Acceptance and Commitment Therapy and Contextual Behavioral Science:

Examining the Progress of a Distinctive Model of Behavioral and Cognitive Therapy

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RUNNING HEAD: ACT as a Distinctive Model

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Abstract

A number of recent authors have compared Acceptance and Commitment Therapy (ACT) and traditional Cognitive Behavior Therapy (CBT). The present article describes ACT as a distinct and unified model of behavior change, linked to a specific strategy of scientific development, which we term *contextual behavioral science*. We outline the empirical progress of ACT and describe its distinctive development strategy. A contextual behavioral science approach is an inductive attempt to build more adequate psychological systems based on philosophical clarity; the development of basic principles and theories; the development of applied theories linked to basic ones; techniques and components linked to these processes and principles; measurement of theoretically key processes; an emphasis on mediation and moderation in the analysis of applied impact; an interest in effectiveness, dissemination, and training; empirical testing of the research program across a broad range of areas and levels of analysis; and the creation of a more effective scientific and clinical community. We argue that this is a reasonable approach, focused on long-term progress, and that in broad terms it seems to be working. ACT is not hostile to traditional CBT, and is not directly buoyed up by whatever weaknesses traditional CBT may have. ACT should be measured at least in part against its own goals as specified by its own developmental strategy.

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All scientific theories are ultimately shown to be incorrect. Thus, the point of the scientific journey is not to generate correct ideas but to develop more useful half-truths whose limitations can be more quickly and certainly known. A progressive scientific field builds on useful ideas, continuously weeding out those that are not. It is impossible to know whether or not a more progressive field has been accomplished by focusing only on the present. Progressivity only unfolds over time, sometimes slowly.

There is a tension between an urge for immediate progress and the willingness to take the careful steps that might create progress in the long run. That tension is felt especially strongly in applied areas because human suffering is present *now* but the generation of scientific knowledge often takes an unpredictable amount of time. In comparison to their most art-focused colleagues, empirical clinicians are used to arguing for the ultimately greater progressivity of an empirical approach, but in the cognitive behavior therapy (CBT) tradition relatively little has been written about how to produce greater progress *within* an empirical approach. There too what seems to be fastest now could be much slower later and what seems slower now might ultimately go farther.

The CBT Tradition and the Origins of ACT

Acceptance and Commitment Therapy (ACT, said as one word, not initials; Hayes, Strosahl, & Wilson, 1999) is sometimes placed outside of or opposed to CBT (e.g., Hofmann & Asmundson, 2008), but ACT is part of the larger family of behavioral and cognitive therapies (Forman & Herbert, 2009) and has always been said to be so (e.g., Hayes et al., 1999, p. 79). ACT is an overarching model of key intervention and change processes, linked to a research program on the nature of language and cognition, to a pragmatic philosophy of science, and to a

model of how to speed scientific development that we call here a *contextual behavioral science* (CBS) approach. Describing that approach is a primary purpose of the present paper.

The similarities and differences between ACT and the CBT mainstream needs to be seen in the context of respective views about how to create scientific progress. ACT researchers are skeptical of the idea that CBT needs to apply "the cognitive model of a particular disorder with the use of a variety of techniques designed to modify the dysfunctional beliefs and faulty information processing characteristic of each disorder." (Beck, 1993, p. 194) or that its core is to "identify distorted cognitions" and then to subject these distortions "to logical analysis and empirical hypothesis-testing which leads individuals to realign their thinking with reality" (Clark, 1995, p. 155), but that skepticism is a reflection of its process-focused development program. In the 1980's we conducted more than a dozen studies on the theories behind common CBT procedures, and found little or no support for these models (see Rosenfarb & Hayes, 1984 on cognitive reappraisal / self-statements for an example of these). We made early theoretical attempts to analyze cognitive therapy using behavioral principles (e.g., Zettle & Hayes, 1980; 1982) but our long-term interest was in extending a process-based behavioral approach and its underlying development strategy (see Zettle, 2005 for a history of ACT).

ACT: A Contextual Behavior Science Approach

CBS is a principle-focused, inductive strategy of psychological system building, which emphasizes developing interventions based on theoretical models tightly linked to basic principles that are themselves constantly upgraded and evaluated. The strategy has been abstracted and extended from traditional behavior analysis. Only an outline can be presented here because the issues it raises (e.g., induction versus deduction; pragmatic versus correspondence theories of truth; the nature of theory) are complex and controversial. It involves the integration

and simultaneous development of multiple levels of a research program including philosophical assumptions, basic science, basic and applied theory, intervention development, treatment testing, and dissemination, all done dynamically and "horizontally." While a more detailed breakdown is possible, we will describe the approach in terms of nine characteristics (see Table 1), considering each in an abstract way and briefly describing the results so far inside ACT and RFT.

Explicate Philosophical Assumptions

Philosophy of science is the process of clarifying and taking responsibility for the assumptions necessary to do complex intellectual work. ACT is grounded in functional contextualism, a type of psychological pragmatism that extends Skinner's radical behaviorism (Hayes, Hayes, & Reese, 1993) by adopting a functional approach to truth and meaning linked to the prediction and influence, with precision, scope, and depth, of whole organisms interacting in and with a context considered historically and situationally (Hayes, 1993). The core unit adopted is the act-in-context: the ongoing situated purposive action (Pepper, 1942; Hayes, 1993). All actions are considered to be whole events, having meaning only with reference to their context.

The truth criterion of contextualism is "successful working" toward one's analytic goals (Hayes, 1993). Functional contextualists are disinterested in ontological claims (truth with a capital T) because that claim is always also an act-in-context (Skinner, 1974, p. 234), thus "ontology" always ultimately dissolves into pragmatic psychological epistemology. While functional contextualists assume the one ("real") world, there may be many ways of successfully differentiating the world, depending on one's goals. "Causality" is not taken to be in the world but is a way of speaking about how to behave effectively, in given contexts for given purposes.

Scientifically, this explains the environmentalism of contextualistic behavior analysts who seek the prediction *and influence* of behavior. "Influence" requires the specification of

manipulable events, since only contextual variables can be manipulated directly (Hayes &

Brownstein, 1986). Thus models that specify the relation of one psychological action to another

(including thought-behavior or emotion-behavior relations) are viewed as inherently incomplete

until they identify the contextual variables that would allow in principle for the goal of

"influence" to be met (Biglan & Hayes, 1996). Thoughts may be related to particular emotional

and overt behavioral events, but only in historical and situational contexts that give rise both to

these thoughts *and to their relation to subsequent emotions and actions.* It is the italicized

portion of that sentence that is most often missed in traditional cognitive models and it is a key

clinical focus of ACT.

Develop a Basic Account with Manipulable, Contextual Principles Organized into Theories

Manipulable contextual factors are specified by behavioral principles that apply in a

specific way to a given event (precision), are broadly applicable (scope), and that maintain

coherence across levels of analysis such as psychology and neurobiology (depth). A CBS

approach goes beyond traditional behavior analysis by asking clinicians to help develop the basic

work needed to support application, and by organizing principles into models and theories of

domains relevant to application. This addresses two key flaws in the original model of behavior

therapy development: what to do when basic principles are not adequate and how to scale them

into functional analytic theories.

The change from behavior therapy to CBT reflected the right problem but not the best

solution. An urge to move ahead quickly on the problem of cognition caused the search for more

adequate basic behavioral principles in this area to be abandoned in favor of *clinical* models of

cognition. We thought this was ultimately likely to slow progress. Conversely, our early

theoretical focus was on basic behavioral research on rule-governance (e.g., Hayes et al., 1986;

see Hayes, 1989 for a book length treatment), but the lack of a clear understanding of verbal

rules soon lead to an even more basic focus on the nature of human language and cognition itself.

Relational Frame Theory (RFT: Hayes, Barnes-Holmes, & Roche, 2001) was the eventual result.

