Available online at www.sciencedirect.com
ScienceDirect
Behavior Therapy xx (2016) xxx–xxx
Behavior Therapy
www.elsevier.com/locate/bt

Considering Meta-Analysis, Meaning, and Metaphor: A Systematic Review and Critical Examination of "Third Wave" Cognitive and Behavioral Therapies

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In this review, we examine common usage of the term "third wave" in the scientific literature, systematically review published meta-analyses of identified "third wave" therapies, and consider the implications and options for the use of "third wave" as a metaphor to describe the nature of and relationships among cognitive and behavioral therapies. We demonstrate that the "third wave" term has grown in its use over time, that it is commonly linked with specific therapies, and that the majority of such therapies have amassed a compelling evidence base attesting to their clinical and public health value. We also consider the extent to which the "third wave" designation is an effective guide for the future, and we encourage scientific inquiry and self-reflection among those concerned with cognitive and behavioral therapies and the scientific basis of psychotherapy more broadly.

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Keywords: third wave cognitive and behavioral therapy; Acceptance and Commitment Therapy; Dialectical Behavior Therapy; Mindfulness-Based Cognitive Therapy; Behavioral Activation

In 2004, a group of psychotherapy approaches was described for the first time as "third wave" therapies in the English language scholarly literature (Hayes, 2004). This designation suggested that the field of psychotherapy was undergoing an important evolution of cognitive and behavioral therapies. This "third wave" was situated in reference to the shift in the late 1960s and 1970s from purely behavioral approaches to those that integrated or privileged cognitive approaches. The "third wave" designation elicited both enthusiasm and controversy. Enthusiasts heralded the importance of these approaches to alleviating human suffering and underscored the ways in which these approaches represented innovations in psychotherapy. Skeptics questioned whether the approaches were really all that different from the "second wave" cognitive behavioral therapies (or, for that matter, whether they were all that similar to one another) and whether they had sufficient empirical evidence to warrant such fanfare.

Please cite this article as: Sona Dimidjian, et al., Considering Meta-Analysis, Meaning, and Metaphor: A Systematic Review and Critical Examination of "Third Wave" Cognitive and Behavioral..., *Behavior Therapy* (2016), http://dx.doi.org/10.1016/j.beth.2016.07.002

Over a decade has passed since that first designation, providing an opportunity to reflect on three key questions: What are "third wave" therapies? To what extent have "third wave" therapies provided significant public health benefit? What is the future of "third wave" therapies? We engage these questions in three ways. First, we examine the meaning of the term "third wave" by tracking its use in the scientific literature over the past decade to situate our consideration in an historical context. Second, we systematically review the current meta-analytic literature on specific treatments that have been identified most frequently in the literature as "third wave," examining effect sizes that contrast pre-post change within treatments and between-group contrasts when available. Third, we consider the conceptual status of the category of "third wave," both as a metaphor and as a guide to the emerging scientific questions that must be answered to help advance the field towards maximum public health impact.

Considering Meaning: The Historical Status of Common Usage of "Third Wave" in the Scientific Literature

The meaning of the "third wave" term is determined, at least in part, by common usage patterns. To examine the meaning of the "third wave" designation, we examined the use of the term in the scientific literature in an historical context. We searched the databases PsycINFO and PubMed using the search term combination "third wave AND therapy." This search returned 145 results in PsycINFO and 124 results in PubMed, of which 30 were duplicates, yielding a total of 239 scholarly articles. We reviewed the title, abstract, and subject/keywords of these articles. All studies that referenced cognitive and behavioral therapies by using the term "third wave" were retained, and those using the term "third wave" in a different context (e.g., third wave feminism, third wave of a longitudinal study) were excluded, as were book reviews. Using these criteria, we identified 140 unique articles published between 2003 and 2015.

The first reference to "third wave" therapy identified in the English language scholarly literature was in the seminal paper by Hayes (2004) in *Behavior Therapy*; although an earlier paper on Acceptance and Commitment Therapy was published in a Dutch journal (Hayes, Masuda, & De Mey, 2003). Although substantial work developing and testing individual "third wave" therapies had been ongoing prior to 2004, it was not until that time that these therapies were linked under the broader umbrella of the "third wave" term. We sought to address the question of what the designation of "third wave" means, in part, by examining what is and is not identified as a "third wave" therapy based on these references in the scholarly literature. Hayes (2004) defined the unifying features of "third wave" interventions as follows: "No one factor unites these new methods, but all have ventured into areas traditionally reserved for the less empirical wings of clinical intervention and analysis, emphasizing such issues as acceptance, mindfulness, cognitive defusion, dialectics, values, spirituality, and relationship. Their methods are often more experiential than didactic; their underlying philosophies are more contextualistic than mechanistic" (p. 640). This original definition offered by Hayes (2004) also specifically cited the following approaches as examples of "third wave" therapies: Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), Dialectical Behavior Therapy (DBT; Linehan, 1993), Functional Analytic Psychotherapy (FAP; Kohlenberg & Tsai, 1991), Integrative Behavioral Couples Therapy (IBCT; Jacobson & Christensen, 1996), and Mindfulness-Based Cognitive Therapy (MBCT: Segal, Williams, & Teasdale, 2002), among several others. We reviewed each article ($N = 140$) to identify which specific approaches were classified as "third wave" based on the authors' designation.

Many among the total pool of articles did not explicitly refer to a specific approach as "third wave" and spoke more generally of the category of "third wave" ($N = 47$); however, of those that did ($N = 93$), a total of 17 specific approaches were classified in the literature as "third wave." The distribution of the number of times a specific approach was referenced as "third wave" in the literature is illustrated in Figure 1. The third wave category has been linked clearly with specific treatment approaches. Among those approaches characterized as "third wave" at least 10 times, ACT was most frequently cited, followed by DBT, MBCT, FAP, and BA. A range of other therapies were referenced less often and included the following approaches (number of times identified as "third wave" indicated in parentheses):

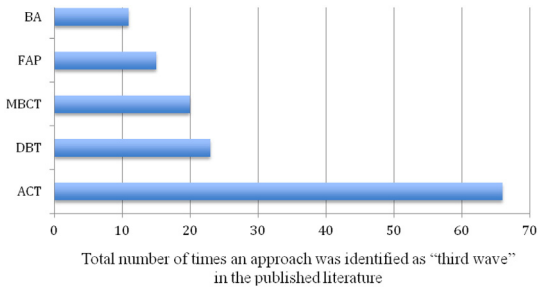

FIGURE 1 Therapeutic approaches most frequently characterized as "third wave" in the scientific literature.

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"mindfulness" (9 times), "metacognitive therapy" (8 times), "schema therapy" (7 times), "mode deactivation therapy" (6 times), "integrative behavioral couple therapy" (5 times), "compassionate mind training" (5 times), "mindfulness-based stress reduction" (4 times), "cognitive behavioral analysis system of psychotherapy" (4 times), "mindfulness-based training group" (1 time), "positive psychotherapy" (1 time), "Unified Protocol of Barlow" (1 time), and "compassion focused therapy" (1 time). Clearly, there exists both consensus in the literature regarding some members of the "third wave" category (e.g., ACT), and a diversity of views about others.

In 2011, Hayes and colleagues offered an update to the "third wave" designation, moving away from the term "third wave" and proposing a new name for the linked therapies, "contextual cognitive behavioral therapy," organized around the constructs of "open, active, and aware" (Hayes, Villatte, Levin, & Hildebrandt, 2011). This conceptualization sought to shift away from the classification of specific therapies as a set (with therapies that are "in" *versus* "out") and toward an emphasis on theory and therapeutic process and procedure. In so doing, Hayes and colleagues sought to address directly some of the criticisms of the "third wave" designation, including the concerns that it implied that "traditional" behavioral and cognitive behavioral therapies were "old hat" and that the term itself was vague and time bound (Hayes et al., 2011). However, the "third wave" designation continues to be widely used in the published literature. As illustrated in Figure 2, the cumulative identification of therapies as "third wave" has increased steadily since the first published report.

