Note from Russ Harris: *Chapter 3 of my textbook 'ACT Made Simple' is entitled 'The House of ACT'. In the textbook, most of the chapter got deleted as a) it was considered too complex and b) we ran out of space. Here is the original chapter in its unedited version. If you're interested to know a bit more about Applied Behavioral Analysis (ABA) and Relational Frame Theory (RFT), you'll find this a good place to start (I hope).*

The House of ACT: Functional Contextualism, ABA, and RFT

What Took You So Long, ACT?

Why did it take ACT so long to become popular, given that as long ago as 1986 there were randomized controlled trials showing it to be equivalent or superior to CBT for treatment of depression? Here is Steve Hayes' answer to that question:

"If ACT had been popular 20 years ago it could not have withstood scrutiny. The model was not well developed and its foundation was weak. .... We were willing to spend years on philosophy, basic theory, measures, and applied theory before even publishing the approach in book form (in 1999). .... But because we waited and worked on the foundation, now when people peel back the layers they see how much has been done on the foundations of the work." (Hayes, 2008 a.)

As a result of all this foundational work, ACT is now like the top floor of a fabulous three-storey mansion. On the next floor down you'll find relational frame theory, RFT, which is a behavioral theory of human language and cognition. Then on the ground floor you'll find applied behavioral analysis, ABA: a powerful model for the prediction and influence of behavior, which has had an enormous impact on almost every branch of modern psychology. And the ground on which the entire mansion rests is a philosophy called functional contextualism, FC.

While the rest of this book is primarily focused on ACT, in this chapter we're going to take a look at ABA, RFT and FC. I can't do justice to any of these topics in a short chapter, so I'm

just going to give you some "tasters", in the hope it will whet your appetite to explore further. (I hope any purists reading this book will forgive me for the "loose" language I use here.)

Before you read on, a quick reminder that ACT is like driving your car, whereas RFT, ABA, and FC are how the car engine works. You can drive well without knowing anything about the engine – thus, there are plenty of good ACT therapists who know little or nothing of RFT, ABA, and FC. However, if you *do* know something about the engine, you'll be better equipped and prepared should your car break down. It's hardly surprising, then, that many ACT therapists report they become more effective as they progressively learn more about RFT, ABA, and FC. So while none of the stuff in this chapter is *essential* for practicing ACT, I do hope it stimulates you to explore further. (A word of warning: there is a lot of jargon in this chapter. Please don't let that put you off. You don't have to remember it, and after this, the rest of the book is virtually jargon-free.)

Functional Contextualism

Let's start from the ground up, with functional contextualism - the philosophy that underlies ABA, RFT and ACT. I'd like you to imagine a chair with four legs. Imagine something has happened to this chair, so that the moment anyone sits on it, one of the legs drops off. Would you describe this chair as "broken" or a "faulty" or "damaged"? Would you call it a "dysfunctional chair", or even a "maladaptive chair"? I've asked this question of many hundreds of therapists, and they always answer "yes" to at least one of the above. The problem is, this instinctive answer - "Yes, there is something wrong, faulty or flawed in the chair" - forgets to take into account the all-important role of context. So I invite you now to think laterally: think of at least three or four contexts in which we could say this chair functions very effectively to serve our purposes.

* * *

Did you come up with some? Here are a few:

- Playing a practical joke
- Creating an art exhibition of broken furniture
- Finding props for a clown's act or a comedy show
- Demonstrating design flaws in a furniture-making class
- Improving balance, coordination and muscle strength (i.e. you try sitting down without making the leg fall off).
- Hoping to injure yourself at work to get a compensation claim

In all of these contexts, this chair functions very effectively to serve our purposes. This example illustrates how functional contextualism gets its name: it looks at how things function in specific contexts. From the viewpoint of FC, no thought, feeling or memory is inherently problematic, dysfunctional, or pathological: rather, it all depends on the context. In a context which includes cognitive fusion and experiential avoidance, our thoughts, feelings and memories often function in a manner that is toxic, harmful or life-distorting. However, in a context which includes defusion and acceptance (i.e. mindfulness) those very same thoughts, feelings and memories function very differently: they have much less impact and influence over us .They may still be painful, but they are no longer toxic, harmful or life-distorting; and more importantly they don't hold us back from valued living.

