
THE NEW GREAT PSYCHOTHERAPY DEBATE: SCIENTIFIC INTEGRATED PSYCHOTHERAPY VS. PLURALITY. WHY COGNITIVE-BEHAVIOR THERAPY IS THE GOLD STANDARD IN PSYCHOTHERAPY AND A PLATFORM FOR SCIENTIFIC INTEGRATED PSYCHOTHERAPY

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Abstract

In this metareview, we argue that in the era of the evidence-based health practice, cognitive-behavior therapy (CBT) is the *gold standard* in psychotherapy for several reasons: (1) it is the most researched form of psychotherapy; (2) overall, no psychotherapy has proven superior to CBT; on the contrary, if there are differences, typically they favor CBT; and (3) its theories and mechanisms of change are both the most investigated and supported in psychotherapy and the best aligned with mainstream general psychological theories (e.g., learning theories, information processing) and related fields (e.g., neurogenetics). However, there is room for improvement, both in terms of CBT's efficacy/effectiveness and in terms of its underlying theories/mechanisms of change. It is argued that a movement towards an Integrative and Multimodal CBT (IM-CBT) could consolidate the *gold standard* status of CBT and perhaps even contribute to its enhancement, based on higher standards of research-suport. Although some colleagues

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argue that the plurality in psychotherapy could be an option for development (i.e., by encouraging all psychotherapy approaches to follow the CBT model in relationship to the evidence-based movement), we argue for the alternative of having a scientific integrated psychotherapy. IM-CBT could serve as a platform for psychotherapy integration, thus moving the current fragmented field of psychotherapy to a scientific integrated psychotherapy (i.e., Integrative and Multimodal Psychotherapy).

Keywords: Integrative and Multimodal CBT (IM-CBT), gold standard, scientific integrated psychotherapy, plurality, metareview

1. Fundamentals

Mental disorders are highly prevalent, bringing high suffering and economic costs to patients, their families, and society. Among these disorders, depressive and anxiety disorders are most prevalent. About 75% percent of patients suffering from anxiety or depression disorders prefer psychotherapy over medical treatments (i.e., pharmacotherapy) (McHugh et al., 2013). Taking this into account, an outsider would assume that psychotherapy is well organized according to the best standards of the evidence-based paradigm in the field of healthcare. However, this is not the case. Indeed, the field of contemporary psychotherapy is vast and complex, as patients can choose from more than 500 psychological treatments, delivered in individual and/or group format (e.g., couple/family/groups), most of them fitting one of the three general psychotherapy systems (in historical order): (1) psychoanalytical-dynamic; (2) humanistic-existential-experiential; and (3) cognitive-behavioral (CBT). One could also argue that systemic psychotherapies represent the fourth independent system (although all general psychotherapy systems use systemic components in their couple/family/group versions) and interpersonal psychotherapy/IPT represents a popular outlier that does not fit into a particular system, as it was designed based not on a specific theory, but mostly on a general biopsychosocial model (however, it has dynamic, humanistic, and behavioral influences). Unfortunately, many psychological treatments disseminated today have never been subjected to rigorous scientific test, and therefore, there is no guarantee that a psychotherapy client will receive an evidence-based psychological treatment (see Lilienfeld et al., 2013; Lynn & Lilienfeld, 2017).

Based of Thomas Kuhn (1962)'s model of philosophy of science, DiGiuseppe et al. (2016) have argued that the psychotherapy field transformed according to the following development phases: (1) a preparadigmatic phase (e.g., schools of psychotherapy proliferated, often based on case studies, rather than based on rigorous clinical studies); (2) a paradigmatic phase (e.g., the first science-based paradigm was arguably behavior therapy – first wave CBT); (3) crisis (e.g., behavior therapy was challenged by cognitive theories); (4) new paradigms (e.g., cognitive therapies emerged as competitors of behavior therapy – second wave

CBT); (5) paradigm clashes (e.g., behavior and cognitive paradigms competed for academic/practice supremacy); and (6) normal science (e.g., the integration of cognitive and behavioral paradigms yielded to CBT, which is being again completed by emerging so-called neo-behavioral/third-wave CBT approaches). Some researchers (Hayes & Hofmann, 2017) believe that the field is again at the beginning of a shift within the existing paradigm, namely moving away from a syndrome-focused approach and toward process-based care.