RFT researchers have discovered that the core of human language and cognition is

learning to relate events mutually and in combination not simply on the basis of their formal

properties (e.g. size, shape) but also on the basis of arbitrary cues. For example, while a young

child will prefer a nickel over a dime because it is bigger, she later will prefer a dime over a

nickel "because it is bigger." Evidence suggests these relational skills are operant (e.g., Berens &

Hayes, 2007), and that they impact all other behavioral processes, both operant and classical. For

example, humans who are aroused by a stimulus that has been paired with shock will be even

more aroused by a neutral stimulus related to the original stimulus in the presence of a "larger

than" cue (Dougher, Hamilton, Fink, & Harrington, 2007).

Space precludes detailed citation (see Hayes et al., 2001 and Rehfeldt & Barnes-Holmes,

2009 for book length treatments) but RFT researchers have found that these "relational frames"

begin in infancy; without them children do not develop normal language; weakness in relational

framing is associated with significant cognitive deficits; some clinical disorders have specific

framing deficits; and training in relational framing can increase language acquisition, and higher-

order skills such as perspective taking and empathy. Many complex cognitive phenomena, such

as metaphorical reasoning, self of self, lexical recognition, and implicit cognition can now be

modeled and researched, both behaviorally and neurobiologically, in the RFT laboratory. RFT in

term is leading to applied programs in many areas. Although ACT is rhw focus on this article,

ACT is only one of them.

A key RFT insight of clinical importance is that relational framing is regulated by two

distinguishable features: the relational context and the functional context. The relational context determines how and when events are related; the functional context determine what functions will be transformed in terms of a relational network. Stated more clinically, the relational context determines what you think; the functional context determines the psychological impact of what you think. Because relational frames are learned and arbitrarily applicable it is impossible to control the relational context so thoroughly so as to entirely keep unhelpful relations from being derived. For example, myriad arbitrary cues can lead children to derive that they are not as attractive, lovable, intelligent, or worthwhile as they should be. As with all learning, once relating occurs, it can be inhibited but will never be fully unlearned. Once a child derives "I am unlovable," that behavior will always be at some strength. This is part of why it is hard to restructure cognitive networks and schemas fully, efficiently, and permanently.

It is the functional context that determines the impact of relational responding – an observation that is put to good use in ACT. In imagination, one can taste an orange, or notice that the word contains "range." The impact of these two will be hugely different. Relational context interventions can also be functional context interventions and the two can easily conflict. For example, challenging the rationality of a thought can easily make a thought more central, noticed, or important. RFT provides guidance about how to balance these processes. For example, teaching a person to add "I am having the thought that …." to a self evaluation such as "I'm bad" is indeed designed to amplify the person's cognitive network (it is a relational context intervention) but in a way that diminishes automatic and unhelpful cognitive control (it is also designed to be a helpful functional context intervention).

Clinical readers exposed to RFT will initially find little such guidance. Eyes glaze over, understanding lags, or what is understood seems obvious. That is not unlike the experience of

clinicians reading unfamiliar basic behavior research of any kind. Solving that problem is dependent on the next element of a CBS approach.

Develop a Model of Pathology, Intervention, and Health Tied to Behavioral Principles

Behavioral principles are difficult to scale directly into clinical work, and early bold attempts to do so (Kanfer & Saslow, 1969) were long ago put aside. An inadequate analysis of cognition was one source of the difficulty but the other was complexity. To all but a few, basic behavioral principles are too technical and abstract to give ready clinical guidance in many situations – it would be like asking people wanting to use a computer operating system to first understand the programming language used to build it.

The CBS solution is to this conundrum is to develop clinically useful models of pathology and treatment based on middle-level terms that are not behavioral principles but are based on them. The ACT model is meant to be a kind of user-friendly interface – an operating system if you will – that stands atop a far more extensive enterprise. Terms like "defusion" are based on RFT concepts but do not demand that the clinician immediately understand basic principles in order to make applied use of them. Six key middle-level processes have been identified and organized into the model of pathology, intervention, and health shown in Figures 1 and 2. We will briefly consider each process.

Cognitive fusion. *Cognitive fusion* refers to verbal dominance over behavioral regulation to the exclusion of other sources of stimulus control ("verbal" is meant technically here: "via relational frames"). Cognitive fusion is argued in RFT to be due to the pervasiveness of literal, reason-giving, problem-solving, and evaluative contexts sustained by natural language communities. While fusion is not necessarily harmful, it becomes so when overextended. People begin to take their thoughts literally, without noticing the process of thinking itself. Common

examples of cognitive fusion include the excessive reliance on rules about what is possible for one's life that are targeted by most forms of CBT.

Because learning is additive, not subtractive, RFT suggests that is often safer to create more flexible responding by diminishing the excessive impact of cognitive events than trying to correct their content. Psychoeducation can be helpful when there is an absence of information, but in many clinical situations entanglement with thoughts is the more central issue. Deliberate attempts to alter negative cognitive content can paradoxically increase its functional importance. Given a change agenda, people tend toward suppressive tactics that expand difficult content (Wegner, 1994; John & Gross, 2004) even if that was decidedly not the goal of the clinician.

Defusion involves the creation of non-literal, non-evaluative contexts that diminish the unnecessary regulatory functions of cognitive events, and increasing contact with the ongoing process of relating as opposed merely to its products. Said in another way, the focus is on mindfully noticing thinking as it occurs. Some examples of defusion techniques include thanking one's mind for a thought, watching thoughts go by as if they were written on leaves floating down a stream, repeating words out loud until only the sound remains, or giving thoughts a shape, size, and texture. Clients can practice labeling the process of thinking (e.g., "I am having the thought that I will never be successful"), and practice behaving in ways that directly contradict a thought (e.g., saying "I cannot walk" as one walks across the room). The goal is greater behavioral flexibility, not an immediate change in their frequency or form.

Experiential avoidance. *Experiential avoidance* is the attempt to alter the form, frequency, or intensity of private experiences such as thoughts, feelings, bodily sensations or memories, even when doing so is costly, ineffective, or unnecessary (Hayes et al., 1996). According to RFT, humans target aversive private events for change in the same ways that

external events are targeted due to an overextension of the problem-solving and evaluative functions of cognition. Some emotions or other private events are evaluated negatively and rules are constructed to keep them at bay. These avoidance or escape rules often contain stimuli that relate to the experiences to be altered, or to events that evoke them. For example, avoiding anxiety in order to avoid a shameful incapacity to function tends to elicit anxiety in response to the verbal construction of an inability to function. Distracting or soothing events become related to the avoided event, thus creating more opportunities for the aversive event to appear. Checking to see if avoidance is effective necessitates cognitive contact with what is being avoided thus evoking it. The avoidance behavior itself, through negative reinforcement, also strengthens the behavior regulatory effect of the avoided private event even if that prevents adaptive, values-based responses.

All complex organisms show avoidance learning, but in non-verbal organisms what is avoided are aversive stimuli, not reactions to them. Without bi-directional relational responding there is neither an evolutionary reason nor a robust means to avoid what *follows* the presentation of aversive stimuli, and emotional or other responses are in that category. Conversely, the relational nature of human language and cognition makes it possible to categorize, evaluate, and seek to avoid emotional responses themselves. Furthermore, arbitrary applicability means that virtually any situation can evoke aversive emotions, such as when a beautiful sunset makes a person sad because a person who passed away is not there to see it. The verbal nature of experiential avoidance greatly expands avoidance learning per se.

While there are some differences, experiential avoidance overlaps with several other concepts in the literature such as lack of distress tolerance (Brown, Lejuez, Kahler, & Strong, 2002), intolerance of uncertainty (Dugas, Freeston, & Ladouceur, 1997), and cognitive and

emotional suppression (e.g., Wenzlaff & Wegner, 2000). As RFT explains, experiential

avoidance often works in the short term to reduce some discomfort, but can have long-term

negative effects. This idea is supported in the larger literature (Baumeister, Zell, & Tice, 2007;

John & Gross, 2004; Pennebaker & Chung, 2007) and by numerous studies on experiential

avoidance per se (for a recent review see Chawla & Ostafin, 2007).

