anxiety problems, learning situations. Graziano et al (1979) reviewed 20 studies of **modeling** for childrens' phobias and fears and found, that these studies showed the very good effectiveness of **modeling** in allowing children to cope with their fears such, that they could accomplish behaviors that had been impossible for them to accomplish before therapy. Other conclusions they drew from examining these studies:

1) Neither age, gender nor beginning level of fear expressed or reported had any predictory value as to subsequent success.
2) **Modeling** becomes more successful with repetitions with differing models and differing objects of fear. For example the mother models, friend models, teacher models, small snake, large snake, differing intensities of interaction with the object.
3) **Symbolic Modeling** can be as effective as **in vivo modeling** if the same amounts of repetitions with the same number of variations are done. **Symbolic** is watching, not touching, either live, or video. **In vivo** is during the hierarchy, doing the actual steps modeled.
4) **Symbolic Modeling** was found very effective in "immunizing" against fears before they become fears, for example showing a procedure on video, that some may consider fearsome, but the model not being afraid and such that the child knows what to expect.
5) The closer the model is to the age and social position of the child, the more effective. This means, that peer **modeling** is most effective, over teacher **modeling**. This also ties into well with the concepts of **Social Referencing**[160].
6) Models showing only an ability to deal with an object are slightly less effective, than a model who him/herself initially shows some fear, but during the **modeling**, overcomes that fear.
7) And a very important thing for us to note for further reference:
   Finally, even when modeling is successful in modifying fear behavior, the effects of modeling may disappear in a few weeks for adults (e.g., Bandura, Jeffery, & Wright, 1974) and for children (Keller & Carlson, 1974) if subsequent reinforced practice is not made available to the observer.

This study also shows, that **modeling** not only is compatible with other techniques, such as **Reinforced Practice** (more on this later), it's even advisable to do so.

156 Speltz & Bernstein (1979)
157 Bandura et al (1975), Murphy & Richard R. (1973),
158 Klingman (1984)
159 Wurtele et al (1987)
160 Klinnert et al (1986), Bandura, A. (1992)

Moving along into more current research, Davis III & Ollendick (2005) describe **modeling** or **Participant Modeling** as (**bold** added where *italics* had already been added – L.Cecil):

> ***Participant modeling*** *(PM), originally referred to as contact desensitization,was developed by Ritter (1965, 1968) and is grounded in social-learning theory. The intervention is based upon the idea that learning can occur vicariously through the guidance and observation of a model. According to Bandura (1969), social-learning theory interventions achieve success by changing behavior and its consequences through use of appropriate social models. From this paradigm, specific phobia can be alleviated by means of vicarious extinction in which an observer begins by watching a model interact with the phobic stimulus. The associations between the conditioned stimulus and the unconditioned stimulus are weakened when there is no aversive outcome for the model (Bandura, 1969). Therapists built upon this principle by focusing more on the instructive capabilities of the model. Extending beyond learning by observation in isolation, PM uses a vicarious extinction procedure that incorporates direct verbal and behavioral instruction from the model (i.e., therapist) with the patient present.*
>
> *Underlying principles of change and response targets. The goal of modeling according to Bandura (1969) is to change behavior. With PM, however, the therapist also verbally and physically instructs the child in how to approach and interact with the phobic stimulus. There is a significant skill-building component to the intervention. As a result, PM produces change by eliminating avoidance, as the patient must watch the model for learning to occur. The therapist also must teach the patient new skills for approaching and interacting with the phobic stimulus. PM requires a patient to view, approximate, and undertake various behavioral experiments that eventuate in no aversive outcomes. A secondary goal of treatment is to create an environment in which a patient's distorted beliefs are tested and disconfirmed first by the model and then the self. According to Bandura, Blanchard, and Ritter (1969), "the absence of* ***anticipated*** *negative consequences is a requisite condition for fear extinction" (p. 174; italics added). The idea that the event is anticipated suggests a more cognitive process than merely the behavioral notion that associative strength is altered after viewing the consequences. PM targets the behavioral component of a phobic response; however, the cognitive component is of clear importance as well. Physiology is not a target of this intervention.*

Richard & Lauterbach (2006) write, that even if **modeling** is not specifically mentioned as a part of modern **Exposure Therapies**, elements of **modeling** as originally intended by Bandura and others, are often included in terms of verbal encouragement in that the therapist shows how some fearsome object or situation is not actually dangerous and therefore incapable of fulfilling catastrophic expectations. The therapists do this by providing accurate information concerning these objects of fear or handling the object of fear, which then conflicts with the mental imagines of the clients. How effective this is, either alone or in combination with other therapies, depends upon the type of fear involved and is generally NOT enough by itself in dealing with *OCD, PTSD, panic attacks, agoraphobia, and other anxiety disorders.*

Glasscock & MacClean Jr. (1990) did an interesting clinical trial using both **Contact Desensitization** and "shaping" (**Reinforced Practice** – see below) with a young girl who was afraid of a dog and had therefore general fears of the outdoors, after having been attacked and injured by a dog. A behavioral hierarchy was set up which included both stepwise leaving the house and moving away from it, then calling a dog to her, approaching a dog, then petting the dog for ever increasing amounts of time. The time prolongation was achieved of course not by **modeling**, but rather by **Reinforced Practice**, with social praise by the therapist and family members as reinforcer. The **modeling** part was performed by her therapist. The family dog was used first as a target and the child was always successful in meeting the hierarchal criteria without showing any avoidance or escape behaviors. Then three other dogs were individually introduced into the therapy with the same results. They did however have to reapply the procedure for the front and side yards, as the gains did not automatically generalize.

This study is especially important to us, because it shows once again, although only being a clinical study of one, that these two procedures of **modeling** and **Reinforced Practice** do compliment each

other well, meaning there is no operational conflict and none in the underlying processes! Fortunately this is not the only study that suggests the ability to combine these two. See also Heard et al (1992), Menzies & Clark (1993), Ost (1997).

Here is a short demonstration of how **Participant Modeling** can be done – learning to brush your teeth: https://www.youtube.com/watch?v=aX8TKaWkRoM

If you were to do **Symbolic Modeling** with someone who had a snake phobia, you might start out with first showing this person a video like this one: https://www.facebook.com/yjbti/videos/986326711423026/ **Symbolic Modeling** is therefore often combined with **Participant Modeling**. The therapist shows the video of the model interacting with the snakes, then for example, as in this one, will even outline the differences between what is going on in the video as opposed to what they will be doing **in vivo**. This is already working to break down the **negative expectancies**. "That looks absolutely horrid, but we're not going to be doing that AND look, nothing is happening to that man anyway." Then it moves on to the therapist simply holding the snake while the client comes closer and closer, all voluntarily but with support from the therapist until the client can actually touch it and otherwise interact with it. One could even combine **modeling** with **Reinforced Practice** as we've seen and have read above, by reinforcing each successive step towards the snake, for example with praise, which is usually the case anyway.

Already well known to dog people, is the dog training method **Do As I Do**[161] [162] by Dr. Claudia Fugazza. This method is based upon concepts of not only Banduras **Participant Modeling**, but also has a long history of animal imitation research[163]. Fugazza has already compared **Do As I Do** for effectiveness and efficacy with clicker training[164] - yes **Do As I Do** showed itself to be a more effective teaching method in the tasks performed, than was clicker training! This body of work[165] sets the precedence for using **Social Learning** generally and **modeling** specifically with dogs.

The concept of **Social Learning** should not be anything new to anyone. If you ever went to school, you most likely benefited from **Social Learning**. A lot of the school day is built upon concepts of **Social Learning**. If you learned to draw, you probably did so through **Social Learning**. The teacher drew a circle and you imitated that circle. Then a mountain. And on and on. Music instruction is almost 100% **Social Learning**. The teacher plays how it's supposed to sound, demonstrates how to phrase, articulate. In fact, anytime you watch a demonstration of anything you'd like to learn, you're learning using **Social Learning** concepts. And...you cannot plot this Learning Theory using ABC contingencies, although some old school radical behaviorists have tried. This was one of the reasons why people like Bandura de-emphasized **Behaviorism** in favor of **Social Learning**, so that no one had to try to fit the square peg of **Social Learning** into the round holes of **Behaviorism**.

The two most important aspects of **Social Learning** are the idea of **modeling**, which we've looked at, but also underlying processes, **Self-Efficacy** together with **Internal Locus of Control**, which summarized earlier, that those people who believe or can be made to believe that they can do something, are more likely to be able to do it, than those who do not believe in themselves and are in control of the situation in which they find themselves, not being controlled by it. Some may call this self-confidence. Bandura insists that **Social Learning** is not tied into **Behaviorism**[166],

> *While most psychology textbooks place Bandura's theory with those of the behaviorists, Bandura himself has noted that he "...never really fit the behavioral orthodoxy." Even in his*

161 http://www.apprendimentosociale.it/en/my-research/the-use-of-do-as-i-do-in-dog-training-seeds-up-the-learning-process-and-enhances-memory-and-generalization-of-the-trained-action/

162 http://www.apprendimentosociale.it/en/claudia-fugazza/

163 Miklosi (1999), Pongracz et al, (2001), Pongracz et al, (2003) and many more at The Family Dog Project, https://familydogproject.elte.hu/publications/

164 Fugazza & Miklosi (2015)

165 https://familydogproject.elte.hu/publications/

166 http://psychology.about.com/od/profilesofmajorthinkers/p/bio_bandura.htm

earliest work, Bandura argued that reducing behavior to a stimulus-response cycle was too simplistic. While his work used behavioral terminology such as 'conditioning' and 'reinforcement,' Bandura explained, "...I conceptualized these phenomena as operating through cognitive processes."

"Authors of psychological texts continue to mischaracterize my approach as rooted in behaviorism," Bandura has explained, describing his own perspective as 'social cognitivism.

Taken in this sense, Bandura sees **Social Learning** to be an extension and welcome addition to the existing learning theories of operant and respondent conditioning, not an all inclusive one. This should help make it more approachable for us at the technical level, at least the **modeling** part of his learning theory.

Concluding Thoughts:

Social Learning contains well documented and successful methods of fear reduction and coping[167] for a wide range of fear stimuli, and are still standardly used in whole or part in **CBT**[168] Several studies have found the **Social Learning** technique of **modeling** to be more effective than **SD** alone when dealing with fear related behaviors (Chambless & Ollendick 2001). To be noted:

1) The extremely important role the therapist and the Relationship therapist-to-client play. The **Self-Efficacy** ("Yes, I CAN do this") as well as the **Internal Locus of Control** (I am able to control my environment) part of the procedure cannot be emphasized enough for it's nature of **Empowerment**. **Attachment Theory/Secure Base Effect** and **Social Referencing** all play critical roles in this.
2) Despite what one could consider a rather time-consuming process of establishing this **Relationship**, most of the experiments were concluded after only a very few sessions, ranging from one to five or six. In other words, these procedures work very quickly.
3) What is also stressed in the studies is the good long term records and less need for generalization[169] trials than was apparent in respondent therapies.

167 Rotter (1966), Bandura (1977), Ozer and Bandura (1990)
168 Framer et al (2008)
169 Bandura et al (1975)

2.8.4 – Reinforced Practice (RP)

Although not strictly a part of **Social Learning**, I'm including **RP** with **Social Learning** because as we've seen, it has been clinically tested not only together with **Social Learning** techniques, but also by itself and found to be very effective. **RP** is generally, but not always, done in some kind of **graduated exposure** setting. Besides its pure form, there are also several variations. For example if one were afraid of dogs, one would simply be cued in a graduated hierarchal manner to approach and would receive some kind of reward for taking a step towards the dog. This can also be turned around. This is also called variously shaping or **Contact Desensitization** (confusion again made in terminology). Another variation would be to extend the amount of time per level in the approach hierarchy, so it can even be applied in a multi-dimensional manner.

The main difference between this and a straight **SD** is, that there is no relaxation involved and the subject is reinforced for completion of each step of the task – an operant procedure, not a respondent one. When done with animals, this process is often called shaping[170]. There is however one big difference and a couple smaller ones between what "we" know as shaping how it's meant here:

1) Each hierarchal step in **RP** is cued. Later we'll see, that other input is also offered as part of the cuing process.
2) There is, as a general rule, no set "criteria" to be fulfilled other than to approach. In other words, there is no marker to hit. Only if you are working for duration might this apply, but it's generally phrased "a little longer" (Craske 2010).
3) There is no "punishment" for not making criteria and the new criteria is always known, so there is no problem with **Extinction burst** or extinguishing **previous shaping criteria**. In fact, the client can simply say "enough" and break off an approach session, thus theoretically facilitating avoidance. This however is NOT seen as such maladaptive avoidance within this method. You can do this and therefore control the situation, it doesn't control you = **Internal Locus of Control**.

Barlow et al (1970) conducted a direct comparison in the effectiveness of **SD** with **RP** in treating snake phobia in adults. They called **RP** "shaping". A 19 point exposure hierarchy was established and the therapy followed this determining the intensity of the exposure. The reward used was simple verbal encouragement and praise for a job well done. If the subject failed 3 times to reach the target distance, the therapist gave the participant "a blank stare". Both the **SD** group and the **RP** group continued with the therapy for either 10 sessions which lasted on average 20 minutes or until the therapy goal had been reached. The result was, that **RP** was the more effective therapy. They also concluded, that anxiety does not need to be dealt with in order to achieve behavior change. This is of course in crass opposition to the tenets of respondent conditioning, still held by some today. They also were able to determine that anxiety however DID actually reduce as the behavior itself improved:

> *Although both techniques led to behavioral improvement, each might have been effective for different reasons. That is, shaping changed behavior in spite of anxiety, and anxiety subsequently subsided, whereas in Systematic Desensitization anxiety was presumably inhibited allowing Ss to approach closer to the snake.*

Ollendick & King (1998) discussed several different studies which examined both slightly different applications of **RP** as well as it's effectiveness:

1) a study by Obler & Terwilliger (1970) in which separate groups of children with either a fear of riding on a bus or fears of dogs were addressed using **RP**. In both cases, neither **modeling** nor **CC** was used. A graduated approach with rewards for successful completion was used. In both groups, the behavioral goals of riding on a bus or petting a dog were reached,

170O'Heare (2014)

something they were not able to do before treatment. By the way – the title states "...systematic desensitization..." and the abstract though says *A modified version of J. Wolpe's systematic desensitization therapy*, that *version* being, that it was an operant procedure with rewarding for each successful approach, i.e. **RP**.

2) Leitenberg & Callahan (1973) took 14 young children of nursery school and Kindergarten age who had severe fears of the dark, and using **RP** were able to significantly reduce the avoidance behaviors shown by the children.
3) Sheslow et al (1983) also did a study in which 32 4-5 year old children with fear of the dark were spilt into 4 groups:
   a) **RP** using graduated exposure to the dark,
   b) verbal coping, i.e. The children were given things to think about in order to better help cope with their fear of the dark. This was done without graduated exposure.
   c) a combination of the two above – both verbal coping skills plus **RP**. d) a no-therapy control group. Rewards used for completion was talking, singing, playing games, ate cookies. Whereas both groups using **RP** achieved good results, there was no improvement with only the verbal coping method or in the control group.
4) Menzies and Clarke (1993) used both **RP** and **modeling** with 48 children, aged 3-8, underwent therapies in 4 groups:

   (a) reinforced practice, (b) live (therapist) modeling, (c) reinforced practice plus live modeling, and (d) assessment only control. At the conclusion of treatment, the reinforced practice condition had produced statistically and clinically significant gains that had generalized to other water-related activities.

On the basis of the above studies, Ollendick & King (1998) concluded that **RP** had been shown to be quite effective in the reduction of various fears.

And a quick side note: while reading all of the above studies, there is not one mention of the quadrants involved. Only in terms of describing the "rewards". The term punishment isn't even used. Since these participants were all children, their immediate welfare was of primary concern, so I'd assume the idea never entered the researchers' minds. And they weren't testing what they primarily considered a puristic operant technique/process anyway.

2.8.5 – Exposure Therapy

The term **Exposure Therapy** has had different meanings at different times in history. According to Wortmann (2014), the history of **Exposure Therapy** dates back to the post World War I days as a treatment for combat trauma. Soldiers were given sedative-hypnotic medications and were instructed to relate their horrific combat memories. The most widely accepted theoretical reason later given for the successes achieved by this method were Mowrer's **Two Factor Learning Theory**[171]. **Two Factor Theory** is, very compactly described, a certain combination of both operant and respondent conditioning which comes into play in the creation of avoidance behavior but can also plays a role with the **Extinction** of the conditioned fear – and both the acquisition and **Extinction** can take place through the simple observation.

The actual goal and methods of **Exposure Therapy** (therapies) has/have switched, from reducing fear to **fear tolerance**[172] [173] or **coping**. For example the development of *new, non-threatening associations of the original fear stimulus generalized over time and context.* **Exposure Therapies** as a whole have proven to be very successful but also as with other fear reduction and coping therapies, prone to **Return of Fear**[174] [175].

Psychology web portal Alleydog.com[176] describes **Exposure Therapy**:

> *"Exposure Therapy is a form of therapy that is used to treat irrational fears and phobias with gradual and increasing exposure to the feared object. For instance, if a client has a phobia of cats, the therapist might start treatment with showing the client a picture of a cat. When he/she can look at a picture of a cat without feeling anxiety, the therapist may add listening to the sounds a cat makes; meowing and purring, later on the therapy moves on to seeing a live cat from a distance and moves eventually to touching a cat. Through this gradual desensitization process, the client can eventually get over their fears."*

Another definition of **Exposure Therapy** is:

> *Exposure therapy defined as any treatment that encourages the systematic confrontation of feared stimuli, with the aim of reducing a fearful reaction*[177].

And yet another:

> *"**Systematic Desensitization** or **Graduated Exposure Therapy** is a type of behavioral therapy to help individuals overcome phobias and other anxiety disorders.*[178]*"*

Richard & Lauterbach (2006) write about the development, research and application of **Exposure Therapy**, also mentioning the relationship to research done with animals to establish the validity of theories and their applications. In other words, most aspects of **Exposure Therapy** are **not** just intangible, unreproducible, non-hard science as has been claimed by some radical behaviorists[179].

> *As shown in earlier reviews of animal models of exposure therapy (Thyer, et al., 1988) and related areas (Cook & Mineka, 1991; Mineka, 1985, 1987), there remains a high degree of correspondence between observations and research findings on the use of various forms of exposure therapy in humans with the results of animal analogue experiments. The effects of all of the major parameters of exposure therapy procedures, including duration of treatment, the use of distraction and contingent reinforcement, and the action of a range of drugs, are highly similar in animals and humans.*
>
> *One important implication of the close correspondence between animal and human behavior in*

171 Buck (2010)
172 Abramowitz (2013)
173 Craske et al (2007)
174 Goode and Maren (2014)
175 Vervliet et al (2013)
176 http://www.alleydog.com/glossary/definition.php?term=Exposure%20Therapy
177 http://www.psychiatrictimes.com/anxiety/exposure-therapy-anxiety-disorders
178 http://glossary.feast-ed.org/5-psychology-and-therapies/systematic-desensitization-graduated-exposure-therapy
179 O'Heare (2012)

anxiety and exposure treatment situation has to do with conceptual and pragmatic status of some of the newer modes of theorizing. Great success has been obtained with animal models that remain closely tied to descriptive principles of behavior, such as those offered by Pavlov, Mowrer, and Skinner. Modern cognitive psychologists have offered elaborations and reinterpretations, but it is yet to be established that these are truly superior to more parsimonious models in the description, prediction, and control of anxiety disorders (see e.g.,Tryon, 2005; Bouton, 1988, 1991, 1994; Bouton & Moody, 2004; Rescorla & Wagner, 1972).

Below are some examples of what these **Exposure Therapies** can consist of:[180] *Exposure Therapy can also be paced in different ways. These include:*

- ***Graded exposure**: The psychologist helps the client construct an exposure fear hierarchy, in which feared objects, activities, or situations are ranked according to difficulty. They begin with mildly or moderately difficult exposures, then progress to harder ones.*
- ***Flooding**: Using the exposure fear hierarchy to begin exposure with the most difficult tasks.*
- ***Systematic Desensitization**: In some cases, exposure can be combined with relaxation exercises to make them feel more manageable and to associate the feared objects, activities, or situations with relaxation.*

Exposure therapy is thought to help in several ways, including:

- ***Habituation**: Over time, people find that their reactions to feared objects or situations decrease.*
- ***Extinction**: Exposure can help weaken previously-learned associations between feared objects, activities, or situations and bad outcomes.*
- ***Self-efficacy**: Exposure can help show the client that he/she is capable of confronting his/her fears and can manage the feelings of anxiety.*
- ***Emotional processing**: During exposure, the client can learn to attach new, more realistic beliefs about feared objects, activities, or situations; and can become more comfortable with the experience of fear.* (**bold type face** above for emphasis L.Cecil)

Habituation, mentioned above, has been defined:

Habituation. A temporary decline in the magnitude of an unconditioned response upon repeated presentation of the unconditioned stimulus[181].

or:

Habituation is a decrease in response to a stimulus after repeated presentations. For example, a novel sound in your environment, such as a new ring tone, may initially draw your attention or even become distracting. After you become accustomed to this sound, you pay less attention to the noise and your response to the sound will diminish. This diminished response is habituation.[182]

While **Extinction** is thusly defined:

Extinction In conditioning, the weakening of a conditioned association in the absence of a reinforcer or unconditioned stimulus.[183]

or ...

A behavior change process in which a response class maintained by added reinforcement no longer generates a postcedent stimulus change (added reinforcement) and the response class subsequently decreases in rate or frequency. May also be used to refer to a schedule of reinforcement in which no responses were or are to be reinforced.[184]

180 http://www.div12.org/sites/default/files/WhatIsExposureTherapy.pdf
181 http://www.associationofanimalbehaviorprofessionals.com/glossary.html
182 http://psychology.about.com/od/hindex/g/def_habituation.htm
183 http://www.apa.org/research/action/glossary.aspx?tab=5
184 http://www.associationofanimalbehaviorprofessionals.com/glossary.html

As mentioned before, the consensus amongst the practitioners of **Exposure Therapy** concerning fear is, that the procedures all are based upon the underlying processes of **Habituation** and **Extinction**. One of the key parts of how **Extinction** works in these procedures is what is called **Expectancy Violation**. Your **expectancy** is, that you will experience something catastrophic, but you don't.

> *An expectancy is a future-oriented belief; it is a belief that something will happen. Therefore, they also have been described as subjective probabilities (Rotter, 1954). From a cognitive perspective (e.g., Kirsch, 1985), instrumental learning situations produce expectancies that particular behaviors will produce particular outcomes (e.g., that food can be found in a particular location), and classical conditioning produces expectancies that certain stimuli will be followed by other stimuli (e.g., that food will be presented soon after the bell is sounded)*[185].

Every time this conflict between the expectancy of the outcome and the outcome itself happens, the lowered height of preparedness for getting attacked as the 2nd step of internal fear response can be consciously chosen over the permanent original memory of the original response to the dangerous stimulus's, so that that original response is less likely to be performed[186]. And thus we see a newer, deeper definition of **Extinction**, than simply not reinforcing previous undesired behavior. Parallel to these exposure procedures, one discusses with the therapist what these catastrophic expectations are before starting the exposure part. During the exposure itself, especially in the beginning, the therapist offers support and encouragement, which helps the client recognize this contrast between catastrophic expectation and that they are not happening.

King et al, (1990) write, that the actual goal is not to eliminate fears with **Exposure Therapies**, as we dog people claim to do with "our" so-called **SD&CC**. They wrote of reduction of fear response, leaving some intact, inasmuch as this is necessary in case that fearful object does warrant a fear response if it does at some point in time become dangerous.

> *A number of behavioral procedures can be used in the treatment of excessive fears in children and adolescents with intellectual disabilities. As will become evident, phobia-reduction methods have been derived from several different conditioning paradigms (i.e. respondent conditioning, vicarious conditioning and operant conditioning). However, the primary rationale for the behavioral treatment of children's phobias is exposure (King & Ollendick, 1989; Marks, 1975). Behavioral programs are fundamentally exposure-based in the arrangement of therapeutic tasks and advice to parents. Accordingly, the various behavioral procedures can be regarded as different "pathways" by which the child is required to face the feared stimulus. Of course, attempts are not made to completely eradicate fear using exposure-based procedures, so much as to help the child learn to discriminate between threatening and non-threatening stimuli. A child who has a dog phobia, for example, should retain a 'healthy respect' for savage or unknown dogs following treatment. Discrimination learning of this kind is either implicit or explicit in successful phobia-reduction programs.*

In terms of practicality of therapy, this just makes sense. A therapy is to help get rid of maladaptive behaviors toward real or imagined objects of fear. It makes no sense to get rid of all fear responses towards objects that could actually be at some time dangerous, as they note in their example, towards dogs, because not all dogs are nice. We actually have the same "problem" with our canine clients. Even if we could change these emotions, and neuroscience shows us, that it just doesn't happen that way[187], it would make no biological sense to do so. Here is a quick 2 minute video explaining the main concepts of (**Prolonged Exposure Therapy**) **Exposure Therapy**. Notice, that it's all about regaining control over the formerly scary environment and the steps of the therapy itself are done, step-by-step voluntarily "at their own pace".: https://www.youtube.com/watch?v=AUOYFQTm9lE&nohtml5=False

185 Kirsch et al (2004)
186 Craske (2010, video 2014)
187 https://www.youtube.com/watch?v=gmwiJ6ghLIM

What does an **Exposure Therapy** look like?
https://www.youtube.com/watch?v=H8GHsjBhWV8

In this example above, the clients are all taking part in a group therapy. They have explained to each other exactly what their fears are, what they are afraid will happen, they are given "tools" to help them calm themselves, they run through a trial encounter with their fears in their minds (**in vitro exposure**). They may be asked what their anxiety level is, step for step to compare their expectations of how bad it will be, what horrible thing may happen next, are encouraged to try it, and heaped with lavish praise when they're successful, not only from the therapist, but also from the fellow clients. The underlying principles are **Habituation** – the fears do get reduced through simply exposure, but also **Extinction** inasmuch as the old behaviors do not get reinforced, because they are not performed or even necessary, while the new behaviors, i.e., the next step in the hierarchy is successfully performed. But the most important part of this **Habituation** is, that one repeats each step in the hierarchy often, not just upon a one-time successful completion of that step.This goes further than just generalization, which would be in different contexts. This is the **over-learning** we wrote about earlier, repeating the procedure at that same place several times. Even later, in quicker versions of **Exposure Therapy**, this repetition is done, just in another manner. The more you repeat a single step, the less daunting that step will be.

https://www.facebook.com/824404154354762/videos/841265702668607/

If you think about it, this squirrel in the video above is doing an **Exposure Therapy** technique with herself. Each time stopping and looking, the squirrel has that image of the most catastrophic thing that could happen. That person holding the nut is a very scary, real, aversive thing. But each approach shows each time, that that expected catastrophe doesn't happen. And the squirrel under his/her own power, can in the end, reach the nut and accomplish the task. This does not mean, that the fear is gone. Each further time will go quicker, because each successful step in the presence of the aversive counters the negative expectation and every success in reaching and getting he nut build a further positive expectation. This is changing the **valence** of that formerly aversive stimulus.

This is a main difference between an **SD**, where the subject stays at one intensity of stimulus until it is no longer aversive, and a **Graduated Exposure Therapy** using **Extinction/Habituation** in which she learns that the negative expectations are not justified through repeated successful graduated approaches. In this case the squirrel set her own pace. In **Exposure Therapy**, the therapist nudges and encourages, but if the patient doesn't want to go further or wants to take a break, that is allowed.

2.8.6 – Optimization Measures for Exposure Therapy

This section is inserted here, because parts of it will be shown shortly and we will see how we do and/or could do some of this with our canine clients. Craske et al (2014); (video 2014) illustrate the following techniques one could and can use to optimize **Exposure Therapy** while also reducing the likelihood of **Return of Fear**:

> *1) expectancy violation, 2) deepened extinction, 3) occasional reinforced extinction, 4) removal of safety signals, 5) variability, 6) retrieval cues, 7) multiple contexts, and 8) affect labeling.*

Some of these are less directly doable with dogs, so if I do not discuss them below, it's because I can't imagine them being applied. If you can come up with ways to applying them, by all means! These points are not considered techniques in and of themselves, but can be considered more like "plug-ins".[188]

Color code:

Green: good, applicable with dogs, will look at this later.
Yellow: maybe with dogs – needs more consideration, will look at this later.
Red: probably not with dogs, but ... help yourself.

1) **Expectancy Violation** – Expectancy is not something many behaviorists want to admit exists. But not wanting to admit it exists, doesn't mean it doesn't. If you do 10 recall-to-front exercises and reinforce every time from the left side, your dog expects to see that food coming from the left and starts either coming into front and looking left for the food, or coming in to the left side and not in to the middle. This is the expectancy. The **Expectancy Violation** is ... when you DON'T feed from the left, but rather from the right. You can build up a new expectancy by repeatedly feeding now from the right and -violate- that, when you feed from ... the left.

2) **Habituation** to a fear stimulus means that it's lost it's uniqueness and **startle effect** potential and happens with continued repetition at the same or less intensity. It no longer startles because you've come to expect it.