In the preparadigmatic period – the period of the *grand psychotherapy systems* (e.g., psychoanalysis, humanistic) - psychotherapy was dominated by schools of psychotherapy, led by charismatic/highly influential founders (e.g., Freud, Rogers). However, although the school leaders and their followers vehemently promoted a school's practice and its hypothesized underlying theory as useful and scientific, most of the evidence invoked was usually based on inferences derived from successful cases and/or small scale research (targeting theory and/or practice), rather than rigorous experimental/randomized clinical research targeting both theory and practice. The first systematic research in psychotherapy was probably related to behavior therapy, mostly in experimental settings and/or clinical single case experiments. Arguably, the first randomized clinical trials testing specifically well-defined psychotherapies – the *gold standard* for evidence-based treatments - were brought into the field when CBT was contrasted with medication for major depressive patients (Rush et al., 1977). Before that, psychotherapy was used only limitedly in clinical trials, in combination with medication, as a maintenance intervention after pharmacotherapy and/or as a control condition (e.g., often non-specific high or low contact interventions). After that, large sets of CBT studies investigated both the theory and the practice, independently or in the same design (e.g., theory of change analysis). Following the success of the CBT model, some of the classical psychotherapy systems (e.g., humanistic, dynamic) – including Interpersonal Psychotherapy/IPT - started to conduct rigorous clinical studies that were theory focused (e.g., by research on etiopatogenesis theories) and/or practice oriented (e.g., by randomized clinical trials testing efficacy/effectiveness).

Today, CBT is well-integrated into the more general evidence-based health practices, considered the most researched form of psychotherapy, and therefore, is the *gold standard* of psychotherapy. However, despite the vast research support for CBT, some question the idea of using evidence-based paradigm from the health field in the psychotherapy field (see for analysis Lilienfeld et al., 2013), while others (e.g., Leichsenring & Steinert, 2017) question the claim that CBT is the *gold standard* of psychotherapy. The first problem was exhaustively discussed by Lilienfeld et al. (2013). The second problem – the *gold standard* status - is more important for the scope of this article, as it can have important academic and practical implications. Therefore, its clarification is fundamental both for the academic field and for patients needing psychotherapy.

So, is CBT the current *gold standard* of psychotherapy? If by the *gold standard* we understand the best treatment we can have in the field, no, CBT is not the *gold standard* and CBT, as a progressive research program, would not even pretend such a status. However, if we defined *gold standard* as the best treatment we currently have in the field, then yes, CBT is the *gold standard*.

2. The status of the CBT practice

There is a distinction between general CBT and various strains of CBT-based treatments (Barlow, 2004; Barlow et al., 2011). Indeed, CBT is a general system of psychotherapy – composed of various principles, techniques, and clinical strategies –, from which more or less specific CBT psychological treatments (e.g., behavior therapy/behavioral activation, cognitive therapy/CT, rational emotive behavior therapy/REBT, schema focused therapy/SFT, dialectic behavior therapy/DBT, acceptance and commitment therapy/ACT, unified protocol for emotional disorders, etc.) have been derived for different clinical conditions (be them defined as specific clinical disorders and/or trans-diagnostic). In this regard, CBT is multimodal, as it has a complex armamentarium of techniques and strategies, including all of its so-called three waves of development (i.e., behavioral, cognitive, and neo-behavior-acceptance/mindfulness-based). It allows us to provide CBT psychological treatments in a more personalized paradigm, thus better fitting the clinical conditions, the characteristics, and values of the clients.

The control conditions for testing CBT psychological treatments vary, including no intervention, waitlist, placebo, treatment as usual/TAU, and/or other active (e.g., other psychotherapies) or already validated treatments (i.e., pharmacotherapy).

In Tables 1 and 2 we present a brief review of the most up-to-date quantitative meta-analyses (within the last 3 years) assessing the clinical efficacy/effectiveness of some of the most active psychotherapies on prevalent mental health conditions (i.e., depression and anxiety as primary symptoms) at post-treatment. In doing so, we can get a glimpse of the current evidence-based status of various psychotherapies (i.e., of various psychological treatments) as compared to CBT (please note that in these reviews, typically the authors reduced CBT to its behavioral and cognitive phases, leaving out the neo-behavioral developmental phase).