Most models of psychology are based on a philosophy called "mechanism". Mechanistic models treat the mind as if it as a machine made up of lots of separate parts. "Problematic" thoughts and feelings are seen as faulty parts of the machine, or errors in the structure of the machine. The aim in such models is to repair, replace or remove these faulty parts, so the machine can function normally. Mechanistic models of psychology assume that there are such things as inherently "dysfunctional", "maladaptive", or "pathological" thoughts, feelings and memories. In other words, there are memories, thoughts, feelings, emotions, urges, schemas, narratives, ego states, core beliefs, and so on, which are fundamentally problematic,

dysfunctional or pathological; and much like a "faulty chair", they need to be either fixed or removed.

Mechanism has been the most successful philosophy of science in most scientific fields, so it's not surprising that most models in psychology are based on some sort of mechanistic philosophy. And there is nothing "wrong" or "bad" or "inferior" or "basic" about mechanism. I'm merely emphasizing that functional contextualism is a radically different philosophical approach to the mainstream, and it naturally leads to a different way of doing therapy.

Damaged Goods?

Our clients often come to therapy with mechanistic ideas. They believe that they are faulty, damaged, or flawed, and they need to be fixed up or repaired. Sometimes they even refer to themselves as "damaged goods". They often believe they are lacking important components - such as "confidence" or "self-esteem". Or they believe they have faulty parts that need to be removed - such as feelings of anxiety, or negative thoughts, or painful memories. Most mechanistic models readily reinforce these notions, through two processes:

i) They use words that imply we have faulty or damaged components in our minds - e.g. terms such as "dysfunctional", "maladaptive", "irrational", or "negative";

ii) They use a wide variety of tools and techniques designed to directly reduce, replace or remove these unwanted thoughts and feelings (usually on the assumption that this is an essential step for improving quality of life).

In ACT, our attitude is very different. We don't set out to reduce or eliminate "symptoms"; instead we aim to fundamentally transform the client's relationship with her thoughts and feelings, so she no longer perceives them as "symptoms". After all, the moment we label a thought or feeling as a "symptom", that implies that it is "bad", "harmful", "abnormal", and therefore something we need to get rid of in order to be normal and healthy. This attitude

readily sets us up to struggle with our own thoughts and feelings – a struggle that often has disastrous consequences.

Suppose there's a plant that you judge as "ugly", growing right in the center of your front garden. And suppose that there's no way to get rid of it without destroying your entire garden. (You may be thinking, "But there must be some way to get rid of it." If so, just step back for a minute and make a hypothetical leap: imagine, for the purposes of this exercise, that you *can't* get rid of this plant without destroying your garden.) Now if you view this plant as a "weed", what is likely to happen to your relationship with it? Chances are, you won't like it, and you won't want it there. And you may well get upset or angry about it. You could easily waste lots of time thinking about how much better your garden would be without it. You might even hesitate to let people into your front garden, for fear they'll judge you on account of it. Perhaps you might even start leaving by the back of your house, so you don't have to look at this "ugly weed". In other words, this "ugly weed" has become A VERY IMPORTANT THING IN YOUR LIFE – so much so, that it now has a significant impact on your behavior.

But what happens if instead of viewing that plant as an "ugly weed", you view it as just an unfortunate fact of life: a natural part of the native environment; a common example of American indigenous flora? Now it's the same plant, in the same location, but your relationship with it has fundamentally changed. Now you no longer have to struggle with it. Now you need no longer be upset or embarrassed about it, or waste so much time thinking about it. Now you can let people into your garden without hesitation, and you can leave by the front of the house. The plant itself has not changed, but you no longer make it into A VERY IMPORTANT THING IN YOUR LIFE. It now has much less impact or influence over you.

Mindfulness enables us to make a similar attitude shift towards all those thoughts, feelings, sensations and memories that we so readily judge as "problematic"; it enables us to choose

the relationship we have with them. By changing the context from one of fusion and avoidance to one of defusion and acceptance (i.e. mindfulness), we alter the function of those thoughts and feelings, so they have much less impact and influence over us. In a context of mindfulness they are no longer "symptoms" or "problems" or "things that stop us from living a rich and full life"; they are nothing more or less than thoughts, feelings, sensations, memories, and so on.