The alternative to experiential avoidance is acceptance: adoption of an intentionally open,

receptive, and flexible posture with respect to moment-to-moment experience. Acceptance is not

passive tolerance or resignation but an intentional behavior that alters the function of inner

experiences from events to be avoided to a focus of interest, curiosity, and observation as part of

living a valued life. Ironically, acceptance is one of the biggest functional changes possible, and

often will ultimately change the form of emotional events themselves.

Loss of flexible contact with the present. The contexts that promote fusion and

experiential avoidance often also take an individual out of flexible contact with the present: what

becomes central is being somewhere else, where difficult events are not occurring. ACT

promotes attending to what is present in a focused, voluntary, and flexible fashion, linked to

one's values and purposes. This is accomplished by using language more as a tool to note and

describe internal events, than to predict and judge them. A sense of self called "self as process"

is actively encouraged: the defused, non-judgmental, flexible and ongoing noting of thoughts,

feelings, and other private events when doing so is useful. The present moment focus of ACT is

seen in therapy itself, in which attention is brought to present moment experience, bodily

postures, tone of voice and so on in a focused and flexible manner. The ability to move

voluntarily from one domain of the present to another, or to persist in a focus when that is

needed, is useful in bringing attention itself under purposive control and greatly expands what

the present environment affords. Contemplative and mindfulness homework is often used to practice a different mode of mind that is less judgmental and problem-solving and more curious, appreciative, flexible and open.

Attachment to a conceptualized self. ACT seeks to undermine an attachment to a conceptualized self (our fused, evaluative stories about who we are) and to promote contact with a sense of self based on the "I/here/nowness" of conscious experience. It is usually termed "self-as-context" although other terms (noticing self; observer perspective; transcendent sense of self) have been used. When answering a series of questions what one did (I did this, I felt that, I saw this, and so on) "I" does not refer to the content of the answers but to the perspective from which observations are made and in that way normal language development leads to a sense of self as a perspective. RFT researchers have found that a sense of locus derives from learning "deictic relational frames," such as I-You, Here-There, and Now-Then, and that these are central to the ability to take the perspective of others, feel empathy, or to communicate (Rehfeldt & Barnes-Holmes, 2009). This insight has led to new assessment and training methods for children who fail to develop perspective-taking skills (Rehfeldt, Dillen, Ziomek, & Kowalchuk, 2007).

The limits of perspective taking cannot be consciously known (e.g., you cannot consciously note the limits of consciousness) and thus provides a transcendent, spiritual aspect to human experience. This idea was one of the seeds from which both ACT and RFT grew (Hayes, 1984). It is important in ACT in part because self-as-context interventions help clients see inner experiences as distinct from consciousness as such, and thus not necessarily a threat. This in turn undermines excessive rule control and increases psychological flexibility. Self as context is fostered in ACT by mindfulness exercises, metaphors, and experiential processes. For example, clients may be asked to imagine that they are older and to write a letter of advice back to the

person struggling now; or they may engage in eyes-closed mindfulness activities where they are

asked to look at difficult experiences and then to notice who is noticing.

Values problems. Just as successful working in contextualism requires a stated goal in

order to be applied as a truth criterion, when a pragmatic perspective is brought into clinical

work it leads naturally to the clinical centrality of what clients most deeply want. The

overarching goal of ACT is increasing the ability to persist or change in behavior in the service

of one's chosen values. Acceptance, defusion, being present, and so on are not ends in

themselves; rather they are meant to help clear the path for a more vital, values-consistent life.

Values dignify these other processes and make them meaningful.

In ACT, values are defined as chosen, verbally constructed consequences of dynamic,

evolving patterns of activity, for which the predominant reinforcer becomes intrinsic to the

behavioral pattern itself (Wilson & Dufrene, 2009). Appetitive rather than avoidant, values of

this kind are never finished: they are more like a direction than a destination. Being a loving

parent, for example, is not an outcome that can be obtained like a degree or a new boat. It is an

on-going, continuous process of supporting and encouraging children as they grow, rebel, take

risks, and make mistakes. The moment to moment reinforcing consequences of parenting can

even be painful and yet be appetitive. For example, being there psychologically as one's child

undergoes a serious medical operation can feel horrifyingly vulnerable: and yet be a sweet,

loving, important, and meaningful thing to do.

The key problem areas in values work are a lack of values clarity (the failure to contact

and specify appetitive consequences of importance), values based not on personal choice but on

pliance (domination of rules followed to avoid social criticism or achieve social approval), and

avoidant tracking (domination of rules followed to avoid or escape difficult feelings such as

shame or guilt). Choices based on avoidance, social compliance, or fusion (e.g. "I should value X" or "A good person would value Y" or "My mother wants me to value Z") are not helpful behaviorally (Sheldon & Elliot, 1999) because they do not lead to the flexibility characteristic of choices linked to positive consequences.

A variety of methods of values assessment and clarification have evolved in ACT (e.g., Wilson & Defrene, 2009). These involve clinical methods of looking for vitality, meaning, and purpose, and sorting them out from pliance and avoidance. ACT uses exercises and journaling to help a client note and choose life directions in various domains (e.g. family, career, spirituality) and to track the consequences for engaging in value-directed behavior.

Inaction, impulsivity, or avoidant persistence. Finally, ACT encourages the development of larger and larger patterns of effective action linked to chosen values, undermining inaction, impulsivity, or avoidant persistence. ACT is a modern form of behavior therapy – despite its focus on cognition it never left that theoretical wing – and committed action is where that link is most obvious. Unlike values, which are constantly instantiated but never achieved as an object, concrete goals that are values-consistent can be achieved. ACT protocols almost always involve therapy work and homework linked to short, medium, and long-term behavior change goals.

Exposure, skills acquisition, shaping, goal setting, contingency management, and other behavior change procedures are all part of the ACT model and indeed of many ACT protocols. What is different is the functional set. Any behavioral technique, principle, or functional analysis can be applied – harnessed to the goals of the model. More than twenty years ago, for example, it was made clear that in ACT "exposure work … is not designed to reduce anxiety. Instead, exposure gives people an opportunity to practice experiencing anxiety without also struggling

with anxiety" (Hayes, 1987, p. 365; cf., Arch & Craske, 2008). Over time, the larger ACT model

has impacted how we view behavioral procedures at a process level, allowing their more precise

definition. For example, in ACT, exposure is view as organized contact with previously

repertoire narrowing stimuli in a context designed to produce greater psychological flexibility –

thus providing a technical definition of a term long lacking one.

It is sometimes said that ACT is unconcerned with symptoms, but this is correct only in a

specific sense. In line with its tradition, ACT eschewed the *a priori* scientific importance of

syndromal analysis, seeking instead a bottom up, inductive account of the way that

verbal/cognitive processes interacted with traditional behavioral processes so as to produce

psychological inflexibility. ACT addresses cognitive, emotional, and behavioral elements of

psychological problems, but only in that context. When presenting problems are discussed, it is

often clear that client "symptoms" are functioning to keep clients from engaging in one or more

valued domains such as spending time with family or going to work regularly. And as an

empirical fact ACT reduces "symptoms" quite well (Hayes et al., 2006). But that impact is

secondary to the primary focus on valued living.

Psychological inflexibility. Psychological inflexibility and flexibility refers to patterns of

behavior that are regulated by the six repertoire narrowing or six repertoire expanding processes

specified in the ACT model. The goal of ACT is psychological flexibility: being able to contact

the moment as a conscious human being more fully as it is, not as what it says it is, and based on

what they situation affords, persisting or changing in behavior in the service of chosen values.

That definition includes all six processes. While distinguishable, each of the six processes are

understood more fully in the context of the others. The relation between each process in each

direction is theoretically and practically meaningful. Acceptance seems to depend upon defusion,

for example, because it is hard to embrace private events fully if they are as we evaluate them to be. So it is through all 30 relations among the six processes.