Table 1. A review of the key meta-analysis investigating the role of various psychotherapies on depression (as primary outcome at posttreatment).

Clinical condition Psychotherapy	Depression
Cognitive-behavior therapy (CB) Note: CBT is an umbrella including behavioral, (e.g., behavioral activation), cognitive (e.g., Beck's cognitive therapy, Ellis' REBT), and/or neobehavioral (e.g., acceptance/mindfulness) approaches	CBT vs. Control (based on Cuijpers et al., 2016) - MDD: $g=0.75s$ ($k=63$); HQ: $g=0.73s$ ($k=11$) - Comparator: Weak (no treatment: 0; wait list: 28); Strong (placebo pill/psychological: 5/pill; TAU: 30)
Interpersonal psychotherapy (IP) Note: Cuijpers et al., 2016a's metaanalysis defined HQ for IP less stringent (3 or 4 criteria met – low risk of bias) than Cuijpers et al., 2016's metaanalysis for CBT (all 4 criteria met – high quality) and therefore we note it HQ-. If HQ- in IP were defined as in CBT, IP would have 17% ($k=16$) studies of HQ of the total studies included in the Cuijpers et al., 2016a's metaanalysis (depression/anxiety/eating and other mental disorder).	IP vs. Control (based on Cuijpers et al., 2016a) - Depression: $g=0.60s$ ($k=31$); HQ-: $g=0.79s$ ($k=8$) - Comparator: Weak (no treatment: 1; wait list: 4); Strong (placebo pill/psychological: 4/pill and 6/psychological; TAU: 15) IP vs. Other psychotherapies (based on Cuijpers et al., 2016a) - Depression: $g=0.06ns$ ($k=14$); HQ-: $g=0.10ns$ ($k=6$) - IPT vs. CBT: $g=0.00ns$ ($k=8$) - IPT vs. Other psychotherapies: $g=0.17ns$ ($k=6$)
Psychodynamic psychotherapy (PP) Note: Steinert et al., 2017 run an equivalence studies for PP with the existing <i>gold standard</i> (i.e., 22 studies for CBT and 2 studies for pharmacotherapy) and found the equivalence to be supported for the interval ± 0.25. However, equivalence is not transitive. If B (PP) is equivalent to the <i>gold standard</i> A (CBT), it does not mean that B could be used as a <i>gold standard</i> for a new treatment C, as the equivalence between B and C does not imply the equivalence between A and C. This transitivity is even problematic here because, in the equivalence limit, significant differences favoring <i>gold standard</i> over PP were found for (1) target symptoms (posttreatment: $g=-0.158s$; $k=21$) and (2) general psychiatric symptoms ($g=-0.116s$; $k=15$).	PP vs. Control (based on Driessen et al., 2015) - Depression: $d=0.61s$ ($k=10$) - Quality of studies does not moderate - Comparator: Weak (no treatment: 0; wait list: 4); Strong (placebo pill/psychological: 1/pill and 1/psychological; TAU: 4) PP vs. Other psychotherapies (based on Driessen et al., 2015) - Depression: $d=-0.25s$ ($k=15$) - PP vs. CBT (group): $g=-.12s$ ($k=2$) - PP vs. Other psychotherapies (individual; including CBT): $g=-0.14ns$ ($k=13$) - Quality of studies does not moderate <u>Note:</u> Of the 54 studies included by Driessen et al., 2015, 33 studies (61.1%) were randomized, 13 studies (24.1%) had blind outcome assessors, 29 studies (53.7%) used intention-to-treat analyses

Notes: MDD – major depressive disorder; $s - p < 0.05$; $ns - p > 0.05$; $g/d - g$ and d are roughly similar, measuring the effects size: marginal - < 0.2 ; small – between 0.2 and 0.5; medium – between 0.5 and 0.8; large – > 0.8 ; k – number of comparisons; HQ – high quality studies fitting four criteria of the risk of bias developed by the Cochrane Collaboration (see Cuijpers et al., 2016): adequate generation of allocation sequence; concealment of allocation to conditions; blinding of assessors; and dealing with incomplete outcome data – seen positively when intention-to-treat analyses were used (HQ- fits either 3 or 4).