> *The first strategy is to design exposures that maximally violate expectancies regarding the frequency or intensity of aversive outcomes (Davey, 1992; Gallistel & Gibbon, 2000; Rescorla & Wagner, 1972). This strategy derives from the premise that the mismatch between expectancy and outcome is critical for new learning (Rescorla & Wagner, 1972) and for the development of inhibitory expectancies that will compete with excitatory expectancies. The more the expectancy can be violated by experience, the greater the inhibitory learning.*

> *Inhibitory learning is dependent upon this mismatch between the expectations of the learned behavior and the actual presenting stimuli. If you do not let the client habituate so much, by more often violating the expectancy, the amount of startle effect upon that violation deceases with the amount of repetition and is makes the extinction process more stable, meaning less fear responses to the same or similar stimuli later.*

> *The main difference between inhibitory learning and what we've done up to now is, that inhibitory learnings goal is not fear reduction per se, although that does often occur as well. The main goal is the recognition, that the previous stimulus that elicited the undesired fear response is not dangerous. The theoretical basis for this was establish by Rescorla (1993) in which he showed that as opposed to the idea of an "unlearning" model of classical conditioning, the aversive CS does not simply transform into a nice one, but stays and will be compared to new learned reactions to it. This has also been shown in neuroscience to be the case. (Craske shows this in the related video.)*

188 This entire section is a summary of Craske et al (2014), so when individual studies are mentioned, they are cited within THAT study. Any cites I include then are referenced in that paper and not ones I've cited from and therefor will not be specifically in my bibliography

Learning is centered around whether the expected negative outcome occurred or not, or was as 'bad' as expected (i.e., was 'manageable or not').

Inasmuch as extinction learning represents the formation of a non-contingent Relationship between CS and US, awareness of both the CS and the non-occurrence of the US are essential.

For example, for persons who fear having a heart attack from a panic attack in an elevator, exposure may be conducted to progressively lengthier trials in the elevator even though fear does not decline with each exposure trial. Notably, sustained arousal throughout extinction is associated with less fear at retest in animals (Rescorla, 2006) and in humans (Culver, Stephans & Craske, under review), arousal consolidates extinction memories (Cain et al., 2004) and in several of our studies, failure to habituate throughout exposure therapy was not associated with poorer outcomes (e.g., Lang & Craske, 2000; Kircanski et al., 2012; Culver, Mortazavi et al., 2012).

Habituation approaches to exposure posit that exposure to a given item continues for long enough for fear to decline and for the number of occasions necessary for fear to be significantly lessened. In an inhibitory learning model, exposure continues for the length of time predetermined as an adequate test of a stated expectancy, and continues for the number of occasions necessary for expectancies to be lessened.

This shows, that while it is important to keep a subject at an arousal level towards the CS, such that some of the anxiety must be felt in order to "convince" the subject, that in fact, the expectancy of something catastrophic happen, isn't fulfilled – nothing bad happens.

3) **deepened Extinction** - *Another example would be exposure to one specific type of spider, then a second distinctly different spider, followed by exposure to both spiders at the same time.*

Whereas we have always avoided trigger stacking, of which this is a good example, it's been shown that this can actually heighten the effect of **Expectancy Violation**. There are several ways to do this, not just with adding stimuli. If there are multiple fear stimuli one can add a related one. While working on fear of trucks, can add a bus and that will heighten the effect. One only needs to assure that, since this is an **Extinction** process, that the intensity is not such, that the dog feels compelled to act in the old undesired manner.

4) **occasional reinforced Extinction** – is one we won't be doing, because, as Craske writes, the effect has been shown to be the reverse in animal testing as in human testing. Occasional reinforced **Extinction** is when one DOES actually allow the undesired to occur, only to back up to a level at which it doesn't anymore. This once again addresses that **Expectancy Violation**. This will happen now and again in canine behavior modification and cannot be helped. What we can gather from the reason why we don't do this intentionally is, that in animals, this does actually temporarily block the **Extinction** process and the fear does remain or grow. So when this does happen, we need to back way up and reduce this NEW expectancy, violating it with the non-dangerous intensities again.

5) **removal of safety signals** – safety signals are signals the end up predicting something bad could be happening and ... the therapist could be one of these. But so would be the availability of kleenex to someone with a spider phobia, because often the fear of spiders centers around how disgusting they are, not that they are dangerous. Craske reports that research is mixed, that some studies have shown, that safety signals may reduce inhibitory learning, other studies have shown they have neither positive nor negative effects. She writes, that much depends upon the intensity of the stimuli and the amount of **Expectancy Violation** one can build into the procedure as to whether these consciously or unconsciously used can or will be a problem. I've experienced both, that they've helped and that they've become a problem.

6) **Variability & Multiple Contexts** – is nothing more than varying the conditions of the trials as much as possible. Vary the length of trials, of trial sessions, vary the type of trigger (size, movement, towards away). We know this as generalization. Craske shows, that the evidence in terms of behavior modification does NOT favor extinguishing one trigger in one form before moving on the the next. Even within an intensity level, one should vary all the other variables. Once again, this has to do with those expectancies.

7) **affect labeling** – is a tricky one. It has to do with identifying a CS in a positive manner, which then can help change the basic **valence** that object otherwise holds. With humans that research that showed this was comparing how people felt about seeing spiders label negatively with irrelevant labels such as “bomb” or “war” showed less physiological fear response than the control group. I don’t really see this as a viable technique to use with dogs, but maybe you can.

2.8.7 – Intensive Exposure Therapy

This is a rather newer, more intense version of **Exposure Therapy**, which has shown to be highly effective. WARNING! When we watch these examples, some of them are difficult, because one sees real suffering of the clients. These are not dramatizations, these are real videos of real exposure sessions, although truncated. I am not linking to these to say we could or even should do these at this intensity, because there are certain conditions of such therapies we cannot fulfill. I'm linking to these to show the different evidence based techniques used from which we could draw upon AND reconfigure for our dogs, which I will then discuss.

Intensive Exposure Therapy for claustrophobia:
https://www.youtube.com/watch?v=wE5F-FjbTRk

I've made a commentary to this video, explaining the procedures used, which were mostly

1) **Symbolic Modeling** in the preparation sessions, inasmuch as she needed to explain her worst expectations, meaning running through them in her mind and explaining them to the therapist,
2) **Participant Modeling** with the therapist showing by first getting into the elevator, that it isn't dangerous, and only then inviting her to join her
3) Simple **Reinforced Practice**,
4) Exhibitions of empathy and bodily contact which have to do with client-therapist **Relationship**, which was initiated during the first three verbal sessions.

0'17" - the "brief field test" is the observational part of what we'd call a **Functional Assessment**. Part of the **FA** is to determine what the real fears are, what the catastrophic expectancies are. The other part takes place back in the office.

1'12" - begins the actual cognitive part, in 3 sessions, informing her of what the treatment is about, what will be done and how and why as well as going over what her actual catastrophic expectations are.

1'.54 - "to heighten the anxiety, so she can more fully experience the **Exposure Therapy**" which is necessary, so that she can actively recognize, what the difference is, between her worst imagined fears and what actually is happening.

2'.04 - giving an estimate on the amount of anxiety she's feeling in front of the elevator on a 1-10 scale.

2':15 - **Participant Modeling**, in that the therapist first enters the elevator, showing how undangerous it is and how to do it. Encouragement "You can do it." Empathetic body contact, more encouragement.

2'26" - once again the cognitive, asking "what's your worst fear" (but, it's not happening!)

2'45" - 15 minutes at this level of anxiety until she allows the therapist to let the door close – **Empowerment** via **Internal Locus of Control**, the client controls the situation.

3'.01" The therapist say "It's your fear, it's hard." Which is both encouragement and empathy: I know how hard this is for you, but you're doing fine, keep going.

3'40" - informing the client of the coming, difficult step, but that despite the anxiety felt, it will not hurt her. Encouragement - which is at the cognitive level, reinforcement for a good job done. (**Reinforced Practice**)

4'07" - More encouragement and reinforcement for "doing it".

4'16" - don't go right out of the elevator. This is to let the realization sink in, that "she's done it", but more important, that her worst catastrophic fears, did not occur = **Expectancy Violation**

4'25" - upping the criteria: the client needing to do it by herself.

4'40" - "repeating the experience again and again breaks the back of her fear." **Extinction**

using **Expectancy Violation** and **Habituation** now through **RP**.

These questions will come up:

1) This looks soooo aversive, horrifying for the client. This must be flooding. Well, it's close, but ... these steps are very large, this means the intensity is also very large. But at the same time, there is constant encouragement from the therapist, reinforcement for successes and in actual fact, the client can stop at any point. In a flooding, there is none of this.
2) Do you absolutely need to approach these heights of intensity and panic? No, this is a specific version of **Exposure Therapy** called **Intensive Exposure Therapy** in which it's thought, that best results can be achieved by, as explained, provoking panic, but using that panic with nothing bad actually happening to more quickly break down those negative expectations (**Expectancy Violation**). One can do this much, much slower, at lower arousal levels with therefore lower stress levels and I would never do it at that intensity level with a dog, but then ... it will take much, much longer. Humans opt for this faster version, because they're busy and simply want to get it over with. But dogs don't want this at all, didn't sign up for ANY behavior modification protocol whatsoever. Either slowly or faster, there doesn't appear to be a down-side concerning long term effectiveness.
3) If the encouragement and support of the therapist is so vitally important to the realization of the conflict between expectations and what is in reality not happening, how can you reach the same thing with a dog? There are ways you can approach this, one of them being, to use a mixture of vocal encouragement - "Good job!", "Terrific" and such, mixed with actual positive reinforcement in terms of food or play for especially good steps, which is the technique we read about called **RP**. I think it's important NOT to overstep the dog's own boundaries if possible, as the dog will probably show that "melt-down" they spoke about with less warning than a human. I would even suggest, after performing a couple short trials with **RP**, to retreat to the same point where you started using this and seeing if the dog will now peacefully approach without the cue/reinforcement of the **RP**. If not, just stay at that distance of low anxiety for awhile.

https://www.youtube.com/watch?v=zKTpecooiec

WARNING: This example is even more aversive and difficult to watch than the video above. But if you can handle it, after having read about the different procedures about, see if you can recognize them being used here. Treating snake phobia using **Exposure Therapy** which us actually an **Intensive Exposure Therapy** and consists of:

1) **Functional Assessment** to determine what the clients' worst expectations (catastrophic beliefs) of an encounter with snakes
2) describing the treatment to be administered (**Symbolic Modeling**). Key statement "...so I will challenge you to try things, but I will never force you do to anything that you're not ... (voiceover)"
3) prolonged **Exposure Therapy** – done in one 3-hour session in which points 1 and 2 take up a total of 1-hour
4) continual support DURING the exposure in the form of encouragement, praise, body contact, asking if the person is experiencing the worst expectations – important to cognitively refute the own held beliefs of these same bad expectations – **Expectancy Violation**
5) In this process it's explained, that relaxation procedures in the direction of **CC** or **RI** "mask" the emotions felt on the one hand and make it more difficult to realize, that the worst expectations are not happening – one reason why **CC** and **RI** are NOT considered to be the driving underlying processes necessary to "get over" such phobias and fears.

6) It is important to notice, that there is a continuous exchange between the therapist encouraging her to do or think of things that make the snake less catastrophic – like asking her to name the snake. She then makes several suggestions herself to approach the snake, sometimes with conditions, like "...but hold it." These are very conflicted situations and are necessary. Stress with a resolution is difficult, but is not life threatening in and of itself. And is necessary to diminish the catastrophic expectations.

I want to be perfectly clear on this next point: I am NOT advocating, that we take our dogs to these levels of arousal, that they cower, try to escape, exhibit the previous undesired behaviors. That would be completely inhumane on the one hand and on the other hand, counterproductive to the procedure and the affective processes. But we DO need to understand, that in an **Exposure Therapy**, meaning almost any technique we already do, our dogs are ALREADY in this conflicted state every single time they are exposed to an object of fear. Every – single – time, even if we believe we're feeding them goodies and they're eating. Eating does NOT mean they are relaxed and not bothered by that scary object. It only means, that it is not bothering them enough to stop them from eating as we've seen from the studies above. And nothing more than that.

If we can learn anything at all from these videos showing **Intensive Exposure Therapy**, it's that this conflicted condition is necessary to set the processes into motion, that those horrible expectations that drive unwanted behavior can be reduced by this confrontation at an arousal intensity, in which the dog can **cope** with those feelings AND register, that nothing bad happens. This sets up that **Expectancy Violation**.

But that's only one step. In my opinion, we may tend to want to advance too quickly. Once a certain level of coping has been reached, we tend to jump right up to the next level, because the dog isn't having any problems with the last. While that may be true, it's the **Habituation** that we're forgetting. The practice of coming into this level of intensity several times – as recommended, 5 times – that is also necessary longer term, in reducing those externalized fear responses. And continual repetitions session for session.

2.9 – Some Intangibles

This is the part of the book that is ... not, at first glance, what you'd expect of a "science-based" book. Some of the things I will write about are seemingly intangible and according to our training in Behaviorism or Behaviorology, we don't attend to anything we can't observe. Yet ... who will really claim, that they don't think **Relationship** has anything to do with training? You can't see it, you can't measure it. So, like so many intangible things, why concern ourselves with it in training? Is the only reason we give treats, really ONLY to reinforce good behavior? Is that the only reason for throwing that ball or stick? Are play dates only to proof prosocial behavior? Of course not.

Most of these intangibles came from my interviews with my psychologist friends. My original idea was to talk to these trained psychologists about what "we" do and see if what we do is familiar to them. I knew, that they do/did not work as "we" do, so I wanted to find out why they chose NOT to help their clients' emotional problems or behavioral problems with methods which are familiar to "us". I was hoping then to get some insight into how they work, what they found most important in their work with their clients and, if at all possible, get some useful suggestions that we might be able to use in our work with our canine clients.

At first I'd planned to have a section summarizing the interviews and the results for each individually, but changed that plan after going over the recorded interviews. I was frankly astonished, that 3 different psychologists working in more or less three different manners with different clienteles had the same things to say to my main questions.

1) All of the psychologists have intensive training backgrounds. And as such they were all familiar with the psychological procedures of **SD** and **CC**. They all admitted to, however not having had anything to do with either of them, nor with any operant behavior change methods since their study days.
2) When asked why they chose NOT to use Behaviorism as their main therapy method with their clients, they all answered to one extent or another, because they did not consider simply changing behavior to be sufficient to address the actual problems causing the behaviors. Their opinion was, that while one can simply change behaviors, condition them operantly or respondently away, the results are usually not of a lasting nature because you treat the symptoms, not the causes.
3) Another comment that all made, once again more or less decisively was, that people doing behavior modification appear to concern themselves more with behavior modification processes and less with the human beings. At first I was shocked, until I thought about how we do actually think about it:

   3-part contingencies. Antecedent → Behavior → Consequences.
   Application of **SD** or **CC**, keep under threshold. Avoid rehearsing undesired behavior.

   If this were a human, where is the person-part, the empathy, the support? It's left at the training room door or at the edge of the exposure setting.
4) There was a general agreement, that no therapy, no matter from whom, done by whom, is 100% effective or successful. There are too many variables to be considered: presenting problem, the client as a human being, the **Relationship** between the client and therapist, the previous history of "problems" and attempts of solutions, the amount of time the client has had these problems, the willingness to actually affect a change, the genetics involved, contributing physical factors and many more. This fit right into the **Dodo Bird Verdict**.

5) All agreed, that by far, the most important aspect of any therapy is the personal, human **Relationship** between client and therapist. If the trust, empathy and more cannot be established, no matter what technique you use, it will probably not succeed. Without that **Relationship**, you have nothing.

6) Both Bodenheimer and Tarr have worked with non-verbal or know of (a) therapist(s) who've worked with non-verbal clients, or clients who did not speak the same language. The ability to formulate thoughts was not as important as the ability to use some means of communication. Sometimes this communication is not implicit, yet understood. Sometimes it's not verbal at all, but rather through some other communication form, such as music, art, motion. So working with non-verbal clients presents challenges, but is not impossible.

7) The goal of the therapy is NOT to cure a client of fears or anxieties, although that may happen. Moreover, the goal is to help the client live with the fears and anxieties, to recognize that they are not nearly as dangerous as imagined. This is often done by having the client relate how they feel, what their actual fears are and if they are experiencing them now, are they justified in this safe environment. This is very similar to an **in vitro SD** or **Symbolic Modeling** or any of the **CBT/Exposure** mental imagery procedures.

   The idea is not to tell the clients to stop feeling afraid, but to realize, that they are safe now. In our discussions, in which I admit I took up way too much time trying to explain what we do and what I've found out about it from the scientific side, we came to the conclusion, that actually, the processes going on under the hood were pretty similar. Through their empathy and the Relationship with the client, they can set up realizations, that the anxiety felt is not coming about physically. It's ok to feel afraid, but it's not relevant to the situation. So ... how do you deal with it?

   And yes, they too have techniques to help clients over rough spots, mostly cognitive ones. But in the end, the more often one experiences the anxiety but sees, there is no physical reason for it, the easier it becomes to cope with it. The fear/anxiety will always remain a part of this person, but the client now should be able to better deal with it when it comes. This is what happens as shown neurologically and what we also (should) know from our work. So, it seems that we reach the same place through different routes that may not be all that different after all. Coping instead of trying to heal.

8) Where we were all fairly well stumped was, what of their methods could possibly be applied by us with dogs. There was never the thought, that they couldn't be in some way applicable. There was never the idea of not extending the dog-therapist (trainer and/or caretaker) **Relationship** further than what we now do, so that we don't stop the signs of that **Relationship** during the actual session, but support a dog more prominently during an encounter. There was never the supposition, that the dog could not understand this if done well. The question remained – what and how.

I found it was extremely productive to speak with and exchange ideas with these three psychologists. I would like to express my thanks to them, also for proofreading the parts in this book in which I refer to them and our talks specifically.

Before we get to **Relationship** as something tangible and testable – yes, you read that right, I'd like to bring up another topic.

Force Free. I've already written a blog on this.

Words have meaning.

We can't just co-opt some words and redefine them as we wish. Well, we do this actually and then we get upset when someone doesn't agree with us. "Well, when I say Force Free, I mean...." If you say what you do is **Force Free** and then define it anyway you want and get upset when I don't agree, then I can call those animals I work with "apricots". And I can even say, there are very different ways to deal with apricot problems that use science based methods that are apricot oriented.

While this is a tongue-in-cheek example, it's not tongue-in-cheek, when I say, that no one gets a free pass to re-define **Force Free**, any more than they get one to define **SD&CC** as they wish. The concept of **Force Free** is too import to simply turn it over to marketing people.

Now whether you like it or not, most of what we do with dogs is not **Force Free** in any non-dog-people sense of the words. As soon as you put a leash on a dog, you're exerting **force** on that dog to slow down or change the direction. And if the dog doesn't agree with your decision, that's just too bad. "Dog, you will obey. We can do this nice or do this nasty, but you will obey." And at that point, both nice and nasty are **forcing** your will upon that dog.

We use **force** on our dogs more often than we'd like to admit. There are always "good reasons" for this, but it's **force** none-the-less. We **force** the dog into social isolation from other dogs unless we say it's ok and then determine the kind of contacts, if and when and where are permitted. And if not, we will **force** a separation and will **force** either our dog to stay away or **force** the other to. We will **force** the dog to not eat what she wants to, when she wants to. We will **force** the dog to wake up if we want some attention from the dog, but will at the same time, for no other good reason, deny the dog attention for pretty much any reason, good or bad.

And, if the dog is displaying any behavior with which we are not pleased for whatever reason, the dog becomes a "bad dog" and we **force** the dog to learn new behaviors, usually with no concern for what the dog wants in that situation.

As a general rule, if a human suffers from fear, anxiety or phobia, he/she can seek help voluntarily. Sure, sometimes help is sought as a result of social pressure or even a parental concern, but the decision to actually do something about it is otherwise made by the person involved. Only seldomly will someone be committed to psychiatric care. But, when we determine, that a dogs behavior is "bad", that dog is committed to "dog-psychological" care, although the dog probably sees no problems with his/her behavior. Except, that he/she would never have gotten anywhere near that other dog if YOU hadn't **forced** him into that confrontation. "C'mon Rover, don't be afraid, he only wants to say hello!" And now, because Rover didn't want anything to do with that dog you insisted he meet, you are taking him to some human he doesn't know and doesn't really want to know, who will **force** him into more confrontational situations with dogs he wants nothing to do with, until he shows the behavior that human and you expect.

In any idea of human psychology, there are two absolutely critical elements. One of these is the idea, that the client recognizes, that he/she has a problem with this fear, anxiety or phobia and seeks help at this particular time, voluntarily. The implied or very real contract with the therapist is, "If I don't like this or feel it's not helping me, I'm outta here." And this happens more often than we'd like to think.

Vervliet et al (2013) and Craske (video 2014) determined, that

1) 30% of those clients offered **Exposure Therapy**, refused it.

2) Depending upon the study consulted, between 15-30% dropped out of **Exposure Therapies**.
3) Of the clients who start an **Exposure Therapy**, between 40-50% experience no improvement – and compared to some other therapies, this is a good ratio (see the Dodo Bird above).
4) Between 19-68% experience a **Return of Fear** of one degree or another.

And they volunteered for this treatment, not so our dogs. We need to take even more into account, what they want during such a "Therapy", than those humans who signed up voluntarily. So, how can we respect the individual wishes of the dog while also respecting the wishes of the client? We say, that we should be our dog's advocate and see that they come to no harm. We also say, that the first and most important rule when training or doing canine behavior modification is **Do no harm,** just as in human medicine. Does this only apply to the 2 legged client or also to the 4-legged client?

Being a **Force Free** canine behavior consultant doesn't mean being just **Force Free** towards the human, but rather using subtile but never-the-less concrete and concentrated **force**, simply without shock collars, prong collars or other physical pain inducing tools with the dog. Simply insisting a dog stay in one place in the presence of another he really doesn't want anything to do with, is still **force** – especially when the dog shows

1) the unwillingness to be there – check out body posture, tension etc. AND
2) a total change in that same body posture (relaxed), tension (gone) etc. when "allowed " (lifting of **force** methods, like a leash) to leave = employing **Empowerment** techniques instead of well intentioned "force" methods.

These ARE things we can observe, and are the direct results of environmentally based and maintained behavior, initiated by us and for which we are responsible. When we get to applying and optimizing concrete **Empowerment** based techniques, I will be sure to point out how we can take this conflict of interests into account.

The second critical element, as shown by research and by the philosophies themselves is the **Relationship** the therapist (caretaker) develops with the client (dog) – see below.

2.9.1 – Relationship

Many reading this paper might wonder, really wonder, why I'd bother to stick in something like **Relationship** into a paper looking at the science the canine behavior change. There could be several concerns or even objections to this:

1) Why is this even a topic? We do what we do to improve the **Relationship** between client and dog. OR
2) **Relationship** is an intangible that we can neither observe nor quantify, so it doesn't really help to lend it attention. In order to address behavioral problems, we need to address behavior and the contingencies maintaining them. OR
3) Supposedly, when behavior is changed, underlying emotions are effected. As long as we do so positively, the emotions concerned with **Relationship** will also change.

There are probably more, feel free to add yours to the list. The fact is, that "we" concentrate how we work with specific protocols, methods which we apply to specific behavioral problems which have been identified by the human client and ourselves, not the dog. The dog generally doesn't have nearly as much of a problem with this "undesired behavior" as the human caretaker and society does, often for very un-canine reasons, like the social pressure put on the human for having a dog not acting according to societal standards, standards that are very different today than they were 50 or 60 years ago (Bradshaw 2011). In fact, when we're speaking about fear responses in feral populations, when watching films of dogs interacting, there is very little snarking between dogs. Very short resource-guarding incidents are very quickly resolved by one going away. We just don't see dogs who bark and lunge at all other colleagues. This comes, as Bradshaw points out, with the demands placed upon our dogs by our society and our expectations of what a "good dog" is.

We live in a symbiotic **Relationship** with our dogs[189]. They have what they need from us, we get (usually) what we want from them. But at the end of the day, we determine what they get in virtually every aspect of their lives – and when and how much and if at all. This includes affection, this often, but not always, includes consideration of their own desires.

When we determine, that our dog has a problem, we don't have either the means or even usually the time or knowledge to "sort it out" with the dog. Like sending your "sick" Uncle Fred off to the asylum, we send our dogs off to a board-and-train or a neighborhood "dog psychologist" who will take this broken "thing" and make it "right" again. This is like committing the dog to be treated and if all goes right, our dog back comes back cured of her problems.

People like James O'Heare (2014) push back against a medical model of canine behavior modification, but at the end of the day, what "we" actually DO, is not so much different. We conduct a **Functional Assessment** with the intent of identifying what the dog gains from the undesired behavior, so that we can manipulate either the antecedent and/or the consequences such, that we obtain the newly trained desired (by us, not by the dog) and societally compatible behavior. All this is supposedly of course in the dog's best interest. So we identify these aspects, apply a label to this type of behavior, look in our training tool box for the corresponding accepted procedures, be they labeled according to conventional psychological procedures or commercial products, to perform in a manner and for the length of time necessary to effect the change. And even if we do not simply apply a pre-packaged alphabet soup solution to a specific problem, the idea of only addressing antecedent or consequence to affect behavior change is in and of itself a broader based labeled package of one – Behaviorism or Radical Behaviorism – without taking other learning theories or other behavioral influences and their practical applications into consideration!

189 http://www.scienceclarified.com/everyday/Real-Life-Biology-Vol-3-Earth-Science-Vol-1/Symbiosis-How-it-works.html

So what's wrong with this picture? It works (when it works). This is the treatment model according to ABA, according to Behaviorology – you use an operant or respondent technique to change behavior. And the dog? The steps for behavior modification are very well laid out in every protocol out there. But many professionals outside of the dog training world and especially outside of Behaviorism see a huge and hugely important aspect of such therapies to be missing. What is missing from their perspective, is a true concern and respect for the real wishes and being of the subject involved, i.e. the dog. And part of this revolves around how we then do go about "helping" this individual, after all, this canine individual doesn't necessarily see anything wrong with him- or herself.

Bandura (1961) came up through the world of Behaviorism and the treatments applied, which were empirically developed. He became disenchanted with them, as did many other professionals in the field of psychology, for some of the very reasons described above – the un-humanness of the simple application of techniques, which, done properly, cure behavioral problems. Their concerns were emotionally, that without a caring, trusting **Relationship** between client and therapist, you might be able to change behavior, but not necessarily in a lasting and meaningful manner address causes. An excerpt from his paper:

> *In the first place, the deliberate use of the principles of learning in the modification of human behavior implies, for most psychotherapists, manipulation and control of the patient, and control is seen by them as anti-humanistic and, therefore, bad. Thus, advocates of a learning approach to psychotherapy are often charged with treating human beings as though they were rats or pigeons and of leading on the road to Orwell's 1984.*
>
> *The results of these studies show that the therapist not only controls the patient by rewarding him with interest and approval when the patient behaves in a fashion the therapist desires, but that he also controls through punishment, in the form of mild disapproval and withdrawal of interest, when the patient behaves in ways that are threatening to the therapist or run counter to his goals.*
>
> *One difficulty in understanding the changes that occur in the course of psychotherapy is that the independent variable, i.e., the therapist's behavior, is often vaguely or only partially defined. In an effort to minimize or to deny the therapist's directive influence on the patient, the therapist is typically depicted as a "catalyst" who, in some mysterious way, sets free positive adjustive patterns of behavior or similar outcomes usually described in very general and highly socially desirable terms.*
>
> *It has been suggested, in the material presented in the preceding sections, that many of the changes that occur in psychotherapy derive from the unwitting application of well-known principles of learning. However, the occurrence of the necessary conditions for learning is more by accident than by intent and, perhaps, a more deliberate application of our knowledge of the learning process to psychotherapy would yield far more effective results.*
>
> *The predominant approach in the development of psychotherapeutic procedures has been the "school" approach. A similar trend is noted in the treatment methods being derived from learning theory. Wolpe, for example, has selected the principle of counterconditioning and built a "school" of psychotherapy around it; Dollard and Miller have focused on extinction and discrimination learning ; and the followers of Skinner rely almost entirely on methods of reward. This stress on a few learning principles at the expense of neglecting other relevant ones will serve only to limit the effectiveness of psychotherapy.*
>
> *Changes in behavior brought about through such methods as counterconditioning are apt to be viewed by the "dynamically oriented" therapist, as being not only superficial, "symptomatic" treatment, in that the basic underlying instigators of the behavior remain unchanged, but also potentially dangerous, since the direct elimination of a symptom may precipitate more seriously disturbed behavior.*

I'm sure, that some will object to this summary of how others see "us". It's not necessarily the picture we have of ourselves. I had planned on now linking to a few videos of people performing various protocols with dogs to illustrate how others do actually see us, but I do not want to attack

specific people and their work. I would however ask, that you as an openminded reader (if you weren't, you wouldn't have gotten this far in the text), objectively watch some of your favorite behavior modification videos. How much true, emotional interaction between dog and handler do you see immediately before the therapy, during and after? Compare a behavior modification video to one showing people interacting with dogs in their living rooms, back yards, trails, etc. The picture is starkly different. And then, watch a video of a **person-oriented therapy** or **Exposure Therapy**. You'll see empathy, caring, support, physical contact comfort during the actual therapy, be it strictly verbal or an **in vivo** exposure session.

