The potential benefits of flexibility for dissemination and implementation: Acceptance and

commitment therapy as an example

Michael E. Levin [a], Brooke M. Smith [a] & Gregory S. Smith [b]

[a] Utah State University, Department of Psychology

[b] Chrysalis

* Corresponding author. Utah State University, 2810 Old Main Hill, Logan, UT 84322, United

States. Phone: +001 (541) 531-3892; Fax: +001 (435) 797-1448, E-mail address:

Michael.Levin@usu.edu.

Abstract

Our commentary on the article by Fixsen and Blase (2018) highlights some of the converging and diverging strategies between the Teaching-Family Model (TFM) and the dissemination and implementation of acceptance and commitment therapy (ACT). We focus primarily on the potential benefits of flexibility in areas including theory, methodology, and intervention protocols. Examples include the use of middle level terms, randomized controlled trial methods, protocols focused more on function than specific topography, and an open, collaborative approach to dissemination. We also note how this broader set of strategies can be made coherent and progressive through a careful connection back to contextual behavioral science as an underlying scientific strategy and its associated philosophy of science. We hope this approach contributes to an ongoing conversation on potentially useful strategies for dissemination and implementation.

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The article by Fixsen and Blase (2018) provides a clear roadmap for how to scale up

behavior analytic procedures for successful dissemination and implementation. The authors

outline the steps taken and lessons learned in achieving large scale implementation through

strategies such as focusing on fidelity, replication, and larger units of analysis with a well-

defined set of procedures and programs. Identifying factors that affect successful dissemination

and implementation is critically important to ensure decades of careful research have maximal

impact on providers, policies, and, ultimately, public health. Yet, there may be multiple

pathways to success and exploring other strategies can broaden the range of methods from which

to choose.

In this commentary, we will highlight some of the converging and diverging strategies

between the Teaching-Family Model (TFM) and the dissemination and implementation of

acceptance and commitment therapy (ACT). ACT is a behavior analytic approach to

psychotherapy that has had notable success with dissemination over the past two decades, which

we will review briefly for context. For example, the larger professional organization, the

Association for Contextual Behavioral Science (ACBS), of which ACT is a central component,

has over 7,000 members internationally and a flagship journal (*Journal of Contextual Behavioral

Science*). ACT is recognized as an evidence-based treatment by organizations such as Division

12 of the American Psychological Association (APA, 2016) and the National Registry of

Evidence-based Programs and Practices (SAMHSA, 2010). Searching "acceptance and

commitment therapy" on PsychInfo identifies over 1,300 peer-reviewed articles, and over 250

randomized controlled trials (RCTs) have been published on ACT to-date (ACBS, 2018). ACT

protocols have been developed and tested for a wide range of problems within and outside

mental health including depression, anxiety, obsessive compulsive-related disorders, psychosis,

eating disorders, addictions, aggression, chronic pain, coping with medical conditions, obesity,

and stigma as well as positive functioning in settings such as business, healthcare, athletics, and

education (Hooper & Larsson, 2015). ACT has been successfully disseminated internationally,

with large and growing programs of research, training, and practice in a variety of regions

including Western Europe, Asia, Australia, and Iran, among others.

The success of ACT can be attributed to its behavior analytic roots and the more specific

scientific strategy articulated in contextual behavioral science (CBS) that guided its development

(Hayes, Barnes-Holmes & Wilson, 2012; Vilardaga et al., 2009). A core feature of CBS that we

will focus on in this commentary is flexibility[1] defined in relation to theory, methodology, and

intervention protocols, all of which are made coherent through an explicated philosophy and

scientific strategy.