ACT defined. The six processes – acceptance, defusion, the now, self, values, and committed action – can be further organized. The first four are acceptance and mindfulness processes; the last four are commitment and behavior change processes. Thus, an easy definition of ACT is a behavioral and cognitive intervention that uses acceptance and mindfulness processes, and commitment and behavior change processes, to produce psychological flexibility. Treatment attempts to build the acceptance and mindfulness processes that undermine excessive literality and create a more conscious, present, flexible approach to psychological experiences; it also attempts to strengthen the commitment and behavior change processes that enhance values-based action.

Because of its bottom up, inductive nature, the ACT model is not a model of any specific type of disorder, nor of a set of techniques. One could say it is a model of how to do CBT or of therapy in general, but in an even more general sense it is meant as a model of how relational learning can interact with direct contingencies in human psychology.

ACT in practice. Because of the nature of language itself, trying to undermine literality using literal language is difficult and can easily lead to more entanglement in the name of "understanding." Therefore, ACT focuses heavily on experiential exercises in which clients are encouraged to come into contact with psychological processes more directly. Metaphors and stories allow ACT therapists to help clients learn to relate to their experiences in more flexible ways without creating a new set of rigid rules. Behavioral techniques dominate but are linked to fostering the processes in the ACT model.

In essence, the ACT model provides a functional dimensional diagnostic system (Wilson

& Defrene, 2009; cf., Hayes et al., 1996) inside a unified model of behavior. Each of the six

processes, as supplemented by traditional functional analysis, and applied to the specific

cognitive, behavioral, emotional, and social content, can be linked directly to intervention

methods and clinical targets. At the level of the model, ACT is not a technology: it is a

perspective into which a wide variety of technologies, some identified with ACT and some not,

can be deployed in a coherent fashion linked to basic principles. Movement in the processes in

the model is the functional goal and any techniques that move these processes can be part of an

ACT intervention.

The therapeutic relationship in ACT is simply a social scaling of the model. It involves

the therapists targeting these processes, *from* positive ACT processes (psychologically, for the

therapist), *with* positive ACT processes (Pierson & Hayes, 2007; Wilson & Dufrene, 2009). For

example, in ACT the therapist targets acceptance from a posture of self-acceptance, and does so

in an accepting way.

Summary. Although the number of concepts is few, they are new to some readers so it

seems worth summarizing what has been said. From an ACT / RFT approach, psychopathology

is caused in large part by the tendency to become entangled in cognition, taking thoughts literally

and remaining in a problem-solving mode even when that is not helpful. The domination of

verbal/cognitive processes over other sources of stimulus control is termed cognitive fusion. In

part as a result, there is a tendency to avoid and escape from aversive private events, such as

emotions, thoughts, memories, and bodily sensations, even when this creates behavioral harm.

This is termed experiential avoidance, which is thought to enormously restrict behavioral

flexibility and effectiveness. People lose contact with present moment contingencies due to

entanglement with a conceptualized past and future and resulting attentional inflexibility. They

fail to stay in contact with a more transcendent sense of self, allowing behavioral patterns to be

dominated by a conceptualized sense of self instead. All of these contribute to narrow and rigid

behavioral patterns characterized by inaction, impulsivity, and avoidant persistence in specific

domains, dominated by excessive social compliance and avoidance rather than chosen values.

The coming together of all of these processes is termed psychological inflexibility, which is

argued to be at the core of most human suffering. Cognitive, emotional, and behavioral

inflexibility narrows the opportunities that are apparently present to move in a valued direction.

Theoretically, it is argued that all six processes are related to each other in all directions, but

specific life histories, organismic patterns, and current situations enhance or diminish these

processes and their interrelationships. ACT views syndromes as loose collections of unknown

utility and prefers to focus case conceptualization on these empirically supported processes

within the model. The goal of ACT is not necessarily the regulation of emotional and cognitive

content, but flexibility: contacting the moment more fully as it is and persisting or changing in

behavior in the service of chosen values.

Building and Testing Techniques and Components Linked to Processes and Principles

The theoretical model provides the conceptual scaffolding for creating and deploying

treatment technologies and components. In a CBS approach treatment technologies and

components are often examined in smaller, sometimes lab-based, studies to determine their

efficacy in impacting relevant behavior and processes of change. This approach avoids the

problem with large scale dismantling studies, which are expensive and often delayed for many

years, limiting their impact because they occur too late in the dissemination cycle. There are now

scores of studies on ACT component methods, including those not done by ACT researchers but

clearly applicable to these components. We will review only a small subset of this work – not to

summarize it but to show how it relates to the development model.

Defusion. ACT researchers have found that word repetition (Hayes et al., 1999, p. 154-156) reduces both believability and subjective distress experienced from negative self-relevant phrases (Masuda, Hayes, Sackett & Twohig, 2004). The "soldiers on parade" mindfulness exercise (Hayes et al., 1999, p. 158-160) reduces subjective distress from an intrusive thought provoking task (Marcks & Woods, 2005) and willingness to engage in the task again (Marcks & Woods, 2007).

Acceptance. Research has shown that acceptance interventions alone and in combination with other ACT components increase persistence and willingness to engage in distressing tasks (e.g., Hayes, Bissett et al., 1999; Levitt, Brown, Orsillo & Barlow, 2004; McMullen et al., 2008; Takahashi, Muto, Tada & Sugiyama, 2002) and produce lower reported distress (e.g., Gutiérrez, Luciano, Rodríguez & Fink, 2004; Levitt et al., 2004) compared to inactive and emotion control/distraction conditions.

Self as context. War veterans experiencing PTSD exposed to a full ACT protocol decreased significantly more in PTSD symptoms than when exposed to one without the self-as-context component (Williams, 2006).

The present. Studies on training attentional flexibility (e.g., Langer & Moldoveanu, 2000) suggest that a flexible present moment focus can be helpful. Asking participants to focus on sensations during painful stimulation increases task persistence (e.g., Cioffi & Halloway, 1993).

Values. In pain tolerance tasks, brief values interventions have been found to increase task persistence, without decreasing self-reports of pain, especially when high degrees of pain are encountered (Paez-Blarrina et al., 2008). Studies have also shown that values interventions

increase task persistence when combined with other ACT components (e.g., Gutiérrez et al., 2004). Brief values writing exercises have been shown to increase school performance in stigmatized minority students (Cohen, Garcia, Apfel & Master, 2006), reduce physiological stress in distressing tasks (Creswell et al., 2005), and improve reactions to health messages (Harris & Napper, 2005).

Committed action. The literature on consistent application of behavioral methods is vast and hardly needs to be cited. For scientific reasons, ACT researchers have sometimes excluded behavioral methods so that the psychological impact of the other elements of an ACT model can be examined. For example, Twohig et al (2006) found that the elements of an ACT model minus behavioral exposure were effective for obsessive compulsive disorder. In essence this becomes a kind of dismantling study, testing a deliberately hobbled ACT intervention. While a few studies of this kind seem needed, it can plant a dangerous seed in which ACT is thought to be all of the elements in an ACT model *except* validated behavior change methods. That is incorrect, although some have criticized ACT researchers on that basis (e.g., Öst, 2008, p. 308). To yield to this kind of criticism would peel ACT away from its own model. A better alternative is to test behavioral methods without any ACT elements compared to those with ACT elements. Studies of this kind have found ACT elements to be helpful (e.g., Eifert & Heffner, 2003; Levitt et al., 2004). Another is to examine the mediators of ACT when behavioral technology is used to see if the packages work through ACT-sensible means. For instance, Lundgren, Dahl, and Hayes (2008) found that an ACT epilepsy protocol that included behavioral elements worked through changes in acceptance and values, a functional path that is very unlikely to be due to the behavioral element alone.