In medicine, people talk about bed-side manner. This is not meant to be the sarcastic, demeaning TV Dr. House manner of ignoring the patient and ripping apart the "associates". It is actually, with very easily adopted techniques, winning the trust of and showing empathy for the human patient, his/her problems and interacting with this person as a whole, not simply as an illness or an injury to be treated. "But of COURSE I do this already!" you will say. Then ask yourself why it is, that when seen at work with dogs, OTHER non-trainers comment "lovely application of XYZ" but are otherwise not thrilled. We may think we are in a good **Relationship** with our clients' dogs, simply because we're not physically hurting them. But not doing A is not the same as doing B.

The next question that comes to mind, would be, "is **Relationship** necessary in a therapy situation"? For years it was simply assumed in human psychology that it was – no questions asked. But it was also assumed, that this was so intangible, that you couldn't really test for it. How do you test for the usefulness of empathy, caring, the necessity of trust? After all, most forms of psychology are not hard sciences – we've heard. It turns out, one CAN isolate specific aspects of person-oriented psychology or, for example, the cognitive side of **CBT,** and test to see what happens in a therapy, when these are **not** present as opposed to when they are. Another conclusion is, after looking at the supposed workings of the mechanics of a procedure and finding that NONE of them are key to it's success or failure, such as in **SD**, that one comes to other, intangible explanations. Wilkens (1971) writes:

> *The effectiveness of the procedure does not appear to be due to the traditionally stated mutual antagonism between muscle relaxation and anxiety, but rather to social variables in the patient-therapist Relationship and cognitive variables involving (a) expectancy of therapeutic gain, (b) information feedback of success, (c) training in the control of attention, and (d) vicarious learning of the contingencies of behavior.*

Beck (1993) p. 40:

> *Perhaps in part because of the emphasis on specific empirical techniques in behavior therapy, there is a widespread belief that a behavioral approach necessarily denies the importance of the effect of person and Relationship in therapy. Not so. In fact, the precise specification of personal and non-personal components of therapeutic techniques offers the best avenue toward the further elucidation of the complex effects of human Relationships in the therapeutic process.*
>
> *Social Relationships are among the most important, albeit complex, biological and behavioral phenomena. Some behaviorists have even stated that the most important stimulus is the person. The research by Harlow and his colleagues has clearly demonstrated the profound influence of neonatal social rearing conditions on an individual's subsequent development[(126)]. In addition, recent research with Pavlovian techniques has contributed evidence for the fact that large-scale behavioral responses having measurable physiological components, regularly and consistently occur during various types of social interaction [(127, 128, 129, 130, 131, 132, 133, 134)]. Of even greater interest from a psychotherapeutic point of view is the observation that both the behavioral and autonomic indices of the usual reactions to conditioned fear and pain (produced by pairing a tone with an electric shock] can be abolished by social stimulation during these aversive conditions[(129, 130, 131)]. In fact, this is the model of systematic desensitization: relaxed social interaction during situations previously conditioned to be aversive.*

However as remarked above, it doesn't appear, that we have included much of either Wilken's or Beck's concern during the therapy sessions for our canine clients. We are so concerned with antecedent control and timing in reinforcement, for example making sure we start feeding as soon as the CS comes into view and stopping as soon as it disappears, that the dog in the middle of the process, that he/she wants or doesn't want, is not often (enough) considered and an even normal supportive, communicative **Relationship** is ... missing during this time, when it could according to the research, do the most good.

Bandura (1977) suggests, that even traditional verbal psychological techniques may work due to **RI**. It would be based upon the anxieties being confronted by the strong interpersonal **Relationship** upon which these verbal therapies depend. If that is the case, it can only be the case, if the dog has access to this emotional support to offset that aversive stimulus. If at that important moment, this support goes missing, then **RI** on that level cannot take place. There's no counter-balance in place, just that negative **valence** of the present CS and the associated environment to contend with.

These are however, suggestions as to how social interaction between therapist and client are beneficial or even key to the success or failure of therapies. Suggestions are fine, but "Show me the data".

Black (1952) shows, that despite non-agreement on the particular therapies used, the idea of a good client-therapist **Relationship** is of central importance. He underlines how relatively unimportant the specific therapy is in the total picture by referencing Rozenzweig's **Dodo Bird Verdict** (see above!) He also however lists some of the extra-therapeutic client-therapist personal qualities necessary, sometimes citing specific schools of psychology and writings of their representatives. Since most of us don't know of these schools of psychology, I'll just quote some of the qualities:

> *Therapists have elaborated the definition as "confidence of the patient that the therapist is both willing and able to help him", a feeling "of confidence ...a composite of trust, respect, and liking for the therapist", "a Relationship . . . in which the (patient) is optimally cooperative, exerts his best effort to do well . . . " Rogers mentions "warmth and responsiveness" on the part of the counselor as essential for establishment of rapport, and Williamson emphasizes "a deserved reputation for competence, kindliness, respect for the students' individuality and the keeping of confidences." Essentially, the patient needs to feel that the therapist is interested in him as a person and that he can be trusted with thoughts and feelings ordinarily withheld from others. It is not even established that the patient must think the therapist can help him as long as he is willing to try talking about himself.*
>
> *"The therapeutic Relationship is an unusual one in which the patient . . .is met by an attitude of unconditional acceptance, a point common to all systems of psychotherapy": Unfortunately, there is considerable confusion in the literature over the definition of acceptance. Levine implies it is a "positive attitude (which) is non-condemning and non-critical, non-judgmental . . . " The Rogerians have strongly emphasized acceptance; indeed, they sometimes write as if they had invented it.*
>
> *To summarize: the therapeutic Relationship, regardless of the system or methods of therapy employed, possesses common factors - a feeling of rapport through which the patient discovers that he is accepted as a person and can find support in the therapist, whom he accords superior status and who sets limits on the Relationship and controls his own involvement in it. In this basic given Relationship between patient and therapist lies the secret of the efficacy of much of today's therapy. Hathaway asserts: "It is likely that rapport as an interpersonal Relationship between client and the well-meaning counselor is, in itself, a powerful therapeutic factor." Reading the testimonials to non-directive therapy published by Rogers and his associates, one senses that many of them actually describe the basic Relationship discussed here and that the specific non-directive techniques may be quite incidental.*

Luborsky et al (1985) looked at 9 therapists using 3 different types of therapies with their clients and looked for reasons for success or less success, by looking at the therapists themselves, trying to determine why. Inasmuch as the study couldn't determine much qualitative difference between the the types of therapy – they concluded:

> *The combined data from our study of the therapist's personal characteristics and the patient-therapist Relationship indicated that these factors were both positively related to the outcomes of therapy. The findings to this point prompt a conclusion that some in the field have suggested for a long time: the major agent of effective psychotherapy is the personality of the therapist, particularly the ability to form a warm, supportive Relationship. In fact, the highly consistent finding of nonsignificant outcome differences among conceptually different therapies[6] suggests that the specific type of therapy may be less potent in affecting change than the therapist factors. In fact, the two psychotherapies studied here, SE and CB, showed nonsignificant differences in many measures, although SE therapy tended to be more effective in more of the comparisons.[1]*
>
> N.B. – **SE**=Supportiveness and Expressiveness Therapy; **CB**=Cognitive Behavior Therapy; **DC**=Drug Counseling Therapy.

Lambert & Barley (2001) looked at over 100 different studies to analyze the determining factors for relative success or less success, and came to similar conclusions as above. They make the recommendation, that more time and energy be put into continuing education which would reflect the importance of the client-therapist **Relationship**, the quality of which was a great predictor of success. Another very important factor they mentioned was the success expectancies of the client which is also at least partly within the realm of the therapist to reinforce and build up. They also were not able to determine that one specific form of therapy was inherently and generally better than another.

> *Factors such as therapist credibility, skill, empathic understanding, and affirmation of the patient, along with the ability to engage the patient, to focus on the patient's problems, and to direct the patient's attention to the affective experience were highly related to successful treatment.*
>
> *These are similar to the three facilitative conditions proposed by the person-centered school. The three conditions are empathic understanding, the degree to which the therapist is successful in communicating personal comprehension of the client's experience; positive regard, the extent to which the therapist communicates non-evaluative caring and respect; and congruence, the extent to which the therapist is non-defensive, real, and not "phony."*

Hoglend (2014) examined various types, styles of patient-therapist interactions to see if and how these influenced the outcomes of the therapies and found these to be crucial to the success of the outcomes. Once again, it was almost not important which of the various methods were used, the important aspect seemed to be an involvement of the therapist actively in the actual feelings and perspectives of the client. This is not something we actually do when we do behavior modification. This goes much further than simply trying to determine what is reinforcing and what is punishing for the dog. Those, in-and-of-themselves, are simply parts of a procedure to be inserted at the appropriate moment, if at all. In a verbal therapy, the interaction between therapist and client is of a human nature in which the therapist in the cases in Hoglend's study interjects him/herself into the emotional life and feelings concerning that person's everyday life – during and as part of the therapy. And THIS is what creates that **Relationship** between the two, because it then goes beyond simply being a clinical situation of client sitting together with therapist to solve a problem. So the question here is: many of us do this in everyday life with our own dogs. We hope that clients do this with theirs. Do they? If not, wouldn't establishing this **Relationship** between them and their dogs be key? But how?

Secure Base Effect has to do with the, in human terms mother-child bond, but has also been looked at in adoptive and foster situation (Howe, 2003) The ramifications of this are further reaching than

just explaining that human-dog bond we all know about. Something "we" know about, we also now know, that this bond is a real thing with data showing it's existence and how it's manifested. There have several studies since then which have further investigated the **Secure Base Effect**.

The idea of **Secure Base Effect** came out of Salter Ainsworth's (1967) first investigations of her **Attachment Theory** having to do with how the mother-child bond is established and in terms of behavior how this is manifested.

> *Attachment can be defined as an affectional tie that a subject forms to another specific one, binding them together in space and enduring over time (Ainsworth & Bell, 1970)."*[190]

Bowlby & Salter Ainsworth (1991) describe how they initially, apart from each other and then in collaboration, had been working on these concepts since even before World War II. In very general terms, Bowlby was mostly interested in investigating these concepts of **Secure Base Effect** which comes from **Attachment Theory**[191] in animals, while Salter Ainsworth investigated these in humans (1967). She wrote a comprehensive summary of the (to date) existing research done with animals concerning **Social Referencing** as a part of **Attachment Theory:** "A Consideration of Social Referencing in the Context of Attachment Theory and Research"[192]. The first practical applications of their work were discussions on causes and treatments of separation anxiety. Bowlby's theory was, that fright was different from fear in that fright is activated by something noxious, whereby attachment behavior can de activated by fright itself. **Secure Base** is the **safety** offered by the parent, or in later work, foster or adoptive parents (Howe, 2003) that offers the child, or as shown by Palmer & Custance (1998) as well as Horn et al (2013) dogs, the **safety** from which to explore their environment. This builds the core idea of the **Relationship** between human therapist and the client, but also is analog for the building or rebuilding of the **Relationship** of the caretaker with the student dog[193] and is, as has been shown, one of the two imperative aspects of therapy which much be present for success.

In conjunction with the above, we can consider **Social Referencing**[194], which is the ability of one person or animal to get information from another person's or animal's reactions to an environmental stimulus. This has shown to also exist between animals[195] as well dogs and owners[196] .

We saw however, that encouragement, support of the therapist was deemed to be one of the most important part of **SD**[197], as is self-recognition and self-praise. During this procedure with humans, both the therapist and the client are continually reviewing the felt emotions, the expectancies, how they'd previously felt in such situations, how they feel now – rating the fear/anxiety on subjective scales of 1-10, while observing, that those horrible things are NOT happening. And being praised by the therapist also.

Upon viewing several videos of **Exposure Therapies**, which are procedurally run differently than Wolpes original **SD**, one sees the personal involvement and care for the human individual both during the verbal cognitive part as well as the actual exposure part. This is shown in the preparations for the therapies, upon success, but also very intensely during the actual therapy as the client is dealing with this trigger or aversive situation. Encouragement, praise, "You're doing great." "Just another minute" "What do we want to name the snake?".

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190 Prato-Previde et al (2003)
191 Topal et al (1998), Prato-Previde et al (2003), Gacsi et al (2013)
192 Salter Ainsworth (1992)
193 Horn et al (2011)
194 Klinnert et al (1986), Bandura, A. (1992)
195 Evans & Tomasello (1986), Itakura (1995)
196 Merola et al (20121), Merola et al (2012), Prato-Previde & Marshall-Pescini (2014), Duranton et al (2015), Payne et al (2015),
197 Wilkens (1971), Bandura (1977)

When we watch many of the dog-people videos of performing behavior change techniques, we can sometimes see normal interactions with the dog up to the beginning of the session. We can see praise and reward after the exposure is done. But during the exposure ... it's like we bring the dog to the brink of contact and then the **Relationship** stops and the dog has to figure it out all by herself with no support or encouragement. But, it could be done differently, meaning with praise, pleasing bodily contact, encouragement during the actual interaction with the trigger or aversive stimulus.

And with all of these, we come back to a powerful mix from **Social Learning** of strengthening of **Internal Locus of Control** which couples will with and bolster **Self-Efficacy**. **Attachment Theory/Secure Base Effect** and **Social Referencing** all come together also to assure a sense of **safety** through the deepened and broadened **Relationship** which is tied up into the package called **Empowerment**.

Below is a short video showing a dog which needs to have blood drawn, so this is not a training session per se. It is however set up as if it were, with continual interaction before, and especially during and after each hierarchal step, from the beginning up to an including finishing taking the blood. There is still some stress, but ... also that **Relationship** is used to help the dog better cope with the stressful, uncomfortable, scary situation:
https://www.facebook.com/Freeportvet/videos/1090999134254245/

From the same vet's practice, we see less-personally involved training session, but still otherwise excellent usage of the **Extinction/Habituation** paradigm. Notice how during the actual touching, for which the dog is being conditioned, all verbal interaction stops?
https://www.facebook.com/Freeportvet/videos/1070611849626307/

Whether we call this **Relationship** or love, at this point that's almost an individual preference. But it turns out to be one of the most, if not the most important factor in behavior change and our joint lives with our dogs. https://www.youtube.com/watch?v=LUeMojLuwxE

2.9.2 – Valence, Likes, Dislikes, Evaluative Conditioning

We assume, that distance increasing behaviors are related to fear responses. We've heard from all sorts of experts, that this is so. But ... what empirical evidence do they present, that this is actually the case? Or, are these just chicken and egg problems? Certainly you don't like something you're afraid of. Or you're afraid of things you don't like. These are, at the end of the day, guesses or labels and what we do also, at the end of the day, is interpret when we determine what function the dog gets from a behavior. Do we really stop at "distance increasing" or "distance decreasing"? Or do we then apply interpretive conjecture to say this is a "fear response" or "he dislikes other dogs" or ??? And as soon as we do that, we are in the realm of what may "cause" the fear response and we land, amongst other things, at **valence**. So, what do we know empirically about **valence** and whether it plays a role in determining fear responses?

Definition of **valence**:

> *noun. 1. with regard to the field theory of Kurt Lewin, the subjective worth of an occurrence, item, individual or other being in the life space of the person. An entity which draws the person nearer has positive valence, while one which repels the target has negative valence. 2. With regard to particular theories of motivation, the expected gratification of reaching a specific objective or result.*[198] *Valence in psychology is defined as the degree of attraction or aversion that an individual feels toward a specific event or object. People make accurate predictions in general about which side their emotional experiences will fall (positive or negative), especially if they have previous experiences in that area.*[199]

An example that is perhaps even easier to understand: If someone brings you a disturbing bit of information, you may very well feel negatively towards this person, simply because of this disturbing information – the "don't kill the messenger" idea[200]. The process is called **Evaluative Conditioning**[201] and it is responsible for the assignment of the negative **valence** now associated with that messenger. And ... this is something too, that has been investigated in humans and non-humans[202].

What is the difference between **Respondent Conditioning** and **Evaluative Conditioning**?

Hofmann et al (2010) write:

> *...evaluative conditioning (EC), defined as a change in the liking of a stimulus (conditioned stimulus; CS) that results from pairing that stimulus with other positive or negative stimuli (unconditioned stimulus; US).*
>
> ....
>
> *[classical conditioning] concerns the associative learning of predictive relations by which the CS becomes a signal for the upcoming presentation of the US. This type of signal or expectancy learning is hypothesized to be determined by the statistical contingency between the CS and the US. It is assumed to underlie most cases of Pavlovian conditioning ... In referential learning*[203]*, the CS becomes a stimulus that simply activates a mental representation of the US, without creating an expectancy that the US will appear. This is similar to the way that, for instance, reading the name of a beloved one may make one think of a kiss without necessarily expecting a kiss to occur.*

Evaluative Conditioning has been defined by Rozin et al (1998) as:

> *Evaluative conditioning (EC) is usually conceived as a variety of Pavlovian conditioning, in which the unconditioned stimulus (US) is an elicitor of an affective unconditioned response (UR), and the "conditioned response" (CR) is a change in affective response to a conditioned stimulus presented contingently with the US. An alternative description focuses on* ***valence***

198 http://psychologydictionary.org/valence/
199 https://positivepsychologyprogram.com/affective-forecasting/
200 http://www.psych-it.com.au/Psychlopedia/article.asp?id=312
201 http://psychology.wikia.com/wiki/Evaluative_conditioning
202 Pearce 2002, De Houwer (2009)
203 In this case , referential learning meaning the kind of learning that has taken place due to evaluative conditioning.

*and change in **valence**, rather than the more general term "affect."*(**Bold** emphasis L.Cecil)

They also described research findings, that link the efficacy of **Evaluative Conditioning** to **modeling** – see **Social Learning**:

> *Two important recent studies from the Leuven group demonstrate EC in humans with social USs (Baeyens, Kaes, Eelen & Silverans, 1996; Baeyens, Vansteenwegen, DeHouwer, & Crombez, 1996). Apparent enjoyment or displeasure at consumption of a specific beverage was indicated facially (on a video) by a "demonstrator," and caused subjects watching the video to show a corresponding increase or decrease in liking for associated cues (glass shape in one study, flavor of the beverage simultaneously sipped by the observing subject, in the other study). We presume that such socially mediated EC is a major component of the acquisition of preferences....*

There are three distinctive characteristics of **Evaluative Conditioning** as opposed to **Classical Conditioning**[204],:

1) *Lack of awareness of the attitude formation*
2) *The formation includes Social Factors*
3) *The attitudes are stable and resistant to extinction, unlike classically conditioned attitudes.*

How does this work? Very simplistically: If you pair an appetitive stimulus directly with a formerly aversive stimulus, that formerly aversive stimulus begins to take on the appetitive characteristics of the appetitive stimulus. This is different, than if that appetitive stimulus is simply presented or is in the presence of the aversive stimulus[205]. So **CC** may take place if a trainer feeds a dog in the presence of a "dangerous man". As we've seen however, it's not 100% clear if the CER that is established is for the "dangerous man", for his presence, the person giving the dog the food or for the food itself. If however, the "dangerous man" himself is directly associated to the food, i.e. he gives the food to the dog, it's more likely, that the dog will learn to "**like**" that "dangerous man" because of this direct contact and if then the dog likes the formerly "dangerous man", **Evaluative Conditioning** has taken place, the man has acquired a positive **valence**.

In other words – there are more than just the one held belief as to what is going on in "our" procedures, since we cannot even be sure IF a respondent conditioning is taking place or an **Evaluative Conditioning**. What is now clear is, that the old idea, laid to rest by neuroscience, that **Respondent Conditioning** changes, for example, fear to joy, still does not mean, that the subject learns to "like" that trigger. If that happens, that is the product of **Evaluative Conditioning**, through the **US-revaluation effect**[206] first mentioned by Rescorla (1974), NOT respondent conditioning.

This above is interesting to know, like the height of the highest mountain in the Rockies, but does that help us to understand what **valence** is, what it does, where it comes from and what it can effect? Huijding & de Jong (2009) show us what role **valence** plays in conditioning:

> *Contemporary classical conditioning models of phobias (e.g., Davey 1997) conceptualize phobic stimuli (CSs) as a predictor of catastrophic events (USs). From this perspective, exposure can be seen as an intensive attempt to break this (dysfunctional) predictive CS–US Relationship via extinction. Although exposure is generally a very successful strategy for treating phobias (e.g., Ost 1997), it is a common finding that in a subgroup of individuals, fear may return over time (e.g., Mineka et al. 1999).*
>
> *One explanation for this phenomenon may be that even though exposure treatment leads to a significant extinction of predictive CS–US Relationships, the CS remains associated with a negative valence (e.g., Hermans et al. 2002). This suggestion is in line with the clinical observation that even after avoidance behavior has been drastically reduced, spider fearful individuals continue to describe spiders as nasty little animals (Baeyens et al. 1989).*

204 http://psychology.wikia.com/wiki/Evaluative_conditioning
205 Rozin et al (1998)
206 Walther et al (2009)

We have the very real situation, that although a therapy has been behaviorally successful, in that those distance increasing agonistic behaviors have ceased, those participants (and our dogs) still do NOT **like** that previous fear eliciting stimulus. They just are not reacting in the same manner as before the therapy. This of course refutes the claims, that respondent conditioning will change how one feels about a stimulus from fear to joy – or something similar. Humans are verbal creatures and can explain this, but they also show this in terms of still showing disgust[207], for example saying they feel disgust, towards the spiders, but despite that, still being able to approach them. Behavior change – yes, emotional change – not so much.

Colombetti (2005) in her paper tracing the research on **valence** from it's first experiments, identifies several different kinds of **valence**, showing how the theories of **valance**, like those of **Evaluative Conditioning** themselves, have progressed from rather simple ideas to finer and finer delineations. She writes for example of **facial valence**, or the ability of facial expressions to be understood as having **positive** or **negative valences**. These evaluations are based upon a relationship between the visual characteristics of the face and the experiences connected with those expressions. These then establish expectations based upon this information. And we have some pretty good ideas of how capable dogs are of reading our emotions through facial expressions and/or bodily positions – which gives them expectancies of possible behavior[208] – **valence**.

> *For Ben-Ze'ev (2000) positive and negative emotions are elicited by positive and negative evaluations; a positive (negative) evaluation is an evaluation of something as good (bad). Schadenfreude is thus positive because it is elicited by a positive evaluation — that is, an evaluation of someone else's misfortunes as good. Similarly, compassion and sympathy are negative, because they are based on the evaluation of one's condition as bad[209].*

Barrett (2006) writes:

> *Valence is not only a basic property of emotion experience, but it is also a fundamental component of emotional responding. Objective measurements used in the study of emotion, such as peripheral nervous system activation (Bradley & Lang, 2000; Cacioppo, Berntson, Klein, & Poehlmann, 1997, 2000), facial movements (Cacioppo et al., 1997, Cacioppo, Berntson, Larsen, Poehlmann, & Ito, 2000; Messinger, 2002), vocal cues (Bachorowski, 1999), expressive behavior (Cacioppo & Gardner, 1999), and neural activations (Barrett, in press a; Wager, Phan, Liberzon, & Taylor, 2003) all give evidence of valence or its intensity. These measures are consistent with one another in providing a strong empirical basis for concluding that an affect system, with valence at its core, constitutes the most basic building block of emotional life (for a review, see Barrett, in press a; Barrett, in press b). Recent theoretical developments in the emotion literature have synthesized this evidence, to propose the concept of core affect as a viable way to represent this affective system.*

Dour et al (2015) compared an **Exposure Therapy** control group with a second group in an experiment to test if establishing a **positive valance** first towards spiders would improve the resistance to **Return of Fear** after therapy. The control group first watched a film with no references to spiders at all. The **valence** test group first watched a film which showed educational materials about spiders in general and then depicted a spider as being nice and even saving fellow animals from harm. Then both groups simply sat in a room with a tarantula for a number of sessions and then were tested for avoidance behaviors directly after the sessions.

> *We have demonstrated that adjunct positive valence training to exposure can reduce fear of spiders at test of spontaneous recovery and increase behavioral approach towards spiders after an aversive reinstating event. Furthermore, the more positively spiders were rated by the end of exposure, the less fear was reported after the aversive reinstating event in those who received positive valence training.*

207 De Jong et al (2000)
208 Turcsan et al (2015)
209 Colombetti (2005)

We can see above, an abundance of hard science as to the existence and observability of **valence** as a "thing" and not just a concept or theory and can/does have a significant effect upon how one perceives the environment, even to the point of changing those perceptions. And **valence** being neither impossible nor unquantifiable in terms of the types of behaviors we see as an important element of **Evaluative Conditioning**, is something we can deal and work with.

The idea of **likes** and **dislikes** is something all animals and humans do. We evaluate whatever it is we are looking at and experiencing and make judgements as to whether we **like** this or **dislike** it. Even plants are said to **like** shade or direct sunlight – upon what do we base this? Behavior.

But **liking** or **disliking** something does not definitely determine the behavior we show towards it. Although animals will normally move away from sources of great heat, they can be conditioned to remain or not go completely away. In other words, neither **liking** nor **disliking** can be linked to evoking a specific behavior in all cases, because these can be effected by other external forces. Most of the **evaluation** process however does not include a determination as to what behavior is directly attached to that **like** or **dislike**. There can be situations, in which we determine, that we like something, but still do not approach – or visa versa[210]. For example we like chocolate cake, but since we're on a diet, we refrain from eating a piece. The problems for us come, in that there are many instances where that **dislike** can be so intense, that it does couple with the behavior and in an unconscious manner, the retreat or agonistic approach takes place. Or if the **like** is that intense, the approach is carried out.

Martin & Levey (1978) discuss several studies by Razran in the 1930's that showed, that exposure to pleasant things could influence how subjects felt about social topics or even politics after such an exposure. In doing so, Martin & Levey wrote: *it is interesting that he seems to have been the first to suggest that what is involved in classical conditioning is the underlying modification of general affectivity.* Affectivity being the **likes** or **dislikes**. And this is a precursor to the idea of **Evaluative Conditioning**, or a conditioning model to change the basic emotional content of things or an environment, meaning through the establishing of liking that thing or environment or disliking it, without it having directly effected the subject.

> *To quote Osgood and McGuigan (1973, p. 455): "What is important to us now, as it was in the age of the Neanderthal, is the good or bad for us of the things signified by signs. , . ." While it may be argued that individuals differ in their readiness to evaluate the objects and events about them, it is certainly the case that most of us make spontaneous evaluations and base a part of our behavior on them. It is also evident that these evaluations summarize information, asArnold (1970) clearly recognizes in her concept of "affective memory".*

Craske (2014) writes:

> *Furthermore, as with classical conditioning, early mechanistic models of operant theorizing have been replaced by expectancy models, in which conditioning is presumed to result in the formation of representations of the relationships between the response and the outcome. That is, instrumental (operant) learning situations produce expectancies, that certain behaviors will produce particular outcomes (see Kirsch et al, 2004, for a review). As with classical conditioning, there is some evidence that explicit expectancies may even mediate operant conditioning. For example, simply informing participants about response-reinforcement contingencies can produce instrumental learning, just as can information that the contingency is no longer present produce extinction.*

What does this mean for "us"?

To what extent do we consider the environment in which behavior occurs to be a factor in that behavior? What all is included in what we call environment? Sure, we talk about environmental cues, such as the presence of the CS. We talk about using environmental rewards to reinforce

210 Martin & Levey (1978)

desired behavior, meaning not just dishing out treats, but also using what the dog "wants" within that environment, like sniffing a bush, as that reinforcer. But is that it? Hammond (1978) and Dunwoody (2007) describe the ideas of Egon Brunswik[211], that the environment in which a subject lives, plays a central role in the relative psychological make-up and therefore behavior of that specific individual within that specific total environment. The direction of psychology up to that point had been either introspective, dealing with the person from the inside out or dealing with specific stimuli regardless what was surrounding that specific stimulus. In a nutshell, Brunswik said, that you cannot separate the one from the other. The entire contents of the environment[212] in which the subject exists, play a determinant role in how the person then acts and reacts within that environment. This may seem pretty self-evident to us now, but we still don't really take this fully into consideration when applying behavior modification techniques for fear based behaviors. We look at those specific antecedent stimuli. We don't really concern ourselves with the environment in which both stimulus and subject are situated – usually.

Think of how your dog flips out, when he/she sees the agility training field, where all sorts of good stuff is about to happen. That field is now associated with GOOD STUFF – it exudes it's own expectations ... it has a positive **valence** for your dog – he **likes** the field and what happens there. This will still be the case, whether or not an agility trial actually takes place that day. It doesn't change **valance**, when that expectation is not fulfilled that day. And why is it, that we are so against the use of aversive training? The horror stories of anti-snake shock training going wrong. The delivery of a shock takes place next to an athletic field. Now the dog panics, every time she sees an athletic field. Be it Pavlovian Conditioning or **Evaluative Conditioning**, that athletic field forebodes BAD STUFF happening.

Expectation, expected gratification, predictions of emotional experiences, SEEKING[213] and more. No, these are not exactly "things" we can observe, but they are things we can interpret according to those observations. Your dog comes from a recall and sits in front of you on the side of the treat bag. What you observe is the springing gait, relaxed muscle tension, loose slightly open mouth like in a smile (whoops, interpreting again ... we don't DO that), sitting slightly off side with the nose pointing towards the treat bag. What we can infer is the emotional content of all this – the expectation of the forthcoming treat, life is good. Simply because this is an inference doesn't mean it's not happening – it is, after all ... all behavior! It means there is an excellent chance that that expectation is bouncing around inside the dog, SEEKING is in full swing – **positive valence**.