This flexibility is a direct result of the unique needs and challenges that ACT developers had

to address in taking a clinical behavior analytic approach to the complex behaviors typically

occurring in therapy (Zettle, 2005). In the 1970s and 80s, clinical psychology was moving away

from behavioral approaches, embracing cognitive theories and treatments that seemed to more

adequately address complex verbal behavior (e.g., thoughts) and its interaction with

psychopathology and therapeutic change. During this time, clinical psychology also became

intensely focused on developing an evidence base through RCTs of treatment protocols for

specific disorders. Thus, ACT developers were faced with challenges in maintaining a behavior

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[1] "Flexibility" is used in its more typical, colloquial meaning in this manuscript, particularly with regards to being sensitive and adaptive to target audience and contexts, rather than it's more specific use in ACT as a shorthand for psychological flexibility.

analytic approach that could address current needs, including a more comprehensive account of verbal behavior relevant to complex behaviors encountered in therapy, a way to bridge behavior analytic methods with the increasing emphasis on RCTs, and strategies to increase clinicians' use of behavioral methods in a field increasingly turning to other theoretical approaches. Addressing these challenges led to articulating CBS as a scientific strategy deeply linked to behavior analysis, which provided the necessary flexibility to address the needs of clinical psychology and other applied behavioral health domains as they continued to evolve.

Functional contextualism as the foundation for CBS and ACT

A defining feature of CBS is its well-specified philosophy of science, functional contextualism (Hayes et al., 2012; Hayes, Hayes & Reese, 1988), which provides the foundation for the broader scientific strategy. Explicating a philosophy of science is critical for ensuring that one's approach to theory, methodology, and practice are coherently linked to a world view and scientific goals (Vilardaga et al., 2009). This is what has allowed ACT developers to be flexible in their scientific strategy, while avoiding incoherence, ecclecticism, or an otherwise non-progressive approach to knowledge development.

Functional contextualism can be understood by its pragmatic approach to truth, in which the accuracy of a scientific analysis is defined by successful working with regard to the prediction and influence of behavior (i.e., "what works"), and its unit of analysis, the whole organism interacting with the environmental context (Hayes et al., 1988). This is aligned with and indeed derives from behavior analysis in emphasizing traditionally held assumptions, such as the importance of studying the behavior in context, looking to environmental factors to identify manipulable independent variables, and focusing on control/influence of relevant behavior, not simply prediction (Hayes et al., 1988).

The pragmatic truth criterion serves as an organizing principle, thereby allowing for a more flexible approach to knowledge development in which any scientific methods may be used, provided they enhance prediction and influence of behavior (Vilardaga et al., 2009). In this way functional contextualism provides a guiding framework that has allowed for a more flexible approach to ACT's development, research, and dissemination, while maintaining rigor, coherence, and progressivity. The remainder of this commentary will review examples of flexibility with ACT that derive from a CBS approach and its underlying philosophy, and which we believe have enhanced its success in dissemination and implementation.

Flexibility with theory through the use of middle level terms

ACT is defined by its focus on function and processes, rather than topography or procedures. This fits well with the broad scope afforded by behavioral principles, yet leaves a practical gap between highly abstracted principles and the specific contexts in which they apply. Consequently, CBS utilizes *middle level terms* in an attempt to help bridge these abstracted principles with the treatment contexts and domains to which they might apply.

For example, negative reinforcement is a precise and broadly applicable behavioral principle, which in the domain of clinical psychology could account for a variety of pathological behaviors that function to alleviate contact with aversive internal stimuli. However, the concept of negative reinforcement alone does not necessarily point therapists to the specific, complex, and potentially subtle contingencies that are maintaining the pathological behavior patterns that present in the therapeutic context. By contrast, *experiential avoidance* is a middle level term in ACT that refers more specifically to rigid patterns of behavior in which individuals attempt to avoid, escape, or otherwise control the occurrence of internal states (e.g., thoughts, feelings, sensations, urges), despite undesirable consequences for doing so.

Experiential avoidance not only refers to a more specific instance of negative reinforcement, albeit with less precise terminology, it also orients to particular features relevant to an ACT approach. For example, the rigidity of this behavioral pattern, despite its harmful consequences, orients to instances of negatively reinforced behavior in which avoidance/escape from aversive internal states is highly valued relative to other consequences that might otherwise reduce the probability of avoidance/escape (e.g., lost opportunities for positive reinforcement, additional aversive consequences due to avoidance behavior). Additionally, the emphasis on "*attempts* to avoid" highlights that experiential avoidance may occur in contexts in which an individual lacks a history of direct negative reinforcement (i.e., this behavior has never led to an actual reduction in aversive internal states), and instead may be rule-governed behavior.

