

ACT

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ACT: A Process-Based Therapy in Search of a Process

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A large array of randomized controlled trials and meta-analyses have determined the efficacy of Acceptance and Commitment Therapy (ACT). However, determining that ACT works does not tell us *how* it works. This is especially important to understand given the current emphasis on Process-Based Therapy, the promise of which is to identify manipulable causal mediators of change in psychotherapy, and how their effectiveness is moderated by individual contexts. This paper outlines four key areas of concern regarding ACT's status as a Process-Based Therapy. First, the relationship between ACT and Relational Frame Theory has been widely asserted but not yet properly substantiated. Second, most of the studies on ACT's core process of change, psychological flexibility, have used invalid measures. Third, while lots of research indicates means by which individuals can be helped to behave consistently with their values, there is virtually no research on how to help people effectively clarify their values in the first instance, or indeed, on an iterative basis. Finally, the philosophy underlying ACT permits a-moral instrumentalism, presenting several ethical challenges. We end by making several recommendations for coherent methodological, conceptual, and practical progress within ACT research and therapy.

Keywords: process-based therapy; values; value clarity; relational frame theory; acceptance and commitment therapy; mechanisms of action

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ACCEPTANCE AND COMMITMENT THERAPY (ACT; Hayes et al., 1999) is a third-wave behavior therapy putatively comprised of multiple components. “Acceptance,” in ACT, refers to an appreciation of the fact that troublesome thoughts are a normal, unavoidable, and often necessary part of the human experience. Therefore, it makes sense to acknowledge the presence of negative thoughts and emotions but try to redirect one's attention towards what makes life worthwhile (facilitated using self-compassion, mindfulness, etc.). In contrast, Cognitive Behavioral Therapy (CBT) focuses more on *changing* maladaptive cognitions and dysfunctional beliefs (Beck, 1993). “Commitment,” in ACT, refers to the orientation of the individual towards value-consistent behavior instead of efforts to reduce negative thoughts/emotions. In ACT, values are not just goals, but rather, “adverb-like, as qualities intrinsic to action that can be instantiated but not obtained or finished” (Chase et al., 2013, p. 79). In other words, in ACT, values are more related to *moral characteristics* (e.g., kindness, integrity) than *areas of life* (e.g., family, relationships) or *stuff* (e.g., money, holidays) that we value. ACT's core thesis is that engaging in value consistent behavior (VCB) subsequently often reduces psychological suffering as a by-product (see Sonntag et al., 2017).

Process-Based Therapy (PBT) refers to “contextually specific use of evidence-based processes linked to evidence-based procedures to help solve the problems and promote the prosperity of particular people” (Hofmann & Hayes, 2019a, p. 38). ACT aspires to be a PBT (Ong et al., 2020). The PBT approach to psychotherapy has received full book-length treatments (Hofmann & Hayes, 2020) and articles on the topic have been published in leading clinical psychology and psychia-

try journals (e.g., Hayes et al., 2019; Hofmann & Hayes, 2019b). For this reason, it seems reasonable to ask, What are the core therapeutic processes and mechanisms of ACT and what evidence is there to support their status as such? This article considers the existing evidence base for the inter- and intrapersonal mechanisms of action in ACT, while attempting to identify opportunities for conceptual and empirical progress. Here, we adopt the following definition of mechanism as “the steps or processes through which therapy (or some independent variable) actually unfolds and produces the change” (Kazdin, 2007, p. 3).

Functional Links Between Relational Frame Theory and ACT: Asserted but Not Substantiated

Relational Frame Theory (RFT; Hayes et al., 2001) is a behavior-analytic theory of language and cognition that was largely developed by one of the co-founders of ACT. In RFT, language and cognition are considered to be expressions of an underlying ability to relate stimuli based on symbolic properties (e.g., A is more than B and C is less than B), with the generativity/novelty of language and cognition being explained by the ability to derive novel relations (e.g., A is more than C). While it is not relevant to the current paper to outline every facet of RFT itself, McLoughlin et al. (2020) provide a relatively unbiased discussion of its promise, outlining the theory itself more fully for interested readers. For purposes of the present article, what is important to appreciate is that ACT was co-developed alongside RFT, by many of the same researchers, and that there is a prevailing idea that ACT is one form of applied RFT (see Hayes et al., 2006) given that language (putatively explained by RFT) is the tool ACT therapists use to produce change in their clients. This idea has been the subject of book-length treatments (Törneke, 2010; Villatte et al., 2015) and book chapters (Törneke et al., 2015). Some RFT researchers have even proposed that it may be desirable, in the interests of achieving technical precision, for ACT researchers to use RFT-consistent language rather than introducing natural language (sometimes termed “middle level”) terms for concepts within clinical psychology (e.g., Barnes-Holmes et al., 2018).

Both ACT and RFT are championed by the Association for Contextual Behavioral Science (ACBS) as essential to its mission and as symbiotically related to each other. A search on the ACBS website (contextualscience.org) for “Clinical RFT” produces dozens of hits revealing the extent to

which ACT practitioners support the idea that ACT and RFT are to a large extent mutually entailed and co-evolving (see also Hayes et al., 2022). However, one important question here is whether RFT has gained sufficient empirical support as an account of human language and cognition from the point of view of those outside the field. A second important question, which we will focus on more, is whether there is sufficient evidence to support a functional (rather than merely theoretical) relationship between ACT and RFT. Superficially, it appears that RFT is an empirically supported and well-cited theory (e.g., O'Connor et al., 2017, reported that there were 521 RFT papers from 2009–2016 alone), which could therefore be drawn upon as a theoretical basis for ACT. Upon closer inspection, O'Connor and colleagues' assessment of RFT's empirical standing might be unduly optimistic in several ways. Specifically, only 55% of the studies they reviewed that included RFT-related search terms were empirical studies. This renders the RFT literature base alarmingly top-heavy with theory and conceptual analysis.