Even if there is no box to check for this on a FA form, does this mean that expectation is not something to consider? **Positive valence**? Trust? Empathy? We're very well in a realm of hard science, although we've been told, that things of "Mind" are no concern of ours. ??? But intangible emotions like fear, that we cannot concretely observe: fear, panic, trepidation, or maybe just **dislike** – how do you know for sure? But we've been told, that these are not things we can observe, quantify. We don't observer these emotions, but do label them according to the specific behavior we see at the time – attributions and guesswork. Science however has been looking at **likes** and **dislikes**, **positive valence** and **negative valence** and has found ways to quantify these, even come up with theories about how these work, what effects what. It's not so intangible, so unobservable after all.

One question we can ask specifically about the emotional **valence** connected with behavior: How can/could we use this concept of **valence** to our advantage when designing behavior change strategies, how could we intentionally use **valance** to help optimize these strategies?

This also poses some other very real questions:

211 http://www.brunswik.org/index.html
212 Brunswik (1943)
213 Panksepp & Biven (2012)

1) Since we know from neuroscience that we cannot actually extinguish fear, can we install alternative behaviors that help the dog cope better, not needing to use the old fear response to gain that distance? How can we use this information? When constructing a setup exposure situation, can we actually make that scary man seem more friendly to the dog, thus exuding a more **positive valence** and be less threatening? The research suggests this.
2) Can we take that to the next step, that the dog may actually start **liking** that formerly fearsome stimulus – if we think the dog could actually **like** that scary man? How can we -know- that this **liking** is actually taking place or if the dog even wants to **like** that man? One reason to consider this option would be, if the dog only **dislikes** some men but does **like** others. What does the dog **like** about those she does? **Evaluative Conditioning** suggests this.
3) Is this even a reasonable target? Does it respect the wishes of a sentient being with **likes** and **dislikes**, something we cannot observe, quantify and therefore should not even concern us in terms of things like **functional assessments** which deal only in observed behavior? If the dog **dislikes** all men, can we accept this and instead train other behaviors that are at least compatible with our human society?
4) What should our actual goals in canine behavior modification be? Is it realistic to expect emotional change? How do we define "success" in behavioral modification? Does "not exhibiting unwanted behavior" fulfill the criteria of "success"? For whom? Society? Client? Dog? We may be able to train more socially acceptable behavior, but with a respondent conditioning, will the dog then **like** that strange man? Or simply learn, that that man is not dangerous? **Liking** would be nice, but "not dangerous" is also very good.

Not all behavior must be learned. We don't like to talk about "innate" behavior, but since we rarely get 100% accurate histories of the dogs we deal with, we do encounter cases, where a dog has no traumatic encounters with so-called objects of fear, yet reacts violently towards them. "For no reason". We may try to explain this as being "genetic pre-disposition" - something that also is not observable and not quantifiable, in other words: guesswork. It may even be true. But it may also be a simple case of "I don't **like** those" and not necessarily "I'm afraid of those". And no dog is thinking: "It's not in my genetic make-up to **like** disgusting dogs." Can we reach the same behavioral goals using the same methods to treat such diverse emotional responses? And to what point do we respect a possible "I don't **like**" carrots? Do we condition the dog to **like** carrots because we want the dog to **like** carrots, no matter what the dog thinks about carrots? Is there a difference between helping a dog deal with fear responses and conditioning the dog to **like** something she simply doesn't? What about that **Force Free** thing? Using psychology to **force** a dog to **like** something or someone?

2.9.3 – Frustration in Non-reward Situations is Aversive

Frustration[214]:

> *The view that frustration, or failure to reach a certain desired goal due to circumstance, often leads to aggression, or behavior which intends harm.*

Wagner (1959) describes the origins of **Frustration Theory** of **Frustration Effect** so:

> *Amsel (1958a) has recently presented a theory of nonreinforcement in appetitional learning situations which ascribes, under certain conditions, active motivational properties to nonreinforcement. In part, the theory maintains that after a response has been reinforced a sufficient number of times to permit the development of anticipatory goal responses, nonreinforcement will elicit a primary motivational condition termed frustration.*
>
> *Support for this position comes largely from a series of studies (Amsel & Hancock, 1957; Amsel & Roussel, 1952; Roussel, 1952) from the Tulane laboratory. The response chain investigated involved rats running from a start box to a goal box where reinforcement was given on a portion of the trials and then running to a second goal box where reinforcement was always given. In each of these studies it was found that after some number of reinforcements in the first goal box, Ss ran faster in the second alley on trials when reinforcement was omitted from the first goal box than on trials when reinforcement was given. This increased vigor of responses following nonreinforcement has been termed the frustration effect (FE) and has been attributed, by Amsel, to the motivational properties of frustration.*

Taken purely as written, this may not be considered so exceedingly aversive or of large concern in the treatment of fear, but before we jump unfounded to this conclusion, let's consider when this **Frustration Effect** may occur. On the other hand, Kaufman and Baron (1968) were able to show, that timeouts that resulted in the loss of expected reinforcement were perceived as aversive. We count on this **Frustration Effect** in a mild form for increased motivational responses[215] centered in the brain's dopamine systems when training operantly and changing from a CFR (1:1 ratio of reinforcement) to any other non-CFR 1:1 ratio, for example 1:2 or more OR when moving to fixed interval, variable interval or variable ratio. In other words after acquisition in which it's 1-reinforcer per successful trial to a so-called thinning out of reinforcers (Staddon and Innis, 1966). But this can also take place (Amsel 1994)

- when in a (free) shaping program, the criteria is raised. The subject has been reinforced each time at criteria A, but then is not reinforced for behavior A when the new criteria is now B. We even speak of extinguishing behavior A so that B can be reinforced when offered (Amsel (1994). And we also very well know of the so-called "extinction burst", which is nothing more than an expression of the frustration experienced, when the old behavior is no longer reinforced, but the subject doesn't yet know what behavior WILL be reinforced.
- In a series of trials in which an incorrect behavior is offered and the expected reinforcer is therefore withheld = negative punishment. It is the expectation of this reinforcer, but delivery of same reinforcer that is frustrating.
- In a similar situation in which neither reinforcer nor punisher is given, in fact no reaction whatsoever is given, what is commonly called "extinction" but since this is the underlying process, one can say, that it's a non-reaction, ignoring the subject.

What all of the above have in common is something a bit outside of classical behaviorism, because it has to do with motivation, with built-up expectations, which in turn are mental agentics, which are not considered in behaviorism, but rather come from cognitive science. Expectations are built up, meaning the delivery of reinforcers. We know from writings on dopamine systems in the brain,

214http://psychcentral.com/encyclopedia/frustration-aggression-hypothesis/
215Sapolsky https://www.youtube.com/watch?v=axrywDP9Ii0

that dopamine is released when the subject recognizes the possibility of receiving reinforcers, BUT (from the subject's perspective) for whatever reason, these reinforcers are not delivers. **Frustration** occurs, the subject tries harder to do what is necessary to get those reinforcers. And we have the core of **Frustration Theory** or **Frustration Effect**.

If, within a certain amount of time, the subject happens onto the solution such, that the required behavior is exhibited and the reinforcer is once again delivered, the frustration subsides. But, if not, we come to a situation, in which that frustration can manifest itself outwardly in aggression.

Amsel (1994) traced the history and development of **Frustration Theory** / **Effect** going as far back as 1928!

> *Both Hull (1952) and Spence (1956) accepted the view that "frustration" (or some other emotional factor) accounts for the incentive contrast effect (Crespi, 1942; Elliott, 1928), a suppression effect that occurs when magnitude of reward is shifted from large to small, but neither provided a detailed account of how frustration might enter into the structure of learning theory. Other researchers had also reported signs of "emotional" upset in animals at the beginning of extinction (e.g., Miller & Stevenson, 1936; Skinner, 1938), but, again, these observations were never formally incorporated into a more general theory of learning.*
>
> *In 1951, I conceptualized the role of frustration, and more specifically anticipatory frustration, as a third factor to be added to Hull's (1943) two-factor theory of inhibition, and I applied it to the Elliott-Crespi incentive contrast effect. This conceptualization was later extended to cover the partial reinforcement extinction effect (PREE), discrimination learning, and a number of other reward- schedule phenomena (Amsel, 1951, 1958, 1962, 1967, 1986; Spence, 1960; Wilson, Weiss, & Arosel, 1955). Mine was an extension of the conditioning model approach to include a theory of frustration.*

While he mentions the work of Dollard et al (1939) on **Frustration Aggression**, he does not dwell on it, because he was more interested in a more pragmatic learning situation type of **frustration** and how **frustration** is used to facilitate that. Dollard et al (1939) posited (Berkowitz 1989), that all human aggression was a result of **frustration**:

> *Aggression is always a consequence of frustration" (p. 1). This statement means, they were quick to note, that (a) "the occurrence of aggressive behavior always presupposes the existence of frustration" and (b) "the existence of frustration always leads to some form of aggression" (Dollard et al., 1939, p. 1).*

But Berkowitz (1989), in examining subsequent research and writings on the subject, comes to another slightly different conclusion:

> *A proposed revision of the 1939 model holds that frustrations generate aggressive inclinations to the degree that they arouse negative affect. Evidence regarding the aggressive consequences of aversive events is reviewed...*

and this does lead into the idea, that in terms of non-rewarding situations, where rewards are expected, these can, as seen above, elicit negative affects, and may even, lead to aggressive behaviors. In other words, Berkowitz is positing, that it's the degree to which something is perceived to be frustrating, that may determine if this frustration leads to aggressive behavior.

As with everything else that has been posited having to do with humans, does this effect animals? There is quite a large body of research examining just this. Haskell et all (2000) examined this in chickens which were denied access to expected food sources. While not tested in pure learning oriented training situations, they did show these frustration aggressive tendencies in situation in which the access to the desired food or water was denied.

Frustration aggression occurring during extinction (withholding of reinforcers) has also been reported in pigs (Arnone, M. & Dantzer, R., 1980; Cherek DR & Pickens R., 1970; Lewis 1999), birds (Duncan, I.J. & Wood-Gush, 1971; Stout et al 2002), mice (de Almeida, Rosa M.M. and Miczek, Klaus A., 2002), rats (Thompson T. & Bloom W., 1966) as well as several other species.

Jakovcevic et al (2013), following initial work by Bentosela et al (2008) tested for type and degree of frustration behavior in dogs during extinction trials with the expected result, that many of the signs we have come to associate with stress such as whining, pawing etc. were shown. Of course since these were extinction trials of relatively harmless behaviors, there was no level reached that would the elicit aggressive responses, but then again, they also were not placing the dogs in fearsome situations and the purpose was not to test the extreme frustrative reactions.

> *Data gathered from other species shows that in addition to the decrease of the instrumental response, extinction produces a general reaction that modifies the animal's behavioral pattern (Bouton & Moody, 2004). For example, in rats, birds, and pigs, after an increase in the levels of locomotor activity, exploration and rearing were observed (Papini, 2003). Aggressive behaviors toward conspecifics and escape responses from the place where downshift/omission of reward took place were also observed. In addition, the emission of odors and ultrasound vocalizations in infant rats and an increase of crying behavior in human babies were reported (Papini, 2003). In animals in captivity and in the laboratory it was also observed that frustration produces an exacerbation of stereotypic behaviors (Latham & Mason, 2010)*
>
> *These behavioral changes reflect an aversive emotional reaction known as frustration (Amsel, 1992). Frustration is operationally defined as the animal's reaction after surprising incentive omissions, that is, the absence or reduction of an appetitive reward in the presence of signals previously paired with a larger incentive (Papini & Dudley, 1997). These reactions would be similar to the fear and stress responses that occur when aversive stimuli are introduced (e.g., Gray, 1987) given that they imply an increase in the cortisol levels and are influenced by anxiolytic pharmacological treatments (Papini, 2003). From an applied point of view, this is especially relevant when it is taken into account that stress has widely been associated with changes in learning abilities (e.g., McEwen & Sapolsky, 1995).*
>
> *....*
>
> *From an applied point of view, it is important to consider that in the initial phase of an extinction procedure these frustration behaviors can occur. Having these indicators in mind can help trainers make the appropriate decisions about whether to continue or to interrupt training. Finally, if it is taken into consid- eration that frustration is stressful, welfare should be improved by reducing its occurrence.*

This last paragraph above is one of particular interest and importance to this work with fearful dogs. As we've seen, the work we do dealing with such dogs is based upon three psychological underlying processes:

1) **habituation** to the fearsome stimulus
2) **extinction** of previous reinforced but now unwanted behaviors and
3) **expectancy violation**

The potential aversiveness of non-reward situations as part of this extinction process must be taken into consideration and there are several ways this can be accomplished while, at the same time recognizing and accounting for, that the coping mechanisms necessary, for example **resiliency**, later need to be developed. This is indeed a tricky balance to strike and will be addressed further in the practical part of this book.

At the beginning of the chapter, I listed a couple of situations in which non-reward frustration can appear. These are situations that were covered in research articles and I then proceeded in discussing them. **Frustration** in terms of non-reward situations can however take other forms and these also -can- lead to unwanted behavioral results, but there is very little in the "literature" looking at them, because they are more dog related than directly human related. And they do not necessarily have to do directly, but only indirectly with the main topic of the book: so-called fear and fear aggression.

The -problem- comes in thinking about where in the book to places the next ideas. These are not procedural techniques, so they don't really belong in the practical part. If at all, they are more

variations of topics already discuss, but not pure in terms of the investigative science, so I apologize for simply sticking them in here.

Frustration can play a role also in fear inducing situations. But because it's NOT fear itself it may not be readily recognized as **frustration**. Imagine if you will, a fearful dog, who is afraid of other dogs. Not all fearful dogs are only fearful. Many are curious, but inexperienced with other dogs due to their behavioral history. When doing a Functional Assessment, you often see, when using a stuffed animal, a very slow and testing approach towards the stuffed animal. This is an indication of, in terms of Panksepp[216], a switching back and forth between SEEKING affects (curiosity) and FEAR affects. Not uncommon and not unknown in terms of the assessment. **Frustration** can enter such a situation when this dog, at a later point in the working-sessions is trained with an alternative behavior BUT is still firmly in this SEEKING affective behavior. The SEEKING is still vastly of a higher intensity than FEAR. You may be able to tell this with some whining, pulling on the leash towards the helping dog/person/object. What -can- then happen is similar to what "we" label (tsk, tsk) "leash reactivity", with agonistic redirecting towards the leash or the caretaker. This is not just fear-based agonistic or aggressive behavior, but rather **frustration** induced behavior. It's not distance increasing behavior, but rather distance decreasing behavior ... but it's also VERY unstable because as the dog gets closer to the trigger, this can switch as the affect switches from SEEKING to FEAR.

Frustration is usually also combined with some kind of higher intensity of arousal. The higher the **frustration** level, the higher the arousal. Arousal connected to the level of intensity of the activity itself. Low keyed activities don't generally produce high levels of arousal. Frenetic activities and are more likely to. When, in close quarters with another dog, and the learner "suddenly" snaps at the helper, the common observation is that "it happened so fast...", but it's my opinion, that what happened so fast is a possible switch between SEEKING and FEAR or within a SEEKING affect, the denial of access to the helper in the manner that the learner desires. There are, in my opinion, a couple things one can do to avoid such undesired encounters:

1) Train slowly, building up the **resilience** to the fearsome stimulus, allowing the dog to habituate to the trigger and the circumstance.
2) Introduce a thoroughly positive rewarding retreat from such a stimulus and taking point number one above into account, only progress closer towards the stimulus when the subject can totally voluntarily and seemingly in anticipation of the awaiting reward, turn away from the stimulus, finding the promised reward more rewarding than the encounter with the other dog.
3) This retreat signal can be both visual and aural in nature and it's probably a good idea to have both. Aural to get the dog's attention and visual to rely on the positive valence created by that signal – promising really good stuff.
4) When working with such dogs, I try to set up situations, especially when using operant procedures, in which ONLY POSITIVE RESULTS ARE POSSIBLE. Why? Because as we've seen, non-rewarding situations, especially within operant conditions can themselves induce aggressive reactions due to frustration. We don't need both frustration caused aggression AND fear-aggression switching back and forth. I'll look more closely in Part 2 of the book, how to actually do this, but think "Set your dog up for success" which is even more crucial, because we really want to avoid any situations in which -P or non-reward as a consequence is even possible.

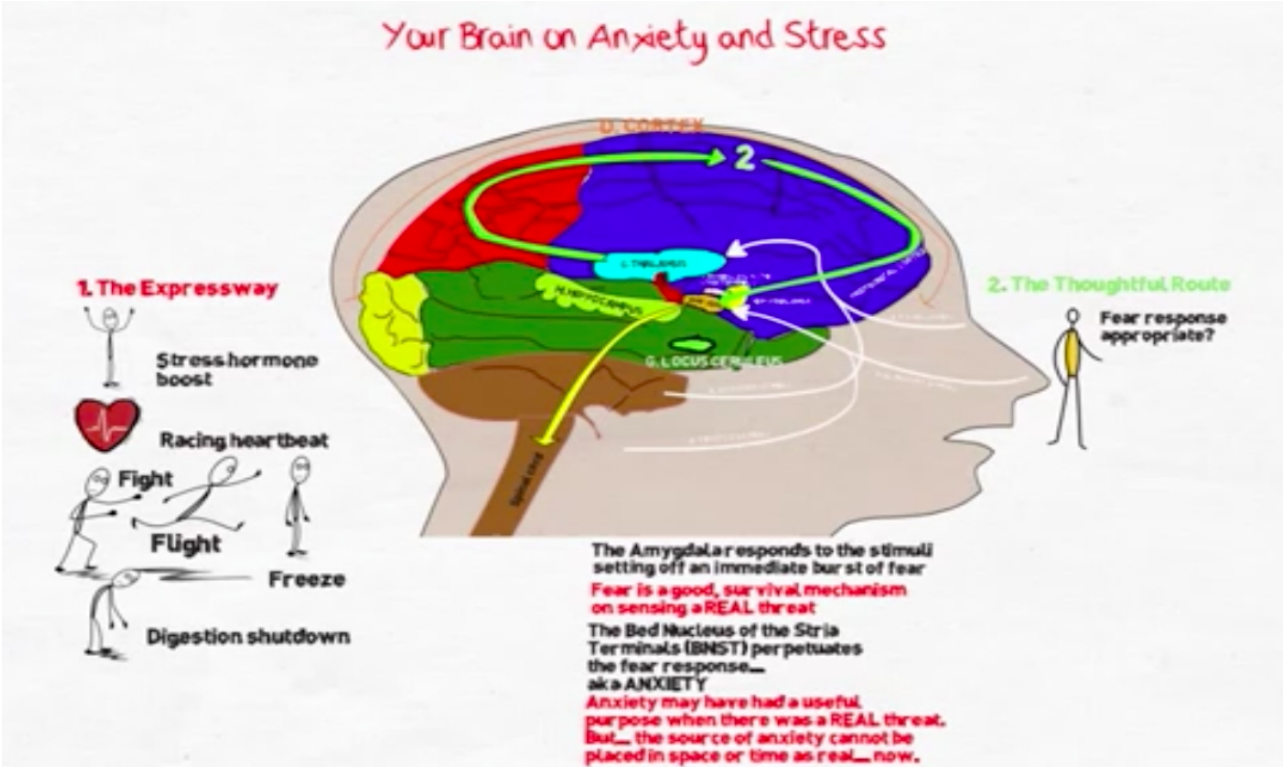
216 Panksepp & Biven (2012)

2.10 - The Brain and Fear System / Structures

You're probably going to ask, why I'm taking the time to discuss what's happening in the brain when the emotion of fear is going on. Good question. Many of us use labels to describe types of behaviors or even behaviors themselves. Like, the dog is afraid, or the dog is reactive, or the dog is shy or the dog is ... (fill in the blank). Labels are handy, they make things more understandable for clients. The danger therein lays, in that the labels often don't have much to do with what is actually going on, either what we can see, or what's going on under the hood.

The subject itself is MUCH too complicated to simply handle here in a few sentences. I'll first discuss what structures of the brain come into play. The "why this" has to do with determining later if we "science based" dog trainers and behavior consultants are really so science based. You have a couple of possible ways of covering this:

1) I'll present a VERY compressed description of an even shorter YouTube video by Dr. John Kenworthy[217], which explains this very concisely – up to a certain point. He covers stimulus input into the brain, internal fear reactions, how responses are decided upon. It's usually these responses, called "behaviors" that we label or get called upon as consultants to deal with.
2) You can watch a great lecture by Dr. Kerry Ressler[218] on the brain and fear/stress responses
3) You can watch a terrific-er lecture on the emotional brain by Dr. Joseph LeDoux[219], where he talks not only about this structure in the brain, but his (and others') findings concerning the efficacy of respondent and operant fear reduction techniques.
4) One of my favorites, Dr. Robert Sapolsky[220] on stress. His explanation on what happens in terms of hormones during a stress response is very clear and, in his own unique, entertaining way.
5) Or all of the above.



217 https://www.youtube.com/watch?v=gmwiJ6ghLIM
218 https://www.youtube.com/watch?v=a9LjXHtLvlY
219 https://www.youtube.com/watch?v=9_IIgXWdF-w
220 https://www.youtube.com/watch?v=eYG0ZuTv5rs

This brain graphic above, a screen-shot from Dr. Kenworthy's video[221], shows the pathway of stimuli into the brain, where they go, how they are acted upon, sorted and stored and behaviors done and committed to which kind of memory. Below I will list the pathway.

1) Visual and audio stimuli are first received by the Thalamus (pale blue) and the information is sent immediately to the Amygdala (orange below Thalamus in the purple). Smell and touch go directly to the Amygdala.
2) Any stimuli perceived to be a threat are then immediately processed by the Amygdala which triggers the classical internal fear responses and **this happens before you actually feel the emotion of fear**.
3) The Hippothalamus and the pituitary glands signal the adrenal glands, which send out cortisol, (also glucocorticoids and epinephrine are released. L.Cecil) which shut OFF all bodily functions not necessary for immediate survival tactics, like reproduction, digestion, growth, cooling. They also increase heart beat, breathing, send glucose reserves to necessary muscles in the legs, arms and senses to be on alert.
4) The first reaction is actually to freeze, even if only shortly. This moment can be VERY short, what we call a split-second reaction, like jumping back from a bus whizzing by. The physical sensations actually come after such an emergency reaction. Only then is your brain ready to let you feel the emotion itself.
5) "*Only after the fear response has been activated, does the conscious mind kick in*". The cortex then decides, what further action is necessary. If it determines, that the threat is real, it signals the Amygdala to remain vigilant, to continue the fear response.
6) Dr. Kenworthy then states "Fear is a good, useful response, essential to survival. However, anxiety is a fear of something that cannot be located in space and time."

Now, do me a favor. Read point 6) again and think about that **Systematic Desensitization** and **Counterconditioning**. That object of fear, even if no stress is obviously being shown, IS triggering that entire massive physiological **fear response**. This is NOT only theoretical. This has been measured in animal and human subjects showing no outwardly physical signs[222]. Heart beat, pulse strength, skin temperature, all analog to the above mentioned signs of the fear response. Something to think about.

Needless to say, this is a VERY abbreviated version of what is going on and only entailing the contact with a fearsome stimulus. It's much more complicated than that. And it goes further into consolidation of fear memories, reconsolidation of fear memories and more, all discussed in the videos mentioned above as well as several review papers, for example Craske (2008, 2013, 2014) as well as Dunsmoore et al (2015).

Joseph LeDoux goes further and says

> *But the correlation between bodily responses and feelings is weak at best, and emotional stimuli can elicit bodily responses without being aware of the stimulus and in the absence of a feeling. Hypothesis: The brain mechanisms that underlie feelings and bodily responses are distinct. They interact indirectly but are separate.*[223]

So we have a time delay between:

1) Seeing a potential danger.
2) Analyzing it and preparing for the eventuality of fight, flight or continuing to freeze.
3) Deciding as to whether to execute the original fear response or whatever newly learned response.
4) Feeling emotion if it is actually then necessary and correlates to the chosen behavioral path.

221 https://www.youtube.com/watch?v=gmwiJ6ghLIM
222 Craske (video 2014)
223 https://www.youtube.com/watch?v=tjhCPhhzBqQ

Orienting Response

When we think of our dogs' reactions upon noticing a potential danger, as explained above, there is an instant in which they appear to become fixated, even if for only a second, but up to several sometimes seemingly very, very long seconds, upon that possible danger. This is called the **Orienting Response** or **Orienting Reflex** and was first described by Russian physiologist Ivan Sechenov in his 1863 book *Reflexes of the Brain*[224]. Pavlov then gave it the name "What Is It?". Sokolov (1963) wrote that **Orienting Response** has two important characteristics:

1) it occurs in the presence of unfamiliar stimuli
2) it decreases in novelty (**Habituation**) with time and repeated attention

What this means is, that the animal or person will perceive an unfamiliar stimulus and will look at it, gathering relevant information for as long as that stimulus remains interesting and/or that information is deemed necessary. The more often the subject examines this stimulus, the more information the subject will digest, the less interesting it becomes, i.e. the subject **habituates** to that stimulus. The process may take place naturally in the context of the environment without external cue or may be introduced by a third party[225], in this case by a caretaker or a trainer. When occurring naturally, it's function is to "protect" against a **startle effect** due to this information gathering. Since the beginnings of the investigations into **Orienting Response**, scientists have moved on from establishing it's existence and are now looking into the neurological workings in the brain[226] using mostly animal subjects.

224 https://en.wikipedia.org/wiki/Orienting_response
225 Waters et al (1973), Buzsaki (1982), http://www.indiana.edu/~p1013447/dictionary/habituation.htm
226 Sokolov (1990)

2.11 – Summary: Theory Section

Normally, if there were to be a summary, it be at the absolute end of a paper. But this is actually 2 papers in one, in book length. The first part is to present "the science" upon which we say we base our behavior modification as well as some "new" (for us) ideas and some extraneous thoughts, which are also evidence based. The second part, which is following this part, will deal with the possible practical applications of these evidence based procedures and philosophical thoughts.

So in order to save some time I'll summarize what I've shown in the previous sections:

1) **Systematic Desensitization** as a process is no longer done today as Wolpe originally conceived it in 1958. One reason is, that research has shown, that no particular procedural element of a **SD** is any more important or necessary than any other. In fact, one can leave every individual component out and can simply expose the client to the CS and with time, the client will "get better" - if he/she does. Some people will "get better" and some will not. Or some will "get better", but it also may not "stick" (**Return of Fear**). Another reason why **SD** is done differently today being, after individually examining all the possible underlying processes that could be responsible for **SD** working, there was no conclusive evidence for any one of them. So, we have a new **SD** aligned with **CBT/Exposure Therapy** which takes the research of the last 6 decades and what it has empirically shown into consideration. It now is done quite differently than Wolpe proposed and differently than we "do" it.
2) **Counterconditioning** has also been deconstructed as a procedure with the same results as with **SD**. Even the process of **CC** has been tested, mostly as being an underlying process of **SD** and it's NOT been found to be THE underlying **process** responsible for behavior change that occurs, when it does. It's gone so far, that today, **Counterconditioning** has taken on a more generic meaning – as many as 5 different main meanings - as we've seen. The "how" has therefore become immaterial.
3) **SD&CC** has not been empirically tested, because during the time in which one still considered **SD** and **CC** to be viable procedures on their own, they were (by many) considered to function based upon different underlying processes with differing respondent procedural components and different levels of perceived anxiety during those procedures. So there was no reason to even considering mashing them together. Also, two of the variations listed above are simply not prevalent in human psychology literature, so that this was not taken into consideration when researching the one or the other. Existing references to this **SD&CC** procedure in the literature, mostly veterinary behavior studies and texts, have turned out to be either personal opinions as to how "this procedure" should be done, misinterpretations, misunderstandings or at worst, misrepresentations of actual theories and studies – and only clinical reports, no peer reviewed studies using control groups. And therefore there is no research showing which, if any, specific procedure amongst the many different ones described as **SD&CC** is any more or less effective than any other.
   Simply naming something **SD&CC** doesn't mean that it actually exists = Nominal Fallacy[227]. It is also a Bandwagon Fallacy[228], i.e. just because it's general opinion, doesn't make it so. It is not the sum of it's parts because neither of the parts are as done today in non-human therapies and/or what it's supposed to be, has been in any way standardized outside of certain animal peoples' world. Even when supposedly used, there is no "**S**tandard **O**perating **P**rocedure" for doing it, as shown by the cited references above.
4) The processes of **Reciprocal Inhibition**, **Counterconditioning**, **Habituation**, **Extinction** have all been individually examined as possible individual underlying processes for behavior change of fear responses and all have been shown NOT to be individually

227 http://kspope.com/fallacies/fallacies.php
228 http://grammar.about.com/od/ab/g/bandwagonterm.htm

responsible for behavior change when it takes place. (See point 1 above.) The current state of research since the 1990's, which means combinations of behavioral, cognitive and neuroscience theories, has however reached a general consensus, that a combination of **Habituation** together with **Extinction / Expectancy Violation** as the processes necessary to be addressed, in order for behavior change of fear responses to effectively occur.

5) None of the existing psychological techniques for treatment, neither of behavioral nor introspective, verbal oriented types, of fear, anxiety or phobias are globally any more effective than any others. Some may show more effectiveness for one specific problem, but then are less effective for others. The only exception to all of this is the **Relationship** between therapist and client, which has been empirically shown in behavioral and cognitive oriented therapies to be the most important aspect. In the verbally oriented introspective therapies, the **Relationship** between therapist and client has always been held to be a key aspect, although they can show no empirical evidence within their specialty for this.
6) Besides the techniques known to "us" already, techniques from **Social Learning** as well as some "other" techniques have been shown to be every bit as effective or more so than our old friends **SD** or **CC**. Some of these contain also completely different learning theories with a strong empirical basis, as has also been shown in the preceding sections.