Considering Meta-Analyses: The Empirical Status of "Third Wave" Therapies

To what extent have therapies identified as "third wave" provided significant public health benefit? The scope of the empirical work that has been conducted on individual therapies identified as "third wave" is voluminous. Although we identified a total of 140 scholarly articles that specifically used the term "third wave," an examination of each of the specific therapies reveals a much larger evidence base, and a critical examination of each is beyond the scope of this review. Thus, we conducted a search for meta-analyses of the five treatments most frequently identified as "third wave": Acceptance and Commitment Therapy (Hayes et al., 1999), Dialectical Behavior Therapy (Linehan, 1993); Mindfulness-Based Cognitive Therapy (Segal et al., 2002), Functional Analytic Psychotherapy (Kohlenberg & Tsai, 1991), and Behavioral Activation (Martell, Addis, & Jacobsen, 2001; Martell, Dimidjian, & Herman-Dunn, 2010). We identified meta-analyses using both PubMed and PsycINFO, searching for articles between January 2004 and September 2015. We used the following search terms combined with "meta-analysis": "mindfulness-based cognitive therapy," "functional analytic psychotherapy," "acceptance and commitment therapy," "dialectical behavio* therapy," and "behavioral (or behavioural) activation." As illustrated in the Figure 3 PRISMA flow diagram (Moher, Liberati, Tetzlaff, & Altman, 2009), the titles and abstracts of these records were screened, and resulting full-text articles were assessed for eligibility, and qualifying meta-analyses (number in parentheses) were identified for inclusion by JA and RS for ACT (8), by JF and PD for DBT (5), by ZS

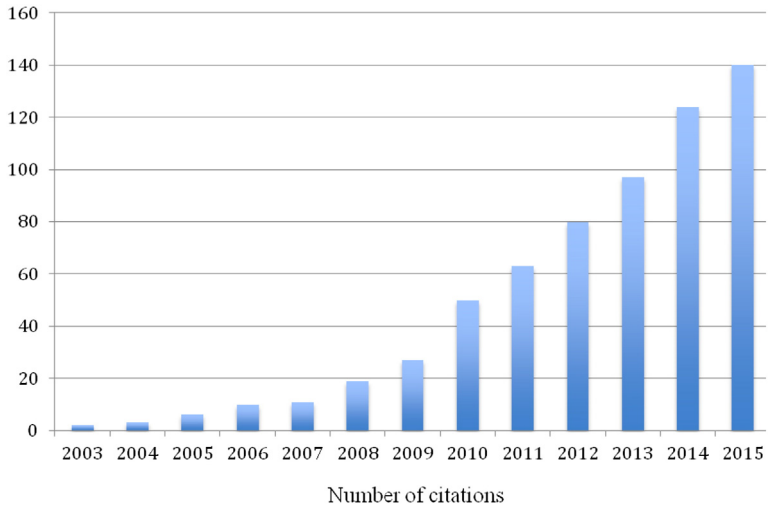

FIGURE 2 Cumulative use of the term "third wave" in the scientific literature.

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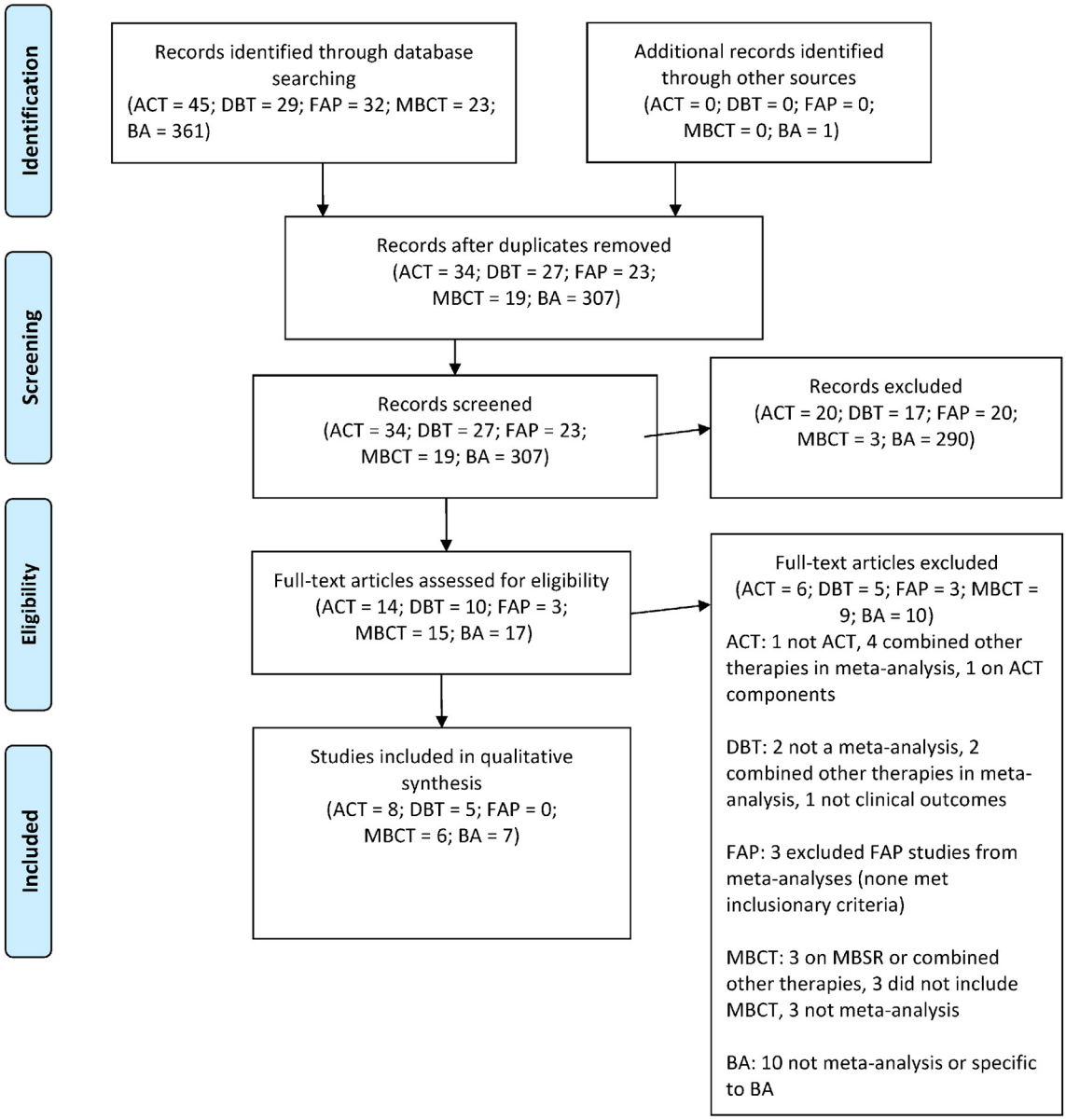

FIGURE 3 PRISMA Flow Diagram.

for MBCT (6), and by SD for BA (7); these co-authors also critically reviewed and summarized the resulting meta-analyses in Tables 1–4. Although we included FAP in our original search based on the frequency with which it is identified as "third wave" in the published literature, none of the meta-analytic studies reported specifically on FAP in analyses; thus FAP is not a focus of our critical review. Publications that included multiple "third wave" therapies were included under the relevant therapy section if results were reported by specific therapy, or in some cases, those publications are reported in more than one section (e.g., the sections on ACT and DBT both include a discussion of Öst, 2008).

ACCEPTANCE AND COMMITMENT THERAPY

ACT is informed by contextual principles of behavior analysis and relational frame theory (Hayes, 2004), operating from the premise that psychological problems result from how human language can dominate direct experience, creating verbal rules that perpetuate psychological rigidity and promote experiential avoidance. The latter term refers to occasions in which people exhibit "unwillingness to remain in contact with" private experiences such as challenging thoughts, emotions, or memories and "take steps to alter the form or frequency of these events and the contexts that occasion them" (Hayes, Wilson,

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Gifford, & Follette, 1996, p. 1154). In aiming to increase psychological flexibility, the ACT model cultivates six interrelated processes, including those related to enhancing awareness (*acceptance* and *mindfulness*), openness to experience and perspective taking (*cognitive defusion*, defined as flexible distancing from the literal meaning of cognitions, and *self-as-context*, defined as cultivating the capacity to observe one's own ongoing experience as well as contacting a sense of self that is larger than the content of one's thoughts and feelings), and behavior change (awareness, refinement, and connection with personal *values* and *committed action*, or flexibly committing to behavior change consistent with those values; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 1999; Hayes et al., 2011).

The meta-analyses of ACT published to date occasionally have invited controversy and represent an ongoing domain of scholarly activity and debate (see Table 1). An early meta-analysis (Hayes et al., 2006) reported large effect sizes for ACT relative to all comparison conditions, e.g., active treatment, waitlist (WL), treatment as usual (TAU), educational, or placebo treatments (d = .66 at each post and follow-up), and moderate to large effect sizes for ACT relative to structured and established treatments (d = .48–.63), including for studies comparing ACT to traditional CBT or CT (d = .73 at Post and .83 at FU). However, the authors framed their findings as preliminary; for example, the latter comparisons included only 4 studies, some of which were unpublished.