Psychological flexibility. A great deal of research exists to support the core importance

of flexible behavior, cognition, and emotion. For example, it is known that depressed individuals are less sensitive to emotional contexts and show less reactivity to both positive and negative emotional stimuli (Rottenberg, Gross, & Gotlib, 2005) and show behavioral rigidity in tasks that require adaptive skills (Hopkinson & Neuringer, 2003). Depressive symptoms and response to treatment are better predicted by flexibility of attributions than by the content of cognitive schemas (Moore & Fresco, 2007). Indeed cognitive flexibility moderates the relationship between negative life events and depression, even after controlling for the influence of explanatory style and the interaction between explanatory style and negative life events (Moore & Fresco, 2007). Similarly, inflexible application of emotion regulation strategies is more determinative of effectiveness than are the strategies themselves (Bonnano, Papa, Lalande, et al., 2004). It is known that flexibility is related to other aspects of the ACT model. For example, emotionally avoidant and controlling coping strategies are more likely to be applied rigidly, independent of the current context (Folkman et al., 1986).

Another example of psychological flexibility is the desynchrony effect that frequently occurs in ACT interventions in which the link between private events (i.e., emotions and cognitions) and overt behavior is reduced. For example, acceptance and values interventions sometimes increase persistence in a distressing task even without reducing distress (Hayes, Bissett et al., 1999; McMullen et al., 2008), suggesting these interventions may reduce the dominant control of distress over subsequent behavior and allow for more flexible responding in aversive contexts. Similarly, ACT for persons with psychosis reduces self-report of positive symptoms less than treatment as usual, but patients are rehospoitalized less – particularly those who admit to positive symptoms (Bach & Hayes, 2002) suggesting less behavioral impact and more psychological flexibility in the presence of hallucinations and delusions.

Measuring Theoretical Processes and Their Relationships to Pathology and Health

The goal of functional contextualism is prediction and influence with precision, scope, and depth. Scope in particular requires good theory, not just good technology. Exploring processes of change allows one to test the theoretical model, providing another link between principles, theory, and treatment components/packages. Thus, a CBS approach focuses on developing adequate measures of the key processes thought to be involved in psychological difficulty and in psychological change and examine their relations to psychopathology and behavior. There needs to be tight links between theoretical constructs and the auxiliaries and conditions of measurement, so that empirical problems can be attributed to the theory rather than to characteristics of the measure (Hayes, 2004).

A number of process measures have been developed. The work is too broad to describe in detail here but a few highlights can be mentioned. The Acceptance and Action Questionnaire (AAQ; Hayes, et al., 2004; the AAQ II is under review, Bond et al.) assesses experiential avoidance and psychological flexibility fairly broadly and does a very good job of predicting many form of psychopathology, as is predicted by the model (Hayes et al., 2006). To detect process changes in targeted protocols problem specific versions of the AAQ have been developed in such areas as smoking (Gifford et al., 2004), weight (Lillis & Hayes, 2008), psychosis (Shawyer et al., 2007), chronic pain (McCracken, Vowles & Eccleston, 2004), epilepsy (Lundgren et al., 2008), and diabetes (Gregg, Callaghan, Hayes & Glenn-Lawson, 2007). Believability ratings are commonly used to assess defusion (e.g., Varra et al., 2008) and specific defusion questionnaires have emerged (Wicksell et al., 2008). Values measures are also beginning to appear (e.g., Lundgren et al., 2008; Wilson et al., under review). Mindfulness measures also effectively tap these processes (Baer, Smith & Allen, 2004; Baer et al., 2006).

Emphasizing Mediation and Moderation in the Analysis of Applied Impact

Exploring the relationship between processes of change and outcome in treatment studies

through meditational analysis allows a further test of the treatment model beyond whether the

treatment package can produce a positive impact per se. Mediation provides important

information regarding the ability of a treatment package to target functionally important

processes of change. If mediation fails it is important to determine where this occurred (Follette,

1995) because it matters whether the failure was due to failures of technology (i.e., the

intervention did not impact the processes of change) or limitations in the model (i.e., the

intervention did impact processes of change, but this did not account for changes in outcome).

Nearly two dozen formal mediational analyses of ACT now exist, including those that are

analyzed and being written up but are not yet published or in press. Successful ACT mediators

include general or specific measures of acceptance and psychological flexibility (e.g., Gifford et

al., 2004; Gregg et al., 2007; Lundgren et al., 2008; Lappalainen et al., 2007; Lillis & Hayes,

2007); defusion (e.g., Hayes et al., 2004; Lundgren et al., 2008; Varra et al., 2008; Zettle &

Hayes, 1986); and values (e.g., Lundgren et al., 2008), among others. In virtually every case,

when alternative mediators drawn from other perspectives were applied to ACT interventions

they did not work or did not work as well as those drawn from ACT theory.

The quality of the evidence on mediation in ACT varies. For example, some studies show

mediation using processes assessed before outcome differences are seen (e.g., Gifford et al.,

2004; Lundgren et al., 2008; Zettle & Hayes, 1986 as re-analyzed in Hayes et al., 2006); in other

cases the mediators were assessed concurrently with outcome. What is most noteworthy,

however, is the consistency across the entire dataset: the small number of concepts specified by

an ACT model work very consistently as mediators across the very wide range of problems

targeted by ACT.

Comparing treatments at the level of processes of change is a useful approach in determining whether interventions are distinct from each other (O'Donohue & Yeater, 2003). The first two published ACT outcome studies involved a direct comparison of ACT to CT (Zettle & Hayes, 1986; Zettle & Rains, 1989). Believability of depressive thoughts mediated outcomes in ACT, but not CT (Zettle & Hayes, 1986/Hayes et al., 2006); reductions in dysfunctional attitudes correlated with treatment effects for CT, but not ACT (Zettle & Rains, 1989). Two recent effectiveness studies comparing traditional CBT and CT to ACT (Forman et al., 2007; Lappalainen et al., 2007) also both demonstrated different processes impacted by these approaches. Forman et al (2007) found that changes in the acceptance and acting with awareness subscales of the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004) as well as the AAQ related to outcomes with ACT, but not as well with CT which instead related more to changes in the observing subscale of the KIMS. Lappalainen et al (2007) found that CBT increased self-confidence more than acceptance at post, while the reverse was found for ACT. Both related to outcomes on the SCL-90 but if partial correlations with outcome were calculated for both, self-confidence no longer predicted outcome. Interestingly, at follow up ACT participants now had significantly higher self-confidence than CBT participants.[1]

Several studies have also explored moderation in relation to the theoretical model. A study by Masuda et al. (2007) provides an example. It found ACT was equally effective in targeting stigma towards mental illness regardless of participants' level of psychological flexibility, but that psychoeducation was less effective when individuals reported higher levels of psychological inflexibility. Differences in moderation have also been shown comparing ACT to traditional CBT. Forman, Hoffman et al. (2007) compared the impact of a brief, ACT

intervention for food cravings to a traditional CBT model (drawn from Friedman & Brownell,

1996), and no treatment. Outcomes differed depending on an individual's level of sensitivity to

food in the environment. Individuals who reported few difficulties with food did worse with

ACT, but individuals who reported high levels of difficulty did significantly better than either

CBT or no treatment when exposed to ACT.

Mediation and moderation data are high tests of a CBS approach because they

simultaneously examine the utility and coherence of the relationship between theory, technology,

and outcomes. It is not important to CBS that ACT technology always be more successful than

other approaches -- indeed it has not been (e.g., Forman, Hoffman et al., 2007). The failures so

far seem theoretically sensible (e.g., it makes sense that acceptance will not help with food

cravings if the person is not dominated by food to begin with) but a lot remains to be learned.

The consistency of the evidence on the model however provides a target for the creativity of

researchers and clinicians, who can then focus more on empirically supported processes than

labels, packages and manuals (Rosen & Davison, 2003).

Early and Continuous Testing of Effectiveness, Dissemination, and Training Strategies

A CBS approach differs from stage-based treatment development models in which

effectiveness and dissemination research is only conducted after multiple studies have tested the

treatment. Contextual behavioral scientists are not trying to find out what is "true" in an

ontological sense and then see if that knowledge is useful. From a pragmatic perspective, the

truth of a given analysis is found in its utility where it is applied. This suggests that effectiveness,

training, and dissemination research should begin early and be emphasized throughout (Hayes,

2002). Knowledge development in such an approach is embedded and horizontal. Diverse

populations and settings need to be a significant part of the process instead of passive recipients

of knowledge developed elsewhere. Factors relevant to dissemination such as feasibility, cost-effectiveness, and acceptability of the treatment by both clinicians and their clients (Hayes, 1998) should be considered early, and a broad and diverse development community needs to be created.