Table 2. A review of the key meta-analysis investigating the role of various psychotherapies on anxiety (as primary outcome at posttreatment).

Clinical condition Psychotherapy	Anxiety
Cognitive-behavior therapy (CB) Note: CBT is an umbrella including behavioral, (e.g., behavioral activation), cognitive (e.g., Beck's cognitive therapy, Ellis' REBT), and/or neobehavioral (e.g., acceptance/mindfulness) approaches	CBT vs. Control (based on Cuijpers et al., 2016) Total Anxiety: $g=0.83s$ ($k=121$); $HQ: g=0.73s$ ($k=21$) - GAD: $g=0.80s$ ($k=31$); $HQ: g=0.82s$ ($k=9$) - Comparator: Weak (no treatment: 0; wait list: 24); Strong (placebo pill/psychological: 3/pill; TAU: 4) - PAD: $g=0.81s$ ($k=42$); $HQ: g=0.61s$ (4) - Comparator: Weak (no treatment: 0; wait list: 33); Strong (placebo pill/psychological: 5/pill; TAU: 4) - SAD: $g=0.88s$ ($k=48$); $HQ: g=0.76s$ ($k=8$) - Comparator: Weak (no treatment: 0; wait list: 40); Strong (placebo pill/psychological: 5/pill; TAU: 3)
Interpersonal psychotherapy (IPT) Note: Cuijpers et al., 2016a's metaanalysis defined HQ for IP less stringent (3 or 4 criteria met – low risk of bias) than Cuijpers et al., 2016's metaanalysis for CBT (all 4 criteria met – high quality) and therefore we note it HQ-. If HQ- in IP were defined as in CBT, IP would have 17% ($k=16$) studies of HQ of the total studies included in the Cuijpers et al., 2016a's metaanalysis (depression/anxiety/eating and other mental disorder).	IPT vs. Control (based on Cuijpers et al., 2016a) - Anxiety: $g=0.89s$ ($k=3$); $HQ-$: None - Comparator: Weak (wait list: 2); Strong (placebo: pill/psychological: 1/psychological) IPT vs. Other psychotherapies (based on Cuijpers et al., 2016a) - Anxiety: $g=-0.16ns$ ($k=6$); $HQ-$: $g=-0.33s$ ($k=3$ – IPT vs. CBT) - IPT vs. CBT: $g=-0.24ns$ ($k=4$) - IPT vs. Other psychotherapies: $g=-0.08ns$ ($k=2$)
Psychodynamic psychotherapy (PP) Note: Steinert et al., 2017 ran an equivalence studies for PP with the existing <i>gold standard</i> (i.e., 22 studies for CBT and 2 studies for pharmacotherapy) and found the equivalence to be supported for the interval ± 0.25. However, equivalence is not transitive. If B (PP) is equivalent to the <i>gold standard</i> A (CBT), it does not mean that B could be used as a <i>gold standard</i> for a new treatment C, as the equivalence between B and C does not imply the equivalence between A and C. This transitivity is even problematic here because, in the equivalence limit, significant differences favoring <i>gold standard</i> over PP were found for (1) target symptoms (posttreatment: $g=-0.158s$; $k=21$) and (2) general psychiatric symptoms ($g=-0.116s$; $k=15$).	PP vs. Control (based on Keefe et al., 2014) - Anxiety: $g=0.64s$ ($k=5$); $HQ: g=0.65s$ ($k=1$) - Quality of studies does not moderate - Comparator: Weak (no treatment: 0; wait list: 2); Strong (placebo pill/psychological: 3/psychological) PP vs. Other active conditions (based on Keefe et al., 2014) - Anxiety: $g=0.024ns$ ($k=17$) - PP vs. CBT: $g=0.05ns$ ($k=13$) - PP vs. Other psychotherapies: $g=0.19ns$ ($k=3$) - PP vs. Pharmacotherapy: $g=-0.09ns$ ($k=1$) - Quality of studies does not moderate <u>Note:</u> Of the 13 studies included by Keefe et al., 2014, only 3 fit an overall quality of 6 or 7 and only one of 7, rated on a scale of 1 (exceptionally poor) to 4 (average) to 7 (exceptionally good).