Öst (2008) subsequently conducted a highly cited meta-analysis of third wave therapies, which included 13 ACT RCTs on highly varied mental and physical health problems (including worksite stress). Findings showed that ACT outperformed WL, TAU, and active treatment comparisons by moderate to large effect sizes (g = .96, .79, and .53, respectively; see Table 1). However, Öst also developed a scale to rate the quality of included studies, by first generating a pool of "twin" (traditional) CBT studies published within a year of each ACT study and then randomly selecting from this pool a CBT study to compare on quality dimensions; the ACT studies fell short of the CBT studies on 11 of 22 study quality dimensions. Subsequent analyses, however, raised important questions about this matching strategy (Gaudiano, 2009), including the fact that the "twin" CBT studies were significantly more likely to have focused on anxiety/depression populations (100% of studies) than the ACT studies (38% of studies). In contrast, the majority of ACT studies treated conditions such as psychosis, personality disorders, addiction, and chronic medical conditions, thus raising concerns about comparing "apples with oranges."

The next ACT meta-analysis included 18 RCTs and concluded that ACT outperformed WL control and placebo (g = .68) and TAU (g = .42), but not established treatments (comprised largely of CBT; g = .18) (Powers, Zum Vorde Sive Vording, & Emmelkamp, 2009). Similar to Öst (2008), this meta-analysis reflected diverse treatment-seeking mental and physical health problems (ranging from trichotillomania to psychosis to pain to substance abuse), including a study on worksite stress; however, Powers et al. (2009) categorized a number of studies differently than Öst (2008). Levin and Hayes (2009) conducted a reanalysis of the Powers et al. (2009) data based on a recategorization of comparison treatments and concluded that ACT significantly outperformed established treatment comparisons by g = .27 to .32.

Ruiz (2012) next meta-analyzed 16 clinical trials comparing ACT to traditional CBT/BT for diverse problems, including addiction, chronic pain, anxiety disorders, depression, worksite stress, and the psychological experience of cancer. Overall, he found that ACT significantly outperformed CBT on primary outcomes at post-treatment and follow-up (g = .37 and .42, respectively), and approached significance for outperforming CBT on quality-of-life outcomes at posttreatment (g = .25) but not at follow-up (g = .10). Further, ACT outperformed CBT on ACT-related processes of change at post (g = .45) but not at follow-up (g = .10). ACT and CBT did not differ on impacting CBT-related processes of change. These findings highlight the value of testing directly the extent to which ACT works via its proposed processes of change. As noted by Ruiz (2012), in most studies the assessment of the mediators neither temporally preceded assessment of study outcomes nor assessed possible bidirectionality in the relationship between mediator and outcome (by measuring each at multiple time points), as recommended to assess causal-ordering assumptions (Kazdin, 2007). As Kazdin (2007) suggests, these criteria are rarely met in studies of any psychotherapy approaches, though they represent important standards.

Öst (2014) conducted another ACT meta-analysis, on 60 RCTs focusing on a broad array of psychological, somatic/physical, or worksite stress-related problems. At posttreatment, Öst concluded that ACT significantly outperformed WL (g = .63), placebo (g = .59), and TAU (g = .55), and active treatment comparisons (g = .22), but not in the subgroup of studies comparing ACT to different forms of CBT/BT (g = .16). The overall effect size at posttreatment (g = .42) was reduced somewhat by follow-up (g = .30), as were the subgroup effect sizes (WL g = .39, placebo g = .53, TAU g = .48, active

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Table 1
Characteristics of the Studies Included in Meta-Analyses of ACT Outcomes

Meta-analysis	Study design	Comparison	Outcome [1]	Number of included studies or comparisons	Number of participants	ES
Hayes et al. (2006)	RCT	AT, WL, TAU, PLA	Primary outcomes, Post-treatment	20	704	d = 0.66
		AT, WL, TAU, PLA	Primary outcomes, Follow-up	13	519	d = 0.66
		SI, ET	Post-treatment	11	456	d = 0.48
			Follow-up	9	404	d = 0.63
		CBT/CT [2]	Post-treatment	4	96	d = 0.73
			Follow-up	NR	39	d = 0.83
Öst (2008)	RCT	All studies	Primary outcomes, Post-treatment	13 [3]	677	g = 0.68
		WL		2	NR	g = 0.96
		TAU		5	NR	g = 0.79
		AT		8	NR	g = 0.53
Powers et al. (2009)	RCT	WL, PP, TAU, AT, ET	Primary outcomes (combined across Post and Follow-up)	18 [4]	1079 [5]	g = .42
		WL/PP		4	167	g = 0.68
		TAU		9	624	g = 0.42
		ET		8	380	g = 0.18
Levin & Hayes (2009)	RCT	WL, PP, TAU, AT, ET	Primary outcomes	18	1079	g = 0.27-.32
Ruiz (2012)	RCT/nRCT	CBT	Primary outcomes, Post-treatment	16 (1/16 nRCT)	954	g = 0.37
		CBT	Primary outcomes, Follow-up	11	NR	g = 0.42
		CBT	Quality of life, Post-treatment	11	NR	g = 0.25
		CBT	Quality of life, Follow-up	8	NR	g = 0.10
		CBT	ACT Process measures, Post-treatment	11	NR	g = 0.45
		CBT	ACT Process measures, Follow-up	8	NR	g = 0.10
Öst (2014)	RCT	All studies	Primary outcomes, Post-treatment	60 (64 comparisons)	4234	g = 0.42
		All studies	Primary outcomes, Follow-up	41	NR	g = 0.30
		WL	Post-treatment	16	NR	g = 0.63
		WL	Follow-up	7	NR	g = 0.39
		TAU	Post-treatment	14	NR	g = 0.55
		TAU	Follow-up	7	NR	g = 0.48
		AT	Post-treatment	30	NR	g = 0.22
		AT	Follow-up	23	NR	g = 0.17
		PLA	Post-treatment	4	NR	g = 0.59
		PLA	Follow-up	3	NR	g = 0.53
		CBT/BT [2]	Post-treatment	22	NR	g = 0.16
		CBT/BT [2]	Follow-up	17	NR	g = 0.06
A-Tjak et al. (2015)	RCT	All studies	Primary outcomes (combined across Post and Follow-up)	39	1821	g = .57
		All studies	Primary outcomes, Post-treatment	32	1767	g = .54
		All studies	Primary outcomes, Follow-up	25	1259	g = .36
		WL	Primary outcomes	9	346	g = 0.82
		TAU	Primary outcomes	12	457	g = 0.64
		PP	Primary outcomes	5	238	g = 0.51
		CBT/BT	Primary outcomes	9	456	g = 0.32
Bluett et al. (2014)	RCT	MT or WL	All outcome and process measures	9	404	g = 0.40
		CBT/BT [2]	Primary outcomes	5	NR	g = 0.00
		CBT/BT [2]	ACT Process measure	3	NR	g = 0.13

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Table 2
Characteristics of the Studies Included in Meta-Analyses of DBT Outcomes

Meta-analysis	Study design	Comparison	Outcome	Number of included studies or comparisons	Number of participants	ES
Öst (2008)	RCT	Overall	BPD (9), depression (2), ED (2)	13	539	g =.58
	RCT	WL	ED	2	75	g = 1.30
	RCT	TAU	BPD	4	160	g =.47
	RCT	Active	BPD, depression	7	233, 71	g =.47
Kliem et al. (2010)	RCT	Active, TAU	Global effect	8	553	0.39
	RCT	Active, TAU	SB + SIB	6	643	0.23
	RCT	Active, TAU	Long-term	5	255	0.20
	nRCT + RCT	N/A for nRCT; Active, TAU for RCT	Global effect	+6	+154	0.44
	nRCT + RCT	N/A for nRCT; Active, TAU for RCT	SB + SIB	+5	+142	0.37
	nRCT + RCT	N/A for nRCT; Active, TAU for RCT	Long-term	+2	+81	g = 0.05
Lenz et al., 2014	Open trial	N/A	ED episodes	4	67	1.43
	Open trial	N/A	MD severity	2	35	1.90
	RCT	WLC; TAU	ED episodes	4	202	0.82
	RCT	WLC; TAU	MD severity	4	187	0.57
Stoffers et al. (2012)	RCT	TAU	Anger	2	46	SMD = -0.83
	RCT	TAU	Parasuicidality	3	110	SMD = -0.54
	RCT	TAU	Mental health	2	74	SMD = 0.65
	RCT	TAU	Attrition	5	252	RR = 1.25
Panos et al. (2013)	RCT	Various	Parasuicidal	3	96	g = -0.64
	RCT	Various	Suicide attempts	2	159	OR = 0.31
	RCT	Various	Combined effect	5	255	g = -0.62
	RCT	Various	Attrition	5	255	PRD = -0.17
	RCT	Various	Depression	3	153	g = -0.90

Note. BPD = borderline personality disorder, DBT = dialectical behavior therapy, ED = eating disorders, g = Hedges's g, MD = mean difference, SMD = standardized mean difference, RR = risk ratio, m-ADM = maintenance antidepressant medication, MBCT = mindfulness-based cognitive therapy, N/A = not applicable, nRCT = non-randomized controlled trial, OR = odds ratio, PE = psychoeducation, PLA = placebo, PRD = pooled risk differences, RCT = randomized controlled trial, RR = risk ratio, SIB = self-injurious behaviors, SB = suicidal behaviors, TAU = treatment-as-usual.

treatment g = .17, CBT/BT g = .06). Both overall effect sizes evidenced significant heterogeneity. Studies with fewer therapists and lower methodological quality scores were associated with higher effect sizes—a not uncommon finding in the psychotherapy literature (Cuijpers, van Straten, Bohlmeijer, Hollon, & Andersson, 2010). Further, overall study quality did not differ significantly from Öst's 2008 meta-analysis.