MANY EMPIRICAL RFT STUDIES ARE ON IMPLICIT BIAS

Of the RFT-related papers identified by O'Connor et al. (2017) that were broadly empirical ($N = 288$), $n = 128$ were classed as “other” rather than “RFT,” narrowing down the list of actual empirical RFT studies further. Dymond and May (2018) argue that the search terms were too broad even among the remaining “empirical RFT” articles ($n = 160$), with several clear examples of non-RFT studies (e.g., Miguel et al., 2015, studied analogy from a Skinnerian perspective) counted as “empirical RFT” studies. Forty-seven of the (something fewer than) 160 empirical RFT studies involved reports on the use of a single “implicit bias” test called the Implicit Relational Assessment Procedure (IRAP). The myriad of studies involving the IRAP across a range of domains (food preference, object preference, cultural preference, etc.) do not necessarily support RFT as a theory; the same experimental procedure was conceptualized within the cognitive psychology literature and, in terms of producing original data, this method predated the IRAP (A. P. Gregg, 2007). In this case, as may also be the case in ACT, RFT was not *required* to produce any of the ensuing methods and positive findings associated with these methods. In any case, implicit bias tests, *a priori*, have no applications within clinical practice with individual clients. Even if implicit tests did measure a real bias at a *group* level: (a) their proponents

broadly agree that they are not useful for *individual* diagnoses (see Jost, 2019) pertinent to psychotherapy, (b) they rely on participant compliance to be accurate, and (c) it would be unethical to treat a person differently based on anything other than their real-world behavior (cf. based upon highly variable indirect measures of biases that a client does not even know they are having, and that may or may not manifest in their everyday behavior).

RFT FINDINGS CANNOT YET BE GENERALIZED

Of course, RFT is arguably a *promising* theory of language and cognition, especially given its theoretical congruence with key findings in cognitive science, neuroscience, linguistics, and other disciplines (see McLoughlin et al., 2020), and it appears to have many *potential* clinical applications (see Hayes, Law, et al., 2021). On the other hand, many of these involve single-subject investigations of symbolic relating behavior implicated in psychopathology or involve $N < 10$ participants per study (Dymond & Barnes, 1995; May et al., 2017; McLoughlin et al., 2018; McLoughlin & Stewart, 2017; Steele & Hayes, 1991), or small samples per independent condition (McHugh et al., 2004; Villatte et al., 2010). Small sample studies like these have been the bread and butter of high-precision basic behavioral research studies for decades, allowing for high degrees of control over contingencies governing complex behavior within the samples selected. However, a researcher with no affiliation to RFT might reasonably argue that this does not necessarily allow RFT researchers to generalize their findings to the broader population such that they can make claims about language and cognition writ large, because they do not involve representative samples of *any* given population. It follows that numerous small sample studies, each with nonrepresentative samples, and with varying procedures and outcome measures, do not easily form a sufficient basis upon which to establish *general* principles of language and cognition. In contrast, multiple tests of the *same* hypothesis, across laboratories with minimal vested interests, employing the same procedures, would allow for a relatively unbiased accumulation of evidence for particular hypotheses.

REPLICATION ISSUES AND PUBLICATION BIAS

Familiar effect sizes (Cohen's *d*, eta squared, etc.) and measures of error (e.g., *SEs*, confidence intervals) are often unreported in "single case" basic RFT studies (e.g., Dymond & Barnes, 1995; May

et al., 2017; McLoughlin & Stewart, 2017) as in most other experimental analyses of similar basic cognitive phenomena (see Corral et al., 2018). Perhaps unsurprisingly, there has never been a large-scale assessment of publication bias and methodological quality of the literature on RFT's most fundamental tenets (though see May et al., 2022, for a recent meta-analysis of one applied RFT intervention). This is arguably important given that RFT is such a specialist research area in which researchers are likely to have some vested interest (as briefly mentioned in May et al., 2022) in yielding and promoting positive outcomes. For example, Context Press publishes books on RFT and ACT and was founded by a co-founder of ACT and RFT. These concerns about potential sources of bias are reinforced by findings that researcher allegiances are moderately to strongly associated with effect sizes in tests of CBT treatment efficacy (Maj, 2008; Munder et al., 2013; Reid et al., 2021). While we would not for a moment suggest that there is any conscious intent to deceive audiences within the RFT literature, and while we have a great degree of respect for (and indeed are authors of!) many of the small-*N* studies that comprise the RFT literature base, the issue of reliance on conceptual extrapolation from low-*N* studies with no systematic measures of bias cannot be avoided with ease.

There are many conceptual pieces (e.g., Luciano et al., 2021; Törneke et al., 2015) on the clinical applications of RFT that contain no empirical synthesis of the available evidence base (e.g., meta-analyses of the effect of specific technique X on specific outcome Y) to provide an unbiased assessment of the quality of such evidence. In our opinion, this pushes the promise of an empirically grounded evidence base for ACT methods even further away. For instance, and in the interest of providing a steel-man argument here to support this case, we might purposively focus on what is perhaps the cream of Clinical RFT empirical research that both uses a robust design (as opposed to single-subject designs, discussed above) *and* has undergone independent replication by a disinterested party (the only clear exemplar of which we are aware). Specifically, Sierra et al. (2016) sought to test whether the effectiveness of therapeutic metaphors for improving pain tolerance could be enhanced by modifying them in accordance with what RFT would predict to make them more effective. Specifically, in accordance with RFT, matching physical properties (in this case, temperature) between a metaphor's content ("imagine swimming through a cold swamp") and an aversive task (tolerating pain in a cold pressor task) should

increase perseverance within that task. Moreover, invoking one's values within the metaphor (i.e., swimming in the cold swamp towards something of value) should also transform the aversive task into a valued action, leading to increased perseverance. In a small randomized controlled trial (RCT), [Sierra et al. \(2016\)](#) reported confirmation of these ACT-related hypotheses derived from RFT.

This general finding was extended further by the same research group ([Criollo et al. 2018](#)), suggesting that this may be a robust effect, and a clear example of how RFT might augment ACT practice. However, more recently, [Pendrous et al. \(2020\)](#) conducted a preregistered replication study of the [Sierra et al. \(2016\)](#) study, which yielded null results. Sierra and colleagues should be credited with being one of the few teams to attempt to test RFT predictions in relation to therapeutic outcomes using a relatively robust design. This is precisely the type of work that is required to build bridges between RFT and ACT. It is entirely possible that this nonreplication could be a Type 2 error. At minimum, however, the Pendrous et al. study shows that the broader RFT-metaphor effects reported in the original ([Sierra et al., 2016](#)) and subsequent ([Criollo et al., 2018](#)) studies are temperamental. To be clinically useful, any intervention effects must be robust to complex and dynamic treatment environments (i.e., their scope is limited; [Hulbert-Williams et al., 2020](#)).