Notes: GAD – generalized anxiety disorder; PAD – panic attack disorder; SAD – social anxiety disorder; s – $p < 0.05$; ns – $p > 0.05$; g/d – g and d are roughly similar, measuring the effects size: marginal – < 0.2 ; small – between 0.2 and 0.5; medium – between 0.5 and 0.8; large – > 0.8 ; k – number of comparisons; HQ – high quality studies fitting all four criteria of the risk of bias developed by the Cochrane Collaboration: adequate generation of allocation sequence; concealment of allocation to conditions; blinding of assessors; and dealing with incomplete outcome data – seen positively when intention-to-treat analyses were used (HQ- fits either 3 or 4).

First, although there are many CBT studies based on weak comparisons (e.g., no intervention, waitlist), there are enough studies based on stronger comparisons (e.g., pill or psychological placebo, TAU, other psychotherapies, pharmacotherapy) to fit the highest standards of research supported treatments (Chambless & Hollon, 1998). Indeed, Cuijpers et al. (2016) found that about 54% of total trials for depression (about 34 trials) and about 20% of total trials for anxiety (about 25) fit the criteria for strong comparison (i.e., pill placebo or TAU). Most psychotherapies (except IPT for depression) are not even close to these numbers (see Tables 1 and 2).

Second, although there are many CBT studies of low quality, again, there are enough high quality studies to support the evidence-based status of many CBT psychological treatments; these high quality studies also control the investigator allegiance effect. For example, in case of anxiety and depression, Cuijpers et al. (2016) found that about 17% of the total trials (about 25) were of high quality (the percentage of interpersonal psychotherapy is roughly similar for depression – 19%). Moreover, the relationship between the quality of studies and the effect sizes was not strong. Indeed, the effect size moved – but not dramatically – from high (all studies) to moderate (only high quality studies) in case of panic disorder (Hedges' $g=0.81$ vs. $g=0.61$) and social anxiety disorder ($g=0.88$ vs. $g=0.76$) and remain about the same for major depressive disorder and generalized anxiety disorder (Cuijpers et al., 2016). Again, most psychotherapies (except IPT for depression) are not even close to these numbers (see Tables 1 and 2).

Finally, when compared to TAU or various active conditions (e.g., other active psychotherapies, pharmacotherapy) CBT often shows a small/moderate (for TAU) or small/no effect (for active conditions) (see for example Cuijpers et al., 2016 for CBT vs. TAU in anxiety and depression). However, in these conditions, even a small effect size might be very important clinically, depending on the cost and benefit analyses as well as if it is cumulative or not (e.g., in time and/or population) (see also Cuijpers et al., 2014). If CBT psychological treatment is similar in costs with other psychological treatments, then a small effect size becomes clinically relevant. A small effect size would be problematic if the control condition consisted of no intervention/wait list/placebo. The issue of small effect size is well discussed in psychotherapy (see Cuijpers et al., 2014), as well as in research on various large scale medical treatments (e.g., the use of aspirin – see for more analyses Leucht et al., 2012).