Subsequently, A-Tjak et al. (2015) published a meta-analysis that reflected an emphasis on higher quality, larger, and more targeted studies.

Notes to Table 1:
Note. ACT = acceptance and commitment therapy, AT = active treatment, BT = behavioral therapy, CBT = cognitive behavior therapy, CT = cognitive therapy, d = Cohen's *d*, ET = established treatment, FU = follow up, g = Hedges's g, m-ADM = maintenance antidepressant medication, MT = manualized treatment, NR = not reported, as in, the authors did not clearly specify the variable of interest in their meta-analysis, nRCT = non-randomized controlled trial, PLA = placebo, PP = psychological placebo, RCT = randomized controlled trial, SI = structured intervention designed to impact the targeted problem, TAU = treatment-as-usual, WL = wait-list control

[1] Most of the ACT meta-analyses estimated separate effects for post- and follow-up across various outcomes; thus, following the literature, we emphasized the timepoint more than the content domain of the outcomes. Thus, the table generally does not report every test conducted in a given meta-analysis. Unless otherwise indicated, outcomes refer to primary outcomes assessed across diverse content domains, depending on the particular focus of each meta-analysis (see text).

[2] These studies comprise a subset of those examined as established, manualized, or active treatments.

[3] The authors initially report 13 comparison groups in their list of included ACT studies (see their Table 2), but later report 15 comparisons (Table 7).

[4] Four included studies had 3 arms each, including one with an arm (ACT+CT) that did not fit the current categories. Thus, the number of comparisons exceeded the number of studies.

[5] The authors report a total of n = 917 but the included studies listed in their Table 1 total n = 1079.

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Table 3
Characteristics of the Studies Included in Meta-Analyses of MBCT Outcomes

Meta-analysis	Study design	Comparison	Outcome	Number of included studies or comparisons	Number of participants	ES
Hofmann et al. (2010)	Open trial		Depressive symptoms	9	113	g = 0.85
	Open trial		Anxiety symptoms	6	189	g = 0.79
Piet & Hougaard (2011)	RCT	TAU	Depressive relapse	4	386	RR = 0.66
	RCT	PLA	Depressive relapse	1	56	RR = 0.64
	RCT	m-ADM	Depressive relapse	2	177	RR = 0.80
Chiesa & Serretti (2011)	RCT	TAU	Depressive relapse	4	386	OR = 0.36
	RCT	m-ADM	Depressive relapse	1	123	OR = 0.61
Galante et al. (2014)	RCT	TAU	Depressive relapse	4	307	RR = 0.55
	RCT	m-ADM	Depressive relapse	1	123	RR = 0.80
	RCT	TAU	Depressive symptoms	2	124	MD = -2.49
	RCT	m-ADM	Depressive symptoms	1	118	MD = -1.64
Strauss et al. (2014)	RCT	TAU + PE	Depressive symptoms	6	278	g = 0.39
Clarke et al. (2015)	RCT	TAU + m-ADM	Depressive relapse	8	757	RR = 0.79

Note. g = Hedges's g, MD = mean difference, m-ADM = maintenance antidepressant medication, MBCT = mindfulness-based cognitive therapy, PE = psychoeducation, PLA = placebo, RCT = randomized controlled trial, RR = risk ratio, TAU = treatment-as-usual.

Specifically, this meta-analysis included 39 RCTs and was limited to those that treated a "clinically relevant disorder," had at least 10 participants per cell at posttreatment, and defined ACT interventions as those based at least 80% on ACT. Pooled across all time points and comparison conditions, they found that ACT was superior to comparison conditions (g = .57), including WL (g = .82), psychological placebo (g = .51), and TAU (g = .64). However, ACT was not significantly superior to established CBT/BT treatments, though the pattern was in this direction (g = .32). They replicated Öst's (2014) finding that studies of higher quality were associated with smaller outcome effect sizes, but differed with Öst (2014) by concluding that "the methodological quality of the ACT studies seems to have improved over the years" (A-Tjak et al., 2015, p. 12), though they did not specifically test this association.

One challenge with ACT meta-analyses is that their breadth of focus involves combining diverse disorders (and often, nondisorders) across most analyses. However, the diverse range of psychological, physical, and nonclinical problems addressed in the ACT literature (as reflected in these meta-analyses) also reflects a potential strength of the ACT approach. In contrast to many psychotherapy approaches, ACT was not developed to address a specific problem or disorder, but rather, to expose broader principles of psychological inflexibility and flexibility and to develop strategies for moving from the first to the second. Thus, ACT may possess valuable bandwidth for addressing a wide variety of clinical (and nonclinical) problems. That said, the heterogeneity of samples in most published meta-analyses complicates the interpretation of results. In contrast, Bluett, Homan, Morrison, Levin, and Twohig (2014) conducted an ACT meta-analysis within a specific domain—anxiety and OCD-spectrum disorders—representing an informative strategy, albeit a preliminary one in that this domain includes relatively few studies (as the authors acknowledge). Traditional CBT/BT has enjoyed equal or greater success in the anxiety disorder domain than nearly any other domain (Butler, Chapman, Forman, & Beck, 2006), thus representing a particularly stringent comparison with a newer treatment. Bluett et al. (2014) found that ACT for anxiety disorders was more effective than a category consisting of both manualized comparison treatments and waitlist control conditions (g = .40) but similarly effective as CBT/BT (g = .00). Relative to CBT/BT, ACT also showed similar magnitude of change on the AAQ, an ACT-specific process measure (g = .13). Thus, within this preliminary comparison, although ACT did not represent an improvement over established CBT/BT treatments, it performed as well.

In summary, meta-analyses of ACT indicate that ACT has been a focus of considerable empirical study and that target problems and populations have increased over time to include highly diverse clinical (and nonclinical) populations. Overall, meta-analytic findings indicate that ACT has demonstrated superiority to a variety of control conditions. However, the magnitude and significance of effect sizes for comparisons of ACT to CBT/BT, or to established treatments more generally, has differed across meta-analyses. Some find

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Table 4
Characteristics of the Studies Included in Meta-Analyses of BA Acute Phase Treatment Outcomes

Meta-analysis	Study design	Comparison	Outcome	Number of included studies or comparisons	Number of participants	ES
Cuijpers et al. (2007)	RCT	Multiple	Depressive severity	16	780	–
	RCT	Heterogeneous [1]	Depressive severity	10	239	d = .87
	RCT	Active [2]	Depressive severity	14 [3]	NR	d = .12 [4]
	RCT	CT	Depressive severity	10	NR	d = 0.02
Cuijpers et al. (2008)	RCT	Active [5]	Depressive severity	21	NR	d = .14
	RCT	CBT	Depressive severity	11	NR	d = -0.08
Ekers et al. (2008)	RCT	Heterogeneous [6]	Depressive severity	12	459	SMD = -0.70
	RCT	CT/CBT	Depressive severity	12	476	SMD = 0.08
	RCT	Brief PDT	Depressive severity	3	166	SMD = -0.56
	RCT	Supportive Tx	Depressive severity	2	45	SMD = -0.75
Mazzucchelli et al. (2009)	RCT	WLC/TAU	Depressive severity	16	453	g = 0.78
	RCT	CBT/CT	Depressive severity	15	536	g = -0.01
	RCT	Other [7]	Depressive severity	17	533	g = 0.33
Mazzucchelli et al. (2010)	RCT	Control	Well-being	11	465	g = 0.52
	RCT	Active	Well-being	19	825	g = 0.09
Cuijpers et al. (2011)	RCT	Heterogeneous [8]	Depressive severity	10	NR	d = 0.87
	RCT	Active [5]	Depressive severity	21	NR	d = 0.14
Ekers et al. (2014)	RCT	Heterogeneous	Depressive severity	31	1088	SMD = 0.74
	RCT	Antidepressant medication	Depressive severity	4	283	SMD = 0.42

Note. RCT = randomized controlled trial; CT = cognitive therapy; CBT = cognitive behavioral therapy; PDT = psychodynamic therapy; WLC = waitlist control; SMD = standardized mean difference; g = Hedges's g; TAU = treatment as usual; NR = not reported.