In one sense, mindfulness is the ultimate reframing tool: it moves all these painful thoughts and feelings from the old frame of "abnormal pathological symptoms that are obstacles to a rich and meaningful life" into the new frame of "normal human experiences that are natural parts of a rich and meaningful life".

What Is The Goal Of Functional Contextualism?

The goal of FC is to predict and influence behavior, accurately and effectively, using empirically-supported principles. And what is the purpose of predicting and influencing behavior? In ACT, the purpose is specifically to help humans create rich, full and meaningful lives; to enable mindful, valued living. Thus ACT teaches people to increase awareness of their own behavior (both public and private), and to notice how it functions in the context of their life: does it improve their quality of life, or lower it? You may recall that in ACT, we refer to this concept as "workability".

Now let's take a moment to consider the word "function". It's a technical term (not one that you'd use with clients) that you'll find in most ACT textbooks. When we ask, "What is the *function* of this behavior?" we mean "What effects does this behavior have? What are the consequences?" In other words, we're asking "What purpose does this behavior serve? What is it intended to achieve?"

To clarify this, imagine five different people, in five different situations, each making cuts across their forearm with a sharp knife. Now see if you can come up with five possible functions for this behavior.

* * *

Here are some possibilities:

- Getting attention
- Self-punishment
- Release of tension
- Distraction from painful emotions
- Creating body art
- Trying to feel something if you are "totally numb"
- Attempting to get admitted to hospital

Notice in all these scenarios the *form* of the behavior is the same - cutting one's arm - but the *function* of the behavior (the purpose it serves) is different.

Now let's suppose your partner is lost in thought, and your purpose is to gain his attention; think of five different *forms* of behavior that might achieve this.

* * *

Here are a few ideas:

- Wave at him
- Shout "Hello, is there anybody in there?"
- Pour a cup of water over his head
- Bang loudly on some furniture
- Say, "Darling, can I have your attention for a moment please?"

In this example, you can see that many different *forms* of behavior all have the same *function*: they serve the purpose of getting attention. In functional contextualism we are interested in the function of a behavior, rather than the form of it. But notice, we can only know the function of a behavior if we know the context in which it occurs. If someone raises their arm up high in the air, what purpose does that serve? Are they in a lecture theatre, asking a question? Are they pointing up at a plane in the sky? Or are they perhaps trying to hail a taxi? Without knowing the context, we cannot know the function of the behavior – and vice-versa. And that brings up another question: what do we mean by "behavior"?

A Misunderstood Word: "Behaviorism"

When I first discovered ACT, I could not believe the model came out of behaviorism. I thought behaviorists treated humans like robots or rats; that they had no interest in thoughts and feelings, and considered them unimportant or irrelevant. Boy, was I wrong! I soon discovered there are several different schools of behaviorism, and some of them have ideas that directly contradict essential elements of ACT and RFT. ACT comes from a branch known, somewhat unfortunately, as "radical behaviorism". But don't let the name put you off. Radical behaviorists do not run around in combat gear, armed with assault rifles. Radical behaviorists get their name because of their radical view of behavior: they consider everything an organism does is behavior. Yes, you read that correctly: *everything an organism does* is behavior. Thus, to a radical behaviorist, processes such as thinking, feeling, and remembering are all considered to be forms of behavior – and all are considered very important.

Radical behaviorists talk of two broad realms of behavior. One realm is "public" behavior – i.e. behavior that can directly be observed by others (provided they are present to witness it). Thus, if we watched a video of you, whatever we could see you doing or hear you saying would be public behavior. In everyday language, we commonly refer to these public

behaviors as “actions”. The other realm is “private” behavior – i.e. behavior that can only ever be directly observed by the person doing it: thinking, feeling, remembering, fantasizing, worrying, tasting, smelling etc. Radical behaviorists are very interested in both these realms of behavior.

Behaviorism has had a profound impact on clinical psychology. Through rigorous scientific study, the behaviorists discovered a wide range of powerful methods for reliably and effectively influencing human behavior (both public and private): methods that include exposure, reinforcement, shaping, extinction, and classical and operant conditioning. Many models of therapy have been extremely influenced by these ideas - although many fail to acknowledge it, or even realize it. Indeed, it’s hard to imagine an effective therapist or coach that does not utilize at least some of these basic principles, given they have proven so effective for facilitating behavioral change.