CBT was the first psychotherapy tested according to the most stringent criteria (e.g., active comparator in randomized trials) of the evidence-based framework used in the health field (e.g., similar for those used in case of pharmacotherapy). Therefore, it was the first form of psychotherapy that was included in clinical guidelines based of its empirical support (in case of depression alongside with interpersonal psychotherapy). Consequently, many new and/or later tested psychotherapies started to use CBT as the reference treatment, often arguing for their efficacy/effectiveness when finding no difference from CBT. However, no difference from CBT can be invoked as support for a kind of clinical similarity only in equivalence or non-inferiority designs, not in superiority designs (and most of such comparisons are superiority designs). Moreover, speaking statistically, if B is equivalent to A and C is equivalent to B, it is not guaranteed that C will be also equivalent to A. Thus, if therapy A is the reference treatment and one proves that psychotherapy B is equivalent to A, it does allow psychotherapy B to become a reference treatment for the test of a new psychotherapy C. For example, Steinert et al. (2017) conducted a recent equivalence meta-analysis for PP with the existing *gold standard* (i.e., 22 studies for CBT and 2 studies for pharmacotherapy) and found the equivalence to be supported for the interval - 0.25 to + 0.25. However, equivalence is not transitive. If B (PP) is equivalent to the *gold standard* A (CBT), it does not mean that B could be used as a *gold standard* for a new treatment C, as the equivalence between B and C does not necessary imply the equivalence between A and C. This transitivity is even problematic here because, in the equivalence limit, significant differences favoring *gold standard* over PP were found for (1) target symptoms (posttreatment: $g=-0.158$; $k=21$) and (2) general psychiatric symptoms ($g=-0.116$; $k=15$). Thus for the reason mentioned above, even if the equivalence of PP to CBT was supported, it does not mean that PP gains the same reference status as CBT, instead, it should also independently pass the same tests (e.g., independent randomized trials using placebo and/or other active comparators) as the *gold standard* to obtain the same status.

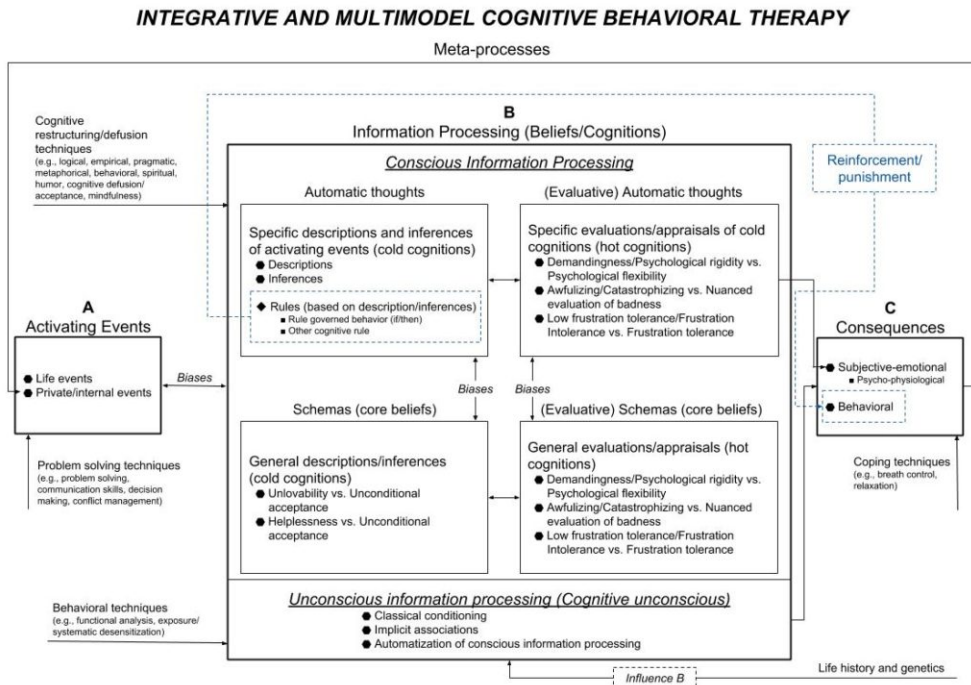
In summary, based on clinical trial research (see also Tables 1 and 2), CBT is the most researched psychological treatments, and therefore, the best represented in the international guidelines for psychosocial treatment and in some cases as efficacious or even superior to pharmacotherapy (e.g., CBT, not pharmacotherapy, is the first line of treatments for various anxiety disorder). Indeed, at this stage no other psychotherapy proved superior to CBT, as reflected in the National Institute for Health and Care Excellence's guidelines (<http://www.nice.org.uk>) or by American Psychological Association (<https://www.div12.org/psychological-treatments/>). On the contrary, if there are differences, typically they tend to favor CBT (see for details Hofmann et al., 2012). Thus, CBT is the *gold standard* based on its rigorous empirical basis, and not due to political reasons, as some colleagues (Leichsenring & Steinert, 2017) seem to suggest. However, we must add that although CBT is efficacious/effective, there is still room for improvement, given that some patients do not respond to CBT and/or shortly relapse. The fact that CBT is an evolving psychotherapy based

on research makes it a progressive research program; therefore, we predict that improvements in psychotherapy will come from the CBT field.