[1] Heterogeneous controls included both waitlist and active therapies (e.g., cognitive therapy, psychodynamic therapy, problem solving therapy).

[2] Active psychotherapies referred to treatments for depression such as cognitive therapy, psychodynamic therapy, problem solving therapy.

[3] 14 studies provided 18 comparisons.

[4] This effect size is reported by the authors as d = .12 and as d = .13.

[5] Active psychotherapies referred to treatments for depression such as cognitive behavioral therapy, nondirective supportive therapy, psychodynamic therapy, interpersonal therapy, social skills training.

[6] Heterogeneous controls included waitlist, TAU, and relaxation.

[7] Other included brief psychodynamic psychotherapy, supportive counseling, assertiveness training, problem solving therapy, psychoeducation, increasing placebo activities, and TAU.

[8] Heterogeneous control groups including waitlist, TAU, pill placebo, and psychological placebo.

that that ACT and CBT do not differ significantly from one another (A-Tjak et al., 2015; Öst, 2014; Powers et al., 2009), whereas others do (Hayes et al., 2006; Levin & Hayes, 2009; Ruiz, 2012).

DIALECTICAL BEHAVIOR THERAPY

DBT (Linehan, 1993) was initially designed as a treatment for chronically suicidal patients, many of whom were diagnosed with borderline personality disorder (BPD). The theoretical framework that guides DBT is based on a biopsychosocial model of BPD (Linehan, 1993), which posits that BPD is a function of transactions between emotional vulnerability and an invalidating environment. Emotion vulnerability is defined as the propensity for rapid and intense emotion reactivity as well as slower return to baseline. An invalidating environment is defined as one that fails to respond to the individual in a way that recognizes or affirms the worth of the individual's experience; examples include inaccurate reflection of a child's internal state, emotional or material deprivation, or trauma and abuse. Linehan (1993) originally approached the treatment of BPD with standard cognitive behavioral therapy procedures, but found that the integration of other procedures was necessary to respond to the clinical challenges of many of her clients. Informed by her training in both behavior therapy and Zen and contemplative practice, Linehan (1993) integrated "acceptance" procedures with the standard cognitive behavioral "change" procedures. Comprehensive DBT includes individual therapy, skills training, phone coaching, and a consultation group for the

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therapist. Three sets of behavioral skills are taught as modules in a repeated cycle (distress tolerance, interpersonal effectiveness and emotion regulation), and mindfulness is taught as a core set of skills at the beginning of each of the other modules. The delivery of DBT is organized by an overall dialectical framework—of which the dialectic between acceptance and change is a core and guiding element—and by a clear set of treatment targets, which are organized hierarchically (life-threatening behaviors, therapy-interfering behaviors, quality-of-life behaviors, and skills acquisition).

In the first meta-analysis including DBT, Öst (2008) examined 13 DBT studies within the larger set of studies examining 5 "third wave" CBTs. As detailed in Table 2, Öst (2008) reported a large effect size for comparisons between DBT and WL, and a small effect size for comparisons to TAU and active controls. Using the modified methodology rating scale, also used in the meta-analysis of ACT and other therapies, Öst reported that the mean methodology stringency score for DBT was significantly lower than for a set of "twin" CBT studies, although as discussed in detail above, several concerns with this "twin" method have been raised.

The meta-analysis of Kliem, Kröger, and Kosfelder (2010) included both RCTs and nRCTs (neither randomized nor controlled trials) and examined the global effect from preintervention to postintervention incorporating multiple outcome measures as used in the source trials. In addition, they examined effect size estimates for specific outcomes such as suicidal and self-injurious behaviors, long-term effectiveness, and dropout rates. Generally, the authors report significant and small effects when examining RCTs alone and when also including nRCTs when contrasted with a variety of comparison conditions (e.g., treatment as usual, bona fide treatments, etc.). The authors also examined the efficacy of DBT as compared to other BPD-specific treatments and reported generally a lack of significant differences based on such contrasts. Although the authors found that each of the included studies were of at least satisfactory methodological quality, they also note that only one of the RCTs was conducted without the involvement of the original treatment developer (Linehan).

In a review of RCTs of psychological interventions for borderline personality disorder, Stoffers et al. (2012) calculated meta-analytic pooling for DBT compared to TAU for four outcomes. They report that DBT outperformed TAU for anger, parasuicidality, and mental health outcomes, as indicated by statistically significant differences and moderate to large effect sizes; however, DBT did not differ from TAU in attrition, but there was substantial heterogeneity and the quality of evidence for outcomes was categorized as low to moderate.

Lenz, Taylor, Fleming, and Serman (2014) conducted a meta-analysis to examine the impact of DBT on disordered eating. Five between-group (i.e., WL or TAU) and four single group studies were included, and there were no comparisons to active control conditions. Lenz and colleagues report large effect sizes for the impact of DBT on a number of eating disorder episodes in both between-group and single-group studies, and medium to large effect sizes for depression symptom severity. Significant heterogeneity was evident for each of these analyses, and the authors caution that the results are preliminary due to the small number of studies conducted and included.

Panos, Jackson, Hasan, and Panos (2013) conducted a meta-analysis including only studies that utilized an RCT design with adults diagnosed with BPD. The outcome variables of interest were parasuicidal behaviors, suicide attempts, attrition, and depression symptom severity. Pooled odds indicated that DBT was significantly better than TAU at reducing suicide attempts and some evidence of significant improvement in parasuicidal behavior compared to control conditions. The effects of DBT on attrition were inconsistent across studies, and there was no indication that DBT yielded better depression outcomes than TAU. Results from sensitivity analyses did not suggest that results were heavily dependent on a single study. The authors compared the pooled results of the two RCTs conducted by Linehan with the other three studies and found that they were qualitatively similar to the non-Linehan studies, with slightly higher efficacy reported by non-Linehan studies.

In summary, it is notable that few studies were available to be included in these meta-analyses, highlighting the need for more randomized controlled trials, particularly given promising results in reducing suicide attempts among BPD patients, and eating disorder episodes and depression symptom severity among patients with an eating disorder. Additionally, DBT has been applied to an increasingly broad set of target problems and populations; however, these studies have not yet been included in meta-analytic reviews, suggesting that the meta-analytic literature has not kept pace with treatment development and efficacy tests of DBT. Finally, studies to date provide little indication of the extent to which DBT provides incremental benefit over first or second wave cognitive behavioral therapies.

MINDFULNESS-BASED COGNITIVE THERAPY

MBCT (Segal, Williams, & Teasdale, 2013) is an 8-week group program that incorporates

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mindfulness meditation with cognitive therapy to target relapse vulnerability among formerly depressed individuals. The central theory underlying MBCT is that individuals with histories of depression are vulnerable during dysphoric mood states when automatic cognitive patterns that were present during previous episodes are more easily reactivated (Teasdale, 1988, 1999a, 1999b; Teasdale et al., 2002). Rumination is defined as the tendency to focus repetitively on the experience, causes, and consequences of one's depressive symptoms, and is associated with onset of depression and severity of symptoms (Nolen-Hoeksema & Morrow, 1991) and predicts relapse following MBCT (Michalak, Holz, & Teismann, 2011). The mindfulness skills of MBCT, such as brief daily mindfulness practices and extended formal meditation practices, foster awareness of the typical ruminative, automatic patterns of thoughts, emotions, and sensations and teach participants to intentionally switch to a more decentered, nonjudgmental, present-focused awareness. Decentering has been defined as taking an accepting and nonjudgmental stance toward thoughts, emotions, and sensations, and the ability to view thoughts as mental events, rather than as facts (Fresco, Segal, Buis, & Kennedy, 2007).

Aggregate evidence regarding MBCT's clinical outcomes is provided by 6 meta-analyses (see Table 3). These studies examine prevention of relapse/recurrence as well as changes in the severity of depressive symptoms once treatment has ended. A notable strength of this work is the reliance on 12- or 18-month intervals for clinical follow-up, whereas a drawback is that a number of the trials did not assess treatment fidelity. The comparison groups in the meta-analyses range from minimal controls to more active conditions, such as maintenance antidepressant medication or pill-placebo.