The use of such middle level terminology may raise concerns due to its weaker precision or potential confusion with mentalistic or hypothetical constructs. In CBS, middle level terms are (or at least strive to eventually be) directly and empirically linked to the more precise terms from which they derive and also to measurable environmental stimuli and behaviors, such that they are more like abstractions of basic principles or intervening variables than they are hypothetical constructs (MacCorquodale & Meehl, 1948). It is worth noting that applied behavior analysis has also found utility in adopting certain middle level terms that similarly serve to better orient applied researchers and practitioners in applied contexts (e.g., automatic reinforcement).

Although the merits and potential issues with middle level terms for the progressivity of science continue to be debated (Darrow & Follette, 2014; Kanter, Holman & Wilson, 2014), a potential benefit of this theoretical/terminological flexibility is its ability to support dissemination and implementation. Middle level terms may provide a common language to orient basic researchers, applied researchers, and practitioners to the ways in which principles

apply to specific domains and phenomena. As an example, *cognitive defusion* is a middle level

ACT term, which refers to the process of reducing the literal, evaluative functions of thoughts

(i.e., cognitive fusion) and instead responding to thoughts simply as thoughts. This term provides

some common language for basic researchers, applied researchers, and practitioners to share and

learn from each other with regards to predicting and influencing the ways verbal processes affect

overt behavior.

From the perspective of response effort, the greater the effort to learn a treatment, the less

likely clinicians are to use it. Middle level terms may help to simplify complicated theories,

making them easier to teach and learn, and thereby lessening the barrier to entry for clinicians

interested in adopting new treatments. This is not to suggest scientists should abandon evidence-

based methods or necessary details for the sake of dissemination. Yet, it does raise an important

consideration regarding the balance between rigorous training and dissemination, particularly if

there is an absence of evidence indicating such rigorous training improves outcomes.

This can be framed in a metaphor as the difference between a computer program's user-

facing operating system (middle level term) and the underlying source code used to program it

(basic behavioral principles) (Vilardaga et al., 2009). Just like in day-to-day use of computer

programs, for typical practice, middle level terms may be sufficient for clinicians to implement

ACT and it may even be cumbersome at times to work within the more abstracted "source code."

This is not to say that programmers with expertise in source code are not needed when issues

arise or to further improve the operating system, just that not every "user" needs to know the

source code. This can reduce the training burden for clinicians to deliver ACT with fidelity,

without requiring respecialization in behavior analysis for those with different training

backgrounds. A similar strategy was noted by Fixsen and Blase (2018), as they learned it was

actually less effective to teach providers "pure" applied behavior analysis than it was to teach

them the necessary skills for delivering the TFM. In other words, middle level terms may orient

practitioners to the more specific skills and functions relevant to an intervention, while reducing

the barriers related to learning the underlying basic science and principles. Interestingly, trends

in ACBS suggest this method may increase providers' interest in learning about behavior

analysis, such as with the popularity of books oriented to clinicians that teach the underlying

"source code" for ACT (e.g., Toerneke, 2010; Villatte et al., 2015).

Flexibility with methods through the use of RCTs

Historically, behavior analysis has eschewed the use of group-level designs (e.g., RCTs) in

which causal assertions are made from average differences between experimental groups of

people detected through statistical inferences (Shull, 1999; Sidman, 1965). Although there is

certainly validity to such concerns, they are paralleled by the potential benefits of RCTs (and

missed opportunities from their exclusion in a program of research), perhaps most notably in

relation to dissemination and implementation. RCTs evaluate treatments in a format that is

readily understandable across many approaches to science, public policy, and healthcare by

testing the practical impact of a given independent variable (e.g., treatment protocol) on a

relevant sample and inferred population. Although there are many things a RCT will not tell you,

it is a concrete way to determine the overall estimated effect of a treatment in a population, the

degree to which this effect is directly due to the treatment, and the potential advantage over other

approaches. A RCT does not necessarily clarify how a treatment works, for whom it is more or

less effective, or how to make it more effective (although methods can be used in RCTs to help

answer these questions). Yet, RCTs will provide answers to concrete questions that stakeholders

and clinicians have regarding whether a treatment is likely to produce better outcomes for clients in general and at a population/system of care level.