Summary

It is clear that ACT researchers and practitioners often promulgate the idea that the empirical robustness of RFT is a unique selling point of ACT, typically referring to the quantity of studies in the area (see [O'Connor et al., 2017](#)). This is exemplified in relation to the discussion on RFT more broadly. For example, [Hayes et al. \(2021\)](#) say:

This literature is now quite voluminous and, thus, a challenge to summarize. Our solution in this paper is to take a small set of examples and to do a more adequate review of what is known there, while waving a hand at the larger body of work that is available. (p. 13)

Such “hand-waving,” as these authors put it, may create a powerful narrative if repeated by people who are sufficiently senior within ACBS. However, it does not present a sufficiently critical evaluation of the quality of published RFT studies, a critique that extends towards RFT's therapeutic relevance. Nonetheless, Clinical RFT is promoted to clinicians in workshops (e.g., [Barnes-Holmes,](#)

[2019; Villatte, 2018, 2021](#)) and books ([Törneke et al., 2015; Villatte et al., 2015](#)) as a well-grounded approach to psychotherapy that harnesses an understanding of basic processes of language and cognition. However, the burden of proof has not been sufficiently assumed by RFT/ACT researchers/trainers to show that ACT benefits empirically (not just conceptually) from the literature base on RFT (see [Lilienfeld et al., 2013](#), on “burden of proof” in relation to clinical efficacy).

Mismeasurement of the Core Process of ACT

The core process of ACT is claimed to be psychological flexibility (PF; [Hayes et al., 2006](#)). More specifically, to assert that PF is the core process of ACT is simultaneously to assert that PF is a mediational process of change in ACT (e.g., [Ciarrochi et al., 2010](#)). Therefore, a critical analysis of PF is crucial when assessing ACT's standing as a PBT. PF has been defined as “the ability to contact the present moment more fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends” ([Hayes et al., 2006, p. 7](#)).

THE HEXAFLEX

PF is said to have six component processes, which are not reflected in the definition above: present-moment awareness, values, committed action, self as context, defusion, and acceptance ([Levin et al., 2012](#)). While there are studies of these individual components and their role within ACT (see also [Hayes et al., 2022](#)), the evidence base for these fitting together within a global PF model to affect therapeutic outcomes is relatively scant. To claim evidence for this “Hexaflex” model of PF, we cannot rely on conceptual consensus of ACT practitioners and researchers alone, as the six-part structure of a latent variable is a psychometric rather than conceptual claim. With this in mind, those wishing to provide evidence for the Hexaflex might follow several steps, in order. First, they could develop valid and reliable measures of each of the six core processes, as all subsequent inferences depend on the quality of these measurement tools. Part of this would include ensuring that each component can be distinguished from general distress/negative emotion (i.e., to ensure that we are measuring what we think we are measuring). Next, they might be included in an exploratory factor analysis, showing each of these six processes to be distinct (i.e., items from each of the six components should load onto the expected factors without cross-loading to any significant degree). Next, a hierarchical confirmatory factor analysis (or structural equation model) in a new sample

should show that, not only are the six processes distinct, but they load onto a superordinate factor we might call psychological flexibility with acceptable model fit. Having established the factor structure, we may then have provided evidence for the Hexaflex model of PF. This was broadly achieved within one psychometric measure of PF (outlined below; also see Landi et al., 2021). However, this is not the same as showing the six-factor hierarchical model (as opposed to one or two of its components at a time) to be a critical part of the change process within ACT therapy. To do this, we would need to show that changes in a given outcome variable within ACT treatment studies are mediated by changes in this latent PF construct (e.g., using longitudinal structural equation modelling). Below, we discuss various putative measures of PF, only one of which measures all six hypothesized components of the Hexaflex.

6,500+ WRONG CONCLUSIONS?

Lilienfeld and Strother (2020) argued that one of clinical psychology's four sacred cows is that we can safely rely on the name of a measure to infer its content. For this reason, we must ask whether we can measure PF as the core ACT process. Thankfully, several researchers have already sought to do this (see Doorley et al., 2020). The most popular measure of PF upon which the vast majority of research on ACT processes is based is the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) and its revised version, the AAQ-II (Bond et al., 2011). Combined, these two questionnaires have been cited over 6,500 times, at the time of writing. However, despite these undoubtedly honest attempts to measure PF and test its effects within ACT, several studies have now suggested that the AAQ-II, in particular, may simply measure trait negative emotion/neuroticism, or some of its facets like experiential avoidance or distress (Rochefort et al., 2018; Tyndall et al., 2019; Vaughan-Johnston et al., 2017), or that the AAQ-II does not generally predict clinical symptoms over and above such factors (see Gloster et al., 2011).

A relatively recent review (Ong et al., 2019) reveals that there are many variants of the AAQ, many of which have not been subjected to confirmatory analyses, with very limited tests of incremental predictive validity. These AAQ variants typically show that context-specific measures are shown to predict outcomes better than context-free measures, a finding that is not unique to this

literature (see Swift & Peterson, 2019). Importantly, this finding does not speak to the structural properties of PF (i.e., 1. *Do the items load onto the expected factor structures and sub-structures?* and 2. *Do related factors such as negative emotionality load onto separate factors?*) or incremental criterion validity (i.e., *Do those factors differentially predict outcomes of interest alongside things like negative emotionality*) of those AAQ measures, both of which are important for establishing overall construct validity. The bottom line here, however, is not that all 6,500+ papers citing the AAQ and AAQ-II are necessarily without merit. Rather, it is that 6,500+ papers need to be reinterpreted and made sense of in light of the fact that the AAQ and AAQ-II measured something entirely different to what its adopters supposed it measured. For example, we could take any given AAQ study and search for instances of “psychological flexibility” or “PF” in their Method, Results, and Discussion sections, and replace those instances with “neuroticism” or “negative emotion” or “distress” and reread these articles without altering other aspects of the text. In some cases, the conclusions may still make sense when reinterpreted (e.g., if AAQ/negative emotion correlates with exercise habits), but in many cases (e.g., if AAQ/negative emotion correlates with another measure of negative emotion), they will inevitably not be informative at all. We have no idea how many of these studies will be affected. However, it might make sense to avoid any sweeping claims surrounding PF unless speaking specifically about findings from studies that included a valid and reliable measure. There are some promising avenues in this regard mentioned below. Specifically, two other recent putative PF measures (see Kashdan et al., 2020; Landi et al., 2021) have shown promise as legitimate measures of PF, as distinct from neuroticism, but these are the exception rather than the norm. While there is clear evidence of progress in PF measurement validation from within ACT, we must be careful not to tally studies that used invalid measures when quantifying the existing evidence base for PF within ACT. Similarly, if individual components of PF (e.g., cognitive fusion) mediate treatment outcomes within ACT, this is not necessarily evidence that PF as a whole mediates treatment outcomes unless all its components are included in the mediation model. In this case, in the interest of (a) accuracy and (b) not making things more abstract, we might simply refer to those specific components as being the mediators for that specific outcome rather than

invoking PF and thereby all its other untested constituents.