Many of these ideas have also been hugely influential in everyday life. For example, in business leadership programs, managers are advised to catch their co-workers “doing something right” and sincerely praise them for it. Likewise, in positive parenting programs, parents are advised to actively notice when their children are behaving well, and actively reward them for it in some way. This sound advice is based on the powerful behavioral principle of positive reinforcement.

The Three Waves Of Behaviorism

There have been three “waves” of behavioral therapies in the last century. The “first wave”, which reached its peak of popularity in the fifties and sixties, focused primarily on overt behavioral change, and utilized techniques linked to operant and classical conditioning principles. (Many practitioners in this first wave did not place much importance on thoughts and feelings. Unfortunately this lead to *all* behaviorists being tarred with the same brush - all accused of treating humans like rats or robots.) The “second wave” of behaviorism, which

took off in the seventies, included cognitive interventions as a key strategy in behavior change. In particular, the "second wave" placed a major emphasis on challenging or disputing irrational, dysfunctional, negative or erroneous thoughts, and replacing them with more rational, functional, positive or realistic thoughts. Cognitive-behavior therapy (CBT) eventually came to dominate this "second wave", closely followed by Rational Emotive Behavior Therapy (REBT).

ACT is one of the so-called "third wave" of behavioral therapies—along with Dialectical Behavior Therapy (DBT), Mindfulness-Based Cognitive Therapy (MBCT), Functional Analytic Psychotherapy (FAP), and several others —all of which place a major emphasis on acceptance and mindfulness. And now that the historical tour is finished, let's explore the ground floor of the ACT mansion: ABA.

ABA: Applied Behavioral Analysis

ABA is a powerful technology for predicting and influencing behavior, based on learning theory and basic behavioral principles. In this chapter we only have time to look briefly at one of the most powerful tools in ABA: "functional behavioral analysis". What this means is, we look at a behavior, and analyze the function of it. In other words, we ask "What purpose does this behavior serve?" There is a simple ABC formula to help us do this: *A*ntecedent-*B*ehavior-*C*onsequence.

The A is for *antecedents*: "What happens before the behavior that plays a major role in influencing it?" Or to put it another way, "This behavior happens in the presence of what"? Antecedents can include thoughts, feelings, memories, or other private experiences, plus physical states such as illness, hunger or fatigue, plus environmental factors, such as the availability of drugs or alcohol. The B is for *behavior* – specifically, the behavior we are analyzing. The C is for *consequences* of the behavior: "What effects does this behavior have on self, others, or the environment? What happens as a result of this behavior?" When we

know the A and the C, we can then determine the function of the behavior (i.e. the effect of it, or the purpose of it). Here's a simple example of an ABC analysis:

Antecedents: feelings of anxiety and sadness, thoughts such as "I am a loser" and "life sucks", environmental factors including a TV, a fridge full of beer, and being alone.

Behavior: watches TV and drinks large quantities of beer until falls asleep, intoxicated

Consequences: a) short term: relief from painful thoughts and feelings b) long term: damages physical health, increases emotional pain

In ACT, we frequently ask our clients to do an ABC analysis of problematic behavior, as a first step towards changing it. We don't use technical terms, though. Here is an example of what a functional behavioral analysis might sound like, in practice:

Therapist: So you're home alone, feeling miserable, and your mind starts telling you "I'm a loser" *(Antecedents).* Then what happens?

Client: What do you mean?

Therapist: Well, suppose we followed you round with a camera crew and videoed everything you did. What would I see on that video, that I would know you'd been hooked in by the "I'm a loser" story?

Client: Umm. I guess, well, you might see me pacing up and down a bit, or maybe slumping on the couch *(Behavior).*

Therapist: And then?

Client: Um. Well, then you'd see me go to the fridge and get some beer *(Behavior).*

Therapist: And then?

Client: Well then I'd drink it *(Behavior).*

Therapist: And then?

Client: And then I'd keep on drinking until I pass out on the couch *(Consequence).*

Therapist: And does that get rid of all those painful thoughts and feelings?

Client: It does while I'm drunk.