Part of ACT's success may be attributable to its use of RCTs as a component of knowledge development, which has led to the recognition of ACT as an evidence-based treatment (e.g., APA, 2016; SAMHSA, 2010). In turn, this has further increased interest in ACT among clinicians, healthcare systems, training programs, and professional organizations. As just one example, this evidence base led to widespread adoption of ACT in Veterans Administration (VA) hospitals across the United States (Walser et al., 201).

Through an explicated philosophy of science and a scientific strategy like CBS, researchers can be more flexible in their use of different methods, including RCTs, while retaining their rigor and relevant unit of analysis. For example, RCTs can be used to test generalizability with regard to whether principles and associated procedures predict and influence behavior reliably at larger units of analysis and across varied contexts (e.g., across groups, treatment settings, or a population). Through moderation analyses and related approaches, RCT data can identify heterogeneity in responses to treatments to identify relevant contexts and factors that lead to failure of procedures to produce their intended effects (e.g., whether different treatment strategies might be needed for certain types of clients). Fixsen and Blase (2018) highlighted this strategy within the TFM research, in which results from large scale implementation of the TFM were used to identify factors that hindered successful replication and facilitators that enhanced outcomes across sites. Thus, group-level designs such as RCTs provide another unit of analysis within a program of research to identify factors that lead to more or less success in program implementation.

RCTs can also be connected back to test middle level theoretical predictions and their associated behavioral principles. For example, ACT researchers have developed an array of measures to assess middle level terms related to the model of psychopathology and therapy (e.g., the Acceptance and Action Questionnaire-II [AAQ-II]; Bond et al, 2011). These measures can potentially assess whether a treatment serves its intended function with clients (e.g., whether ACT leads to improvements in psychological inflexibility as measured by the AAQ-II). This begins to associate treatment protocols and efforts to implement them back to the intended function of these procedures. If ACT fails to have the intended function (i.e., fails to improve a process measure like the AAQ-II), it suggests that the procedure failed when used with a group of individuals in a given context, and thus further revisions are needed for successful implementation. An example of this were some of the failures when using ACT to prevent mental health problems among non-clinical populations such as college students, in which ACT did not consistently improve psychological inflexibility, suggesting further protocol refinements to were needed (e.g., Levin et al., 2016). In this way, process measures in a group design can provide some sensitivity to the functional effect of the procedure for each individual, while the summarized effect indicates whether it functioned as intended across a broader sample.

In summary, the pragmatic truth criterion in functional contextualism can help explicitly guide a more flexible approach to methodology in which even group designs can have utility as part of a portfolio of research activities seeking to improve prediction and influence of behavior. This methodological diversity not only provides the necessary evidence base to improve dissemination and adoption by non-behavioral clinicians and stakeholders, but also can help further inform refinements to procedures and theory in a program of research. The CBS focus on the relations between basic principles, middle level terms, and treatment outcomes, as well as the

empirical tests of these relations within RCTs, echoes the work done by the developers of the

TFM in "getting the science right." By empirically identifying the "essential elements" of ACT,

defined in relation to middle level terms for treatment processes/components (e.g., acceptance,

values, defusion), ACT can remain a coherent treatment approach that is functionally, rather than

topographically, defined.

Flexibility with procedures and protocols through an emphasis on process and open

collaboration

The last strategy we highlight may diverge the most from applied behavior analysis broadly,

and the TFM approach described by Fixsen and Blase (2018) that emphasized strategies

including assessing fidelity to essential elements for programs and using certification standards

and credentials. In contrast, a hallmark feature of ACT dissemination has been an open, flexible

stance toward treatment protocols and procedures, which we believe has supported its broad

adoption and ongoing innovations.

ACT is defined in relation to a set of functionally defined therapeutic processes and

components, rather than specific protocols. Thus, although empirically validated ACT techniques

and protocols exist, there are no necessary or sufficient topographically defined protocols for

what constitutes ACT or not. ACT interventions can vary from single workshops (Dindo et al.,

2015) to a series of intensive individual/group therapy sessions (Hayes et al., 2004) to self-help

websites (Levin et al., 2016), and so on. The defining features of ACT still exist across these

diverse protocols and programs, but they are defined in terms of function, which can be assessed

empirically via process measures. What defines ACT includes targeting a key set of

psychological flexibility processes (e.g., acceptance, cognitive defusion, values), and minimizing

ACT-inconsistent processes, particularly those focused on responding to internal states with

avoidance/escape or in a literal/evaluative context. Consistent with this, measures of ACT

fidelity have primarily focused on coding ACT-consistent and inconsistent processes/functions,

rather than specific topographically defined behaviors or adherence to particular procedures

(Plumb & Vilardaga, 2010). Thus, ACT has taken a flexible approach to fidelity, emphasizing

functional processes while de-emphasizing a defined set of procedures or techniques.