ACT researcher have focused on effectiveness and training testing early in the development process. The first ACT study of the modern era was an effectiveness study (Strosahl et al., 1998) that showed that training clinician in ACT produced better overall outcomes in an outpatient setting. Since then two additional effectiveness studies have been conducted with ACT targeting heterogeneous clinical populations (Forman et al., 2007; Lappalainen et al., 2007) in addition to studies on training (e.g., Luoma et al., 2007).

Testing the Research Program across a Broad Range of Areas and Levels of Analysis

The only way to test and further develop a putatively unified model is to apply it to topographically distinct populations understood in terms of the functional dimensional processes specified by the model. That needs to be done while varying everything that is not central conceptually (e.g., individual and group interventions, long and short interventions, in person interventions versus telephone, books, or the internet, and so on). Such as approach to treatment testing may allow researchers to more readily identify the boundary conditions of the model in accounting for pathology and specifying treatment course and outcome, suggesting areas for further model and treatment development, especially is there is attention to mediation, moderation, and components, not just outcomes.

The breadth of ACT research is undeniable, and RFT is even broader. That breadth exists because of this strategic vision. A recent review (Hayes et al., 2006) identified controlled ACT studies on work stress, pain, smoking, anxiety, depression, diabetes management, substance use,

stigma toward substance users in recovery, adjustment to cancer, epilepsy, coping with psychosis, borderline personality disorder, and trichotillomania, and comparisons that included cognitive therapy, behavior therapy, psychoeducation, attention placebo, pharmacotherapy, general treatment as usual, and wait list. Overall the between group effect size was $d = .66$ at post and $d = .65$ at follow up. Three independent meta-analysis have arrived at broadly similar values (Öst, 2008; Powers, Vörding, & Emmelkamp, 2009; Pull, 2009). Since 2006, successful controlled studies have appeared in additional areas, including obsessive-compulsive disorder, marijuana dependence, skin picking, racial prejudice, prejudice toward people with mental health problems, whiplash associated disorders, generalized anxiety disorder, chronic pediatric pain, weight-maintenance and self-stigma, clinicians' adoption of evidence-based pharmacotherapy, and training clinicians in psychotherapy methods other than ACT. This process of expansion is bound to continue, into prevention, organizations, schools, communities, religious bias, environmental issues, sexism, compassion, and the like. Interventions with even more challenging populations (e.g., those with IQs below 70; brain injured clients; young children; prisoners) are currently being tested.

Whether the model succeeds or fails in these areas is an empirical matter – it is the strategy we are pointing to here. In some ways the whole point is to try to find the failures, so that further model and technological development can occur. The best way to do that is to push the model as far as it can go and to be prepared to change when deficiencies are contacted. Already, studies showing that ACT may not work quite as well for minor problems and less entangled and avoidant clients (Forman et al., 2007; Zettle, 2003) are leading to model-consistent methods to attempt to overcome this problem by, for example, emphasizing values and compassion more than struggle with personal pain.

Those outside of the behavior analytic tradition are commonly worried about the expansive goals of the ACT/RFT community, but it is fully consistent with Skinner's original vision. It is not arrogance that led an animal learner to write a utopian novel like *Walden II* (Skinner, 1948): rather, it is an explication of the vision and values of an inductive tradition that started with the study of rats and pigeon in order to understand human complexity. Walden II is a goal, not a claim to knowledge. In the same way, the CBS tradition is committed, as its website notes, to the "creation of a psychology more adequate to the challenge of the human condition." That is an aspiration, not a claim to knowledge.

Creation of an Open, Diverse, and Non-Hierarchical Development Community

ACT and RFT are being developed by an open, diverse, non-hierarchical world-wide community of clinicians, basic scientists, applied scientists, scholars, and students. The creation of a broad and diverse development community is a necessary feature of the CBS approach for three reasons. First, the inductive and yet broadly focused development strategy of a CBS approach can be quite slow. Only many hands can mount such an agenda. Secondly, in a CBS approach all ideas and methods are assumed to be contextually limited. Diversity and openness ensures that the range of ideas, settings, backgrounds, professions, and cultures brought to this development strategy is large and that blind spots can be more readily contacted, especially those held by developers and early explorers. Finally, community control over development avoids the problem faced by labeled and certified empirically supported treatments linked to scientific development strategies based on adherence to validated manuals, namely, that only developers or the anointed have the power to add or subtract elements. The hierarchy, self-focus and ossification that may result could well slow long-term scientific progress. Given the distant and high aspirations of a CBS approach, the flexibility and temporal extension of communitarian

control is necessary.

The link between ACT / RFT and a CBS development strategy is reflected by the consensus the development community reached several years ago about the name of its society. "ACT" or "RFT" is nowhere in it – instead it is called the Association for Contextual Behavioral Science (ACBS: www.contextualpsychology.org). As of mid-2009, ACBS has nearly 2,500 members, more than half outside of the United States.

It is one thing to create a community – it is another to keep it open and flexible. It is a value of the ACT/RFT development community to consciously limit hierarchy, isolation and self-interest. For example ACBS has eschewed certification of therapists. ACT trainers are "recognized" by a free process of peer review, and must sign a values statement in which protocols are made available for free or at low cost, and entanglement of ACT training with proprietary claims are prohibited. Whether protocols that comport with an ACT model are branded "ACT" is considered inside the CBS community to be a strategic decision, not a matter of fundamental importance, and various considerations have lead well-known and respected CBS researchers to call their protocols by other names at times (e.g., McCracken, 2005). There is no attempt to restrict those decisions in presentations accepted at ACBS conventions.

The Scientific Development Strategy of Empirical Clinical Psychology

Empirical clinical psychology needs to attend more to its development strategy. In the usual approach, philosophical assumptions are not explicated, basic processes are all too often an afterthought, and if they exist at all theories are generally narrowly focused, vague, expressed in common sense terms, and at times wholly untested. The idea seems to be that the Food and Drug Administration (FDA) style of medication validation can be used to build a progressive field based on manualized treatments focused on well-specified syndromes that are empirically

validated in well-controlled studies. That seems unlikely and at the very least it needs to be

defended. To our knowledge, no progressive science has ever been built in such a fashion.

The success of this plan requires that psychiatric syndromes lead to functional understood

entities with known etiologies, that is, to diseases. Measured against that criterion it has been an

abject failure. The American Psychiatric Association planning committee for next version of the

Diagnostic and Statistical Manual (Kupfer, First, & Regier, 2002) concluded "Reification of

DSM-IV entities, to the point that they are considered to be equivalent to diseases, is more likely

to obscure than to elucidate research findings. …. All these limitations in the current diagnostic

paradigm suggest that research exclusively focused on refining the DSM-defined syndromes may

never be successful in uncovering their underlying etiologies. For that to happen, an as yet

unknown paradigm shift may need to occur." (p. xix). Without the functional simplification that

is provided by the discovery of diseases, psychiatric syndromes can lead to an endless random

walk through a wilderness of topographical correlations.

The same problem of incoherence occurs if all that is of concern is the validation of

technology. Technological knowledge alone gives us no basis for dealing with a new problem or

situation, no systematic means to develop new techniques, and no way to organize the field

except under broad tribal labels such as "CBT" that are gradually becoming meaningless. It

becomes "difficult to assimilate the mountain of seemingly disconnected bits of information that

science-as-technology presents. The field becomes an incoherent mass, impossible to master and

impossible to teach [and] the shallow level of analysis means that other areas of science cannot

be related to clinical techniques" (Hayes et al., 1999, p. 15)

The field needs a development strategy linked to pragmatically useful processes and

theory, but a domination of empirically validated technology over progressive theory is deeply

imbedded in contemporary empirical clinical thinking. Junior researchers often are applauded (or at least funded) for mixing and matching techniques and syndromes like cooks in a kitchen, relabeling every combination as a model, approach, or treatment, provided only that in the end that the technological stew is tested in the form of a randomized trial. The mountain of manuals and models that result is impossible to simplify or even to characterize. Acceptance and mindfulness techniques are now entering into new manuals at light speed, sometimes sitting side by side with seemingly contradictory methods, and without a well-crafted strategy in place for developing a real science out of this technological tangle.