Therapist: Okay, so getting drunk makes you feel better for a little while *(Consequence – short term).* How do you feel the next morning?

Client: Like shit! *(Consequence – long term)*

Therapist: Hangover?

Client: Ohhh yeah! A real doozie!

Therapist: And do those thoughts - "I'm a loser", "Life sucks", and so on - come back again?

Client: Oh yeah. They come back even worse than before. *(Consequence – long term)*

Therapist: So, isn't that interesting? You're feeling miserable, your mind's calling you a loser *(Antecedents)* so you decide to get drunk *(Behavior).* And in the short term, that gives you some relief from those painful thoughts and feelings *(Consequences – short term).* But in the long term, it actually makes you feel worse than before *(Consequences – long term).*

In the above example, the ABC analysis clearly shows the function of the behavior: to provide relief from painful thoughts and feelings. Or to put it in ACT terminology, this client's drinking is motivated by experiential avoidance.

Knowing the ABCs of a behavior gives us a lot to work with. Thus with the example above, we could work on responding differently to the antecedent thoughts and feelings, using defusion and acceptance. Or we could remove an environmental antecedent: for example, we could make sure there is no beer in the house. Alternatively we might focus on the consequences. For example, we could introduce the client to the notion of workability: "In

the short term, getting drunk makes you feel a bit better, but in the long run, does it work to enhance and enrich your life? Does it take your life in the direction you want?"

We could then explore and clarify the client's values, and have him come up with some more values-consistent activities to do in his evenings, instead of drinking himself into oblivion, e.g. attending an evening class, or playing tennis. Hopefully the client's values will now become antecedents for a new, more effective behavior – i.e. one that has more life-enhancing consequences than the old one. Ideally, the client will then be rewarded by the positive consequences of his new behavior, and this will increase the chance that he does more of it in future (i.e. positive reinforcement).

As you read through the therapy transcripts in this book, you'll see that there's a lot of functional behavioral analysis going on. It is most obvious whenever we start talking about workability. Of course, there's a lot more to ABA than this, but alas, we just don't have time for it; we really have to move to the next floor.

RFT: Relational Frame Theory

My mother-in-law is from the south of Italy, and she grows the most amazing fruits and vegetables. I remember the first time she gave me one of her lemons: huge, gleaming, bright golden-yellow, like the sun. And such a delicious, zesty aroma. And as I ran my fingers gently over the skin, I could feel every tiny dimple in the surface. I took that lemon, sliced it in half, held it up, opened my mouth, and squeezed out the fresh lemon juice, right onto the tip of my tongue.

As you read the previous paragraph, what showed up for you psychologically? Did you "see" a lemon, or "smell", "touch" or "taste" it? Did your mouth salivate a little? Just say the word "lemon" to yourself, and notice what shows up psychologically, in the form of images, smells, tastes, memories, emotions, words. Please do it now, before reading on.

* * *

What showed up for you? Smells? Tastes? Skin texture? Colour? Lemonade? Lemon pie? Lemon cake? Lemon trees? Memories, feelings, or thoughts about lemons? A whole lemon, or a sliced one? In RFT, we refer to all of these private experiences as "events". So when we talk of an "event", we mean any private experience a human being can have: a thought, a feeling, a memory, or anything that you see, hear, touch, taste or smell. Thus each time you see or hear or think the word "lemon", that is an event. And when you smell the scent of a lemon, or taste the flesh of a lemon, those are also events. In the exercise above, you discovered that the word "lemon" is related to many different events, such as tastes, smells, sensations, memories, thoughts and images.

Lemons, Lemons, Lemons

Now let's try something else: say the word "lemon" out aloud, over and over and over again, as fast as you possibly can, for thirty seconds. (NB: You have to do this out aloud or it won't work. So if you're reading this on a plane, go into the lavatory and try it out, before reading on.) As you do this, notice what happens.

* * *

For almost everyone, within thirty seconds of repetition, the word loses all its meaning. Instead, it becomes an odd sound: *lemm-unn*. At the same time, all the images, tastes, smells, thoughts and memories that were previously related to this sound, disappear. (This exercise is known as Titchener's Repetition, named after the psychologist who came up with it: Titchener, E.B. 1916).