ADVANCES IN MEASURING PSYCHOLOGICAL FLEXIBILITY

Several other putative measures of PF have been developed without the use of a negative emotion/neuroticism scale in their validation studies that would allow them to assess its construct validity (Ciarrochi et al., 2022; Francis et al., 2016; Gloster et al., 2021; Thompson et al., 2019). Where they have examined construct validity, they have not predicted clinical symptoms over and above these other factors (Benoy et al., 2019) showing that they have poor incremental criterion validity.

While there are several alternative putative measures of PF, most of these do not provide any evidence that they measure PF as a distinct construct from trait negative emotion (see Gloster et al., 2021; Thompson et al., 2019). One promising exception is the recently validated Multidimensional Psychological Flexibility Inventory (MPFI; Landi et al., 2021; Rolffs et al., 2018). In Rolffs et al. (2018), an exploratory factor analysis suggested 12 Hexaflex factors (loading onto “flexibility” and “inflexibility,” respectively) rather than 6. Nonetheless, subsequent structural equation models reported by Landi et al. shows, with good model fit, the AAQ-II loading onto a “distress” factor alongside measures of anxiety and depression, and the MPFI’s Hexaflex factors loading onto a unique factor that the authors call “psychological flexibility” (these factors were correlated at $-.57$). As such we might recognize the MPFI as a promising measure of PF and the most comprehensive evidence for the Hexaflex model available, cautioning that a relative minority of ACT studies are based on this measure and so sweeping conclusions are to be avoided. However, Kashdan et al. (2020) criticize this measure for not relating the items to meaningful life goals.

Another exception is the recently developed Personalized Psychological Flexibility Index (PPFI; Kashdan et al., 2020). In the validation study for this measure, the authors reported that PF can be distinguished from negative emotion/neuroticism, both structurally and in terms of incremental predictive validity. Specifically, respondents to the PPFI are asked about their emotional experiences and behaviors in relation to a valued goal that participants specify at the beginning of the questionnaire. This addresses the perceived limitation of the MPFI, but without measuring the Hexaflex subfactors. Conceivably, however, scores on such a measure might vary (and therefore be more or

less reliable) in accordance with how salient the specified goal is for a particular respondent. It remains to be determined, therefore, whether this addition will be a strength or limitation of the PPFI. Interestingly, this issue bears on another important concern—namely, the issue of value clarification in ACT, which we address in the next section.

SUMMARY

In summary, ACT therapists and researchers say that PF is the core process of change in psychotherapy. Thus, ACT researchers would ideally be able to demonstrate that “changes in PF mediate the relationship between pre-therapy valued action/negative emotion and post-therapy valued action/negative emotion.” However, most studies to date instead may have merely shown that “changes in negative emotion mediate the relationship between pre-therapy valued action/negative emotion and post-therapy valued action/negative emotion,” which does not speak to the mechanisms of action in ACT. Indeed, if a reduction in negative emotion is the main mediating mechanism of change in ACT, this is arguably more consistent with CBT, which aims to change cognitive and emotional states themselves, rather than what ACT aims to do, which is to change how we relate to negative thoughts and emotions and behave in their presence. The PPFI and MPFI are well-validated measures overall that may represent constructive ways forward here, but with each having unique advantages over the other. Regarding the putative Hexaflex structure of PF, we might zoom out for a moment and ask why different numbers of PF subfactors are found by different authors. Disentangling this might be an important area of future research, especially for a party with no vested interests in confirming any given factor structure.

Jumping the Gun: No Valued Action Without Value Clarity

Disengaging from negative thoughts and emotions, such that they do not dictate our behavior, is synonymous with the “Acceptance” aspect of ACT. However, this is in service of establishing VCB or “valued action”; the “Commitment” aspect of ACT. For example, someone may have negative thoughts such as “trying is pointless, someone always ruins everything good I do.” An ACT practitioner could intervene using a mindfulness intervention to reduce the automaticity of their client’s behavior (e.g., staying in bed all day) in accordance with this thought. At this point, the client is psychologically enabled to act out their values (e.g., “I have these thoughts, and they may or

may not be true, but I will dedicate my time towards being an attentive partner [valued action], come what may”). However, the client is equally free to act out values they *think* or *wish* they held (self-deception), or are *compelled to say they hold* (social coercion), but ultimately do not. This is why effective value clarification is so important for clients: they need to understand what their own values are, and what their ideal (and indeed, moral) identity is, as distinct from others’ values and identities.

VALUE CLARITY AND VALUED ACTION ARE CONFLATED

Our values are not infinitely malleable. For example, we know from a vast differential psychology literature that our personalities (e.g., valuing safety, valuing social connection, valuing ideas and alternative perspectives, valuing hard work and order, valuing cooperation; Anglim et al., 2017) are, to at least some extent, reflective of biological interpersonal differences (Smith & Hatemi, 2020; Vukasovic & Bratko, 2015), which may suggest at least some limitations on their malleability. On the other hand, our values can be subject to local coercive influence. For example, sex differences in values (Schwartz & Rubel-Lifschitz, 2009), interests (Jiang et al., 2018), and personalities (Schmitt et al., 2008, 2017) are largest in countries where men and women are freer from social coercion. This demonstrates the potential role of culture on self-reported personal values. Perceived VCB may not have the desired salutary effects on mental health if people are coerced into espousing values that go against their temperaments and/or they ultimately just do not hold. It may be preferable for therapists to create conditions under which individuals are freer to articulate individual differences in what they value (as in the freer societies mentioned above), helping clients to negotiate with others how they express their unique selves across contexts. This allows us to appreciate both individual differences and the role of biological and cultural context. If people act in accordance with someone else’s values, this likely means that they ultimately have *not* engaged in valued action. In contrast, an individual may be quite clear on what their values are but perceive themselves not to be acting them out. In this scenario, we might expect individuals to be distressed, as every ideal we specify is also a criterion for failure (see Wood et al., 2009). Alternatively, someone might neither be clear on their values nor be acting in accordance with them, in which case we might expect them to be low in positive emotion and disengaged. Therefore, it is

quite important to distinguish the concept of valued action from value clarity.