NO EXISTING LEARNING THEORY EXPLAINS ALL LEARNING OR ALL BEHAVIOR.

That being the case, no learning theory has exclusive rights to a claim as being the only applicable one for behavior change.

In any case, every single technique I presented in the previous sections, with the exception of the animal behaviorists' various versions of **SD&CC**, as done today, has a strong basis of evidence for effectiveness. And because they all operate on the same underlying principles of **Habituation** as well as **Extinction** / **Expectancy Violation**, they are, for the most part, even freely combinable with each others and this has also been shown! The "what", "how", "when" and "why" comes next.

3 – Part 2: Practical Application of *G*raduated *E*xposure *T*echniques for Dogs[229] ... or GET

Before I start to explain **GET**'s different exercises, where they came from and what they're good for, I'd like to ask, that those who've skipped the theory part[230] understand, that all of these procedures are directly from or have been slightly adapted from procedures, which are used today in varying human therapies for fear, anxiety and/or phobias. There is no problem with this, inasmuch as our good old **SD** and our **CC** also originally came to us from this source.

As I wrote in the theory part, the general consensus, which does NOT have to be 100% (and never is) is, that in modern **CBT/Exposure Therapies**, which are now the new homes for what has become of our old procedures, the procedures are based upon a combination of the following underlying processes:

> **Extinction**: the old undesired behavior(s) is(are) not called up and therefore not reinforced, although the client(dog) is in a similar situation as before therapy, because ... as opposed to old-style **Extinction**, if the client(dog) or the therapist(caretaker) over-estimates the client's(dog's) abilities to cope, they simply retreat to a lower level intensity and apply a "reboot". Count on this happening, be grateful if it doesn't.
>
> **Cognition**: through various cognitive procedures, the client(dog) is made aware, that while his fears are very real, his worst expectations of what will happen when confronted with his object(s) of fear however, are not realized. The cognitive principle of **Expectancy Violation**, which is directly tied into **Extinction** above is in play with this realization. Important additional influences one can attach to this part of the trio are: **Relationship**, **Internal Locus of Control**/**Self-Efficacy**/**Empowerment**, **positive valence**, SEEKING-FEAR balance[231], aspects of **Social Learning** and other learning theories where applicable, such as **Internal Locus of Control and Self-Efficacy.**
>
> **Habituation**: the client(dog) stays at one level of felt anxiety, although this level of anxiety is controllable, until he/she decides to move on to the next, because it has become better tolerable. We employ a specific technique to be described later that facilitates the **Orienting Response** we mentioned earlier. There is no force applied, just support (cognition), praise, anything to increase the clients well-being, **Relationship** between client and therapist. Retreat is always one of the client's(dog's) options and is trained as such.Most of the techniques, and this will be individually identified, are also **Relationship** dependent (caretaker/dog) and thus depend upon the strengthening of the components having to do with **Social Referencing**, **Attachment Theory/Secure Base Effect.**

Generalization is still a part of these procedures, and this generalization is also based upon all three of the above. All of the coming techniques, both new and old rely upon these processes above to be effective and make them therefore completely compatible with each other!

Many of the finer points of the techniques have more to do with building and relying on the good **Relationship** than only helping accomplish specific goals. As science has shown (see Part 1 of this book) **Relationship** is not only the central point, but also the critical point in dealing with fear and fear responses. Many of the preparation exercise are not only necessary technical moves, they are also **Relationship** building, teach the caretaker to take on a new role of protector, "isle of safety", not just disciplinarian. This is not a "nice to have" to gloss over, it's of critical importance and the entire results depend up it being well learned and implemented by the caretaker! I will insert here,

229 **Integrative Canine Fear Toolbox**, or **ICFT** is not something that, in terms of marketing, just rolls off your tongue. So I'll stick with **GET**.

230 Part 1 of this book

231 Panksepp & Biven (2012)

that that **Relationship** does not center around the quality of treats you give your dog. Treats can kick-start the rebuilding process. But **Relationship** means giving completely to your dog, that which expresses your joy, love, safety and support you offer. We are NOT doing clicker training here. We are NOT aiming for highest ratios of reinforcement. While food is nice, we humans express those qualities just listed most using our voices, which unconsciously steer our honest facial expression and body movements and gestures. Speaking in a high pitched voice, words of comfort, praise, support will convey so much more than secondary or primary reinforcers. They will convey the feeling, that "Not only have you done a great job, you are a great dog and you can do this thing." So, use your voice, give chin scratches, butt rubs and rejoice in your dog – she will feel so much better for it and she needs that to deal with her fear issues, much more than bits of chicken or hard cheese. So if there is any question, if this is empirically shown to be that important, please review the sections in the Theory Part of this book.

Once the **Relationship** has been repaired – for in many case due to the problems presented by the dog, the caretaker may have damaged the trust involved in such a **Relationship**, due to suppressive punishments having been used to stop unwanted behavior – we come to a not-just philosophical point. How to **empower** the dog to make good choices with which he/she can determine the outcomes of contacts with his/her object of fear. But **Empowerment** is not something that just happens. The dog must be made aware of the fact, that there are other choices that can be made and that make these "new" choices are not only rewarding (in the **Social Learning** sense of the word, not the Radical Behaviorism sense of the word – see Part 1 of this book) from the caretaker, but also from the situation itself. Less danger, less stress, more safety with the caretaker and yet if he/she wants, exploration of that old object of fear as much or as little as he/she wants, without pressure to do so from the caretaker.

This is a central point to the implementation of the following exercises. The dog is NOT obligated to engage with the object of fear. Retreat AND Disengagement are reinforced in various ways. And the caretaker learns the more subtile signals sent, both towards the object of fear and towards the caretaker situationally as to the dog's wants and needs. This differs substantially from traditional exposure methods, where the dog's desires are fairly well either ignored or do not figure into the train, inasmuch as the dog simply MUST stay and engage with the trigger as long as the caretaker/trainer determines is necessary. This **Empowerment** through the choice to engage or disengage is central to the graduated approach steps outlined in most of the exercise. This is often first introduced either totally without the trigger, with proxies for the trigger or with the trigger at such a distance, that the dog can afford to ignore it. And then then, once this control over the options of "engage or disengage = **Empowerment**" are learned, begins the graduated intensity hierarchy, over which the dog … has that control. In this manner, **Empowerment** is not only a method to implement, it is a result of training using all the afore mentioned elements AND makes up a basic observable behavior change towards the trigger.

Since most of these techniques we'll be looking at come from other areas of learning than Behaviorism, which do not now and never have concerned themselves with quadrants, and if at all only even mention if something is rewarding or not (they often do not make a distinction between "reinforcing" and "rewarding"), I will also not attempt to do a quadrant analysis. Doing so with procedures that were never intended to be so analyzed, would be like trying to apply aerodynamic flight design principles to a submarine. You could do it, even explain how that submarine could theoretically fly, but ... why?

Before we start, I just want to list some of the techniques and ideas that I covered in the theoretical part, because they will be reappearing here. The intention is **not** to set up a competing commercial canine behavior protocol, but rather extend the existing techniques with truly evidence based techniques and ideas on how to use them. **G**raduated **E**xposure **T**echniques (**GET**) are just that...several possible additions to your tool box if you think they might be of benefit:

1) **Reinforced Practice (RP)**
2) **modeling** of different types
3) Graduated Exposure Training (from **Exposure Therapy**) as a concept

Each of these can benefit from some of the "intangible ideas or things" from the previous pages:

1) dog's co-operation and respect for his/her **likes**, **dislikes**, **desires and needs**
2) **valence**
3) **Relationship**

The techniques in **GET** could be used by themselves, by adding existing ones to **GET** techniques or **GET** techniques to existing ones, as long as the existing techniques **do not use pain or fear of pain inducing tools**. Pain inducing tools would include, but not only, shock collars, prong collars, choke collars, any correctional device that is used to inflict pain or cause fear contingent upon the performance of the targeted behavior. No intimidation, physical or psychological force. I only use or recommend such devices and techniques which are compatible to my person moral stance and ethics in training, which is not pre-determined by anyone else's graphs, charts, memes or lists. It consists centrally of **Do No Harm,** the driving measure is the dog's cooperation.

I am not going to offer a behavioral analysis of each already existing protocol out there. Even if I did, the authors would probably contest my findings – some of them on principle alone. Therefore, there are a couple approaches you could use:

1) Use mostly **GET** techniques according to recommendations and add in other elements from other protocols as you wish. This means somewhere between none to however many you find helpful in using **GET**. Mix and match as you wish. Please be aware, that **GET** techniques were taken from techniques used with humans, tested often with animals as well as humans, but with the goal of the client(dog) learning to tolerate and cope with fear, not to eradicate it. We normally can't eradicate fear as science has shown us, but also, that some fear of potentially dangerous situations and things is simply healthy to ensure survival, as has also been cited earlier in this book.
2) Use mostly your favorite protocol(s) as you already do and add in **GET** techniques as you find beneficial. Mix and match as you wish.
3) Use only **GET**, although I wouldn't necessarily recommend this. There are plenty of very good products out there that contain very good techniques that are compatible with **GET**. Some bits and pieces are already in **GET**.

Since **Graduated Exposure Techniques (GET)** all go through various hierarchal levels of intensity, they can not only be used as management tools, but these management tools can then be further used to turn a management situation into a training session on-the-fly and this is very effective, **as long as all are safe**. The behavior modification goals themselves may be graduated, and it may even make more organizational sense to formulate these, for example dog-human fear:

> **Goal 1 – primary school**: to be able to notice and implement non-agonistic avoidance strategies before Rover reacts agonistically to the trigger. These might be crossing the streets, retreating behind a car. Rover not finding it necessary to make his own distance.
>
> **Goal 2 – middle school**: to be able to, with minimum avoidance strategies, such as to move 2 steps onto an adjacent lawn, allow approaching people to pass OR to pass people on a wide sidewalk, without Rover demanding more room.
>
> **Goal 3 – high school**: to be able to walk between individuals or groups of people with no contact directed from the people towards Rover.
>
> **Goal 4 – Junior College**: directed meets-greets between Rover and people, watching for any signs of "I'd rather not..."

Goal 5 – PhD: free interaction between Rover and people, knowing he can and will retreat if and when he desires.

Of course, there are many, many finer levels one could reach, this should be something the client(caretaker), client(dog) and the consultant reach together. There is nothing wrong with going at it one level at a time, seeing if this is as far as is practical and stopping there as "Mission Accomplished". Not all dogs want to meet other dogs or other people. In my opinion, this is something we need to recognize and accept. To not accept this and work such a dog until she gives in, is not behavior modification any more than if your partner committed you to a state institution and you could only be released after learning to like Country Music, NASCAR, Mexican food and deer hunting ... and your mother-in-law. It's not respectful of the needs and desires of Rover and is bound to fail.

One sees, that the level of intensity is increased step-by-step, as is the amount of **Empowerment** allotted to and exercised by Rover. What one doesn't see is, that it is just this **Empowerment** of Rover, that is always considered. Rover showing the old, undesired behavior or simply NOT engaging is his way of WITHDRAWING his consent for "therapy". Since he cannot GIVE "informed consent", we only have his continued "consent" to work with him and he will always have the veto-right, just as much as he gradually learns, that "retreat is always an option".

Rover determines if and when and how much stress, arousal, discomfort is present, whether to participate or not. And, don't kid yourself. ALL behavior modification techniques are dependent upon Rover tolerating, coping with a certain level of stress, arousal, discomfort and stress are, in one way or another, provided to Rover by the trainer and caretaker.

3.1 – Functional Assessment

I'm not going to take the time to explain what a **Functional Assessment** is – anyone reading this is interested in doing what one calls canine behavior modification should already know what that is. If you don't already know what a **Functional Assessment** is, here is a good example: http://www.behaviorworks.org/files/articles/Functional%20Assessment.pdf If you are interested in delving deeper into the reasons for and techniques of doing good Functional Assessments, please check out the great book by Cipani & Shock (2011).

Because we're going to want to look much more carefully at the **Relationship** between caretaker and dog, we'll need to consider some key questions. I think, besides observing the undesired behavior and analyzing the ABC contingency, it will be necessary to observe how the caretaker interacts with the dog and visa versa, before the first inkling of the trigger, through the contact with it. Does Rover try to communicate with the caretaker? Does the caretaker notice this? If yes, how does the caretaker react to this communication attempt? How does the caretaker behave during the approach behaviors and during the undesired behaviors? How do the two behave with each other after the incidence is over? In other non-related contexts, how do the two spontaneously act with other? Is there a real communication of desires and needs in both directions? The list of questions one could ask concerning the caretaker-dog **Relationship** is endless. I'd suggest using these as a starting point and expanding them with further questions that would be of a help to you to determine the nature of their basic **Relationship** with each other.

I prefer having the client fill out an informational questionnaire before the observational session. The answers give me a point of reference for my own questions and I believe, just filling out the questionnaire allows the client to reflect upon his/her **Relationship** with Rover and where they stand in this respect. This -may- help later with some of the salesmanship we might need to try to move the client to work on this aspect. And coupling this with a video recording of the entire baseline trial can be very informative, also for the client. "See here, your dog saw the trigger way up ahead and without breaking stride, looked up at you. Did you notice this? Why do you think Rover was doing this?" Of COURSE this is conjecture on everyone's part. On the other hand, this too is observable behavior. It had it's own ABC contingency if you wish to look at it that way. The question would be: did this behavior's consequences fulfill the purpose of the behavior? If the caretaker had reversed course at that point, would Rover still have shown agonistic behaviors? These are valid questions. And in the end they may have to do with a trusting **Relationship** that may need some optimizing.

One of the important parts of a **FA** as a total process is to establish the clients behavioral goals for Rover. It's my job to evaluate these goals while keeping the results of the **FA** in mind. Some goals the clients come up with simply are not realistic: "I just want a normal dog." If your child had cerebral palsy, would you go to a doctor with that wish: "I just want a normal child."? Your child is normal for your child with cerebral palsy. It's YOUR behavior and expectations we need to work on. It's not much different with a dog. "Sorry, you now have a special needs dog. What can we do about that?" is, in my opinion a much more realistic answer with a rational related question.

Just as when we're designing a **GET** modification plan, we should establish a hierarchy of possible behavioral goals. What can we realistically expect to reach? See the example above.

When is using an **Exposure Therapy** called for? Or put another way, when should one NOT use an **Exposure Therapy**? Farmer & Chapman (2008) write:

> *Similarly, if a client is afraid of cobras or other venomous snakes, life-threatening situations, or engaging in behaviors that are likely to produce feared consequences (e.g., hugging a grizzly bear), exposure is not advisable.*

Ok, we're not expecting our dogs to hug grizzly bears. But the fact remains, not all humans, not all dogs are safe. They can act violently towards that client dog. Trucks are NOT completely safe. So there are safety considerations involved when we apply a technique to our canine clients. As already quoted from King et al (1990): *Of course, attempts are not made to completely eradicate fear using exposure-based procedures, so much as to help the child learn to discriminate between threatening and non-threatening stimuli. A child who has a dog phobia, for example, should retain a 'healthy respect' for savage or unknown dogs following treatment.* (*Emphasis* L.Cecil)

When we consider the potential to eradicate fear, we should really consider the fact, that if we should even try to do so, we may not only be putting our canine clients at risk of being mauled by unfriendly dogs, but also creating a more serious problem if this happens, that that dog will probably not respond to future attempts of fear reduction, because ... Rover was justified in his/her fears. In my opinion, a fear reduction therapy must either contain social contact exercises OR the end-target behavior should NOT be social contact at all, but rather the ability to avoid all contact with other dogs. Doing the one without the other is a potential recipe for disaster.

3.2 – Preparations ... and that Relationship Thing, the Whats & How(s)

In terms of relative importance, as shown in the human literature, when dealing with fear issues, or for that matter, dealing generally with our dogs, one of the biggest, most potent tools we have is the **Relationship**, the trust, that we as our dogs' advocates, will not let anything bad happen (if at all possible). **Do No Harm**. So everything we do with our dogs has at least as a secondary motive, the deepening of that **Relationship** as a goal. In fact, in "discussions" about the uses of aversive tools such as shock collar, prong collars or chokers, we name this **Relationship** and trust as one reason why we do not use these, as they injure or destroy that trust. This is something intangible, not in inches, pounds or speed measurable, but as real as a hard stare, a slinky approach or loosely wagging tail and actually, as we've seen, evidence based.

One of the greatest "tools" for helping to establish or re-establish a good **Relationship** with the caretaker is to teach something to both, which they can both pretty much instantly learn to do perfectly and can be of service later in multiple settings/contexts. And once we have this established, we have the basis for a positive **valence**, that will stick to the caretaker, as long as otherwise only good things come from that caretaker, and allows us to show the power and ease of positive reinforcement: the **hand-touch**, which is discussed later.

There are many small, seemingly inconsequential exercises one should do to bolster **Relationship** in addition to the **hand-touch**. But before discussing any more of these let me discuss the difference between reward/reinforcer and treat, since this is central to the idea of establishing that great **Relationship**, that science has shown to be so important.

Jennifer Arnold (2016) proposes "we" **treat** more and **reward/reinforce** less.

1) **Reward/reinforcer** (depending upon which -ology you subscribe to) are contingently based upon successful completion of some kind of task. Do it right, get your reward/reinforcer. These consist of anything the dog likes, such as food, attention, chin scratches, butt rubs, etc.
   Also to be aware of: if the dog doesn't offer the required behavior, when working with reinforcement, you are then obliged to **punish** in some manner (see ethical stand). Punishment by definition must be aversive enough to decrease the occurrence (or likelihood of occurrence, depending on how you describe it, which is in accordance to the -ology used). This will not be conducive to that all important upgrading of **Relationship** we're striving for.
2) **Treats**, are non-contingently given, do not depend upon any success of a given task. These consist of anything the dog likes, such as food, attention, chin scratches, butt rubs, etc. This does not mean however, as we'll see, that **treats** have no place within a "training plan". They simply are used differently than a **reward/reinforcer**.

Ms. Arnold states, that **rewards** for good behavior do not necessarily deepen the **Relationship**, as we've been told. But non-contingency based **treats** just for being a great dog, or simply fun activities we do with the dog ... in general do. With these non-contingent **treats** and activities we can do with the dog, we're back to the topic of **Evaluative Conditioning**. The scary person's value in the dog's eyes goes up when simply throwing him treat because no bad, scary people give food. But food could still be the focus of the dog, not the person throwing it - not as much as that could be. But if the person throwing it also verbally encourages the dog while the dog is getting that food, when the dog is coming back looking for more, that person can better become the focus of the dog's attention together with the food that later comes. The chances of **Evaluative Conditioning** then taking place, that the dog may "change her mind" about that scary person has just grown larger. And the dog is also learning that he/she controls the environment (**Internal Locus of Control**). And this applies as much to the caretaker as it does to objects of fear.

The above also means, that clients often need to be made aware of what is punishing and therefore might set this **Relationship** in doubt from the dog's perspective. What does the dog expect from contact with the human? If the dog is never sure, whether great stuff or unpleasant stuff will happen, the **Relationship** upon which trust in fearsome situations is based, will be shaky and uncertain. So it's not enough to just reinforce good behavior with the dog, one also needs to do great stuff on-contingently with the dog, to give treats of various types just for being so great. Also just as important is to impress upon the caretaker, that all forms of physical or verbal punishment or threat of punishment must stop.

Up until now, most caretakers and trainers have been all about punishing unwanted behavior and reinforcing good behavior. Although we are not recommending we stop this operant based training altogether, we need to be aware of when to use the **reinforcers/punishers** dichotomy and when to "use" **treats** and what each are there for. We also need to be aware of the potential dangers discussed earlier of eliciting **frustration** in the non-reward situations connected with reward based training, because in terms of operant consequences, we cannot reward incorrect or qualitative lacking responses, but instead use some kind of punishment, usual in the manner of withholding those expected rewards – which as we saw earlier -can- lead to heightened arousal, stress and even aggressive behaviors through frustration.

Instead, besides trying to use win-win situations in our training and interactions (see below), what we want to do is, explicitly increase the value of the **reinforcement** when teaching new behaviors, by also adding inter-"personal" **treats** as **reinforcers** which tie directly into the **Relationship** building, which are shown through our verbal and bodily gestures. This takes marginally more time to dispense food and love, but especially for our clientele, this **Relationship** is actually more important than the food. So, when giving the food but also for a couple of seconds while eating and after, celebrate the moment with your dog. Soft (not loud, because loud scares some dogs) words and nonsense words of praise, chin scratches, chest rubs. We love to pat dogs, most don't like this or just tolerate this. So I'd advise not to pat the dog. This manner of reinforcement is a kind of "**treats** as part of the **reinforcement**".

But it doesn't end there. There are many ways to "use" **treats** that do not have to do with compliance to given cues, to be punished or reinforced AND are specifically used to upgrade that missing or reduced **Relationship**. Dogs are social animals who thrive on the social interaction. Food is not so much a social interaction as we use it mostly up to now – it's a reinforcer for desired behavior, i.e. a tool. **YOU** are the object of your dog's interaction with you, so spread **YOU** around – and do so without contingency. **YOU** will not cheapen your value, quite the opposite. We want our dogs to want to be with us and the more interesting we are for them, the easier it is for us to get them to come to us. Can you imagine an application for this "wanting to be with mom?" And if your dog loves a neighbor, friend, acquaintance, ask them also to do this, rather than just flip the dog a treat. With small dogs you may have to start with treat-flipping, because huge people leaning over them to pet can be frightening. Your dog will let you know what he/she likes.

Most of the games below are not success/failure games, where the dog is reinforced for success and punished for failure. These games are prepared for the dog by the caretaker in the plain sight of the dog and the dog plays the game either directly with the caretaker and/or with the rooting section consisting of the caretaker. The food, the fun, the attention, the support the dog receives are all forms of non-contingency based **treats**. Simply slipping your dog a treat (food, chin, scratch, ear rub, butt rub) now and again for being pretty, or cute or loving will not cheapen the "treat" and will not spoil the dog, but will raise her estimation of YOU in her eyes. These games will also not spoil the dog but rather upgrade that **Relationship**. The purpose of these games is NOT to teach tricks, but rather to improve your stock in the dog's eyes, i.e., to improve the all important **Relationship** between dog and caretaker.

Taking kibble gently - patience at getting food: hold piece of kibble between thumb and index finger: on signal "gentle" let the dog sniff, lick for 3-5 seconds. If the dog nips skin, fold the kibble into your fist and signal a "sit" for 3-5 seconds, the try again. Do NOT use this in training other behaviors. If food-taking becomes too rough, your dog's arousal level is too high. Take a short break, then do this a couple of times, then go back to the behavior you were training.

Hide and seek - This can be played with more than one person. Simply cue "sit" and hide somewhere else in the house, then call to the dog. Give a lot of praise, and even food treats, when "found". Do this first in your home, where the dog is comfortable with the environment. Then, you can move this outdoors to safe areas and hide behind trees, rocks etc. Always make a big fuss, when the dog "finds" you. Use a special cue, like "Seek" so that the dog knows this is a fun game.

Stop-start of tug game – Not all dogs love tug games, but if they do, the idea is to use the game itself as the reward for the stop/freeze. I specifically write "reward" because this is a game that uses both concepts. Your interaction is the treat but the reward for doing it as YOU wish is the reinforcement for stopping or pausing. "Stop" means "freeze". It doesn't mean "drop". When you say this, simply freeze yourself. Hold the tug-toy, but do not move with it. It should be dead in your hands, even if the dog continues to try to back away. You then say "Go" and start again with the back-forth of the tug game. At first your dog will not "get it", that tug stops and this is ok. There is no punishment, you just wait a few seconds and then say "Go" and continue. With time, you'll see, the dog will actually "get it" and stop his efforts to tug when you say "stop" and will continue when you say "go". The dog will learn from you how to play this game (and example of the mixture of **Operant Conditioning** with **Observational Learning**). You can then also introduce the "out", but then "start" means to start play again, or grab-and-tug again. This is however not mandatory.

Which hand is the treat in? – Place a treat in one fist and then offer both to the dog. If the dog is infatuated with the wrong hand, which may happen after several repetitions as each hand takes on the scent of the food, signal the "mistake" with "uh-oh", but then offer both hands again right away. This conditions "uh-oh" as a non-threatening NRM, but in the sense of "try again". If this is too aversive for your dog, as it may be for some, don't do it, simply withdraw and then offer both hands again.

Feeding game – Set out a couple dozen pieces of low value food, like dry kibble, and simply give him one piece at a time, while telling him how GREAT he is, best dog in the world and giving him a chin scratch and/or ear rub, chest rub. Use a soft and high voice, but not excited, think soothing.

The barrier – Set up a small barrier that your dog cannot go around, like a sheet over 2 chairs, while the dog is watching, in "sit" from across the room. With your dog on one side of the sheet and you on the other, call the dog to come through the sheet. If the dog is afraid, crawl through the barrier, show yourself to him, by crawling through the barrier, give him a treat then call him again as you crawl through to your original side. Big party, when he dares to imitate you. Think of other barriers you can do this with.

Food cups –Take 5 plastic cups the dog can knock over well and while your dog is watching, place them in various parts of the room with a treat under each one. Then let the dog go to each one and "find" the treats. Later, do this with a sticky treat, like a soft cheese that you stick on the inner rim of the cup. He'll have to turn over the cup but hold it still to lick out the bit of cheese pasted there. And still later, mix and match the two styles of food under the cups.

Buried Treasure – With your dog looking, take an old sheet or blanket and scatter a few treats on the floor, then throw the blanket over the treats and let your dog "find the buried treasure". Also here, congratulate your dog every time she finds one.

Shell game – First, park the dog 10-15 feet away and then take a flower pot and stick a treat under it, when it's turned upside down. It works best, if the dog cannot turn over the flower pot by herself. Creates teamwork. The dog will sniff at it and/or paw it. If the dog cannot turn over the flower pot to get to the treat, do so for her. Then, get another and stick food only under one. Let the dog sniff and she will sniff at and ignore the one without the food and will sniff/paw the one with. There's no real winner or loser. If the dog makes a mistake, just let her try again. Every time the dog finds a treat, celebrate with the dog!

Muffin form game – get a muffin tin for at least 4 muffins and some tennis balls. Place a treat in the bottom of one, or up to all the muffin forms, then place a tennis ball on top and let the dog work out how to get to the treat. Some get this right away, others not so quickly, but that's not the point. Congratulate the dog every time she "finds" a treat.

Spin the bottle – take 1 or more plastic pop bottles and drill a hole across the middle of each one. Then take an old broom handle or similar and stick it through the drilled holes in the bottles. Make sure the holes are large enough, that the bottle can turn freely. You can now build a frame to hold each end of the broom handle or even just place the stick horizontally between two chairs, making sure the broom handle can't be knocked off. pour some kibble into each bottle while the dog is watching and then let her at it: https://www.youtube.com/watch?v=JDJ9cGq6ZZQ And celebrate your dog's ingenuity of batting the bottles enough to have the food come out.

Nose work – if you are going to work a specific place with the dog in a **Graduated Exposure Technique** setting, prepare a small patch away from the target stimulus and spread out some treats, either on the ground or better, in some grass. After a few minutes of "working" with the stimulus, signal a pause and go to this area and let the dog simply sniff these treats out. It should take a little time and effort to find them all. (Shout out to Sally Hopkins and her "Sprinkles" game: https://www.dog-games.co.uk/sprinkles-tm/) Do not simply throw the food on the ground. This may be too exciting. We want to reach the opposite effect. Clear the head of the work with that scary thing. Concentrate on great stuff, but in a thinking manner, not trying to work out what to do to get those treats. It's best to use smelly tiny bits of food, not just kibble and something different than any food used during the working session. Grass is the best search surface, then concrete but not ideal. The dog will be using more eyes than nose. Sand, gravel and such is not good, as this might stick to the food.

Forest agility – This game is not for everyone. If you are not healthy yourself, don't try this, also if your dog is not 100% healthy. Think of a steeple-chase in light athletics. When we go walking in a forest, we generally stick to the path - sometimes this is the law! But in some places, of path hiking is allowed. Pick a place in the forest where you can enter easily and simply jog together, looking for large rocks to climb over together or even go around together, fallen trees to jump over together, small streams to jump across. You can do this together, you can do it first and then have the dog do it, like "Do As I Do" - as you wish. And celebrate every obstacle you jointly conquer.

Destruction – If your dog likes this, and you don't mind, go for it. My dog loves to take paper tissues like kleenex and simply tear them apart. Some people would even use this as a "jack-pot" reward. Ok, if you wish. Also, when I'm tossing a stick into the stream for her to fetch, before we take a break and move on to the next jumping in point, I like to simply … let her take apart the stick. She doesn't actually eat any of the bits she rips off the stick, she spits them out. If your dog tends to want to eat whatever she destroys, this wouldn't be the game for her. But if she likes to do so, I just have a signal to differentiate between a "return to hand" and a "it's yours". "Return to hand is training", but "it' yours" is just for the fun of it.

There are maybe a few thousand other ideas others have come up with for activities that dogs love and can be done with their humans, that are also non-contingency based. Enjoy yourselves!