The process focus in ACT is coupled with a highly open approach to dissemination. As the

professional "home" for ACT, ACBS has been a key organization in guiding its dissemination. A

hallmark feature of ACBS is its open and inclusive approach to sharing ideas and resources,

while minimizing hierarchy or restrictions on dissemination and practice. From this perspective,

ACBS has resisted establishing credentials or other "gatekeeper" functions with regard to

identifying individuals with adequate training and competence in ACT. Even as ACBS has

decided to initiate a program for recognizing peer-reviewed ACT trainers, there have been no

associated efforts to restrict or otherwise diminish training activities from non-peer-reviewed

ACT trainers. Thus, the dissemination of ACT has taken an open approach that explicitly de-

emphasizes regulating practitioners' fidelity and competence with ACT or otherwise restricting

further innovations with ACT.

This open approach, combined with a process-focused definition of ACT, may have helped

maximize dissemination and implementation. For example, practitioners interested in ACT

encounter minimal barriers in beginning to integrate it into their practice, while being afforded

substantial flexibility in fitting their existing clinical skills into an ACT framework to target

relevant functions with clients. This flexibility affords opportunities for clinicians to adapt ACT

to fit their unique clinical contexts and needs. For example, clinicians working within primary

care settings have adapted ACT to fit a very brief, time-limited context (Robinson, Gould &

Strosahl, 2011). Similarly, ACT may be modified for specialty populations to include relevant, evidence-based behavioral methods such as exposure for anxiety disorders, habit reversal training for body focused repetitive behaviors, and stimulus control and contingency management procedures for addictive behaviors. As ACT continues to be disseminated internationally and to more diverse populations, this flexibility also becomes critically important to address necessary cultural adaptations so that therapy is acceptable and effective in other cultural contexts. For example, the Commit and Act project has adapted ACT for working within underserved communities and training local providers in Sierra Leone to target a range of challenges such as mental health, Ebola, and domestic abuse, among others (Stewart, Ebert & Bockarie, 2017). As a process-focused approach, ACT can be readily adapted to fit unique contexts and clinical needs, provided therapy still focuses on targeting the relevant core therapeutic processes as defined by the model.

    This level of flexibility may not only facilitate use of ACT in diverse practice settings, but might also create a context for further innovations. The lack of topographically defined rules for when a clinician is practicing ACT with fidelity, coupled with an emphasis on trying whatever works to target relevant processes, evokes variability in clinician behavior that may lead to new practical innovations. Those clinician behaviors that prove effective in targeting relevant ACT processes can subsequently be selected and shared within the open ACBS community that readily supports and adopts new innovations. This process has occurred numerous times over the past few decades with ACT, leading to innovative protocols, techniques, and targeted adaptations to specific problem areas (see the Matrix as an example; Polk & Schoendorff, 2014). Such a process may have substantial value for implementation efforts as clinicians most sensitive to the unique needs in their practice setting are given ready opportunities to adapt ACT and share

effective innovations, promoting its ongoing sustainability and acceptability to others. This is

contrasted with a more "top down" approach in which clinicians are held to rigid rules for

fidelity that may or may not be necessary for effectiveness and may limit adaptations needed for

sustainability.