At present, valued action and value clarity appear to be somewhat conflated within the ACT literature. For example, the Engaged Living Scale (Trindade et al., 2016; Trompetter et al., 2013) includes items like, “I make choices based on my values” (valued action) within the same subscale as items such as, “I have values that give my life more meaning” (value clarity). Similarly, the Behavioral Activation for Depression Scale (Kanter et al., 2007; Manos et al., 2011) and the Valuing Questionnaire (Smout et al., 2013) mostly measure valued action but not value clarity. Other measures like the Valued Living Questionnaire (VLQ; Wilson et al., 2010) simply provide various life domains (e.g., Work, Parenting) and ask people to rate the extent to which they value these domains. This does not fit well with values as conceptualized within ACT, wherein values are *qualities of our actions* (patient, brave etc.), rather than *areas that we value* (parenting, work etc.), as outlined above; we do not behave *parent-ly*, for example. More importantly for purposes of the present point, though, these ratings on the VLQ could be provided without necessarily having thought these through properly. Indeed, the very act of providing these ratings may alter what we value, making the VLQ potentially more akin to a value clarification exercise than a measurement tool. While we do not claim that these tools are without their own merits, this nonetheless points to a potential lack of consistency in the purpose and methods of these various scales, with none of them clearly measuring value clarity as a distinct construct.

THE UTILITY OF VALUES EXERCISES

Establishing VCB appears to be an important part of the process of change in ACT. For example, one study by Sonntag et al. (2017) found that increasing VCB using ACT preceded a reduction in psychological suffering. Similarly, Grégoire et al. (2021) showed that greater variability in valued action was associated with increases in distress and lower well-being. These findings cohere with ACT’s core thesis, that correcting dysfunctional schemas (per CBT) is not necessary to live a meaningful and engaged life, and furthermore, that alleviating suffering is at least partially a by-product of valued action, rather than the other way around.

Value clarification exercises (VCEs) are intended to help us to discover and articulate which personal qualities we would most like to exhibit in our day-to-day actions. However, here we might introduce some conjecture to highlight

potential scenarios in which a robust research program on the safety and efficacy of VCEs would be informative. More specifically, in the absence of evidence-based VCEs, it is possible that ACT therapists might inadvertently have a larger than necessary proportion of clients pursue what is merely *perceived* VCB that will ultimately lead to more long-term psychological suffering. Moreover, VCEs have the potential to be harmful for those who hypothetically might stand to benefit from ACT the most. For example, positive self-statements (which might include statements of behavior/value alignment) can induce negative affect in those with low self-esteem (Wood et al., 2009). Analogously, it is also plausible that specifying a well-thought-through ideal (e.g., a value, following a VCE) might induce negative affect in those who perceive themselves to be far from that ideal; as previously mentioned, every ideal is also a criterion for failure. It is incumbent upon ACT researchers, therefore, to not only conduct necessary component studies on PF and RFT, but to also develop a science aimed at identifying evidence-based methods of value clarification that are both safe and efficacious for vulnerable people.

At present, there is some literature to support the benefits of including a values component in psychological interventions, compared to not including such a component. In the clinical domain, for example, including a values component helps to increase “approach” behaviors in the presence of aversive stimuli (Hebert et al., 2021), and may help to increase pain tolerance in cold-pressor tasks (Branstetter-Rost et al., 2009). In addition, within education, elaborating on goals and how they relate to one’s life (i.e., increasing value salience) appears to make people more motivated to achieve them. This has a disproportionately positive effect on gender and ethnic minorities within education (Chase et al., 2013; Morisano et al., 2010; Schippers et al., 2015, 2020). When students reflect on and clarify their values it also helps to later increase their resilience to social ostracism, an important part of maintaining mental hygiene (Hochard et al., 2021). Across these domains, we might reasonably speculate that our values give us reason to persist with tasks when we experience difficulties, and this indeed appears to be the case across a range of different contexts.

EVIDENCE-BASED VALUE CLARIFICATION VS NAÏVE REALISM

These kinds of research studies do little to inform therapists of the best *methods* of helping clients to clarify their values. For example, value card sort

tasks are popular methods of helping people to prioritize some value dimensions over others in the clinic, and these are marketed to practitioners (see Harris, 2021; Morris, 2021; The Good Project, 2022). At the same time, value card sort tasks are also used as measurement tools within the ACT literature (see Barrett et al., 2020), highlighting another difference between what practitioners do and the available research. Other popular VCEs like *The Sweet Spot* (Wilson & Sandoz, 2010) involve consciously remembering a time in one’s life in which everything fit into place, reflecting on the values this speaks to. Others are future-oriented, involving imagining what you would like someone to say about you in a birthday speech (Viskovich et al., 2021), or on your tombstone (Hayes, 2004). The effectiveness of these VCEs remains largely untested (with some exceptions; e.g., Sandoz & Hebert, 2015), meaning that therapists are proceeding to implement these techniques in the absence of a robust body of supporting evidence. In future research, it may be beneficial to test whether there are *near transfer* effects of VCEs such that they improve value clarity, and subsequently, *far transfer* towards valued action and well-being.

No doubt, these VCEs may be subjectively acceptable to clients and therapists and subjectively efficacious, but these are not sufficient bases for evidence-based practice. Given the current absence of scientific evidence for (or against) their efficacy, their current use in practice might also reflect naïve realism, leading clinicians to conclude erroneously that client change is due to an intervention itself rather than to a host of competing explanations (see Lilienfeld et al., 2013). Indeed, several researchers (Garb, 2005; Grove & Meehl, 1996; Kahneman, 2011) have also argued that clinical intuition and individual client responses are poor ways to judge an intervention’s efficacy. Furthermore, negative iatrogenic effects may occur (Bootzin & Bailey, 2005). Moreover, Lilienfeld and his colleagues (2013) argued that client acceptability and practitioner expertise are but two of three legs on the stool of evidence-based practice in clinical psychology (the other being what the research shows to be efficacious once individual preferences/biases of therapists and clients are controlled for).