Even serious scholars do not seem to understand the very different strategy being followed by the CBS community. For example, Öst (2008) criticized the lack of attention to syndromal diagnosis in the ACT literature, failing to note why this choice was made or to note the use of functional dimensional process information instead. He compared the ACT literature to a matched set of traditional CBT studies using a set of methodological standards drawn from a traditional model of development applied and argued that the ACT literature was weaker, but failed to note or explain the evidence that instead ACT studies were following a different model of scientific development. The evidence for that claim is in the very list of matched CBT studies he created. The CBT list of studies was 100% composed of studies on depression and anxiety, was funded well (77% with grants of more than $150,000), contained no mediational analyses, and provided almost no process information of any kind. Öst was not being baised: that is indeed where the traditional vision of scientific development inside CBT had lead us, with large and expensive studies excessively focused on a relatively narrow set of problems but with very weak process knowledge and limited evidence of theoretical coherence and progress. In contrast the the ACT literature he reviewed was enormously broad (in seven different areas and only 38% in

depression or anxiety), was underfunded (only 8% were based on grants of $150,000 or more),

and yet almost every study contained good and supportive processes data, and the majority had

successful mediational analyses published, in press, or in preparation focused on a handful of key

processes of change that could nevertheless accommodate the enormous range of problems being

addressed. As measured against its own criteria, which readers of the present article would now

better understand, the early ACT literature is in many ways stronger than the traditional CBT

literature Öst himself held up as a proper comparison, despite its minority status and relative lack

of funding.

As another example of the lack of understanding regarding an ACT approach, in their

meta-analysis of ACT Powers et al. (2009) entered disorder-specific distress as a primary

outcome, even at times categorizing targeted behavioral outcomes as secondary. Although

scientific politics and the dominance of mainstream measures may require ACT researchers to

work both sides of that street, disorder-specific distress is generally a secondary concern

compared to valued actions and life functioning in ACT. For example, the ACT model when

applied to chronic pain is designed to move patients away from a focus on pain intensity toward

a focus on its unnecessary interference with living. Nevertheless, Powers et al. entered pain

intensity as a primary outcome of ACT studies on chornic pain in their meta-analysis and large

effect sizes suddenly approached zero in some cases. The meta-anlysis was still reasonably

supportive, but the failure to characterize evidence in an ACT-consistent way contributed to the

incorrect conclusion that ACT was only as effective as any alternative active treatment (see

Levin & Hayes, in press for a re-analysis of their dataset).

Due in part to the dominance of the FDA model, ACT is most often approached as a

collection of techniques evaluated only in terms of outcomes. The comparisons that result are of

limited interest. Although many of the techniques in ACT are relatively distinct, many are shared with other approaches, especially within CBT writ large but also with experiential, humanistic, and analytic traditions. The level of technique is a moving target and unless processes are understood, it is impossible to know when different techniques are truly different, and outcomes alone are not an adequate basis upon with to build a progressive science.

So far the vast majority of ACT critics have not explored ACT extensively, whether that is meant experientially or in the intellectual sense of a deep understanding of functional contextualism, RFT, and the CBS strategy of development. Various ACT methods are argued to be the same or different, but the grounds for the argument seems to appearances, not well-crafted theory, data, or deep and broad exposure. Everyday language and common-sense understanding based on mainstream assumptions is too flexible for that exercise to work well. On such a basis, a sophisticated CBT scholar can argue that ACT is the same as cognitive therapy (Hofmann & Asmundson, 2008) and in the next breath argue that ACT is the same as an obscure Japanese treatment from the early part of the last century (Hofmann, 2008). Logically, that evidentiary basis would make cognitive therapy a form of Morita Therapy, but the problem is not the failure to see that conclusion, it is trying to understand deep theoretical, philosophical, and strategic differences on the basis of loose verbal associations grounded in the hegemony of mainstream assumptions. A more interesting way to compare approaches, if comparisons are to be made, is to compare their assumptions, theories, evidence regarding processes of change, component evidence, and developmental strategy. We have cast the present article as we have because in the long run what seems most important are not empirically supported packages, techniques, or labels, and the monuments to immortality developers tend to build around them, but empirically supported processes and theories (Rosen & Davison, 2003) that can be linked to a strategy for

the creation of scientific and practical progress, and that can be given away to the field for the good of those we serve.

Conclusion

The scientific progress of empirical clinical psychology seems mixed – no one claims that either paradise or failure has been achieved. Some see the glass is half full and say that the dominant strategy is working; others see it half empty and lobby for strategic change. Frankly, that argument will not be decided by established researchers – it will be decided sociologically by junior researchers, theorists, and students choosing where to invest their life energy.

It seems clear that the field is changing with the ascendance of mindfulness and acceptance-based approaches and their core assumptions that differ so from traditional CBT assumptions. This is not an issue of label or school. The statement "unlike CBT, there is little emphasis in MBCT [Mindfulness-Based Cognitive Therapy] on changing the *content* of thoughts; rather, the emphasis is on changing *awareness of* and *relationship to* thoughts" (Segal, Teasdale, and Williams, 2004, p. 54) could have been stated by an ACT theorist without altering a single word other than the name of the therapy.

Generational changes within a field provide opportunities for advancement and renewal. These may be wasted, however, unless we think seriously about the scientific development strategies that are most likely to produce long-term progress. It will make little long term difference to the field if we take our existing protocols, add a dash of mindfulness here, and a dollop of values there, test them, and gather them into a loose pile all under the tribal label of CBT. Both advocates of traditional CBT and of newer forms alike need to be much more clear about their own scientific development strategy and how it can best be evaluated. As we have tried to describe, ACT and RFT researchers have done so. The contextual behavioral science

approach seems coherent, reasonable, and distinctive, and it has now yielded a body of work that is substantial enough for it to deserve to be considered on its own terms.

It would be unusual to evaluate an empirical clinical approach by examining the clarity of its philosophical assumptions; by the adequacy, progressivity, and coherence of its basic behavioral principles; by the integrity of its processes of change; by the coherence and general utility of its theory; and by the consistency of the link between all of these and successful outcomes. Nevertheless, from our perspective these issues seem far more important than the technological, informal, tribal, or brute force empirical questions that seem to dominate in the dialogue so far.

In this paper we have pointed to signs that the ACT / RFT development strategy is succeeding in areas where success has not been common in applied psychology. But whether it succeeds or fails depends not one bit on the success or failure of traditional CBT or any other area of empirical clinical science and practice. ACT and traditional CBT are distinct models but they are part of the same family and they share the same opponent: the human suffering that exists because of scientific ignorance. Long-term scientific progress is the key to defeating such a difficult opponent, but that will take more than effort. It requires a strategy that works.