3.2.1 – Preparation: Hand-touch

Why teach a **hand-touch**? Because it's one of the most flexible "tools" out there for moving the dog in a no-stress co-operative manner and it's FUN. Think **Relationship**. Many, many clients come with a "problem dog". "My dog does this, my dog that." They define their dog through the behavior they don't like. They've learned to correct these behaviors but have not learned to reinforce the behavior they want. So "forcing" them to learn to teach the dog the various uses for the **hand-touch** is easy, fun, the dog pretty much can't get it wrong and suddenly their dog has something cool that he CAN do instead of just barking and lunging at other dogs. They can extend this into easy tricks and I often DO teach them tricks to teach their dogs, many starting with **hand-touch** or variations of a **hand-touch**. Then they learn to communicate many more "things" via the **hand-touch** ... new positions, come over here, jump up, and more.

Now, instead of a "problem dog", they have a "dog with a problem" who is really smart and can do so much great stuff. AND the dog has learned that mom is not just the one who yells and jerks the leash and commands around with that stern voice. The dog learns a more fun side of mom. Mom is expressing verbally her new-found or re-found joy and all the great things her dog can do now. Expressed trust, safety through **Relationship**, not just through food rewards, fun which adds to a general **positive valence** surrounding the caretaker. All things shown empirically to be even more important to the over-all "success" of a behavior modification program than any one technical step or underlying process. (see Part 1: Theory)

I don't really care how you teach a **hand-touch**, whether it's by shaping, luring, capturing or however. More important is, that you put this not only under so-called sight-stimulus control, but also under verbal stimulus control. The order of the "behavior" is:

1) dog's name
2) present hand
3) "touch" (or any other word you choose, could be "tatsch" or even "Rheinschifffahrtsgesellschaftsmatrosenlehrling")
4) reinforcer – and be inventive. I suggest using a marker, and I like an emphatic "YES" at the time of the touch. It'll also help the client show enthusiasm which Rover will pick up on = FUN plus FOOD = **Relationship**. If for some reason Rover is not taking food, use a toy, sniffing ... whatever to reinforce the touch.

We're going to teach the client, that **Rover's name** is to be used to **re-orient Rover** to the caretaker in order to give Rover a cue that he/she has learned. In this case, "Rover" and then the **hand-touch**, always in this order. Once the basic **hand-touch** has been learned, teach the client how to do this with the other hand, which ever other that is. Rover will probably "get it" quicker than the client. Be prepared for fumble-fingers, because the client is going to do this first with the strong hand. When switching to the weak hand, it's possible, that what the client tries to do the first few times, may not be pretty. A demo-video: https://www.youtube.com/watch?v=2S6bMVTyOZ4

Once the **hand-touch** has been learned by both parties left and right, start teaching the following:

1) **Moving Rover from one side to the other with the hand-touch**. Rover starts in "sit" position on your left side.

   Present hand → say "Rover, touch" → lead Rover across your body to the other side → touch → "Yes"/reinforce.

   Repeat using the other hand going in the other direction. Repeat going back and forth in front of the body. After proficient, add leash. Always let it play out as Rover moves. When Rover arrives at the other side, you can change leash hands. This is wonderful non-stress management tool to place YOU between your dog and a potential trigger in a tight space, by for example, using the **hand-touch** to lead the dog behind you, placing the you between the

dog and the trigger.. Learn to anticipate such situations, be proactive instead of reacting to a problem. **Offer the possible solution before it can become a problem!**

2) **Recall to hand-touch** – From a few feet away,
   Present hand → say "Rover, touch" → move hand so that it is perpendicular to
   Rover coming → touch → "Yes"/reinforce.
   Rover will "chase" this moving hand and with the actual nose-to-hand contact comes "YES!" plus food – then lots of praise and "party" making. Anytime a dog does a recall, this should be a cause for **celebration**. Re-teach using the other hand. Mix hands. You can include the whole family in this one, calling Rover to each family member with "Rover, touch" → touch → "Yes"/reinforce. And then the next family member calls him.
3) **Peek-a-boo**: This one is a tad complicated: with Rover sitting in front of you, cue "Rover, touch" and extend your right palm towards Rover. As Rover comes in to try to touch the hand, move the hand from your side to a point behind you, so that he is following it, but can't quite touch it. As soon as he reaches it and you start this movement to the back, say "back". Here's the complicated part: if they're not already, spread your legs just enough, that Rover could stick his/her head through and when he's now behind you, whip that "touch" hand from in front of his nose to just in front of your slightly spread legs, so Rover has to stick his/her head through to touch the hand, which is now in front of you.
4) **Peek-a-boo extension**: place Rover ANYWHERE and start the same process, bringing Rover in and around you. When Rover touches your hand while being in back of you, reinforce this terrific chain with "Yes!" AND cue "sit". Use the eyes in the back of your head to check for compliance and reinforce the "sit". Practice this many dozens of times from every distance and angle in front of you using the chain consisting of as above plus "sit". After 547 repetitions, the new cue will be
   "Rover, back" → extend hand too one side → lead Rover "by the nose" to the
   "back" position → "sit, Yes!" and reinforce from the front between your legs.
   The "Rover, back" cue will become a safety **peek-a-boo** position for later techniques. With time, the "sit" cue will become unnecessary. Rover will sit automatically.
5) **LLW prep**: This one is just for fun ... for a reason and can even be a prep for LLW. Hold your hand palm down about 6-12" over your dogs nose and cue "Rover, touch". Watch Rover literally "jump for joy". Variation – bring Rover into a sit/stay, walk 2-3 meters away, turn around, extend your hand palm down the same height as before and "Rover, touch". More JOY! Since this is fun, make sure to share that fun with Rover.
6) **LLW with hand-touch**. One of the most common problems that reduces **Relationship** between caretaker and dog is pulling on leash. Using the **hand-touch** and then **reverse hand-touch** (directly from Dog Dance) is one strategy to reduce this ... **Relationship** improvement by making it fun for Rover to stay near you, left or right. Start with Rover sitting on your left with the leash in your right hand, hanging loosely (but don't trip over it!). At the same time, say "Rover, touch" and step off. Only go two steps and let Rover touch your hand, then reinforce. Repeat, repeat, repeat. Then, do the same without leash. OR if you as unco-ordinated as I am, do this in your living or back yard first -without- leash until YOU can do it without tripping over yourself. Take as much time as YOU need, your dog will "get it" very quickly. Then, add the leash as above.

   Do the same as above, but extend the amount of times Rover touches your hand to twice as well as the distance you walk. The exercise is (for now) finished when your dog touches your hand twice. The first time your dog touches your hand, just say "YES!!!" but do not feed yet. The second time Rover touches your hand, say "YES!!!" and then feed. This is, by

the way for the science geeks, a **Fixed Ratio Schedule of Reinforcement**[232] (**FR2**). Do this at least 10 times before taking a break. But then, when you start playing this "touch" game again, start out with just short bits and reinforcing every touch, but then after 5-6 repetitions, throw in one in which you reinforce after the second touch. DON'T get stingy. We're changing the rules on Rover and he needs time to learn of this. In the end, you'll see, he really likes the uncertainty – it's science based[233]! He knows that. He's read my paper. Gradually extend the number of "touches" until Rover gets tired of the game. This is a great management game for those times you absolutely NEED Rover close to you and he might have other ideas, whatever those might be. Instead of simply cuing "heel" and Rover not complying, make it worth it, because it's fun and unpredictable. So the behavioral target is, to not reinforce every "touch", but ... mix up the amounts of touches before he gets his treat. Mixing up walking tempo and when/where you reinforce makes it not only interesting but also fund for Rover, so be sure to let him know verbally how great he's doing.

7) **Emergency Retreat:** The last variation is to use this side-switch technique and extend it to a turn-to-the-back, by combining this with turning with walking briskly away, keeping your extend hand just in front of Rover's nose, so Rover has to give some effort to keep up. This becomes later an **Emergency Retreat**! When both have this movement down cold, put this on a special cue that you can give positively, like "Whoops!" or "Party!". The word is not important. It's important that YOU can say exclusively positively and up-beat. It's exactly this up-beat pitter-patter, that dampens the stress felt as a result of the scary thing/dog and makes it easier to follow you, as it make the **valence** surrounding you even more positive, than it's already become. And for the first 541 times do this **Emergency Retreat** with no specific reason other than practicing a 180 degree turn. You'll see later, that if you do need this, because your path is blocked by a killer Pomeranian, a simple "Whoops" and **Emergency Retreat** will NOT upset your dog, quite the opposite, because you've trained it to be fun and more fun to be with you through that verbal pitter-patter as you retreat.

All of the above are meant to decrease tension in stressful situations, decrease a reliance on leashes and "leash pressure" through an increase in co-operative response to verbal and bodily signals, rather than physical "force", not matter how slight. This is truly a "less invasive" manner of interaction, than jerking and tugging at the leash and the dog having to "give in" to that.

The most important lesson for your client is not his/her own body co-ordination, which will be the physically hardest part. The most important lesson the client needs to learn is to first cue the desired behavior and then carry through and reinforce/celebrate it. Too often clients jerk the leash and then order a "come". Also, trained with reinforcement based methods such as this, the name recognition becomes an orientation cue towards the caretaker. The caretaker can only give a cue or some kind of help, if Rover is focused on the caretaker. The next most important lesson the client has to learn is to **celebrate** how great Rover is. Food giving is not enough. Verbal and bodily praise, encouragement and support go further than food alone!

The most important lesson Rover gets from all this is ... how great and fun the caretaker has become. All sorts of neat stuff to do and it pays off and he loves me and I love being with him = **positive valence**, since it's so positively built up, predicts only good stuff happening, which is, as we saw in the theory part, so incisively necessary for that positive behavior change to be successful.

Here is a video demonstrating the above variations of "touch".
https://www.youtube.com/watch?v=2S6bMVTyOZ4

232 http://www.auf-den-hund-gekommen.net/-/paper5.html
233 http://www.auf-den-hund-gekommen.net/-/paper5.html

3.2.2 – Preparation: Pointing to Identify an Object – Trigger-ID

One of the most difficult things to train AGAINST is the **startle effect** (Lang et al, 1990). As Craske (video 2014) pointed out, being unprepared for appearances of the object of fear can trigger a **Return of Fear**, mostly because the brain needs time to register that stimulus, and compare it to any original fear responses stored and any newer learned ones while working out the relative amount of danger this particular stimulus in this context represents. If Rover doesn't have enough time for these processes to run their course, more likely Rover will respond with the original fear response, before all the cognitive abilities have been considered[234]. Robert Sapolsky speaks also to this point, citing a study comparing the stress reactions of rats who received no warning of a shock coming to those who received a warning. Those who received a warning showed no post-shock stress signs[235]. This warning is something we want to build up by counting on and using an at first, externally built-up **Orienting Response**, first verbally cued by the caretaker.

Parritz et al (1992) write concerning predictability and how this ties into Bandura's idea of **Self-Efficacy** on the one hand and under what circumstances it has it's effects and which ones:

> *There are now numerous studies which indicate that both the controllability and predictability of events play an important role in regulating fear in human adults and animals (see reviews by Averill, 1973; Seligman, 1975). Control over an event, even a painful one, reduces emotional distress and buffers physiological stress reactions (see Weiss, 1971). Objective control is not necessary.*
>
> *...*
>
> *Results such as these have led Bandura (1977) to argue that control moderates threat appraisal to the extent that it affects the person's sense of self-efficacy.*
>
> *...*
>
> *Control and prediction are intimately linked. Having control means knowing what will happen (Seligman, 1975). Of course, predictability can exist in the absence of control, although predictability alone probably never provides as certain a sense of safety as does control. Both animals and human adults will choose signaled noxious events over unsignaled ones (Badia, Culbertson, & Harsh, 1973; Badia, Harsh, & Coker, 1975; Pervin, 1968). Surprisingly, the need to predict noxious stimulation is so strong that animals will choose signaled shock that is several times more intense than unsignaled shock, even though there is nothing that the increased predictability allows them to do to avoid or modify the stimulation.*

Some of us already do something like marking when Rover sees a trigger or after a certain time of looking at the trigger. Purely **Operant Conditioning** (perhaps some **Respondent Counterconditioning,** depending upon relative position to trigger, perhaps also **Evaluative Conditioning** kicking in as well). A problem can come with dogs who have different fear triggers for which they react differently at different intensities. Men only bothersome close up, but large pointy-eared dogs can be bothersome at 50m.

If we can "warn" Rover that a "dog" or a "man" or a "truck" is around and if necessary show Rover where, we can perhaps decrease the time necessary for Rover to analyze the situation and give Rover better chances of choosing desired behaviors rather than fall victim to **startle effect**. We can take advantage of the **Orienting Response** which also through repetition, facilitates the **Habituation** towards that scary thing. The idea of identifying such triggers is not new. It's been attributed to various people, is already part of a couple of techniques, but because I'm using **Social Learning** to introduce it, instead of making a false attribution, I'll just say that it exists, has a good track record but with dogs has no empirical evidence supporting it as a dog technique. Therefore ... since it's introduction is using both **Operant Conditioning** and **Social Learning** – see Ritter and Jones – we can say it has it's roots with those two people.

234 https://www.youtube.com/watch?v=gmwiJ6ghLIM
235 https://www.youtube.com/watch?v=ui5r49tM7M8, see 1':01":40

At first, Rover should learn what the basic cue "Where is the ..." means – a technique that is well known in some circles, but which I'll call simply **Trigger-ID**. This is very easy for a canine behavior consultant to build up, since most of us have a stuffed dog as a prop for our **FA**s. Here is one way to introduce this – you may have your own, and that's fine.

1) With Rover sitting on one side of the room and a stuffed dog on the other, bring Rover into a "sit", show him a treat, and go over and lay the treat onto the stuffed dogs rear. And be nice to the stuffed dog. Quick ear or chin scratch. "Gooood Larry". Then return to Rover and, in a soft, neutral voice, so as not to have him understand that this is meant as a release, ask "Where is the dog?" while pointing at the stuffed dog from just in front of Rover's face. As soon as his gaze leaves you and goes in the direction of the stuffed dog, say "Yes!!" or otherwise mark – when working with clients I prefer the word, as it IS positively emotional and we WANT that positive emotionality from the client – first, reinforce that "look" and only after the reinforcement, release Rover. We don't want Rover to take the "Yes" to mean, charge at Rover. We want him to look at the stuffed dog, but not approach until we say to.
   And ... why place the treat on the stuffed dog's rear and not his (Larry the Retriever is my stuffed dog and he's a "he") head? If we are using **Symbolic Modeling**, i.e. **Observational Learning**, there are two aspects we want Rover to notice:
   - ➔ go first to the rear. Do not go directly to the head of a "strange" dog
   - ➔ this strange dog is not dangerous – I can see how Dad can talk to and pet him and nothing bad happens.

   Every time you go to the stuffed dog, Rovers sits/stays and you go to the stuffed dog. Take 5-6 seconds to talk to the stuffed dog, put the food on it's rear, scratch his chin.
2) Once you've done it once and Rover has eaten his food, call him/her back using our **hand-touch** method. Don't forget to pour on the love every single time Rover touches the hand! Bring Rover into "sit" go back reload the stuffed dog and repeat, several dozen times. As you repeat, gradually do so with less and less of an obvious pointing gesture. You'll know when you can stop pointing, when Rover looks right towards the stuffed dog, despite your hand not being near his head. Take Rover and the stuffed dog to several different places. Aways, in a new place, do two or three repetitions with the pointing, each time further and further from his head. The idea is also, that Rover only goes to the stuffed dog upon release and is duly reinforced for it all.
   This is actually setting up a behavior chain consisting of:
   1/2) "where is the dog?" → Rover looks → Mark "Yes" →
   2/2) Rover is released to meet-greet (for now, gets food from stuffed dog) → Rover is called back with help from **hand-touch**. Reinforce the hand touch and party!

Here is a video showing how this is introduced with the help of a stuffed dog. I've also used a small traffic-cone instead of a stuffed dog with some clients, if the client's dog shows agonistic behaviors towards the stuffed-dog – one can get the behavior chain down with the traffic cone and then graduate to the stuffed dog, before graduating further to a real dog. The procedure must be fairly well trained with minimal arousal before doing it in "real life" because the arousal will be then much higher and that old undesired behavior will now be present as one of the choices. So this newly trained behavior must be strong enough, that it can offer a better choice to Rover over the old undesired one.
https://www.youtube.com/watch?v=mSWknMak2QQ

These are preparation exercises, so that you don't have to train them under stress for Rover or the client. As you will see, it's very important that Rover NOT go to Larry or the "other dog" in real life until released, that this is already trained like two half-chains. When you actually do start this procedure in "real" life, you do not need to take it from the beginning and only stop, when Rover

has met the other dog. In fact, you can even mix this with other techniques, for example **RP**, if you want to stay a little longer at one distance without Rover getting bored with this.

When one has learned the technique, ones sees, it's much more than an "early warning system" to avoid that **startle effect**. It can also be a cue for a whole behavior chain, that might have different rules for different "objects". By the way, **Symbolic Modeling** can also be combined with **Reinforced Practice (RP)** (see section 3.3) and has been shown effective in combination with in numerous studies mentioned earlier in the theoretical part.

"Where is the man?" might become the behavior chain that means:

find the man → look → if scary, place mom between me and man → get treat
and for mom it means, Rover doesn't like him, so let's be ready to tell the strange man: "please don't touch my dog, she has a contagious skin disease".

"Where is the dog?" might become the behavior chain that means:

find the dog → look → go back to mom for a treat, wait for release to play
and for mom it means get ready to undo Rover's leash and be ready to do a **hand-touch** recall if necessary.

"Where is the cat?" might become the behavior chain that means:

find the cat → look → go back to mom for a treats and repeat of game,
"'Cause getting treats is better than chasing that stupid ol' cat I never can catch".
The objects you can train with this are just about only limited by you imagination.

3.2.3 – Preparation: Scouting Out Locations and Using Them

Positive expectations, i.e. **positive valence** is not just connected to caretakers, toys, treat bags. **Valence** is also connected to places in their entirety. There are also other considerations when scouting out environments, especially when dealing with fear.

1) Are there going to be enough opportunities of finding triggers at this place? It is also a good idea to find several places with different numbers of triggers, and start with a place with fewer triggers in the beginning, so that the dog is not overpowered and overstressed by the sheer number and frequency of these triggers.
2) Are there good possible escape routes available. Side paths, roads, bushes or other hiding places. We don't want to get stuck in impossible situations.
3) Can you see a possible trigger or danger-situation coming in order to take advantage of those sorted escape routes? I have several such locations that fulfill all three requirements. I also have a couple with fewer opportunities for triggers, which are more valuable for training basics we'll get to shortly.
4) It should also be possible for the dog to reach a point or place, where he/she is not bothered at all, for example the caretaker's care, which can also act as a refuge and break from the stress. If appropriate for the dog, I find shopping center parking lots and parking garages to be good because one can park the car in a corner and use the rest of the lot as a working area, with a quick retreat to the car for a break. Or a park meadow, where one can park along the edge.

The idea of scouting and then using these places is, that one first sets them up as fun, great places to be. So if you have a client, whose dog is afraid of other dogs, find a place where there are fewer dogs, great escape routes or possibilities to observe other passing dogs from a large distance and ... have a ball (maybe literally) teach Rover the useful prep-behaviors above. Since these are all done in so-called "positive" ways, this area will take on it's own **positive valence**. It's fun to be here, because I get to play with my human, get tons of treats. This sets up a positive set of expectations (**valence**) connected with the entire experience. This has been shown to be of great importance in learning replacement behaviors.

Since you are going to be "working" away from home, plan for your dog's comfort and needs. On summer days, bring plenty of water and maybe even use a place that offers some shade. For breaks a frozen kong is good. And as consultant, have these at your disposal yourself, because clients tend to forget such things, including really good treats. This is not the kind of work, where one can say "It'll work with kibble too." It may, but if you know, that your client's dog has a thing for sharp Greyerzer cheese, bring your own. And if Rover doesn't need it in the session, because mom really did bring her own, you can still eat it yourself later. Think Scouts and "Be prepared".

3.3 – Using Reinforced Practice (RP) in So-called Fear Situations

As discussed earlier **Reinforcer Practice (RP)** is an hierarchal (graduated) operant procedure, which has however been very successfully combined with **Social Learning** techniques in so-called fear reduction/coping procedures. It is similar to what "we" know as shaping in that it progresses step-wise from one successfully completed criteria to the next. In this sense it shares a common aspect with **SD** and for this reason some call it **Contact Desensitization**. The differences are however:

1) Relaxation or competing emotions with the problem emotion/emotional response are **not** used or considered necessary in the same sense. It too however takes advantage or the **Habituation**/**Extinction** paradigm of **Inhibitory Learning**. Some have however combined relaxation if determined that the subject is too aroused. As opposed to **SD**, the goal is **not** emotional change. It's behavior change through cognition – that that scary thing isn't so scary, so the original maladaptive undesired behavior is no longer necessary = **Expectancy Violation**. It is therefore **not** the best technique to teach a peaceful close encounter, but is very good to teach a peaceful approach and especially, retreat. It's an adaptive coping technique. And despite that, I try not to actively "work" the dog for more than 10 minutes without some kind of relaxation, be that simply away from all triggers and/or other fun activities, depending upon the dog and the intensity of the work beforehand.
2) As is usual, the **Relationship**, based upon the principles explained previously of **Attachment Theory/Secure Base Effect** is involved. When used in combination with **Participant Modeling**, of course the **Social Referencing** is then also involved. The **Participant Modeling** can be done at any point within a **RP** session, but can be especially beneficial to check, if the dog really doesn't want to go closer – if after a **Participant Modeling** trial, the dog doesn't want to, he/she doesn't want to and it's time to stop for the day. See below.
3) The guesswork involved with animal shaping, where the animal doesn't know why the last reinforced behavior is no longer reinforced, is **not** part of **RP**. Each step is individually cued and usually the "criteria" that changes is only distance to and therefore the intensity of the exposure to the trigger. One can also raise criteria in a multi-dimensional manner by extending the time at a particular distance where ... nothing happens. There's no guesswork involved for Rover, so although in terms of process, **Habituation** of the one intensity is involved as well as **Extinction** of the necessity of reacting as previously, there is no **frustration** of the -P criteria-change situation in shaping. Each step is essentially the same behavior.
4) Neither shaping nor **SD** has an intentionally presented antecedent stimulus but **RP** does. When using **RP** for approaches, I like to ask the question "Do you want to say hi?" to see if the dog actually DOES want to approach. It's immaterial for the dog what one uses as the cue, but can be beneficial for other people who may be the actual target of the behavior. Some people use a general release cue with the same meaning, especially if this doesn't mean teaching such a new cue. Some will argue, that the delivery of the reinforcer in shaping is also the antecedent stimulus. Let them argue.
5) As most of us do **SD** and shaping, Rover really has little say as to whether or not to participate. This is **not** the case with **RP**. Especially when using **RP,** not wishing to do a step is not punished but rather is understood and accepted as pure communication from dog to caretaker. It's usually identifiable, in that Rover complies slowly or not at all. At this point in **RP**, you break off, take a rest and then back up a couple of levels and repeat at that level several times. OR you can simply call it a day. The wishes of the subject **are** to be respected and if co-operation is no longer forthcoming, it's over for the time being.

How **RP** is done: As with an **SD**, you work out a hierarchy of fear intensity, this usually having to do with distance.

The basic steps are:

1) **Trigger-ID** towards trigger a couple times as warmup. The dog is on a 3-6 meter leash at all times!
2) Helper positions herself between the trigger and the dog (if the dog has a good sit-stay and the distance to the trigger allows, the caretaker can signal the sit-stay and move to a point to take over the role of the helper).
3) Helper then calls the dog and reinforces the arrival. As soon as the reinforcing is over ....
4) ... the caretaker recalls the dog with **hand-touch**, if necessary to a safety position behind the caretaker. One gives a lot of verbal encouragement as the dog is returning and when the dog actually arrives. This reinforces the idea of **Retreat is always an option** by in several important ways. Yes, this also a reinforcer, some would say in exposures to a fear CS, more important than a food reward given by the caretaker, as we're counting on and therefore using that improved **Attachment Theory/Secure Base Effect**, as well as the newly or upgraded **relationship/positive valence as** explained in the theory section.
5) Repeat many times, decreasing the distance to the trigger only when the dog is not bothered at that distance and only a little at a time – be conservative!

We start, as with **RP**, at a distance where Rover shows hardly any interest in the trigger. The helper places him-/herself between the caretaker/dog and the trigger There are a couple ways to decrease this distance to the trigger. One resembles the "LLW preparatory exercise" above and you can even use the **hand-touch** exercise above, where Rover is in the "heel" position, you extend the left hand over and slightly in front of Rover's head, say "Rover, touch" and take ONE step towards the trigger, and reinforce this step. If planning to do **RP** as your approach technique, be sure to give the reinforcer **behind** you, so that Rover walks around you while you turn away from the trigger, thus moves away from the trigger to get it. This facilitates a small approach movement going towards the trigger to the same start-position for the **hand-touch**. (Movement in the sketch is shown from the relative starting point at the left of the line below. A line farthest to the left = farthest distance to helper). The dog moves between the caretaker and the helper, either without leash if the dog's general tendency is to shrink away for fearful stimuli or on a 5-6 meter leash as an emergency brake in case one misjudges the dog's tolerance distance.

HT=hand-touch distance R=reinforcement position

1) client HT .....helper.....trigger
1) R-client (12 reps).....helper.....trigger
2) client-HT.....helper.....trigger
2) R-client (12 reps).....helper.....trigger
3) client-HT.....helper.....trigger
3) R-client (12 reps).....helper.....trigger
4) client-HT.....helper.....trigger
4) R-client (12 reps).....helper.....trigger

Do 1) ca. 12 times before moving forward 1-2 steps and then doing 2). As the dog can and is willing to do so, one deceases the net distance between the client and the trigger. On can decrease distance to the trigger by:

1) client/dog starting a couple steps closer to trigger, but helper stays put
2) client/dog stays put but helper moves closer to trigger.
3) More risky: both client/dog and helper move starting point closer to trigger.

During these exercises, as opposed to learning the **hand-touch**, it's not important, that Rover actually touches your hand when returning to that **hand-touch**. Say "yes" to mark the touch or attempted touch. Rover might jump up or simply look at you or your hand above his head. The more vocal encouragement, praise you can give him after the delivery of the treat, the better. Even during the time he's looking intensely at the trigger. Your soft, calm voice is a reminder of your **Relationship** with him. It's encouragement and ... shown effective. Whereas with shaping, quiet is supposedly essential in order not to distract the learner, silence with **RP** is **not** golden, **encouragement** is.

Now comes the important part. Let Rover look at the trigger when he reaches the helper, at this new distance for 4-5 seconds after moving forward for the your next **hand-touch**. At this point the caretaker recalls Rover and feeds such, that Rover is looking at the trigger over the feeding hand – and is getting mountains of verbal reinforcers also. In other words, we want Rover to be able to disengage from the trigger to get the treats. After he's gotten his reinforcer and responded to the **hand-touch** cue to move forwards again to the hand, he is then free to look again at the trigger. Do this for as long as he wants to look at the trigger. If he doesn't want to look at the trigger any more, it's not because he's too worried. It's because it doesn't worry him at all. He's **habituated** to the intensity of the trigger at this distance. Repeat a couple of times anyway at this level of disinterest, because small unpredictabilities are our friends, but we also don't want to be too surprised by them!

Here is another variation, without a helper as such, but with the trainer starting with the caretaker together. The caretaker leaves the trainer together with the dog, moves a few steps towards the trigger, calls the dog to her and the two go back to the trainer's at her position. It's always started with a Trigger-ID, which show us the relative arousal towards the trigger at this starting point. One only starts with the caretaker moving towards the trigger, when the dog no longer has interest in the trigger. This is crucial, as this determines the tolerance distance and we don't want this arousal to be too high and then increase to be much too much while going to the caretaker, which also means towards the trigger!

1) trainer/caretaker/dog .....trigger
1) trainer/dog.....caretaker..... .....trigger
1) trainer.....dog/caretaker..... .....trigger
1) trainer/caretaker/dog .....trigger
2) trainer/caretaker/dog .....trigger
2) trainer/dog.....caretaker.....trigger
2) trainer.....dog/caretaker.....trigger
2) trainer/caretaker/dog .....trigger
3) trainer/caretaker/dog .....trigger
3) trainer/dog.....caretaker.....trigger
3) trainer.....dog/caretaker.....trigger
3) trainer/caretaker/dog .....trigger
4) trainer/caretaker/dog .....trigger
4) trainer/dog.....caretaker.....trigger
4) trainer.....dog/caretaker.....trigger
4) trainer/caretaker/dog .....trigger

Next comes both the **Expectancy Violation** and **extended Extinction** both, rolled into one. Instead of going forward, retreat to the initial starting point and do it again. If you've repeated the above a couple of times, he'll be expecting going back to the levels distance to the trigger. But ... then after he's relaxed at this levels distance, start again in the prescribed manner, but move two steps forward **past** the previous most forward distance. This will seem like a long distance, also to him, but in reality ... still not close. Still, his **expectancy** of a catastrophic result of the approach is not fulfilled

and the upping the level of stimulation by going appreciably further than any other trial will put him on the edge. This now, is where we become conservative. We only allow him maximum 2 seconds to look at the trigger and then extend the hand again, signal again "Rover, touch" move backwards 2 steps. If he's learned his "Rover, touch" and sees the hand well, he'll come right with you. This using the **hand-touch** towards the rear as a second type of **emergency retreat**. You are coming closer to over-exposing him but not giving him enough time to fully realize it. Now stay at this distance once again, until he's once again lost his interest. Once he has, "Rover, touch" and return to the forward position you left and you'll see, that he's not any more upset about this, than he was with any of the previous advances. He may need 4-5 seconds looking at the trigger, and if so, get another **hand-touch** from him at that distance and repeat. He'll reach his level of **Habituation** at this distance also.