Specifically, the first meta-analysis conducted by Hofmann, Sawyer, Witt, and Oh (2010) examined the efficacy of "mindfulness based treatment" (MBT) across multiple symptom domains such as mood, pain, ADHD, binge eating, and medical conditions. They reported an ES of .50 for reductions in depression and anxiety across 16 studies. Looking within this group of studies at outcomes associated with particular interventions, they noted that MBCT was associated with an ES of .85 for reductions on continuous measures of depressive severity and .79 for symptoms of anxiety. Piet and Hougaard (2011) conducted the first meta-analysis specific to MBCT drawing on RCTs designed to replicate the initial findings of Teasdale et al. (2000), as well as RCTs featuring more active comparators. Their overall findings indicated that MBCT reduced relapse risk by 34%, with positive outcomes reported for comparisons against usual care (risk ratio = .66), pill–placebo (risk ratio = .64) or maintenance antidepressant pharmacotherapy (risk ratio = .80). A consistent observation made in a number of MBCT meta-analyses was that the methodological rigor of the studies that were reviewed was moderate (Chiesa & Serretti, 2011; Galante, Galante, Bekkers, & Gallacher, 2014); very little information is provided about treatment fidelity, training of instructors, and whether patients were screened for recurrent depression.

The issue of patient selection continues to be important, as more recently MBCT has been used in the context of treating acute phase depression, rather than simply in the prevention of relapse or reducing residual depressive symptoms. This is illustrated in the meta-analysis by Strauss, Cavanagh, Oliver, and Pettman (2014) that reviewed studies in which mindfulness-based interventions (MBI) were used to treat patients who met diagnostic criteria for a current anxiety of depressive episode. While the overall ES for MBIs was 0.59, findings were uneven, with effects demonstrated for depressive symptoms ES = 0.73 in RCTs with an inactive control, but not where there was an active control ES = 0.03. Of note, when looking at specific interventions within the MBIs, there was an ES of 0.39 for studies featuring MBCT. Until there is broader agreement within the field on common mechanisms of action and whether MBIs can treat a spectrum of disorders, it may be premature to combine symptom classes and distinct treatments into a single category for the purpose of analyses.

The meta-analysis most relevant to discussions of the "third wave" was conducted by Clarke, Mayo-Wilson, Kenny, and Pilling (2015) and directly addressed the question of how MBCT fares in contrast to first/second wave therapies. The comparators in this work were depression-specific psychotherapies that had well-established evidence bases and are considered to be first-line interventions. What is intriguing about the findings is that the 21% reduction in relapse risk reported for MBCT patients at 12 months is nearly identical to the risk ratios for patients receiving either CBT (25%) or Interpersonal Psychotherapy (22%). There were no 24-month data on MBCT, but the prevention effects of CBT continued over this interval whereas those of IPT did not.

In summary, with respect to the evidence base for MBCT, results indicate a reliable reduction of relapse risk, in the range of 35% to 50% across studies. The data are less clear, however, when MBCT is evaluated as a treatment for patients who are acutely depressed and continuous measures of

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depression severity are the primary dependent measure. Conclusions that MBCT performs on par with CBT (e.g., Manicavasgar, Parker, & Perich, 2011) or outperforms psychoeducation (e.g., Chiesa et al., 2015) are based almost entirely on samples with insufficient power to detect differences among two active treatments. In light of the compelling evidence for CBT or BA's efficacy in treating major depression, the question of how MBCT fares would be more persuasively addressed with noninferiority designs. Given the prevention outcomes of MBCT (and the comparability to maintenance antidepressant medication and more established treatments such as CBT and IPT), it will be important for future research to specify the dose-effect relationship between mindfulness practice in MBCT and clinical benefits.

BEHAVIORAL ACTIVATION

Perhaps more so than any of the other therapies identified in the literature most commonly as "third wave," BA status as a "third wave" therapy is ambiguous. BA has its roots in early theoretical and applied work conducted by behaviorists in the 1970s; however, renewed interest in this approach followed in the wake of a component analysis study that Jacobson and colleagues conducted in the 1990s (Dimidjian et al., 2011). The component analysis study was guided by Jacobson's conviction in a parsimonious explanation of the efficacy of cognitive therapy—perhaps the behavioral activation component within cognitive therapy could alone account for its success. Jacobson and colleagues compared the efficacy in the treatment of adult major depression among three conditions: the BA component, the BA component plus strategies designed to restructure automatic thoughts and the full cognitive therapy package, including BA and restructuring of both automatic thoughts and core schemas. Results indicated no statistically significant differences among the conditions on depression symptom severity measures or rates of improvement or recovery during acute treatment (Jacobson et al., 1996) or on rates of relapse, survival time to relapse or number of well weeks during a 2-year follow-up (Gortner, Gollan, Dobson, & Jacobson, 1998). These findings revitalized interest in purely behavioral approaches to treating depression and the viability of behavioral activation as a standalone treatment (Jacobson, Martell, & Dimidjian, 2001; Martell et al., 2001; Martell et al., 2010). The standalone BA treatment included an explicit emphasis on functional analysis and targeting the process versus the content of negative thinking, thus bridging to other "third wave" therapies. Moreover, the focus on action in BA is a central component of other "third wave" therapies. At the same time, core strategies of BA are clearly anchored in "first wave" therapies, thereby complicating simple classification—an issue to which we return in the final section.

Seven meta-analyses provide information about the efficacy of BA. Although many of these focus on a range of outcomes including acute phase change in depressive symptom severity, retention, and symptom severity or relapse over a follow-up period, we highlight here and in Table 4 meta-analyses of acute phase depressive symptom severity given that the other outcomes often are based on very few studies providing high-quality data.

Cuijpers, van Straten, and Warmerdam (2007) conducted the first meta-analysis focused specifically on BA for depression, which they defined as activity scheduling interventions. Reporting a large effect for BA in favor of control interventions based on RCTs conducted between 1977 and 2003, they concluded that BA was "an attractive treatment for depression, not only because it is relatively uncomplicated, time-efficient, and does not require complex skills from patients or therapist, but also because this meta-analysis found clear indications that it is effective" (Cuijpers et al., 2007, p. 318). That said, the authors also acknowledged that methodological rigor of studies and the quality of reporting was "not optimal" given shortcomings across trials in independent allocation and concealment, blinding, dropout, and use of intent-to-treat analyses.

The next meta-analysis that included BA, conducted by Cuijpers, van Straten, Andersson, and van Oppen (2008), used data from RCTs to focus broadly on the comparative efficacy of multiple treatments for depression. As summarized in Table 4, there was no indication of significant difference in depressive severity improvement during acute treatment among the majority of treatments, including BA, CT, psychodynamic psychotherapy, problem-solving therapy, or social skills training; there was some indication that brief interpersonal psychotherapy fared a bit better and nondirective supportive therapy fared a bit worse among patients with mild to moderate depression. This meta-analysis also examined many study characteristics in exploratory subgroup analyses and reported no evidence that the efficacy of BA compared to other treatments varied along several dimensions (e.g., nature of recruitment, depression entry criteria, and target population). In addition, data were summarized for dropout as an outcome and, from fewer studies, follow-up periods of up to 6 months, both of which also indicated little difference between BA and other interventions. Similar to the earlier

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Jacobson and colleagues' (1996) component analysis study, this meta-analysis highlighted the lack of significant differences between BA and CT, as well as other bona fide treatments for depression.

In 2011, Cuijpers and colleagues summarized the findings from this report with new data in an effort to identify efficacious treatments for depression and moderators of outcome (Cuijpers, Andersson, Donker, & van Straten, 2011). Although the 2011 paper addressed a range of questions (e.g., associations between format and provider of treatment and outcome, and between characteristics of the depressed patient and outcome), the outcomes specific to BA were essentially the same as those reported in the earlier meta-analysis (Cuijpers et al., 2008).

Ekers, Richards, and Gilbody (2008) conducted a meta-analysis of behavioral therapy for depression, defined as "scheduling of activities to reintroduce positive reinforcement and reduce avoidance. Such interventions manipulate the behavioural consequence of a trigger (environmental or cognitive) rather than directly interpret or restructure cognitions" (p. 612). Comparisons among the RCTs included TAU and waitlist controls, CBT/CT, brief psychodynamic or interpersonal psychotherapy, and supportive therapy; however, very few studies informed the latter contrasts. In this study, in contrast to the earlier Cuijpers et al. (2008) meta-analysis, the authors concluded that there was significant evidence of superiority of BA compared to control, supportive therapy, and brief psychodynamic psychotherapy. There was no evidence of superiority of BA with respect to CT.