MEASURING VALUED ACTION: TALK IS CHEAP

Measurement of valued action might also be improved upon by a greater focus on real-world measures of behavior rather than self-estimations alone (e.g., caring about the environment can be

inferred by functional analyses of past pro-environmental actions). Most measures of valued action (e.g., those listed above) involve self-reports of introspected values, which are poor predictors of real-world behavior (see [Baumeister et al., 2007](#)). This general reliance on self-reports within ACT is by no means unique to ACT but is nonetheless in opposition to the kind of direct observation of behavior that is a hallmark of radical behaviorism, the philosophical tradition from which ACT emerged. This is not to detract from, but to reinforce, ACT studies that *do* have behavioral/real-world outcome measures of course. For example, [Bach and Hayes \(2002\)](#) include rehospitalization rates as their outcome measure, and Jennifer [Gregg et al. \(2007\)](#) looked at A1C blood levels. Such studies present an opportunity for unbiased parties to replicate these studies, perhaps with better statistical power, to help us have confidence in these findings/effects. Thereafter, boundary conditions of these effects might be explored. The issue of nonbehavioral measurement is not *necessarily* fully remedied by using ecological momentary assessments, as these are also self-reports for the most part. Indeed, the most recent short measure of psychological flexibility which has been developed for this purpose has also not been clearly distinguished from distress/negative emotionality ([Gloster et al., 2021](#)). It would therefore be both conceptually and practically invaluable to develop measures of valued action that are more transparent indicators of what they aim to index.

Functional Contextualism: The Ends Justify the Means

Underlying the broader approach to ACT and its putative processes is its philosophy, making this the most fundamental issue to address when assessing any aspect of ACT. Here we contend that functional contextualism (FC) might affect the therapeutic process, and also the process of research dissemination within ACT. In accordance with the underlying philosophy of FC, CBS adopts a pragmatic truth criterion: that something is true or not insofar as it is useful in moving the individual closer to goals or valued ends ([Hayes, 1983](#)). In FC, there is no place for ontological reality and Truth ([Barnes-Holmes, 2000](#)). Consequently, there is also no room for absolutes, including moral absolutes. Instead, our own values are ushered in as the yardstick against which all actions are judged, elevating their importance above all else. There has been relatively little written to date on how FC applies to the practicing clinician and their therapeutic processes (i.e., client-therapist

interactions), or how it applies to meta-science issues (e.g., which findings on the process/efficacy of ACT we disseminate or ignore). In this section, we argue that the moral relativist ethic imposed by FC is perhaps the most fundamental issue with which ACT must contend.

[Ruiz and Roche \(2007\)](#) raised the ethical concern that the FC approach to scientific truth allows just about any applied practice to be defined as “truthful” (i.e., useful) if it is deemed personally to be useful for the therapist in a given context. This is a problematic underlying ethic. It is true that, in ACT, client values should be “freely chosen” ([Wilson et al., 2010](#)) in that they should be free from coercion (i.e., they are not influenced by the therapist). On the other hand, once values are freely chosen by the client, a CBS practitioner operating strictly within the FC paradigm necessarily views their own values as the only possible guide to their own therapeutic strategy, whether this complements those of the client in terms of outcomes or not (e.g., the therapist may wish to explore certain issues in the hope of publishing an interesting case study to achieve a valued professional end). It is likely that this is very rarely an issue because most core values overlap considerably across individuals (see [Kostina et al., 2015](#)) and, indeed, unethical practices can occur in any field. Nonetheless, any course of action is, in principle, philosophically justifiable for an ACT therapist who fully subscribes to FC insofar as their own behavior, as an act-in-context, is pragmatically workable always in relation to valued outcomes. It would be impossible to accuse a disciplined and ejected member of ACBS, who operated in a way destructive to the community, of operating outside of the FC paradigm if they had operated always in the service of their own valued ends in a workable way (e.g., if their values deemed it necessary to destroy ACBS). Ironically, the individual would have betrayed the publicly stated values of ACBS, but at the same time would simultaneously have functioned as an efficient and impeccable functional contextualist. Threat of legal and professional sanctions surely form part of the context in which the therapist (or researcher) will identify a course of action as workable. However, requiring values to be stated publicly or codes of ethics to be signed up to only partially mitigates against morally unacceptable behavior. After all, history is replete with examples of individuals committing ethical atrocities for The Greater Good with public support.

The important point here, however, is that FC is unique as a worldview in permitting the individual practitioner to decide for themselves if a given

course of action is moral, not only with respect to community norms and values (the main ethical imperative for other professionals), but also in relation to how a given course of action helps the individual reach personally valued ends. While these valued ends are invited for public airing by all ACBS members, this is not a very coherent risk management system when privately subverting one's publicly stated values can itself serve as a workable (therefore truthful) action within FC, so long as doing so realizes valued ends. For instance, it would be consistent with FC for an ACBS member to subvert community values, tell untruths, falsify data, or whatever it took to precipitate the wrongful disciplining and ejection of certain members that they saw as threatening to the realization of own valued ends, or those of ACBS. In any other professional ethical system we can think of, such actions would be viewed as intrinsically immoral irrespective of any valued outcomes. In contrast, in FC, such actions would have to be viewed as intrinsically moral and "true," even where they contravened publicly stated community ethics and values. Put simply, FC is a relativistic moral framework and with that comes particular dangers not familiar to other psychologists.

FC might negatively affect the ACT research and dissemination processes in practice in ways that are difficult to quantify or indeed confirm. For example, an organization, such as ACBS, could state their values publicly (e.g., to promote the interests of CBS [i.e., ACT and RFT]) and in order to serve these values, members could subsequently ignore challenging research or ostracize individuals who contributed a critical view. This behavior is antithetical to the general scientific effort to mitigate against our individual biases with methodological rigor, and it is ultimately against client interests if we truly believe in the scientist-practitioner model of psychotherapy. Again, this may rarely if ever happen within ACBS. However, it is critical to understand that these occurrences would be philosophically permissible under FC, wherein the satisfaction of our personal values, after taking account of contextual affordances, is the only viable and ultimate guide to the veracity of our truth claims (see Hayes, 1993; Ruiz & Roche, 2007).