The below start back further than the repetition number 4, but then takes the dog even closer to the trigger – expectations of both lack of "danger" as well as "danger that doesn't happen are violated at the same time. **Extended Extinction** because suddenly the net distance to the trigger has been greatly reduced, BUT mom is also there as mitigating factor. It's important here, that the caretaker the first time, NOT stay, but meet the Rover while he's coming towards her and actively lead him back. His anxiety may be building as he's approaching, but he's also coming directly to his **Secure Base**. The caretake must BE that **Secure Base** and lead him back to "safety", where the trainer is standing. When done well, this allows the dog to see, that approaching does not mean horror AND that ... **Retreat is always an option**. Caretakers: use this conservatively. Do not use this to proof a dog, but rather as a change in pace! After 2-3 repetitions at these distances, go back a few steps in distance to continue or simply just take a short break and then continue at a lower arousal level a few steps further away. This is rather stressful for the dog, so we don't do this often. It does however also build on the concepts of building the perception of "I AM able to actually do this" (**Self-Efficacy**) and the retreat also lend to increasing the feeling of having that control through choices of action over his environment (**Internal Locus of Control**). I do NOT recommend doing this without a trainer or someone acting as helper at the trainer's position. Just to be clear here, I recommend doing this with the dog on a long (6-meter or more) leash with the caretaker never being further away than at the end of that extended leash.

4) (from above)	trainer/caretaker/dog .....(last ending position).....	trigger
5)(3)	trainer/caretaker/dog	trigger
5)	trainer/dog.....caretaker.....	trigger
5)	trainer.....dog/caretaker.....	trigger
5)	trainer/caretaker/dog	trigger

You can use this **RP** approach to literally any object and to many dogs or humans if that is the fear trigger. It is, however **not** the absolute best method for teaching actual meets-and-greets. In cases of greeting frustration you can also turn it around and reinforce calmness step for step while approaching a trigger, and can even use this if the trigger is approaching you, BUT this is more difficult and I'd only do this after Rover has completed an **RP** approaching-the-trigger procedure. The danger is, Rover has no escape route and might over-react to the decreasing distance. There is no such thing as a true **Reverse RP**, just a reversing of the motion, now the trigger moves towards Rover, instead of Rover moving towards the trigger.

If at any point in the above process Rover does bark/lunge, simply ignore it, give the "Rover, touch" and as gently as possible lead him away (**emergency retreat**) until he can actually do a **hand-touch** without agonistic displays, but ... stop there at that distance and work the **hand-touch** repetitions at that distance until he gets down to the disinterest level of the trigger at that distance = **Habituation**

to that intensity level. Then ... take a good, long sniff break, or play break or do a slow, deep muscle massage, TTouch or whatever he wants far away from the trigger but still in the general venue. Disinterest in the helper-dog is the goal .. and then some – and this, step-for-step.

Here once again is the short video showing **RP** with Vela and Larry the Lab.
https://www.youtube.com/watch?v=q9xfhF-g0z8

Below is a very quick video showing a training session using **RP**. The trainer says she's "desensitizing" the dog, when the process is **Habituation** in an operant procedure, as she's reinforcing very specific behaviors. https://www.youtube.com/watch?v=pkohC3g15w4
Wonderfully done, I would perhaps spend a little more time at each level just to be sure. On the other hand, perhaps as demo-effect for the camera, the dog showed really no phobic responses.

Moving on with the same trainer, also **RP** because it's an operant procedure in a hierarchal structure, this for actually getting into the car. The dog is learning that getting in is not the catastrophic experience she expecting. **Expectancy Violation** again plus the **Habituation** of doing step for step, habituating to each individual step. The caretaker should take steps towards, but also back, usually not more than one or two towards the trigger to keep the arousal level down, but enough so that the dog does want to look longer at the trigger. One stays at one distance until the dog no longer needs to look at the trigger, but is more interested at getting a food reward. https://www.youtube.com/watch?v=gEAXRc_jpPg moving on to the next hierarchal level, all operantly done, i.e. Cue → behavior → reinforcement. And then, the third video in the sequence: https://www.youtube.com/watch?v=F3vZ0D5kuS4

RP is also not a technique that you have wait to do until Rover can meet the training end target objective. You can switch this out for **modeling** (see next chanpeter) or another technique as you wish to stay at this distance to the object of fear, but don't want Rover to get bored.

3.4 – Modeling (according to Bandura)

Firstly, here is a short background to **Social Learning** from which **modeling** comes for those who did not read the section on it beforehand. When reading basic psychology texts it's often mentioned in the context of being one of the most effective methods around for dealing with fears and anxieties, as described in the previous section on **Social Learning** and Arthur Bandura. After having read about it and then having seen how it's become such a standard part of **Cognitive Behavior Therapy** (**CBT**) and **Exposure Therapy**, although not strictly belonging to either, I started wondering why we dog people have heard so little about it.

Modeling began first as an explanation for aggressive behavior in Children with the Banduras "Bobo Experiment". Bandura's first two books dealt with adolescent aggressive behavior problems, and he used **Social Learning Theory** (yes, still another Learning Theory) to explain how this aggression often comes about, not (yet) how to use **Social Learning** to deal with it. That therapeutic idea actually came after these books. The theory is, that if you can learn aggressive behavior by observing aggressive behavior, you can also learn to deal with aggressive behavior by observing non-aggressive behavior.

Bandura and others outlined several different ways to apply **Social Learning** to teach non-aggressive behavior or, in our case, deal with fears and anxieties.

1) A person handles a snake while the client watches at ever decreasing distances. The client chooses how close and how quickly to approach.
2) A person handles a snake while the client watches at ever decreasing distances, until the client feels that he/she too could handle the snake in that manner.
3) The client watches a film of someone handling a snake and then tries it him/herself.
4) A model shows how to step-wise approach and handle a snake, while the client imitates each step after the model, step for step.

The ways to vary this are almost limitless. The question is, how and when to apply **modeling** with our dogs. As opposed to Claudia Fugazzas **Do As I Do**, we don't need to actually teach Rover how to imitate what we're doing[236], although that could also be a possibility. **Participant Modeling** calls on all the same underlying processes we've already discuss: **Extinction/Habituation, Expectancy Violation, Social Referencing**, **Attachment Theory/Secure Base Effect, Self-Efficacy and even Internal Locus of Control.** Let's look at some ways of how to do this with a dog.

1) The first way I've done with several dogs including my own, when they've been afraid of some strange object, is a **Participant Modeling** technique. Vela will spot some piece of strange farm equipment in a field, something she's never seen before. I bring Vela temporarily into a "sit" a good distance away from this machine, where I know she's not so aroused, that she can't sit calmly. I then go over to the machine and simply talk with the machine, touch it, sit on it, walk around it while talking to it. After a minute of doing this, I can release Vela from her "sit". I don't need to call her over. She can come over if she wants or stay away if she wants. The balance between curiosity and fear (SEEKING and FEAR – see Panksepp[237]) is something you can see in whether the dog approaches, and if so, how. Usually the approach is tentative, with stiff legs, perhaps low to the ground half slink, circling back and forth, ready to jump back. She sets up her own fear hierarchy and approaches at her own speed. I don't need to do much of anything. Just encourage, without touching – she's off leash the whole time. "That's good Vela." "Good job." "Fine!" etc.

   At some point she will be close enough to try a darting sniff and retreat. Which is repeated at different points on the machine. At this point I will move also around the machine and

236 Pongracz et al (2003), Mersmann et al (2011), Heyes (2011)
237 Panksepp & Biven (2012)

once again touch it, talk to both it and her. Her movement towards the machine is now smoother and while not relaxed, certainly not as tense as before. She now has different expectations. You can see, the expectation of danger is no longer very great. At some point she will have gotten all the information she needs. This machine is certainly not going to be her best friend. I doubt seriously she's going to like it or feel joy in it's presence instead of the fear she experienced just a few minutes ago. But, she obviously does not feel threatened or in danger. She's learned something new. She'll usually mark a couple of times near the machine and leave me to pet and talk to this stupid machine if I want to, there's more important fox poo just over there by that tree. I've never experienced it, that on another day, when we pass this machine again, that she's even shown the slightest interest one way or another. She's over it.

BTW – this is not MY invention. Over 15 years ago, an "old-timer" saw how spooked my previous dog, Luna, was at a new piece of farm equipment in a field, that had not previously been there. She said, I should just go over and touch it, talk with it and my dog would come over and investigate on her own. This was long before I'd ever heard of Bandura or **Social Learning** or **modeling**.

This dog (https://youtu.be/HAuzj4MxtoQ) is VERY reactive towards cars at a distance of about 10 meters, such that cars cannot drive past him without him "going off". This was the very first encounter with my car, using the

> "Where is the car?" **Trigger-ID**, which signals to him that he does NOT have to engage unless he wants to.
>
> **Participant Modeling** (Bandura) in which he waits and watches, while mom goes and engages the car. This shows him, that the car is not as dangerous or scary as he supposes. He is then allowed to engage and investigate as he wishes. He even finds it interesting enough to … take a peek inside.

This will be repeated several more times with different cars before we generalize to cars of different forms and intensities in different locations.

2) Another way to model (**Participant Modeling**) is for the caretaker to acquire the help of a friend with a dog. This needs some preparatory work (see above for the steps with the stuffed dog = **Symbolic Modeling**) before actually doing this in real life. The steps are the same, but there are behaviors listed below, which are easier for Rover to learn, when not stressed through the presence of the helper-dog. Also, having done this preparatory work with a stuffed dog with no real danger, this sets up the **positive valence** for this situation with a real dog. Dour et al (2015) wrote on how adding **positive valence** adds the effectiveness to the entire procedure. Rover will have this previous **modeling** preparatory experience as being full of treats and will know how to respond. But the trainer and caregiver will clearly be able to tell what differences in body posture, tension etc. are. This would first be done together with a trainer. While the trainer holds Rover in a sit/stay externally manifested signs of internal anxiety, when they appear. While the work with a stuffed dog above is a **Symbolic Modeling** because a substitute for the real thing is being used, this has also been found to raise the effectivity to first do a **Symbolic Modeling** and then the **Participant Modeling**. Here is a link to the preparatory training as a **Symbolic Modeling**: https://www.youtube.com/watch?v=mSWknMak2QQ

   At a distance to the friend with the helper-dog, such that Rover can calmly notice the helper-dog, but otherwise reacts neither in an agonistic nor a friendly, anticipatory manner, the caretaker goes to the helper-dog and interacts with this helper while Rover just watches from a distance. The caretaker then walks back and takes over the leash from the trainer. Even if Rover is paying attention to the other dog, in order to set up a behavior chain we need, the

caretaker cues “Where is the dog?” as **Trigger-ID** and if necessary, points in the direction of the helper-dog. As soon as Rover has looked in that direction, the caretaker marks “Yes” and delivers the food reinforcer. If Rover is at the right distance, he will look at the helper-dog for a couple of seconds.

As he begins to **habituate** to the stimulus intensity of this distance, his look at the helper with dog will become shorter and shorter until he just whips his head in the helpers direction and right back in anticipation of the mark “Yes”. Stay for another couple of repetitions and then, move the entire procedure 1-2 steps closer to the helper-dog. You can use the **hand-touch** method for those 1-2 steps froward outlined above in the video if you wish. Notice if and how Rover approaches. If he’s loose and not tensed, he’s still within a comfort zone. Start the **Participant Modeling** procedure again with the same conditions concerning staying at one distance or moving away.

Participant Modeling has been successfully mixed with **RP**. One way to do this is, to do a series of **Participant Modeling** up to one intensity, then back up to the original starting point and reach the same point using **RP**. On the one hand, this is called **over-training** and usually is a good idea with both techniques. On the other hand, Rover is continually in motion with **RP** and will notice having to actively approach the helper-dog. Because of going back to get the reinforcer and coming forward to touch the hand, you the trainer will be able to better judge his arousal level due to his gait. Compare the difference between him bounding back to take the treat with advancing to touch the hand. If you see his gait getting stiffer, body position lower and/or the gait getting slower when coming to touch the hand, stick at that distance until the gait in both directions gets closer in appearance. It’s better to be conservative than hasty.

Having spoken about being conservative, there is an exception. If you’ve been making good progress – and this means being able keep the tension staying out of Rover’s body so that you stay for 4-5 “relaxed” trials after only 2-3 normal ones, try advancing once instead of 1-2 steps to the next intensity station, 5-6 steps if Rover does not show agonistic behaviors. Being a bit tense is ok for 1-2 trials – **Expectancy Violation** (see above) is in play. But then, after the second trial at this distance, retreat to the last distance and do enough trials that Rover can do them without visible tension at that distance 4-5 times. Then advance as usual only 1-2 steps. For example:

Rover (12 reps)..... helper with dog
..Rover (12 reps).....helper with dog
..Rover (12 reps).....helper with dog
.....Rover (2 reps).....extended Extinction trial.....helper with dog
Rover (8-10 reps).....helper with dog
..Rover (8-10 reps).....helper with dog
..Rover (12 reps).....helper with dog

The next levels should go faster than before the **extended Extinction** trial. The number in reps are not exact, just representative for what -could- happen. Rover will show you when he’s habituated and then you do
3-4 more to be sure.

The idea of **Participant Modeling** as described and empirically investigated by Bandura, Ritter and others, works best when familiar people are the models who first interact with an object of fear. It will work with strangers, but **Symbolic Modeling**, such as via a video of an interaction with that object of fear, is not as effective as **Participant Modeling** which is usually done by a parent, a teacher or a therapist well known to the patient.

This video https://www.youtube.com/watch?v=UTUPpwoj-s0 shows a short excerpt from the observational part of the FA, followed by the 2nd training session using Bandura's **Participant Modeling**, in which the caretaker engages with the trigger (me) while the dog watches. We see the baseline for today – still some woofs. We see how the dog reacts after the first "trial" watching the caretaker and I interact.

The key to this is, that the dog is not forced to interact at all. The dog is "asked" from behind, if he wants to look: "Where is the man?" At first the dog will look, but then decide, case-by-case, if he wants to engage or disengage. The dog will be reinforced for either decision, as both are good.

One other type of **modeling** can have a very special application. Let's suppose we're dealing with a dog, who has learned a specific behavior, but simply doesn't want to do it. For whatever reason. One can reward someone nearby for doing exactly what we want Rover to do while letting him/her observe, but otherwise ignoring him/her, and with time Rover will become "motivated" to also get this kind of reward and imitate the behavior done by the person doing it. This is called the **Response Facilitation Effect**[238] and looks like this when done well: https://www.facebook.com/131038770247070/videos/1325040570846878/

Sometimes, especially when working in real life, "stuff happens" and we, with the sort video clip below, have a perfect example of using that situation, combined with human support and encouragement and attempts to upgrade the **valence** of the situation, to let Rover see, that ... all is actually ok and nothing bad happened: https://www.youtube.com/watch?v=j-6k_6CZHh8

Combining Reinforced Practice with Participant Modeling

Participant Modeling can be combined in a fear-coping strategy with any number of other techniques, as long as the underlying principles being accessed are in the **Extinction/Expectancy Violation/Habituation** paradigm. This dog's initial distance for agonistic behaviors was >60m. In this video, the 2nd session, we started at about 45m which was too far, better too far than too stressed. This is the 2nd session, using some variations of

1) "Where is the man?"
2) **Reinforced Practice** to introduce ...
3) **Participant Modeling**
4) Then doing a slightly different type of **Counterconditioning** or **Evaluative Conditioning** and
5) ending with an abbreviated version of **Stalking** (**Social Walk** – see below) and reversed **Treat & Retreat**

All are done using a graduated approach technique of raising intensity after **Habituation** to that level.

All of the above depend upon the following underlying processes:

1) **Extinction**: the unwanted behavior is not reinforced, because … it's not necessary
2) **Habituation** to the intensity of the exposure of one level, before decreasing the distance. In the last session I stayed fairly stationary and Jabba could engage or not as he wished. In this one, we both decreased the distance and he did engage or not engage as he wished.
3) **Expectancy Violation**: the horrible thing the dog is afraid of happening, never does. "Well,

238 https://keats.kcl.ac.uk/pluginfile.php/1137482/mod_resource/content/1/page_14.htm

maybe it isn't so bad after all."

4) **Self-Efficacy** and **Internal Locus of Control** (from the dog's perspective) "I can control my interaction with that scary thing and therefore I CAN do this thing." for example: **https://www.youtube.com/watch?v=Sja1AAqa8co** or ...

Ollendick & King (1998), in reporting on the efficacy and/or effectiveness of **Reinforced Practice** alone or in combination with **Participant Modeling** and/or other techniques, found several such successful combinations in studies, for example: Menzies & Clarke 1993; Ost, 1997; Kendall et al, 1992. How would this look with a dog which is fearful of people?

The following procedure consists of:

1) **Participant Modeling**, in that the train first simply approaches the scary person and talks, laughs with this person while the dog watches.
2) **Reinforced Practice**, in that the dog is reinforced to hierarchal approaches as well as for cued or self-initiated retreats (preferred)
3) **Evaluative Conditioning**, at a more advanced stage of the procedure as detailed below.

- Introduction of **Participant Modeling**: As in the short outline above, the caretaker stations herself together with the dog at a distance to a helper person, at which the dog notices the helper person, but does not find it necessary to react in an unwanted manner. Indications of positively wanting to contact this helping person is allowed.

  The trainer, who has already established a positive relationship with the dog **(positive valence)** approaches the helping person, remains with this person for 1-2 minutes while the dog watches, speaks with this person in a friendly manner, can even give this person some object. After this period of time, the trainer returns to the dog joyously and give the dog a reward. This is repeated 3-4 times. This is the part that consists of **Participant Modeling** – i.e. showing the dog that one can interact with this person, that this person is not dangerous.

- Combination of **Participant Modeling** together with **Reinforced Practice**: Now the trainer returns to the helper person and while talking to this person, laughing, the trainer throws a piece of high value food towards the dog, such that the dog begins to anticipate this throwing. This may entail actually simply calling the dogs name and then throwing the food. You may want to practice this outside of such a session first, so that the dog learns to expect this. The first couple of times, it's important to aim for the front feet, then to the side and then a little past the dog, so that the dog needs to turn around and "retreat" from the helper person to get the food. When the dog does turn around, the caretaker then signals "touch", extends the hand so that the dog returns to the caretaker. We've just practiced a tiny advance (maybe 1-2 steps, depending upon how well the first 2 throws go) plus a cued retreat.

  At this point, when the trainer now calls the dog's name, the dog is anticipating the food being tossed. Now one can aim 2-3 feet in front of the dog's feet for the first throw, wait for the dog to come forward to search for the food on the ground, then toss one to the side behind the dog. When the dog has found this bit, the caretaker once again signals "touch" to bring the dog back. In an optimal case, the caretaker may need to take 2-3 steps towards the helper/trainer as the dog searches for the first bit of food. The caretaker should NOT retreat from this position as the dog is then returning to the hand touch more than 1-2 steps. In this manner, the trainer can guage and adjust the distance the dog advances as well as retreats, depending upon how "able" the dog is to advance to get the food. If the dog show ANY hesitation, stop, have the caretaker back up a few steps, wait 1-2 minutes while the trainer just talks to the helper person before resuming the **Reinforced Practice**/**Particpant Modeling** combination.

- Introduction of the **Evaluative Conditioning** via the combination of **Reinforced Practice**/**Particpant Modeling**: Depending upon the dog, when the trainer sees that the dog can approach up to a distance of 8-10 feet, the trainer continues as above, but … after 3-4 food tosses with retreat, the helping person tosses one piece without looking at or otherwise interacting with the dog. The trainer should instruct the helping person to aim simply at the dog. Hitting the dog with a piece of chicken or cheese is ok. As soon as the dog has found and eaten this bit, the trainer follows up with a toss behind the dog, at which point the caretaker signals "touch" for the "retreat". This back-and-forth, combination of helper and trainer tossing is repeated as long as it takes, that the dog shows joyful, anticipatory advances.

  If the dog shows any overt negative stress reaction, the helper stops immediately to toss, as this increase in the exposure hierarchy is simply too much at one time! Go back to just the trainer throwing.

  If all is well, progress to the point, where only the helper person is throwing. The new instruction here is:

  throw one time at the dog, and then one time past the dog.

  The trainer only observes and encourages the dog, and may give the caretaker tips, for example when to offer the dog a "retreat" through the "touch" signal. Do not rush this part. The reason why this is **Evaluative Conditioning** is, that the CS is now also the source of the US (food). One can argue, that the dog is not only learning a new set of responses to the CS (helper person), she may very well actually learn to like this helper person, something that is now seen as different to pure classical conditioning, in which "liking" is not necessarily the goal, but rather simply not behaving in the former manner to the CS. And we do not want to "injure" this process by asking the dog to come too close too soon. Also here, the caretaker should practice the alternative behavior of "retreat" through the "hand touch". You know the dog is seeing this helper person "differently" in that the dog may even ignore the "touch" signal. But … if this should happen, the helper person should hide the food/food hand and briefly turn away, while the caretaker repeats the signal.

  This last part above integrates reverse "Treat & Retreat" with the **Reinforced Practice** and **Participant Modeling**. This means, which great caution, one can have the dog approach, always as she wishes to right up to the trainer/caretaker. The trainer can, at this point interact with the dog by speaking to her, stroking her. When the dog can tolerate this close proximity to both, the helper can, without drawing attention to herself, simply let drop a bit of food. When the dog notices this, she will probably leave the trainer to get this food. The trainer can call the dog back and all can repeat this several times. Then, the helper can simply hold a piece of food in her fist and one can wait to see if the dog then sniffs the fist. If this is the case, the helper may SLOWLY open the fist and let the dog eat out of the hand. The helper should not otherwise move, as a sudden, unexpected move may scare the dog. After giving the dog several pieces of food in this manner, the helper may now try to move the fingertips of the feeding hand while the dog is getting the food – this simulates a chin scratch. If all goes well, repeat several times.

  Now one should take a break by the caretaker calling the dog back with the "touch". After this short break, the helper can try, at a 90 degree angle to the dog, simply call the dog over to her/trainer and let the dog "request" the food from the fist. If the dog can do this, the caretaker once again recalls to "touch" and this approach/retreat is practiced several times.

Resource Guarding

Resource Guarding is often incorrectly diagnosed and misunderstood. It has nothing at all to do with "dominance", as it is an absolutely normal dog behavior – also not unknown with humans. Who allows someone to simply take what belongs to him/her without putting up a fight. Who allows someone to even try this?

Dogs also have things they like, want and see as belonging to them. They rarely decide to simply share these things with other colleagues. But how they react to attempts to share something they see as belonging to them is different from object to object and from individual dog to individual dog.

There are many forms of **Resource Guarding** that present themselves. But I want to address one or two forms that may either already exist in a "fearful dog" OR may develop during the training sessions for other fear responses. This is when the dog exhibits **Resource Guarding** with the caretaker becoming the object that is being guarded, usually against incursions by other dogs, when the caretaker interacts directly with these other dogs or they with the caretaker.

Some people misrepresent this as "The dog is protecting me.". This is most likely NOT what is going on. The dog is not acting suddenly as mom's body guard. The dog is however guarding all the good stuff, that mom has to offer him. The food, the attention, the fun, the games, the social contact, the security. He doesn't want to share these with any other dog and will protect these by any means necessary. Including the similar agonistic behaviors he used to drive off the same dog he used to be afraid of.

Why does this happen sometimes and more often, not at all? There is no certain reason, but there may be contributing factors to be aware of. I've only seen this three times with my clients and in all three times, the client came with the "I've tried everything, but ...." line. We can imagine, what "everything" can mean. In these three cases, the **Relationship** between the dog and the caretaker had simply broken down – it was either highly degraded or destroyed. The fact that we spend so much time in building and re-building this **Relationship** to raise the positive **valence** associated to the caretaker, that was perhaps not so high before, can probably be one of the most important contributing factors of resource guarding the caretaker. What earlier had not been something to be upset about – contact of the trigger with "mom" – now has become of primary concern, now that "mom" has become something so special and necessary to the dog. The dog already had working and functioning agonistic behaviors we'd been working with within one context, i.e., reduction of general fear-related responses. But now the dog has a new fear: fear, that that other dog, who is no longer fearsome as a dog, has now become fearsome as a potential resource-taker. Often the initial resource guarding behaviors appear to be more intense than the previous general fear responses were earlier.

These new **Resource Guarding** behaviors of the caretaker him/herself typically appear when the caretaker tries to pet or feed another dog, for example during a **Participant Modeling** technique, or if another dog approaches the caretaker and "begs" for food or attention. The caretaker's dog and the other dog may be able to play with each other as long as they are away from the caretaker, or even with the other dog's caretaker (see below for an exception). But if that other dog comes near "mom" or "mom" goes to that other dog, all hell can break loose.

If this **Resource Guarding** behavior does show itself during a **Participant Modeling** session, we of course IMMEDIATELY stop the **modeling** and any interaction between the caretaker and the other dog. **Symbolic Modeling** (another person interacting with the other dog is fine and can even help reduce the subject dog's anxiety, by seeing that that dog has no reason to want anything from "his mom"). There are other very effective **Graduated Exposure Techniques** one can apply instead of the **Participant Modeling**, that do not rely upon the caretaker interacting with the other dog. But for now, any method from any source that involves the caretaker interacting actively and directly with the trigger, should be avoided.

There are enough methods out there for working through this problem. All start with management. “Mom” simply does not interact with any strange dogs, ignores them and if her dog does show **Resource Guarding** behaviors, separates the two without “punishing” her dog in any way, shape or manner. That will only prove her dog’s fear to be “correct”.

Whatever one does choose to do, one should carry through with it until the basic fear responses have first been addressed and the behavior change goals for the initial fear responses besides the **Resource Guarding** have been met. If the goal is not to train for off-leash meet-and-greets**,** but rather simply to be able to navigate in “real life” past any fear objects, then a simple request of any other dog-owner “My dog doesn’t like other dogs” is fine and you may simply keep the fact to yourself, that your dog is not good with other dogs interacting with you present during such encounters. If you do decide to train all the way for off-leash meet-and-greets, you then should train for social interaction between your dog and anyone who has another dog. This is where the well known anti-**Resource Guarding** technique can then be applied.

Two of the cases I had involved **Resource Guarding** were only attached to the dog’s own caretaker. But the third dog generalized to any other human who might have food – so it was a very specific food motivated **Resource Guarding**, and not a human attached **Resource Guarding**. You may have to act conservatively and warn the other person, “Please don’t feed the dog when my dog is there – he doesn’t like that. We’re working on it.” (Saying “We’re working on it” is usually good to include, as people have more understanding for a problem that is receiving active attention and won’t be tempted to holler back “Why don’t you train your dog?”).

Here is a suggestion as to how one can re-introduce the idea to the student dog, that he/she doesn’t risk losing anything to another dog by the caretaker’s close contact with that other dog. We can start using our friend, **Reinforced Practice**. Create a typical set-up situation, with the trigger dog a good way away from Rover, such that Rover can be completely relaxed while seeing the trigger. The caretaker places herself right in front of Rover, but slightly to one side, with her back towards the trigger. It’s important, that Rover always have the trigger in his sight. Rover should be on a 3-6 meter leash for this exercise.

1) Simply feed Rover one tiny bit of food while in a soft, soothing voice, telling him what a great, super dog he is. At first, keep the food coming – he can’t bark if he’s chewing. If he tries to go around the caretaker to get to the trigger, he’s too close – increase the distance.
2) Now, we do a similar exercise like a “sit-stay”. The caretaker signals a “sit-stay”, takes one step back (towards the trigger) and immediately returns to Rover to feed and celebrate. Slowly expand the number of steps backwards to 4-5, always returning right away.
3) Same as number 2, but now wait 2 seconds after taking the backwards steps before returning to Rover. Always feed when you reach him such, that he’s still able to see the trigger! And don’t forget to take the extra seconds to verbally and tactilely celebrate with Rover. Not excitedly, but rather soothingly.
4) After having reach 5 steps towards the trigger and waiting 5 seconds at that position, now the caretaker calls to Rover to come, but at the same time starts moving towards him so that the caretaker meets him in the middle and “animates” Rover to return with her to the original starting point. Feed and party. Repeat so that Rover is anticipating the return.
5) When Rover is anticipating the return, NEITHER come to meet him NOR return to the original starting position, but rather simply have the caretaker “catch” him as he arrives and feed/party there.

Both are now 5 steps closer to the trigger. Repeat steps 1) through 5) until about a half meter from the trigger. Now, Rover should be able to sit 2 meters from the trigger and not be “bothered” by the trigger. If this is not the case, then you’ve progressed too quickly. If this is the case, the caretaker can alternately throw food to Rover and to the trigger while all the while speaking soothingly an encouragingly to Rover, otherwise ignoring the trigger. Periodically the caretaker should simply

stop feeding either and go over to Rover and cuddle, chin-scratch etc.