Mazzucchelli, Kane, and Rees (2009) focused on RCTs of BA defined as those that included "strategies to prompt participants to engage with, or act on, the environment so as to increase positive reinforcement and undermine punishment" (p. 386). BA was reported to demonstrate a significant large effect on depressive symptom severity as compared to heterogeneous control conditions and a significant medium effect as compared to other psychotherapies for depression. Again, no significant difference and near zero effect size was found in the comparison between BA and CT/CBT. This meta-analysis was followed by another that examined not depression but well-being outcomes of BA as measured by a range of self-report indices of constructs such as positive affect, happiness, life satisfaction, etc. (Mazzucchelli, Kane, & Rees, 2010). Reporting that BA significantly outperformed heterogeneous control conditions (medium effect size) and was comparable to other interventions (nonsignificant, negligible difference), the authors concluded that BA is well suited to use as a "positive psychology" intervention focused on "the three components of a happy life: positive emotion, engagement, and meaning" (Mazzucchelli et al., 2010).

Finally, Ekers et al. (2014) conducted a meta-analysis of RCTs comparing BA to a heterogeneous set of control conditions or antidepressant medication, in which BA was defined as a "time limited psychotherapeutic intervention including key elements of self-monitoring and activity scheduling" (p. 2). Like Cuijpers et al. (2011), they also examined a range of potential moderator variables, including methodological quality of trials and patient and treatment specific variables. They reported a significant large effect in favor of BA as compared to control conditions and moderate effect in favor of BA as compared to antidepressant medication (ADM); however, this difference appears to have been driven by two older low-quality studies of tricyclic antidepressants, whereas more recent trials failed to find a difference between BA and ADM (Dimidjian et al., 2006). Ekers and colleagues (2014) reported no significant associations between effect size and variables such as delivery mode or therapist training level, which they interpreted as evidence for the dissemination potential of BA.

SUMMARY

There is little doubt based on the meta-analyses reviewed that there exists a strong and growing evidence base supporting the efficacy of individual therapies commonly identified as "third wave." Although there were no meta-analytic findings to review for FAP, the remainder of the treatments commonly identified as "third wave" (i.e., ACT, DBT, MBCT, and BA) each is supported by numerous efficacy studies, which overall attest to at least moderate to large effect sizes for between-group comparisons, using primarily WL or TAU conditions, or within group comparisons, although concerns have been raised about the use of such contrasts. The value of meta-analytic reviews is constrained by the methodological rigor of the available studies (and many meta-analyses of "third wave" therapies raised concerns regarding methodology of individual trials); however, it is clear that the existing evidence base supports the efficacy of the specified therapies in the treatment of problems and populations that are of high public health relevance, including anxiety, depression, borderline personality disorder and suicidal behaviors, and eating disorders, as reported in Tables 1–4.

Considering Metaphor: The Conceptual Status of "Third Wave" Therapies

We turn now to our final question regarding the conceptual status of the category of "third wave" itself. To do so, we propose that it is valuable to

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consider the term for what, essentially, it is—a metaphor. According to the OED, the term metaphor derives from the root meaning "to transfer" and means "a figure of speech in which a word or phrase is applied to an object or action to which it is not literally applicable." As a metaphor, "third wave" describes particular relations among therapies and across time; however, the history of metaphor in psychology suggests that its functions are rarely simply descriptive. Leary (1990) speaks of the "*directive* functions" of metaphor—orienting the focus of attention and the practical actions of psychologists (and the public)—and of the "*transformative*" nature of metaphor—altering the very ways in which we may experience phenomena. Moreover, Leary cautions against the unwitting *literalization* of metaphor in psychology. Lest we forget that metaphors are just that—figures of speech—and instead treat them as literal statements of fact, Leary (1990, p. 6) reminds us: "there is no sharp division between metaphorical and literal language. At the opposite ends of a single continuum . . . there is clear commerce between these poles, as metaphorical concepts become more common (i.e., literal) through use and as literal concepts are used in unexpected (i.e., metaphorical) ways." What may protect against the literalization of metaphor in which figures of speech are reified in ways that have power to direct or prescribe the conduct of psychology? Quoting Lakoff and Johnson (1981, p. 206), Leary emphasizes the necessity, for a field, "to be aware of its metaphors, to be concerned with what they hide, and to be open to alternative metaphors—even if they are inconsistent with the current favorites."

In this context, it may be instructive to consider that the "wave" metaphor is not the only one available for describing the history of cognitive and behavioral therapies. Lakoff, Espenson, and Schwartz (1991) provide a catalogue of metaphors in which they classify the "wave" metaphor as one used in regard to "event structures" (e.g., "the tide of history," "the undercurrents in society pulled them along," "a new wave of conservatism"). Other possibilities in this set of metaphors are potentially relevant to the relationship among cognitive and behavioral therapies over time. For example, alternatives to the "wave" metaphor include: "opportunities as paths" (e.g., x therapy "opened up new paths" for therapies y and z), "creating as birthing" (e.g., x therapy "gave birth to" y and z therapies), and "creating as cultivation" (e.g., x therapy is an "offshoot" of y therapy, x therapy is the "root of" y and z therapies). Hayes (2004) has used also the term "generation," suggesting a family structure linking the therapy approaches across time. The "family" metaphor perhaps best fits within a group of metaphors describing "mental events"—again, of which multiple are available; for example, beliefs can be conveyed as structures (e.g., therapies y and z were "built" on therapy x) in addition to families (e.g., generation).

Considering the full range of metaphors that could be used to describe cognitive and behavioral therapies may invite greater precision in identifying specific sets of therapies and the relationships among them over time. Doing so also may highlight the gaps in our scientific knowledge that are priorities for future research. Optimally, the use of metaphor exists in relationship to an evolving empirical base of evidence resulting from studies that seek to answer core questions, such as: To what extent does the set of therapies identified in the literature as "third wave" share common elements? To what extent are elements of the "third wave" unique and to what extent are they present in other approaches, including "first" and "second" wave therapies? To what extent does leveraging the clinical procedures and change processes identified with "third wave" therapies lead to better outcomes, at least for some problems or people, relative to other approaches? Answers to such questions would help to inform the thoughtful and intentional use of particular metaphors or other organizing frameworks.

Unfortunately, the scope of work addressing such questions is limited and the comparisons of "third," "second," and "first" wave therapies have provided few clear answers. The majority of the studies included in the meta-analytic reviews focus on comparisons between the "third wave" therapy and waitlist or TAU controls; moreover, when active comparators are used, substantial heterogeneity in the nature of those conditions complicates interpretation of the existing evidence base. For example, multiple "second wave" therapies may be categorized as one group despite the fact that not all forms of cognitive therapy, cognitive behavioral therapy, and behavioral therapy are identical, much less considering supportive psychotherapy, psychodynamic psychotherapy, and so forth. BA is the one treatment that has been the focus of multiple specific comparisons to "second wave" cognitive therapy, and meta-analytic findings generally do not provide any compelling indication that BA outperforms cognitive therapy. In the future, it is important to design rigorous RCTs with precisely defined active control conditions that test theory-specific mechanisms.

A focus on examining processes of change was evident in the early ACT literature (see Hayes et al.,

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2006); however, the empirical investigation of key propositions is challenging and complex. Several early meta-analyses have suggested that outcomes in ACT treatments are significantly related to theorized change processes, and at least one later meta-analysis showed that such processes changed more in ACT than in CBT (Hayes et al., 2006; Ruiz, 2012), although others have not (Bluett et al., 2014). Although dismantling studies of ACT have yet to be conducted, a meta-analysis of 66 ACT-relevant laboratory component studies found significant effect sizes on expected outcomes for each of five included core ACT processes (Levin, Hildebrandt, Lillis, & Hayes, 2012). This provides nascent support for the notion that the major ACT components each produce benefit, i.e., that there is no "excess baggage" in the model, though dismantling-type clinical intervention studies in specific clinical populations are now needed.

Similarly, in contrast to progress in elucidating MBCT's clinical outcomes, any understanding of the specific mechanisms by which these outcomes are achieved is in its early stages. For example, there is some convergence among three recent reviews regarding five constructs that bear a consistent association with MBCT outcomes: mindfulness, rumination, cognitive flexibility/decentering, cognitive reactivity, and self-compassion (Gu, Strauss, Bond, & Cavanagh, 2015; van der Velden et al., 2015). In line with the theoretical rationale for the development of MBCT, the most reliable change pattern predicting benefits from MBCT is bivariate in nature—increases in mindfulness and metacognitive awareness of emotions and decreases in rumination and worry. On the other hand, it is possible that treatments with very different rationales may operate via similar processes. For example, the work of Teasdale and colleagues suggests that metacognitive awareness of emotions is a core process of change across both "second" and "third wave" treatments (Teasdale et al., 2002; Teasdale, Segal, & Williams, 1995). Patients who utilized thought records in traditional cognitive therapy or practiced mindfulness meditation in MBCT both showed increases in their ability to step back and "decenter" from depressive thinking styles. Furthermore, skills in decentering were tied to greater depression relapse prophylaxis (Teasdale et al., 2002).