The FC philosophy might also negatively affect the client's behavior. For example, a therapist could support the client in reaching their goals by any means necessary (rendering those means truthful) so long as they are comfortable that these goals and means are in line with personal values. Indeed, lying to the therapist about their personal

values may also be part of that "truthful" action on the part of the client, if doing so got them from A to B, so to speak. In effect, there is no intrinsic value system in FC, even if there is one in ACBS. Such a system has been explicitly avoided to prevent the threat of dogmatism (see Hayes, 1993). What is left, however, is a system so malleable as to, at least in principle, be open to abuse for nefarious purposes.

One potential counterargument to this perspective is that FC-adherent ACT therapists are bound by broader professional ethical standards that would not allow harm to a client. However, FC is a "pre-analytic" philosophy, meaning that it applies to the individual's worldview before they even decide whether to adhere to those guidelines at all. For example, one might ensure not to get caught breaking ethical guidelines without necessarily adhering to the spirit of those guidelines across contexts. The ACBS has a values statement, "Throughout the ACBS community, we work in a collegial, open, generous, self-critical, non-discriminatory, and mutually supportive way" (<https://contextualscience.org/acbs>), but the pre-analytic nature of FC undermines how seriously such a statement can be taken from without. It may simply be useful to be seen to make such a statement in one context but adhering to this statement may no longer be "useful" in another.

This relativist pre-analytic philosophy might also extend towards what gets published and what gets cited, thus affecting practitioner perceptions of extant evidence bases. For example, bias in research interpretation and reporting is arguably evident in the recent failure to acknowledge Pendrous et al.'s (2020) nonreplication of Sierra et al.'s (2016) findings in a later chapter in the *Oxford Handbook of Acceptance and Commitment Therapy* (Luciano et al., 2021) and in a recent journal article (Ramírez et al., 2021) in which this research agenda was discussed. Similarly, this nonreplication was not cited in at least one more recent article (Falletta-Cowden et al., 2022) by a different CBS research group that referenced Sierra et al. (2016). Our aim here is not to discuss the specifics of this research program, as this is discussed elsewhere (e.g., Hulbert-Williams et al., 2020). We certainly cannot speak to the reasons behind these specific instances of citation bias either; many of these authors may not have even been aware of the nonreplication's existence, for all we know. However, we must recognize that omitting such a study would, in principle, be entirely permissible from a FC perspective (e.g., if it was "not useful" to disrupt the narrative, in the context of what researchers wanted to

achieve). This is an important example because it highlights how practitioners' perceptions of the evidence base for ACT's practical processes and mechanisms of change could potentially be misguided because of the ACT research community's instrumentalist/moral relativist philosophy.

Ironing out this fundamental philosophical wrinkle may threaten the internal coherence of functional contextualism, or CBS, or both, as a philosophy to underlie ethical, evidence-based practice with vulnerable individuals. Nonetheless, it is one worth addressing in the interests of integrating ACT with more widely used therapeutic approaches that adopt more absolutist ethical principles (e.g., "first, do no harm" or "tell the full story, even if it is inconvenient"), and with a mainstream view of science that has been fit for purpose in virtually every other scientific field. Until ACT and other FC-oriented psychotherapies that have a nonrelativistic pre-analytic philosophical bedrock, there is no reason to trust research on the processes (and indeed, efficacy) of ACT, unless this comes from disinterested parties who are not moral relativists; a true FC would only report on that which it is useful for them to report.

Summary and Recommendations

This article has highlighted some conceptual and empirical gaps in the ACT literature that affect our understanding of the inter- and intrapersonal processes of psychological change in ACT, and the therapeutic process. However, these limitations are only highlighted here with a view to proposing potential solutions and opportunities for future research. Given the length of this article, it seems prudent to summarize these recommendations for the reader in what follows:

RECOMMENDATIONS REGARDING PSYCHOLOGICAL FLEXIBILITY

First, it might be appropriate to avoid making blanket statements about psychological flexibility based on AAQ-related research papers. Such papers do not need to be disregarded/thrown out, and indeed, nor do the AAQ measures themselves, but these studies do need to be reinterpreted, and general conclusions about PF reevaluated and tempered accordingly. Second, we need to commit to adopting robust measures of PF that are meaningfully distinguished from measures of negative emotion before making truth claims about PF. This will be important to help avoid Type 1 errors in research studies and muddying the ACT and PBT literature with conceptual confusion.

Caution should also be exercised in claiming that PF (i.e., all six Hexaflex components working together) is the core process of change in ACT when, in reality, it is more common to see one or two of PF's components as mediators in any given study. In the interim, there is nothing wrong with simply saying that mindfulness, exposure, or valued action (etc.) are the processes of change for particular applications of ACT if that is what was measured in individual studies, or indeed that their effects are moderated by trait negative emotion levels. Not only would this be more accurate, but conceptually speaking, it allows ACT therapists to then draw upon well-established non-ACT research literatures on these constructs to inform their evidence-based practice. While it is understandable that many ACT practitioners will be keen to emphasize PF as a core process of change in ACT for reasons of conceptual coherence with the ACT literature, such enthusiasm may be premature given the evidence base. While promoting coherent theoretical positions serves community-building purposes well, it can ultimately do a disservice to the science and evidence-based practice, and thereby the vulnerable clients with whom psychotherapists work.

RECOMMENDATIONS REGARDING RELATIONAL FRAME THEORY

In a similar vein, ACT proponents should consider the appropriateness of implying (e.g., in writing and in workshops) that ACT therapy can be improved upon by including RFT components (see Barnes-Holmes, 2019; Villatte, 2018). The extant literature base simply does not support such a conclusion at the current time, even if some developments may appear promising. Instead, it may be better to say that ACT was co-developed with RFT and *aspires* to be consistent with this approach to language and cognition. Insofar as this is the case, RFT may provide the opportunity to develop therapeutic interventions that are technically precise and understood functionally from the ground up. However, this is certainly not the case at present, and we believe that no single RFT-based treatment for any form of psychopathology has been empirically well-validated at this point. The suggestion that such treatments might augment ACT or that they are on the near horizon is highly speculative and potentially misleading to stakeholders (including practitioners) who may not be equipped to critically evaluate such claims.