When you were a baby or young child, the first few times you heard the sound *lemm-unn* it was rather like your experience in the last exercise. At that point in your life, *lemm-unn* had

no meaning for you; it was simply a sound you could hear; and you could not relate that sound to other events, such as the taste, smell, texture, shape or color of that fruit.

So what happened to you, between then and now? Years ago *lemm-unn* was just a noise. But now you relate the sound *lemm-unn* to many other events; it has become part of a vast relational network that includes not only the smells, tastes, textures, and colors of lemons, but also thoughts, images, feelings and memories about lemonade, lemon pies, lemon cakes, lemon trees, whole lemons, sliced lemons, plastic lemons, and so on. How did you learn to do that? RFT provides the answers.

Learning Language

From the moment you are born, the people you live with start teaching you how to use their language. Initially, they do this by talking to you, which familiarizes you to the sounds of this language. Then as you grow older, they encourage you to make similar sounds of your own. Initially these sounds relate to the world outside you, e.g. “Mummy” and “Daddy” and “Bottle”. However, you soon learn to relate these sounds to the world inside you: to tastes, smells, feelings, sensations and desires (e.g. “hungry”, “thirsty”, “yummy”, “yukky”, “hurt”, “want, “no want”, “yes”, “no”).

And it’s not just sounds they encourage you to imitate; it’s also gestures and facial expressions – e.g. screwing up your face when something tastes “yukky”, or clapping your hands to show approval. At the same time, through the use of books, drawings and photographs, they teach you to relate pictures to your experience: e.g. they teach you to relate a picture of a dog to a real dog, or a picture of a child crying to your own feelings of sadness.

Of course many animals are capable of relating events in this manner. For example, some species of monkey naturally make over twenty different warning cries: i.e. different sounds that relate to specific forms of danger, from eagles to leopards to fire. Similarly, you can

easily teach your dog that the sound "walkies" relates to going for a walk, or the sound "din-dins" relates to dinner being served. But around the age of 14 to 16 months, human language starts to differ fundamentally from the language of all other animals. How so? Because humans learn to do something called "deriving relations". I realize that doesn't sound too exciting, but I urge you to keep reading anyway. By the end of the chapter, you'll see how this is clinically relevant.

Deriving Relations: What Does That Actually Mean?

I am about to teach you two absolutely fascinating facts.

Fact 1: The French word for lemon is "citron".

Fact 2: The Finnish word for "citron" is "sitruuna".

Now I have *directly* taught you two simple relations: 1) lemon => citron; 2) citron => sitruuna. From these two directly trained relations, you can now *derive* four more relations, without any further training from me. Don't take my word, check it out for yourself; answer these four questions:

What is the Finnish word for lemon?

What is the French word for sitruuna?

What is the English word for sitruuna?

What is the English word for citron?

See? I only directly taught you two relations, but you *derived* an additional four. Now you're probably thinking, "So what? What's the big deal?" And that's hardly surprising, because our ability to derive these relations seems so ridiculously easy, we generally take it for granted. For example, if I tell you that a kangaroo is bigger than a wombat, you instantly

derive that a wombat is smaller than a kangaroo. If I tell you that Max is my son, you instantly derive that I am Max's father. Deriving these relations seems so natural and spontaneous, it's hard to imagine it could be any other way. However, you only have the ability to do this because when you were a young child, the humans in your social group gave you lots and lots of training in how to do it. (So if you had been raised by wolves, like Mowgli in *The Jungle Book*, or reared by apes, like Tarzan, then you would never have developed the capacity to do this, and you would have grown up, by human standards, severely mentally retarded.)

Here's an example of how this training happens. Let's suppose that Johnny is twelve months old, so he has not yet learned to derive relations. One day, Mom shows him a picture of three magical creatures: a mermaid, a dragon, and a griffin. Johnny has never seen any of these animals before. Mom points to the griffin and she says, "That's a griffin. Can you say 'griffin'?"

Johnny says, "Griffin."

Mom says, "Clever boy." She has now directly trained one relation: picture of a griffin => the sound "griffin". Next Mom says, "Show me the griffin."

At this point in his life, there's only a one in three chance that Johnny will point at the griffin; he's equally likely to point to the dragon or the mermaid. If by chance he gets it right, Mom says, "Clever boy. That's a griffin." If he gets it wrong, she says, "No. *This* one's the griffin." Either way, she is directly training a second relation: the sound "griffin" => the picture of a griffin.