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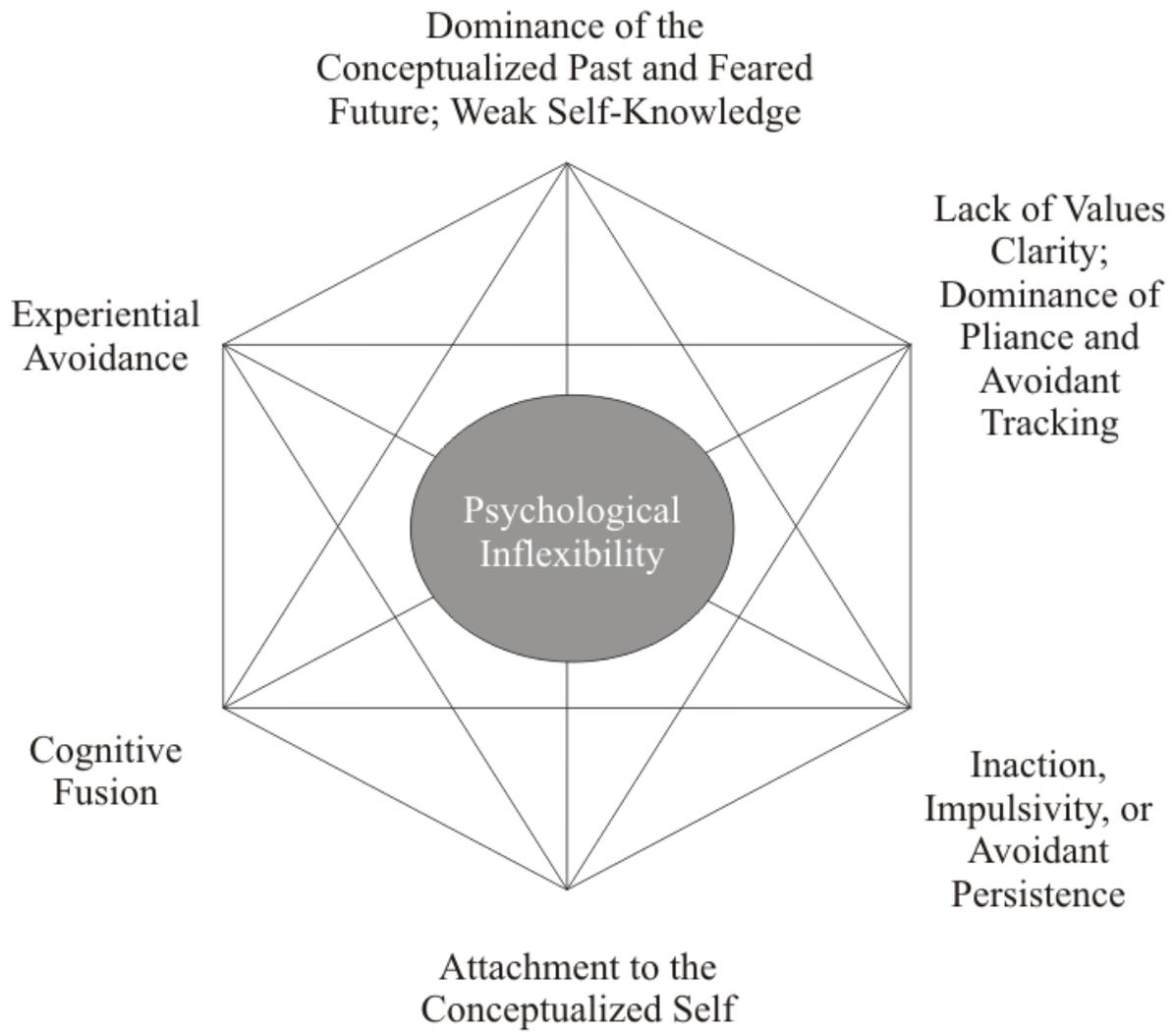
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Figure 1. An ACT / RFT model of psychopathology.

Commitment and Behavior
Change Processes

Contact with the
Present Moment

Acceptance

Values

Psychological
Flexibility

Defusion

Committed
Action

Self as
Context

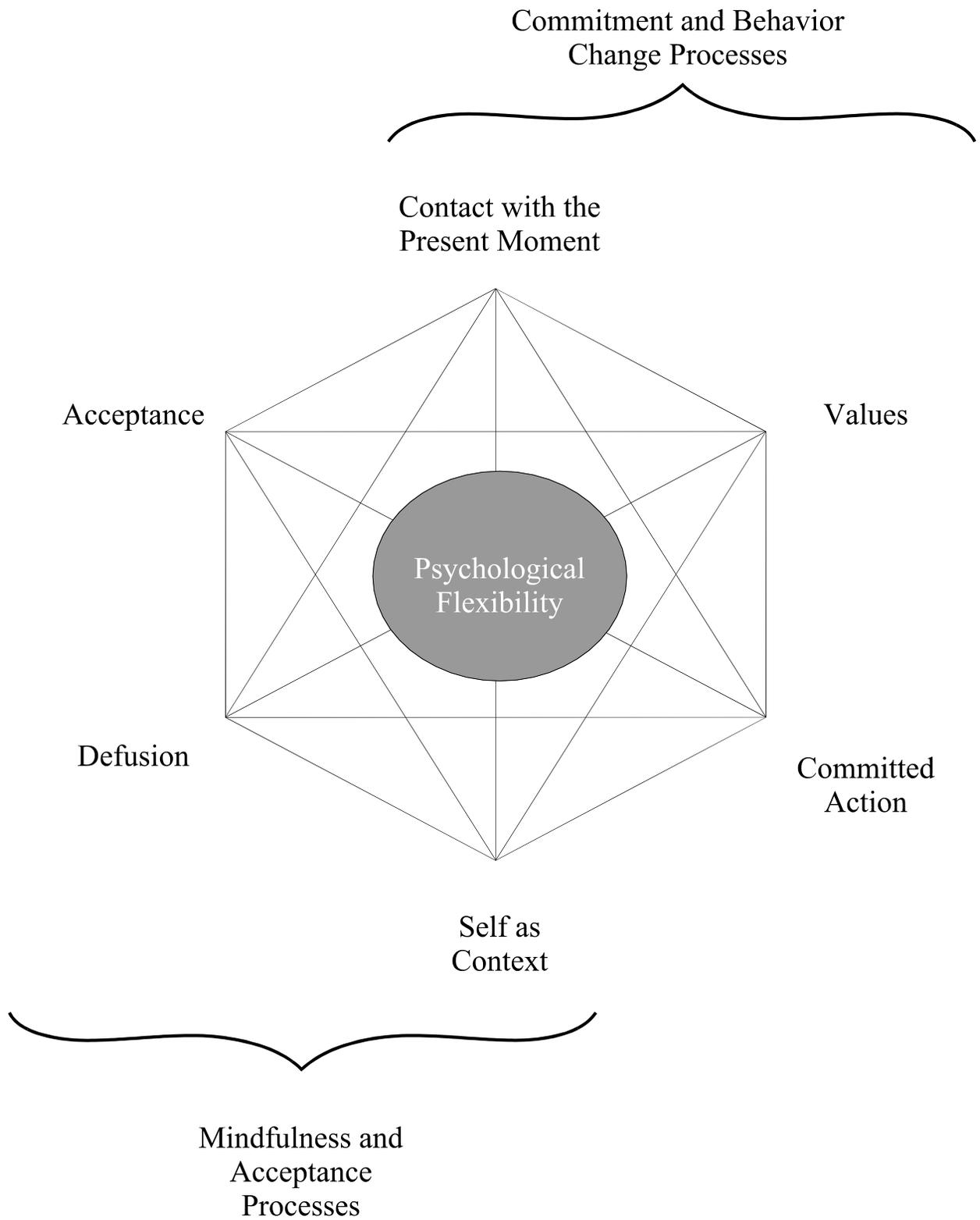Mindfulness and
Acceptance
Processes

Figure 2. An ACT / RFT model of health and treatment processes.

Table 1 – Some Key Features of a Contextual Behavioral Science Approach to Scientific System Development

_____

1. Explicate philosophical assumptions

2. Develop a basic account with manipulable, contextual principles organized into theories

3. Develop a model of pathology, intervention, and health tied to basic behavioral principles and theories

4. Build and test techniques and components linked to these processes and principles

5. Measuring theoretical processes and their relationships to pathology and health

6. Emphasizing mediation and moderation in the analysis of applied impact

7. Early and continuous testing effectiveness, dissemination, and training strategies

8. Testing the research program across a broad range of areas and levels of analysis

9. Creation of an open, diverse, and non-hierarchical development community
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Footnotes

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1. This calculation was left out of the text of the published manuscript but it can be

computed from the included table.