Despite any and all great success, do not do this exercise or any exercise related to fear reduction or coping for more than 10 minutes tops. These are VERY tiring and stressful for the dog ... and the caretaker. Both need serious down-time during sessions in a safe, secure setting to “shake it out” and be able to concentrate further. Doing any of these exercises too long becomes counterproductive, inasmuch as both members of the team loose their capabilities to actively mentally participate. If either Rover or his caretaker show a need for a break in any manner – respect this request. Rover might start sniffing something invisible off to the side. Take this as a request for a break.

At this point, one can move the team to a bench, and practice approaches of the trigger to himself and his caretaker, where at the beginning, the trigger just goes on past, then sits down next to the caretaker who, as a very first step, places Rover on the other side of her away from the trigger’s caretaker (management) and starts the alternating feeding again. This is almost the final fine-tuning. The final fine tuning is having Rover on her one side and the trigger on her other side and simply repeating this alternating feeding and giving Rover attention, while not giving the trigger that attention, until the caretaker CAN actually interact quickly with the trigger and right afterwards with Rover.

Resource Guarding of the caretaker doesn’t occur often and is actually a good sign of a repaired **Relationship** – just unfortunately taken by Rover to an extreme level. This is not WRONG, it’s just too much. But it also usually doesn’t just go away. The caretaker will always need to keep this tendency in mind and prepare Rover for coming contacts, just to remind him, that “it’s ok, I’m still going to be here.” **Resource Guarding** is one of those behaviors that is not simply of an operant nature, but is mostly “in the dog’s head”, so needs to be addressed in a manner that addresses the problem not just through observed behavior change, but such that those processes of **Extinction**, **Habituation** and **Expectancy Violation** are addressed, but in this case through gradually reintroducing the contact that set off the **Resource Guarding** behavior cognitively, now as NOT being as dangerous as once supposed. This has to do with gradually, at Rover’s pace, changing his perception of the situation and what that means for him. If only we could use words to explain this to him, he’d understand, but he doesn’t so we need to find other ways, by example, to convince him.

3.5 – Social Walk

The procedures above are wonderful for helping Rover **habituate** to his fear and to learn that that scary thing is not so scary after all – **Extinction** through **Expectancy Violation**. He could however, with our help, kind of sneak up on that other dog and check him out. He's learned, that he doesn't need to stand his ground and that he can get out of Dodge whenever he wants. But he still hasn't learned what to do when he gets up close and personal. How will he learn to discern if the other dog actually wants to meet-greet him or tear his head off? These are doggy social skills and many fearful dogs, be they hiders or chargers, do not have very good and well developed social skills. They've always been kept away from other dogs because, who knows? They might attack that other dog – how embarrassing for the caretaker? By the way, frustrated greeters also often have deficient social skills, so the **Social Walk** can be good for them also. And many frustrated greeters would really like to meet-and-greet but then get scared when they get close, because they don't have the experience to know what the other dog wants.

This is, as already discussed, one reason why we do not want to change all fear to unbridled joy, even if we could. Not all other dogs are nice, not all other dogs want to meet Rover and Rover needs to learn with our help, how another dog communicates this to him, but also, that he doesn't freak when he understands this. He needs to be able to, cued at first, hopefully later independently, retreat from such a dog. Or such a human.

Social Walks are a great way, in a relatively safe manner, to help Rover learn about what other peaceful dogs are and **Social Walks** can be done at any point during the training, where the trainer feels he/she and Rover can handle it. **Social Walks** do **not** necessarily need to lead to a close-quarters contact. I like construct sessions to do a **Graduated Exposure** approach as outlined above in the beginning, and then at the end do a **Social Walks** for 10-15 minutes. The general rule for a **Social Walk** is "all is possible, nothing is a must". Basically it's a **Graduated Reinforced Practice** procedure. The two dogs with their handlers start 30-50 meters apart, depending upon the Rovers ability. Can he be that close to the other dog and have more interest in the rest of the environment than in the helper-dog? If yes, that's the starting distance. The helper-dog with caretaker lead and Rover with his caretaker follow on a 3-5 meter leash. You always start with Trigger-ID as this is a behavior chain and you can better judge his relative arousal level by his need to stare at the trigger walking up ahead. The helper-dog/caretaker set the tempo. Rover and his human follow, generally at Rovers speed. The job of Rover's caretaker is two-fold:

1) To see that Rover doesn't just charge up to the helper-dog from behind. So if Rover is getting too frisky, his caretaker practices a couple of **hand-touch** recalls: "Rover, touch". "Rover" is the cue to re-orient to handler and "touch" is the motion cue to go back to the handler. After such a retreat, start again with a **Trigger-ID**.
2) To keep the experience fun for Rover. Keep up a happy banter full of praise, encouragement. Also watch for any stress signs, especially when Rover starts closing the gap. If this is the case, "Rover, touch" and let the helper-dog move off again. Retreat is NOT defeat. It's prudent and it helps underscore this possibility for Rover, if he's feeling stressed. Also here, after such a retreat, restart the procedure one again with a **Trigger-ID**.

There is no fast rule as to when the two dogs actually make first contact, except that Rover should be showing interest, but not be frantic. If Rover is for any reason over-aroused, it's better to put off the actual contact for another day. Over arousal can be due to fear or **frustration**. **Frustration** is often accompanied by vocalizations, like whining or even japping. I don't like to see this first contact as a general rule until the end of the first session or even better, the end of the second 15-minute session. Conservative.

What does this first contact look like? Often, Rover will kind of sneak up behind he helper-dog and kind of stick his nose in her bum. So the helper-dogs human must notice that Rover is coming up from behind. When he starts to get close, she should start rapid fire feeding her dog, so that her dog doesn't spin around and confront Rover nose-to-nose for being "rude". We'll work on "rude" later. On the other hand, Rover's human should enforce the 5-second rule: at 3 seconds, cue the "Rover, touch" which should get him away from the helper-dog's bum in under 5 seconds. Give the cue and run back maybe 15 meters away and start another approach. This is where that preparation with "Rover-touch" **hand-touch** in all it's variations comes in handy. The 180 degree turn-around=recall is laden with **positive valence** instead of caretaker stress. In such cases after several such approaches, Rover will be much calmer. He may not even want to sniff the bum anymore, but may just walk nicely next to the helper-dog.

Another type of encounter is typical for dogs who are either still a tad "worried" or actually are not interested in up-close and personal. These dogs will approach generally slower. The great things about either approach are:

1) While approaching from behind, Rover has ample time to bathe in the helper-dogs smells. Pee markings, saliva ... all these hang in the air and on the vegetation behind the helper-dog, giving Rover lots of time to work out more exactingly, what kind of dog that helper-dog is.
2) When first contact is made from behind, Rover is at the far end, away from those loaded semi-automatic machine guns up front in the helper-dogs mouth. It's not so threatening.
3) If Rover starts to "lose it", he's getting cued to get back via **hand-touch** to safety before he actually has time to react agonistically. He doesn't learn to flip-out, he learns to retreat. **Retreat in the face of fear always good**.

So in many cases, once Rover has reached the helper-dog, he/she's already decided, he/she doesn't need to engage. Very often, the dogs will simply walk calmly next to each other without paying each other much mind. TERRIFIC! They'll sniff the same flowers and bunches of grass, but otherwise ignore each other. When this happens, let it continue for 1-2 minutes, then "Rover, touch" and let him/her leave and re-approach again. And it's just this practice, with as many different dogs as possible, that is so necessary.

If there is one thing missing with many other protocols, that is via **Social Walks** offered with this modern evidence-based **GET**, that usually would not be a problem in the human application of this therapy, but very well could be addressed in other manners, both for humans and with our dogs, it would be the prosocial contact with that former trigger. Learned coping strategies which reduce the need of former undesired fear responses do NOT teach Rover how to read another dog to determine if that other dog is actually friendly or not. The **Social Walk** technique helps, but it's important however, to be careful when actually approaching strange dogs in real life after completing this procedure. An unhappy encounter with an unfriendly dog can set the client dog back to square one, as this is one of the main causes for **Return of Fear** – unexpected encounters with original aversive stimuli, which in this case is another dog with a reaction, that Rover hasn't learned[239]. Another reason for a **Return of Fear** is not practicing often enough, either with known dogs or with new ones. It's always a good idea to run through the whole routine again, and especially with an unknown dog. Conservative is safe and therefore not wrong. And Rover is not now and never will be a so-called "normal dog". He is a "special needs" dog and another way to stave off **Return of Fear** is to set him up for success and practice the "Where is the dog", even if you think he doesn't need it. It won't hurt, it's become a fun game=**positive valence** for him anyway.

239 Vervliet et al (2013)

3.6 – Old & New Favorites

Just because they're old, doesn't mean that everyone knows of them or that they can/cannot be combined, recombined, reconfigured. Here are just a couple of my favorites.

WARNING: these are my favorites, skip over if you're not interested or already know these.

3.6.1 – Treat & Retreat

There are almost as many versions of this as there are people using it. However I've encountered so many colleagues, who are not aware of it. There is pretty much no agreement as to who came up with the idea, just as there is pretty much no agreement as to "in which direction" it's done. I'll just outline how I usually do this, with emphasis on the word "usually". The main idea as I like to think about it, is again, teaching the dog that **retreat is always an option**. It is also a half-way good, with cautions, way to judge a dog's readiness to engage with a trigger. It also works on the idea of **Extinction** through **Expectancy Violation**, meaning all the horrible fears of terrible things happening to the dog because of the scary thing, simply don't come to pass. Since the trigger is also giving the appetitive stimuli, **Evaluative Conditioning** may also take place, i.e., the dog may even learn to **like** this "Goodie-Man or Goodie Woman". **Habituation** does not really occur in that respect until the very end of the procedure, as the temptation of the food will override in some cases the desire to stay at one comfort-level before moving on. Be aware, that the dog may make an unwise choice of advancing too far for his own comfort, so it's important to target the approach distances to very small distance increments to avoid this if at all possible.

Why and when use it? Although I've already touched on this, both as a **Reinforced Practice** techniques and combined with **Participant Modeling**, I'll no go further into it as a "stand-alone" technique.

If you've worked with a so-called dog-human reactive dog and you think the dog could be ready to learn actual meets-greets in a prosocial manner. I find that I use this technique when the tolerance distance is 15 meters or less.

I like to start with the dog sitting to one side of the caretaker. I need the dog's attention, but it's a good opportunity for the caretaker to rehearse the "Where is the man?" **Trigger-ID** from earlier. At this first repetition, I'm stand in the typical pose of "Here's a treat for you" towards the dog or 90 degrees away from the dog, sometimes on one knee, but I do not say anything. It's only to get the dog's attention and possibly to wake an interest in the food.

> WARNING: I remember hearing at a seminar years ago, that one needs to be careful counting on the absoluteness of food as a predictor of behavior. The longer I do this, the more I agree. The only time I've almost been bitten was when a dog was taking food from my hand, I shifted weight, and the dog was startled and snapped.
>
> While a dog is able to take food, and is relatively comfortable, it's not until that dog is offering contact without the promise of food, that a **startle effect** will most likely NOT result in a snap. Before then, the dog has likely not yet **habituated** enough to me as the trigger to be completely at ease. So ... don't rush this. Initial success is only that, initial success. It is NOT a done deed.

The caretaker reinforces both the looking at "the man" either at breaking off of the contact or if prompted to break-off. Since we're only using this as an attention-getter, it's ok if the dog fixates on me. When I do have the dog's attention, I throw a piece of high value food, aiming right between the dog's feet. This too is only to get his attention, that food is coming.

After this initial toss, I instruct the caretaker to let the dog approach on a long leash which only acts as an emergency brake if the dog were to bark/lunge. The caretaker only actively enters the picture

to possibly help the dog find the food, if my aim is bad. The dog will get the idea after several tosses between his feet, that ... this nasty man ... has food.

Most dogs will begin to take wary steps towards me. When I think, that the dog has understood, that food is coming and is now watching for when I'm going to throw, I will start mixing the throws:

1) once between the feet or a little in front of the feet, and then
2) the next behind the dog, so he has to "retreat", i.e. go backwards to go get it.

This sets up the situation of the dog then coming back towards me for the next treat. I watch very carefully how the dog carries himself while doing this. If the dog is walking "carefully", stiffly, I will not throw anymore in front of the dog, only behind him. We will practice the retreat-to-get-the-food until this body language loosens up. This is one of the most important points. If the dog does not have to push through his comfort-zone to get the food, no learning via **Expectancy Violation** can occur, i.e., that that evil man doesn't kill him, quite the contrary, he has food. But you also need to reteach the dog through either throwing away from him or better yet, behind him, that **retreat is always an option**. Even in the face of food.

Some dogs, especially dogs who are highly trained and especially deeply "bonded" may not want to simply leave mom's side without express permission, either from mom or from me. These are the only ones, as an exception to the rule, I will verbally "invite" to come for the food, because they won't come otherwise, even if they'd like the food. I'd rather see the dog move totally voluntarily, but we don't always have that situation.

When the dog can come within 3 feet, and is looking very ready to eat, with relaxed stance in my presence at that distance, I will drop to one knee at 90 degrees to the dog and continue. What often happens is, if I wait a few seconds too long before throwing, the dog will actually nudge my throwing hand with the treat in it. I do NOT open the hand right away. I want this nudging several times, maybe the attempt with the tongue to get into my fist holding the treat. But when I do feel this tongue a few times, I will open the hand. But I will still throw the next one a couple of feet away. Retreat-treat-retreat-treat-retreat-treat. I will continue this for several minutes. Then I will throw a treat maybe 3 meters away and while the dog is running to get it, I will stand up and repeat this up to and including the tonguing of my hand. A formerly nasty man standing is a different context than a formerly nasty man kneeling.

As to the underlying processes involved. As with the other techniques mentioned above, **Extinction**, **Expectancy Violation** are in play. Is in Treat & Retreat, respondent counterconditioning going on or **Evaluative Conditioning**? That's the tough one because we can't see what's going on in the dog's head. We are **Counterconditioning** a CR to the CS. But which one? One could do the same if the caretaker did the tossing, but ... we have the increased danger, that the dog only tolerates the CS in order to retreat. So the emotional content of the CS hasn't really changed if the caretaker is providing the food. What often happens with this particular version is, that the CS does take on a completely new emotional content for the dog. This CS-treat dispenser has now really become something positive – **positive valence** sets in. How positive depends upon the dog. It may still just be a tolerance, albeit with less danger of agonistically reacting. One does have to go slowly as the treat-tosser. But especially if this type of Treat & retreat is done over a period of multiple session in many-to-most cases, this CS does actually begin to be **liked** by the dog, because those good things are coming directly from the previously fearsome thing. And since there is an actual change in how the dog perceives the CS in terms of **like**-or-**dislike**, it would fulfill the criteria of **Evaluative Conditioning**. Think of of the snake / spider phobia subjects who lost their fear of the CS (**Counterconditioning**), but still found the CS to be disgusting = **Evaluative Conditioning**, i.e. the CS kept the same **like**/**dislike** value.

3.6.2 – The Street of Life or Parallel Walking

This is an oldie that is often done in group settings, but is just as valuable when doing individual work. Since this is, like many others, done in a graduated exposure manner, i.e. Using ever decreasing distances as the dog habituates to each individual level of intensity, this relies on the already explained paradigm of

1) **Extinction**: through non-rewarding of unwanted behaviors because they don't happen anymore.
2) Which itself provides the **Expectancy Violation** of that horrible expected catastrophe, time and time again not occurring, as well as
3) **Habituation** in that the trainer does not signal a decrease of the distance until the dog is pretty much no longer interested in the "other side".
4) **Social Referencing**, **Attachment Theory/Secure Base Effect** as part of the basic Relationship play a crucial part, also here.

The technique itself is the operant **Reinforced Practice** as discussed in the theory part, inasmuch as it is a rehearsal for "real life" situations of passing triggers, for example in the street. First at the level of the trigger being on the other side of the street, but with time and decreasing distances, even on the same side of the street.

You set this up using imaginary parallel lines in the sand s below:

(C=caretaker D=dog T=trainer)

C/D → → → → → → → → → → → → → → → → → →

10 meters distance

– T – – – – – – – – – – – – – – —– – – – –

In this first version, the caretake sees the trainer standing on the other side of the imaginary street, stops, **Trigger-ID** "Where is the man?", the dog looks at the trainer and when the dog is finished looking, the caretaker leads the dog, if she's not already there, using the **hand-touch** to the caretaker's left side, away from the trainer and initially using the **hand-touch** over the dog's head (**LLW hand-touch**) jogs lightly straight ahead, giving joyful verbal encouragement. This is the basic management technique and can be used even with dogs who are on the edge of their capabilities. The jogging forwards with the prompt of the **hand-touch** helps promote that non-reactivity aimed towards the trigger. Having reached the end of that line without having been attacked by the scary trainer (**Expectancy Violation**), both caretaker and dog celebrate the goodness of continuing life by first turning back towards the trainer, **Trigger-ID** "Where is the man?" and the caretaker not only giving the dog what had been in the prompt hand, but also at least three further treats, one after the other. At this point, one can let the dog take a short sniff-break, for example by simply tossing a small handful of treats on the ground, or even just letting the dog go to sniff for herself. Then you can repeat the exercise by the C/D reversing field and repeating going the other way OR keeping the same lateral distance to the Trainer, who remains stationary the entire time, and going around the trainer to his other side thusly:

– T – – – – – – – – – – – – – – —– – – – –

10 meters distance

← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← C/D

Since the dog is again on the outside with the caretaker between the dog and the trainer, no **hand-**

touch is necessary to reposition the dog. Repeat the the exercise. By the next reversal, the caretaker can try walking at a normal speed instead of jogging. If the dog is not interested at all with the trainer, this shows the level of **Habituation** to this distance. Good stuff! The caretaker can even now and again, stop and "Where is the man" (**Trigger-ID**) before going on.

The next step would be to, instead of going back to the first starting position, that the caretaker reverses direction on the same side of the trainer in this manner:

– T – – – – – – – – – – – – – – – – –

10 meters distance

C/D → → → → → → → → → → → → → → → → → → →

Before marching off, the caretake should perform the **Trigger-ID** "Where is the man?", and use the **hand-touch** to lead the dog over to the caretaker's right side, again away from the trainer. This is always a good idea – this is training, but also a rehearsal of a management situation and established a safety position of the caretake always representing a **buffer** between the dog and the "danger". With time, you might even notice the dog taking up this position without prompt, which is **pure-communication** with the caretaker: "Mom, there's that scary thing up ahead..."

When all of the above can be done with ease for the dog, is even a bit boring for the dog, decrease the distance between trainer as C/D thusly:

– T – – – – – – – – – – – – – – – – –

8 meters distance

← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← C/D

and repeat the procedures.

The next variations are patterned in the same manner, except, the trainer and the C/D are now walking along their imaginary lines, or sides of the street, if you will, in opposing directions:

← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← T

10 meters distance

C/D → → → → → → → → → → → → → → → → → → →

always starting with the **Trigger-ID** "Where is the man" (now far ahead on the other side of the street) and **hand-touch** prompt to the outside such, that the caretaker is that buffer between dog and trainer. Again, one can loop such that the sides are changed:

← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← C/D

10 meters distance

T → → → → → → → → → → → → → → → → → → →

which is easier, because the caretaker does not have to reposition the dog with the **hand-touch**, or by simply reversing field, which means the **Trigger-ID** "Where is the man?" lead the dog to the other side with the **hand-touch**:

T → → → → → → → → → → → → → → → → → → →

10 meters distance

← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← ← C/D

And again, when this is all so boring for the dog, you can decrease the distance between the sides of the street to 8 meters, 6 meters, 5 meters, until you are passing each other as if on the same sidewalk, but ... always with the dog on the outside with the caretaker as that buffer between trainer and dog.

The final variation is the most difficult and is the one you actually hope you do not often encounter in real life, except with good friends of the dog. This is where you have to stand your ground with the dog and the evil man is approaching. It's done in the same manner, but, when you see that evil man approaching you either use the **hand-touch** prompt to move the dog onto the side opposite where you think the evil man will pass OR simply into the usual **safety-position** between your legs. And...if necessary, feed, feed, feed while blabbering sweet nothings into your dog's ear.

T → → → → → → → → → → → → → → → → → → →

10 meters distance

– C/D – – – – – – – – – – – – – – – – – – –

Personally, I tend to do this version often at much greater distance, pretty much from the beginning of exposure sessions, so that the dog gets used to seeing me move at safe distances. A moving evil man is the most "dangerous" for the dog in most instances and is a good measure of the dog's basic state of **Habituation** to the trigger at any one distance. If the dog is moving and the trigger is stationary, there is more of a feeling for the dog of being able to retreat-if-necessary. Rotter's **Internal Locus of Control**, the ability to influence and control one's environment and Bandura's **Self-Efficacy** that the dog can actually reach his behavioral goal, is at it's highest. **Empowerment**! When however the dog is stationary and the trigger is moving, its's potentially at it's low, AND therefore that **Relationship** with the caretaker, that in this **safety-position**, nothing bad will happen is the main strong point. We can tell through the **Trigger-ID** "Where is the man?" during the trainer's motion, if the dog can interrupt his watching this moving evil man, how comfortable he is with the distance. If he can break the looking at the trigger to take food with no prompt, he's cool with the movement. If he can't, it's time to stop the motion in training and/or increase the distance to the dog.

3.7 – "Don't worry, he only wants to play."

Just what every caretaker of a "reactive" dog DOESN'T want to hear. And then the rude, adolescent Retriever comes bouncing up. There are lots of great ways to get out of this sticky situation, be it with a Retriever or a Corgi. This is simply another for your toolbox.

2 years ago my dog Vela was attacked while on leash, while we were walking past a sidewalk cafe in Northern Germany. Two dogs not on leash came charging at us from a table in the cafe and I was just able to reach in front of her and shoo off this pointy-eared cattle dog-like mix, but Vela was obviously shaken. After that, for the next few months, instead of going into her normal meet-greet belly-crawl, she'd start slowly walking back and forth in front of me, now and again looking at me and looking at the other dog. Sometimes she would then come back to me and lean into my legs while not being able to take her eyes off the other dog. Usually however, nothing bad would happen, but she was not feeling good about the entire situation.

I decided to be my dogs advocate and ... teach her a safety position if she needed it. Yes, but everyone says is, that avoidance is bad. But they're talking about maladaptive, meaning unfounded, unrealistic fears leading to avoidance = maladaptive. In this case, the fear was very justified and this fear was not interfering with her normal life, it's an adaptive coping behavior. So I started working on the **hand-touch** cue and bringing her back around between my feet. This is the **peek-a-boo** or "**safety-position**" technique, shown at the end of this video. https://www.youtube.com/watch?v=q9xfhF-g0z8 (1'33")

At first we just "worked" on the **hand-touch** and placing. Since she knew the **hand-touch** already and knew how to get between my legs from behind, it was no problem. The idea is then, that as the strange dog approaches, I intercept and engage the strange dog, talking, slipping a treat into his mouth, dropping a treat on the ground, behind him if possible, while Vela is watching from her trained **peek-a-boo** position. She could then take more time to determine if this strange dog is a problem or not.

The problem was finding appropriate dogs with whom we could practice. Fortunately we live by walking paths and we could practice this often, even if she did not show worry. Sometimes it worked like a charm. Sometimes the other dog was really persistent and I could not keep up whirling around to keep myself between Vela and the dog. But ... if the other dog was not crazy goofy, I could actually engage, talk to the dog while slipping Vela now and again a treat as she stood almost nose to nose with the other dog. And Vela was watching me interact (**Participant Modeling**) with the other dog and not getting barked at or bitten and she would slip out from between my legs and take over the engagement or stay where she was, as she wished. This tactic gave her enough time to do initial investigation from a safe position. If she chose not to engage – and this did happen a couple of times – I could simple take over until the dog's human could get him. If she did want to engage, she could do so after I'd checked out the dog for her.

Another good point of this training was, that if she ever wanted a break from a game with another dog, and that dog was ignoring her cut-off signals, she would come over to me and I would cue her to the back. Of course, she also "misused" the tactic sometimes, in that she'd come to the **safety-position**, the other dog would busy herself with me and my chin-scratches and Vela'd then dart out and "jump" the other dog and they'd start playing again. She's got me well trained.

3.8 – Summary: GET (Graduated Exposure Techniques)

Some people will get all up in arms. "Why do we need still more tricks?" We don't. If you're happy with the ones you've got, great. These small techniques are not meant to replace any existing protocols or techniques, although I suppose one -could- just use them. After all the **Dodo Bird Verdict** has shown us pretty well, that ... we can predict, that all existing protocols are pretty much as effective, including these. I'm not going to say, that they are more effective than the existing ones. I'm not going to say, that they will work as long as you do them "competently". I'm not going to say to drop everything you do now and only do this or you're being inhumane and unethical. And I'm certainly not going to dignify the claim, that the old methods have worked fine for decades without needing any new fads. The previous pages have addressed that nonsense already.

On the other hand, I will say, that all of these techniques work on the same underlying processes and therefore are compatible with each other. You are not going to "break" anything by combining a **Symbolic Modeling** with a **Reinforced Practice** with a **Participant Modeling** with an old fashioned **Treat & Retreat**. How do we know that?

1) Because the consensus is, that they all work through a combination of **Extinction** (**Expectancy Violation**) and **Habituation** and with the exception of **Treat & Retreat,** all take advantage of **Social Referencing**, **Attachment Theory**/**Secure Base Effect.** If your timing is really good and you understand the theory behind it OR you have the proper drugs, you could even use additionally **reconsolidation**[240], but that's stuff for another paper. They also work with the **Empowerment** duo of **Self-Efficacy** and **Internal Locus of Control**.
2) Since most other existing fear reduction/coping protocols, are also actually based upon the same underlying processes (not counting on micro-managing techniques), you should be able to combine **GET** with almost any of them. You may or may not get that same answer when asking the authors of said protocols.
3) Each of the mentioned **GET** techniques is based upon techniques used with success and a long background of research and empirical data behind it – just not always and only with dogs. However, none of the other canine protocols are in this respect any different with the notable exception of **SD&CC**. Most of the individual **GET** techniques were tried out first with animals in the lab before human clinical testing took place.

I've stripped off some of the purely cognitive bits that rely on verbal communication (explanations of procedures to the dog, **in vitro** procedures) between the client (dog) and the therapist (caretaker) which take place in human therapies before the actual exposure. The time spent before the actual exposure in **Exposure Training**, going over verbally with the client (dog) what the actual fears are, which also establishes the empathy and human **Relationship** leading to trust and positive **valence** in the total environment, that is so necessary for these therapies to work with humans can, to a certain extent, be compensated for by stopping all physical and verbal punishments by the client and really learning all those nifty **hand-touch** techniques as well as playing the other described games which can even help quickly re-establish a broken client-dog **Relationship**.

This is not a complete system. It's an **open-source** collection of additions to one's existing toolbox. You get the tools and the source-code (theory) here. It's free. I'll always give free advice and help as I can, answer questions, comment on videos. What I DON'T do is sell any part of it (Kindle is the exception, as it's not possible to list there totally for free – but it's an older, outdated version.), neither in writing, audio, visual nor do I give workshops or seminars. So I have no turf to defend. Use it as you wish or don't use it as you wish. But please ... do let me know if you come up with any ways to optimize these, or any other techniques which function according to the processes of **Extinction/Habituation/Expectancy Violation** as these do, and done using **Empowerment** (**Self-Efficacy**/**Internal Locus of Contro**l = choice learning) since they will be compatible also.

Thanks for reading, pass this around and enjoy.

240 Schiller et al, (2010)

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5 – Index

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L

M

N

O

P

R

S

T

V

W

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6 – Addenda

Other papers of possible interest:

1) **Literature Review: "But I thought....."** – Some thoughts on dog trainers' myths, where necessary with either direct quotes from studies and/or links to the originals. Mostly concerning the existence of "Return of Fear" as well as what the "literature" really says about one of our favorite terms "Threshold" (It can't be, that we use so many different definitions – there must be some standard ones already in existence). http://www.auf-den-hund-gekommen.net/-/paper1.html

2) **Is Learning Theory Enough?** – There are so many -ologies and -isms out there. Is the so-called "Learning Theory" really all we need. Of COURSE we look at breeds and that's Ethology, but what else could we be taking into consideration beside operant conditioning, respondent conditioning, ABC contingencies and quadrants? http://www.auf-den-hund-gekommen.net/-/paper2.html

3) **Drive: Where it came from. Where it's gone to. What now?** – Frankly, I'd never considered "drive", never had any use for it, wasn't covered in my basic training. Was that a BIG mistake? Doesn't everyone KNOW all about "drive"? The learning experience began for me, when I started learning IPO/Schutzhund/VPG. EVERYTHING is "drive" and my dog, according to "experts", didn't have any. My off-the-wall Flat? No "drive"? So I decided to do what I do. Question. And came up with interesting answers. I then looked at how "the experts" actually use the term. Ohhhhh boy. http://www.auf-den-hund-gekommen.net/-/paper3.html

4) **Why you DON'T always need to feed after each click.** The purpose of this paper is to show, that within the realms of empirical scientific data, there is no reason NOT to leave out the primary reinforcer after the secondary reinforcer once the association between the two has been firmly established. Yes, we've always heard: 1-click:1-treat. But this paper shows you where that came from (not science) and what the evidence based science really says about dealing with conditioned reinforcers. The most important thing is: when you deliver a primary reinforcer after a secondary, know why you elect do so and why you elect not to do so. This paper will help you work out that "why".
http://www.auf-den-hund-gekommen.net/-/paper5.html