Mom then goes on to do the same with the dragon. First: "That's a 'dragon'. Can you say 'dragon'? Clever boy." Then: "Now show me the dragon." Finally either, "That's right. Clever boy." or "No, this one here is the dragon."

So here again, Mom directly trains two relations:

1) picture of a dragon => the sound “dragon”;

2) the sound “dragon” => picture of a dragon.

So far, so humdrum - but soon this situation will change dramatically. Within two to four months, Mum will no longer need to give Johnny all this direct training in relations. You see, once human children reach fourteen to sixteen months of age (assuming they’ve had a normal human upbringing, with plenty of practice at relating events in this manner), they start to spontaneously *derive* relations. For example, suppose Mom shows sixteen-months-old Johnny a picture of three exotic animals he has never seen before: an armadillo, a porcupine, and an aardvark. Mom points to the aardvark, and says “That’s an ‘aardvark’. Can you say ‘aardvark’?”

Johhny says, “Aardvark”.

Mom says, “Clever boy. Now show me the ‘aardvark’.”

Johnny will now with 100% accuracy point to the aardvark, and *not* to the other two animals. Mom *directly trained* him that that the picture of an aardvark relates to the sound “aardvark” (picture of an aardvark => the sound “aardvark”) - and Johnny then spontaneously *derived* that the sound relates to the picture (the sound “aardvark”=> picture of an aardvark) .

This ability to spontaneously derive relationships separates humans from all other animals. Non-humans cannot learn to spontaneously derive relationships in this manner - not even with extensive training. Yes, even those clever “language-trained” chimpanzees can’t do it. (Dugdale and Lowe, 2000).

“Yeah, yeah, yeah,” I hear you say, as you politely stifle a big yawn, “So humans can derive relations and other animals can’t. So what? What’s the big deal?” Good question.

What *Is* The Big Deal?

Your ability to derive relations allows you to rapidly and dramatically expand your knowledge. At fourteen to sixteen months, deriving relationships is limited to simple reversals, as in the aardvark example (i.e. from directly learning A => B you derive B =>A). But around twenty-two to twenty-seven months, children learn to combine these derived relations (Lipkens, Hayes, and Hayes 1993) and the consequences are dramatic. To illustrate this, here's yet another scintillating fact for you:

Fact 3: "Limone" is the Italian word for lemon.

Armed with this new relation (limone => lemon), you can now answer all sorts of questions, such as: What is Italian for "sitruuna"?

What is Italian for "citron"?

What is Finnish for "limone"?

What is French for "limone"?

And so on, and so on, and so on. Note that I have only directly taught you three relations so far: 1) lemon => citron, 2) citron => sitruuna, and 3) limone => lemon. Yet from these three directly trained relations, you can, through combining your derived relations, generate an impressive nine new relations *without any further training*. This ability therefore enables you to rapidly generate vast relational networks.

To hammer this point home, suppose I teach you another relation:

1) a guava is more expensive than a lemon.

The amount of new relations you can now derive (when you combine this with the previous three I directly trained you in) is now sixteen! To give you just a few examples: 1) a guava is more expensive than a sitruuna, 2) a guava is more expensive than a limone, 3) a citron is cheaper than a guava, 4) a sitruuna is cheaper than a guava.

You may have noticed a formula here. Directly learn 3 relations, derive 9 new ones; directly learn 4 relations, derive 16 new ones. If the number of relations you directly learn is X, the number you can derive is X squared. So if you directly learn one hundred new relations, you can then derive ten thousand new ones. And if you directly learn one thousand new relations, you can then derive *one million* new ones!

This ability to derive relations, and expand them into vast relational networks, is vitally important for human language and cognition. It enables us to generate an infinite number of new thoughts, and to learn about all sorts of things without requiring direct experience of them. But there's one more piece of this puzzle still to come, known as - wait for it - the "transformation of stimulus functions". Yes, I know that sounds like something from *Star Trek*, but it's actually not as complex as it seems. "Stimulus" simply means anything that an organism responds to. And when we talk about the "functions" of a stimulus, we mean "the effects that this stimulus has on the organism responding to it".