Studies of MBCT compared to active controls have yielded mixed findings. No specific benefit of MBCT was evident in a study of caregivers of dementia patients (Oken et al., 2010), whereas specific benefits were evident in studies with patients with refractory depression (Chiesa, Mandelli, & Serretti, 2012) and patients with tinnitus (Philippot, Nef, Clauw, de Romree, & Segal, 2012). Still other data suggest that the specific effects of MBCT, as compared to active control, may be moderated by individual vulnerability factors such as history of childhood trauma (Williams et al., 2014). With the role of mindfulness meditation featuring so centrally in MBCT, Crane et al. (2014) examined whether the frequency of home practice was associated with posttreatment outcome in recurrently depressed patients who were in remission. Individuals who completed a minimum of 30 minutes of formal meditation at least 3 days per week were nearly half as likely to relapse as those who engaged in formal practice fewer than 3 days per week. Of interest, there were no significant associations between the frequency of informal mindfulness practice (approximately 5 minutes) and outcome; however, this may be due to difficulties measuring frequency and duration of informal home practices.

A dismantling trial of DBT focused on the extent to which the skills training component is the critical element of DBT (Linehan et al., 2015). Women with BPD and a previous history of self-harming behavior ($N = 99$) were randomized to skills training plus case management (DBT-S), DBT individual therapy plus activities group (DBT-I), and standard DBT, which included skills training and individual therapy. Results indicated that while patients in all groups reported reductions in frequency of suicide attempts, suicide ideation and the use of crisis services, interventions that included skills training were associated with lower rates of nonsuicidal self-injury and treatment dropout. Overall, this work underscored the importance of the skills component of DBT; however, this component integrates mindfulness and acceptance skills with more traditional cognitive and behavioral change skills and thus does not inform the extent to which the "third wave" components of DBT are specific and causally active.

The complexity and expense of large dismantling trials and the lack of reliable and valid measurement strategies are rate-limiting factors for process- and mechanism-oriented research. Standardized behavioral measures of hypothesized mechanisms are needed, as most studies have relied upon self-report questionnaires, many of which have been critiqued (Davidson & Kaszniak, 2015; Wolgast, 2014). Greater methodological rigor in assessing constructs such as acceptance and mindfulness is needed, as are conceptually guided dismantling studies of multicomponent "third wave" therapies. These points were echoed in a comprehensive review of current mindfulness-based interventions and were postulated to be one of the barriers to the broader dissemination of these approaches (Dimidjian & Segal, 2015).

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Finally, in addition to these essential empirical questions, it is necessary to consider the strategic and rhetorical implications of particular metaphors or organizing frameworks. The "third wave" metaphor has had clear value in highlighting the contributions of the identified therapies. One potential problem, however, with the "third wave" metaphor is that it communicates a chronologically categorical structure and, perhaps, one in which the future "washes away" the past. This metaphor, thus, may serve to selectively highlight differences and minimize similarities of therapies across time. Today, it is possible that the similarities are more important than the differences among behavioral, cognitive, and cognitive and behavioral therapies. For example, although a commitment to "an empirical, principle-focused approach" was a defining characteristic of the "third wave" category, it also was one of the essential contributions of "first wave" behavior therapy (Hayes, 2004), and it clearly has been a guiding principle of "second wave" therapies given the scope of empirical research conducted on such treatments (Butler et al., 2006). This shared commitment to empiricism may be of crucial importance in light of the vast underutilization of any behavioral, cognitive, or cognitive behavioral therapies in the context of contemporary routine health care. Between 1987 and 1997, although the rate of treatment for depression increased nationally, the use of psychotherapy decreased (Olfson et al., 2002), despite strong evidence that psychotherapy is an effective treatment for depression. The enduring presence of pseudoscientific approaches to clinical care also highlights the limited penetration of empiricism in routine practice settings (Lilienfeld, 2011). The disturbing reality is that, according to some estimates, only 1 in 3 people who struggle with mental health problems will receive "at least minimally adequate treatment" (Wang et al., 2005). Underscoring this point, a recent study at a large public outpatient psychiatry clinic in Los Angeles (one that provided training and supervision in CBT) showed that only a very small percentage of patients with anxiety disorders received CBT in general and exposure in particular (Wolitzky-Taylor, Zimmermann, Arch, De Guzman, & Lagomasino, 2015). This context underscores the importance of a shared commitment to empiricism, which may point us toward metaphors and organizing frameworks that amplify an area of "common cause" among first, second, and third wave therapies, despite differences in principles, procedures, or process.

The reality of the barriers to accessing adequate, evidence-based mental health care also underscores the importance of conveying a place for both steadfastness and flexibility in our metaphors. The notion of a wave may convey a sense of ephemerality, as if the treatments within each wave have a particular "shelf life." In contrast, for a treatment to have a viable place in the future of mental health care, it must offer a resolute commitment to addressing the vast unmet need for care with a capacity for flexibility and innovation (Kazdin & Blase, 2011; Rotheram-Borus, Swendeman, & Chorpita, 2012). Technology and media-driven delivery formats have been a focus of recent innovation, and both web-based and smartphone delivery of "third wave" therapies have demonstrated feasibility and clinical promise (Dimidjian et al., 2014; O'Mahen et al., 2014; Rizvi, Dimeff, Skutch, Carroll, & Linehan, 2011). In addition, the use of trained paraprofessionals, self-help, or peer-support also has become a focus of recent work, using nurses and lay counselors to deliver care (Chowdhary et al., 2016; Ekers, Richards, McMillan, Bland, & Gilbody, 2011). To ensure continued relevance in future decades, it will be important to identify guiding metaphors for cognitive and behavioral therapies that allow for growth, expansion, and innovation.

Conclusion

In this review, we have examined common usage of the term "third wave" in the scientific literature, systematically reviewed published meta-analyses of identified "third wave" therapies, and considered the implications and options for the use of metaphor to describe the nature of and relationships among cognitive and behavioral therapies. In so doing, we have demonstrated that the "third wave" term has grown in its use over time, that it is commonly linked with specific treatments, and that, for the most part, each of these treatments has amassed a substantial and compelling evidence base. Does this imply that the "third wave" designation is an effective guide for the future? As we have considered, as a metaphor, the term "third wave" undoubtedly both reflects and shapes experience, and it is incumbent upon those concerned with cognitive and behavioral therapies, and the scientific basis of psychotherapy broadly, to reflect on the use of this metaphor, its implications, and possibilities for the future.

The use of metaphor has a long history in psychology, which attests to the fact that metaphors are not fixed and immutable but rather change often across time (Gentner & Grudin, 1985). In his discussion of the role of metaphor in psychology, Leary (1990) cites both William James, who spoke of the "fluxional" nature of metaphor, and Freud, who wrote of the need to revisit and revise our

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choice of metaphor and analogy: "In psychology, we can only describe things by the help of analogies. There is nothing peculiar in this; it is the case elsewhere as well. But we have constantly to keep changing these analogies, for none of them lasts us long enough" (Freud, 1926/1959, p. 195, quoted in Leary, p. 18). The words of this pre-"first wave" thinker are as relevant today as they were nearly 100 years ago. The specific treatments classified to date as "third wave" offer clear and significant clinical benefit and are a focus of increasing scientific interest. The "third wave" metaphor, linking some therapies as a set and separating them from others, invites ongoing reflection and revision. The way in which we describe the relationships, both among these therapies and to other therapies that precede or that may follow, is a context ripe for imaginative scientific inquiry.

Conflict of Interest Statement

Sona Dimidjian and Zindel V. Segal receive royalties from Guilford Press for work related to mindfulness-based cognitive therapy and are on the advisory board of Mindful Noggin, which is part of NogginLabs, a private company specializing in customized webbased learning. Sona Dimidjian receives royalties from Guilford Press for work related to behavioral activation. Other authors report that they have no real or potential conflicts to disclosure.

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Received: June 16, 2015
Accepted: July 5, 2016
Available online: xxxx

Please cite this article as: Sona Dimidjian, et al., Considering Meta-Analysis, Meaning, and Metaphor: A Systematic Review and Critical Examination of "Third Wave" Cognitive and Behavioral..., *Behavior Therapy* (2016), http://dx.doi.org/10.1016/j.beth.2016.07.002