Certainly, there are potential downsides of an open, flexible approach to defining and

delivering a treatment. Such an approach means there is less immediate clarity regarding the

degree to which clinicians are practicing (or trainers are training) ACT in a way that is consistent

with the existing evidence base. Although generalizations can be made from the research

literature, particularly if similarly flexible protocols are evaluated in research, these

generalizations are larger when clinicians are focused on processes rather than specific

techniques that have been empirically validated. As clinically-based innovations drift more from

the techniques and protocols tested, gaps can form between what is being practiced and what has

been researched. This becomes a larger issue as highly overlapping, branded protocols and

approaches have developed within or parallel to ACT, such as acceptance-based behavior

therapy (Roemer & Orsillo, 2008). ACT developers and ACBS are open to developers and

clinicians creating new names for protocols or approaches adapted from ACT, but this can create

additional confusion regarding the boundary conditions and practices that define what is or is not

ACT, and can potentially detract from further adding to the ACT research-base. A final related

downside is that there are no formal gatekeepers within ACBS or ACT with regard to whether

clinicians who say they are providing ACT are actually doing so with fidelity and competence.

Although other gatekeepers for professional practice exist in licensed health service fields, there

are no credentials or formal assessment methods to clarify to other professionals or the public the

degree to which clinicians are truly, effectively providing ACT. All of these factors may increase

potential unidentified variability in the quality of ACT provided and its consistency with the existing evidence base.

There may be some ways to minimize these issues with a flexible, process-focused approach. This is primarily by focusing on therapeutic processes in studying ACT and defining fidelity. Rather than conducting research to empirically validate specific procedures, ACT research focuses on more flexible protocols (within and across studies) that validate the effectiveness of targeting specific therapeutic processes. From there, the fidelity of a practitioner employing ACT can be defined in terms of their effectiveness in engaging relevant processes (as well as avoiding particularly ACT-inconsistent functions such as experiential avoidance and cognitive fusion). With the development of valid process measures, clinicians can measure their work with clients to determine if they are practicing ACT with fidelity as defined by engaging these therapeutic processes with whatever procedures are used. This provides a low response effort means for assessing and receiving feedback on ACT fidelity and competence that can be readily scaled up and used by clinicians, albeit with less precision than more rigid, topographically focused methods.

An additional strategy is to maintain strong connections between research and practice. ACBS has established a professional community in which researchers and clinicians are highly integrated, with clinicians regularly looking towards the state-of-the-art findings in research, and researchers regularly looking towards cutting edge clinical innovations and clinician-identified gaps in the research to identify their research questions. Through shared values and respect towards research and practice, the organization has helped to support innovations in clinical methods that fit the needs of practitioners, while continuing to connect what clinicians do in practice to research and addressing any gaps that form.

Lastly, it is worth noting that this emphasis on flexibility does not preclude the potential to use more constrained protocols that can be directly assessed for fidelity, just that such an approach is not required or the primary means through which ACT has been disseminated to date. Examples of more well-defined protocols have begun to emerge for example in applied behavior analysis (e.g., Accept Identify Move protocol; Dixon & Paliliunas, 2018).

In summary, ACT diverges here from the successful approach described by Fixsen and Blase (2018) and many treatment developers. Rather than focusing on fidelity with regards to a topographically-defined protocol or program in a specific context, ACT defines fidelity with regards to targeting a key set of therapeutic processes that can be flexibly engaged in a variety of ways depending on context and provider. This introduces the potential for more variability and gaps between clinician behavior and research, but these gaps can be reduced through a focus on processes in research and practice as well as open communication between researchers and clinicians.

Conclusions

The goals of this commentary were to review key features in the dissemination, and to a lesser extent implementation strategies, taken by ACT, noting parallels and divergences from the TFM approach described by Fixsen and Blase (2018). Sharing various strategies can help to further clarify lessons learned and potential methods to continue to expand the impact of behavior analytic innovations. The approach taken by ACT for dissemination and implementation has been guided by a philosophy of science (functional contextualism) and underlying scientific strategy (CBS) that can be described as flexibility linked to function. This flexibility can be seen in the approach taken with theory, research methodology, and procedures/protocols, all of which are made coherent through their connection to an underlying

scientific strategy that emphasizes prediction and influence of behavior. The emphasis on middle

level terms that organize behavioral principles in relevant applied domains, on methodological

diversity that includes RCTs, and on function and process rather than topographically defined

protocols and credentialing are all examples of how flexibility might be leveraged in a program

of research. We believe this flexibility can reduce barriers to dissemination and implementation,

support innovations and engagement that enhance sustainability, and help to maximize the public

health impact of clinical behavior analytic approaches such as ACT.

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