So let's suppose you bite into a lemon. (Are you sick of lemons, yet?) The stimulus functions of that lemon (i.e. the effects the lemon has upon you) include the taste and smell you experience, the saliva your mouth produces, the movements of your tongue and teeth, and the thoughts and feelings that show up. We commonly use the single word "functions", instead of the full term "stimulus functions". So where does the "transformation" bit come into it?

Transformation of Functions

Say the word "zoobooma" to yourself, and notice what effect it has upon you. Not much I'd guess – except perhaps to stimulate some curiosity or amusement. The thing is, you probably don't know that a zoobooma is a rare tropical fruit. A zooboma looks and tastes remarkably like a lemon, except it's about three times bigger. Now imagine the following scenario as vividly as you can: you pick up a zoobooma, you slice it in half, you open your mouth wide, and you squeeze out all the juice from that zoobooma, directly onto your tongue. Just imagine

your mouth filling up with all the fresh zoobooma juice. And you keep on squeezing and squeezing out that zoobooma, until your mouth is literally overflowing.

* * *

What happened as you read those last few lines? Chances are, you salivated, or your tongue tingled, or you sensed a sort of tangy citrus taste in your mouth. So the word "zoobooma" started to have some effects upon you similar to those a real lemon might produce.

This process is known as a "transformation of functions". Why? Because the functions of the word "zoobooma" (i.e. the effects it has upon you) have transformed (changed). The word "zoobooma" now has some of the functions of a real lemon (i.e. it affects you, to some degree, as a real lemon would).

By the way, there is no such thing as a zoobooma; I invented the word for the purposes of the exercise. And as a result of reading this chapter, you have just increased the number of events in the vast relational network linked to the word "lemon"; specifically, you have added in "citron", "sitruuna", "limone", and "zoobooma". And all of these new words will now have some of the functions of a real lemon.

Tying It All Together

This unique human behavior of: a) deriving relations between events, b) joining them into vast relational networks, and c) transferring functions between related events, is known in RFT as "relational framing". RFT proposes that relational framing is the basis of human language and cognition.

And what is the clinical relevance of all this? Well, in the very same way that I can relate the word "lemon" to a piece of fruit, I can relate the words "disgusting" and "worthless" to myself. And the moment I do that, some of the functions of "disgusting" and "worthless" will transfer onto me.

Now let's take another example. The words "my life" are part of a gigantic relational network. They are related to countless numbers of events, including all sorts of thoughts, feelings and memories about everything from my job and my social life to my health and my family. Now suppose I relate the words "awful" and "pointless" to the words "my life". As I do so, some of the functions of "awful" and "pointless" will transfer across. Those functions will transfer not only to the words "my life", but also to every event within that vast relational network. So now, everything in my life seems awful and pointless. You have undoubtedly noticed this sort of relational framing in your depressed clients.

In everyday parlance, we refer to relational framing as "thinking", "cognition", "human language" or "the mind". Relational framing gives us a huge advantage as a species. It enables us to analyze, talk, plan, imagine, compare, invent, solve problems, and so on. However, as we discussed earlier, our mind is a double-edged sword. Once we have the capacity for relational framing, it's as if it takes on a life of its own - and as we grow older, we increasingly live inside the world of language, and move away from the world of direct experience. And that, of course, is where ACT comes to our rescue.

End of Tour

So now we're back to the top floor of the ACT mansion. If I've whetted your appetite for more knowledge, I recommend you read *The ABCs Of Human Behavior: Behavioral Principles For The Practicing Clinician* by Jonas Ramnero and Niklas Torneke. This is an excellent book that takes you step-by-step, simply and clearly, through the details of FC, ABA, and RFT, tying them all together with ACT via numerous clinical examples and annotated transcripts of therapy. There is also a free online tutorial on RFT, available at: **www.contextualpsychology.org/rft_tutorial**

I do hope this tour hasn't exhausted you. If it has, why not take a rest? Let's face it: you deserve it. After all, you've just been heavily bombarded by a large number of technical

terms, many of which may be new to you. And that's really not what you expect in a book called "ACT Made Simple". Therefore, rest assured: the remainder of the book *does* live up to its title. So I'll see you in the next chapter, after you've rested!