Given that a large proportion of RFT empirical literature is made up of implicit bias research (not

directly relevant to clinical practice) and single-subject and low-*N* design studies (from which it is difficult to extract general principles), it may be beneficial to focus on strengthening the foundations of RFT. This might involve large-scale replication projects and more clinical RFT research from unbiased parties. It is notable, and concerning, that in a recent ACBS task force report on future directions within ACT/RFT (Hayes, Merwin, et al., 2021), increasing methodological quality control via replication of key findings in ACT/RFT research was not one of the 33 recommendations made. On the other hand, ACBS has recently announced that their journal, *Journal of Contextual Behavioral Science*, will soon begin to accept registered reports, which is a positive step forward. Finally, it may be of benefit to conduct a systematic review of RFT literature akin to O'Connor et al. (2017), with closer scrutiny of the quality and impartiality of such studies (e.g., May et al., 2022), and less emphasis on the quantity of RFT studies, so that both RFT proponents and critics can avoid making misleading statements one way or the other.

RECOMMENDATIONS REGARDING VALUED ACTION AND VALUE CLARITY

PF, and at a more basic level, RFT, are purported to be important mechanisms of psychological change within ACT. However, most PF/RFT components are mere means to an end; valued action is explicitly the behavioral outcome sought within ACT. Arguably, the ACT model should then include some evidence-based way to ensure that individual clients can understand what their values are in the first place. It is not unheard of for someone to act out one set of values in their life and then to realize that they hold an entirely different set of values (e.g., a “mid-life crisis”; Oles, 1999). For this reason, clinicians who mean to practice values-focused therapies like ACT should have expertise in helping clients to discover, articulate, and iteratively refine their value systems over time. We cannot have evidence-based practice in the use of value clarification exercises without a robust science of value clarification. To develop a science of value clarification, it is important to have measures of value clarity that are not conflated with valued action. This is an important area to develop within ACT because without a body of research upon which to base practice, there cannot be experts on this topic. In turn, without expertise, it is possible that ACT will be delivered suboptimally, or worse, increase the probability that therapists might inadvertently cause longer-term harm to clients.

RECOMMENDATIONS REGARDING FUNCTIONAL CONTEXTUALISM

We argue here that there is a clear moral gap in ACT's core philosophy that would seem to permit the expedient subversion of ethical practice. As such, what an FC does/does not say/do must be functionally assessed rather than taken at face value. This is because FC is a pre-analytic philosophy with no moral imperative onto which we cannot bolt a moral framework in a Frankenstein-esque manner. This, at least in principle, increases the risk of ethical problems around conflicts of interest, especially in studies with higher researcher degrees of freedom, making independent replication by unbiased parties all the more important for FC-oriented psychotherapies such as ACT. Additionally, should a therapist's amoral and instrumentalist philosophy bleed into their clinical practice, this may have negative iatrogenic effects for the client. Given that FC is the pre-analytic backbone of all aspects of CBS, this is to call for a rather fundamental reconsideration of the philosophical foundations of CBS itself on moral grounds, even where doing so questions the CBS paradigm itself. Not all practitioners of ACT are ACBS members, nor are they necessarily well-read in philosophy. Therefore, we hope that by providing verbal discriminative stimuli (i.e., within this paper) to help researchers and therapists respond to these conceptual/moral inconsistencies, improvements can be made to CBS as a framework for ethical psychological science going forward. We recognize that key hypotheses in psychology are seldom falsified (Haefffel, 2022) and thereby ideas are seldom changed. Amending a philosophy post-hoc is likely to be even harder as it is even more deeply rooted than pet hypotheses, but on the other hand, we must be wary of sunk costs (see Olivola, 2018).

Conclusion

There is a large array of evidence that ACT works approximately as well as CBT for a range of symptoms (A-Tjak et al., 2015), albeit with a few impartial critics arguing otherwise (Öst et al., 2017). However, the question as to *how* ACT works is still an open and empirical one, and not a philosophical, theoretical, nor rhetorical one. We are perhaps further away from a legitimate PBT in ACT than might first appear when considering the empirical research base critically. In answering the question of what the active inter- and intra-personal processes of change in ACT might be, it is important to separate what can be verified empirically from the *theoretical* position of ACT. Many consumers of clinical psychological

science are not likely to be qualified (i.e., have extensive research methods training) to critically evaluate this difference and can easily be misled, unintentionally leading to misplaced enthusiasm for and confidence in the science. This might ultimately negatively impact vulnerable clients as narrative and naïve realism takes over. This danger of misplaced confidence in the science is illustrated in a recent article by Hayes et al. (2022, p. 24), who say: “Because we wished to examine the usefulness of the [new conceptual model for PBT] in summarizing the existing mediational literature on processes of change, our present summary is deliberately universalist and qualitative.”

One of the headline findings from this paper is that psychological flexibility is the largest replicated mediator of psychotherapeutic outcomes across all RCTs in the psychotherapeutic literature from 1985–2018. This headline is misleading, in our opinion, given that most pre-2018 PF measures did not measure PF (though perhaps one or two of its processes at a time), and given that CBT-related processes (e.g., dysfunctional thoughts and rumination/worry) are separated out when quantifying the relative importance of replicated therapeutic mediators. They continue:

We will leave for another day such issues as the quality of research that led to these findings, the interventions that produce them, the diagnostic categories that were addressed, the outcomes that were targeted, the effect sizes of processes of change, and other similar issues. All such matters draw us closer to the world of “protocols for syndromes” and away from how to identify and organize commonly useful processes of change.

The present article argues that these specifics deliberately omitted by Hayes et al. (2022) are all-important to our interpretations (see, for example, Johannsen et al., 2022), in addition to several other issues mentioned herein (especially conflicts of interest, and ethical issues in relation to the therapeutic process itself facilitated by FC). We hope that this article reveals several areas that are ripe for scientific and philosophical inquiry on the inter- and intra-personal processes involved in psychotherapy. Further research in these areas is not merely required for the purpose of knowledge system building, nor intellectual satisfaction, but to satisfy real and present ethical and moral obligations to our clients and the wider scientific community, as well as to honor ACT’s stated commitment to bottom-up, functional-analytic, empirical, process-based accounts of human behavior.

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