3. The status of CBT theory

Simply put, according to the CBT theory (see Figure 1), information processing (B) – be it conscious/explicit and/or unconscious/implicit – mediates the impact of various activating events (A) on our (C) responses (e.g., emotional/subjective, behavioral, psychophysiological). Once generated, our responses (C) could become a new A, thus generating by metacognitions various metaresponses. Therefore, our responses (C) are postcognitive, if we define cognitions as in cognitive sciences, by including both conscious and unconscious cognitions. Moreover, even if conscious cognitions do not generate all our responses (C), they still can impact our responses generated by unconscious information processing. Thus, CBT theory is based on information processing/cognitive paradigms, which is the mainstream of psychological sciences (Hofmann, Asmundson, & Beck, 2013). Indeed, there are hundreds of studies showing the causal role of cognitions –explicit and/or implicit – in human emotions and behaviors, both functional and dysfunctional. However, this does mean that the cognitive paradigm cannot be improved or even replaced by new paradigms in future. But, at this time there is no other theory in psychology that can match the large impact and research support of the cognitive paradigm.

Figure 1. The general model of Integrative and Multimodal CBT/IM-CBT (based on David et al., 2010).



CBT treatments postulate that various types of cognitions (e.g., automatic thoughts, irrational beliefs) and cognitive processes (e.g., cognitive biases, cognitive defusion) play a mediating role between activating events and consequences, which often confuses the readers, patients, and clinicians. Moreover, various CBT psychological treatments may emphasize, more or less, different clinical strategies: (1) focusing on problems solving techniques (e.g., problem solving, decision making) and/or (2) focusing on cognitive restructuring techniques (e.g., using cognitive and/or behavioral methods) and/or (3) focusing on coping skills (e.g., breath control, relaxation).

The above proposed IM-CBT helps us understand and integrate all these perspectives in a coherent general model of CBT while aligning it with general psychological theories (e.g., learning, development, cognitive, and cross-cultural theories) and related fields (e.g., development neurogenetics - see for example Podina et al., 2015). For example, Beck's cognitive therapy/CT discusses automatic thoughts (including specific descriptions/inferences/beliefs (evaluations/appraisal) and schemas (including according to the above model general descriptions/inferences). Ellis' REBT is specifically focused on the automatic thoughts in the form of specific rational and irrational beliefs and schemas. Young's schema focused therapy focuses on schemas including descriptions/inferences/beliefs. While CT and REBT focus on changing the cognitive content (i.e., the cognitive restructuring of dysfunctional/irrational descriptions/inferences/beliefs into more functional/rational descriptions/inferences/beliefs), Acceptance and Commitment Therapy/ACT focuses on changing the relationship to cognitions (e.g., by cognitive diffusion/ mindfulness/acceptance of dysfunctional/irrational descriptions/inferences/belief). Moreover, the theoretical platform of IM-CBT reinforces its multimodal component, as it can integrate in a coherent and complex cognitive conceptualization not only various CBT psychological treatments, but also psychological treatments derived from other psychotherapeutic traditions (e.g., using dream analysis as a cognitive restructuring procedure to enhance and change autobiographical memory). Thus, it gradually moves the fragmented field of psychotherapy towards a coherent scientific model of psychotherapy.

Some of these cognitions/processes are better supported than others and the research continues to investigate the best specific cognitive theories and models (see for example Visla et al., 2016). In this regard CBT is integrative, as various specific cognitive models can be integrated in a larger and coherent information processing framework of IM-CBT (Beck & Haigh, 2014; see for details David et al., 2010).

Overall, at this time there are no other psychological treatments related to other psychotherapy systems with more research support to validate their

underlying constructs. In contrast, some psychological treatments – especially those derived from the classical psychoanalysis – are unsupported or have questionable support (see: <https://www.div12.org/psychological-treatments/treatments/psychoanalytic-treatment-for-panic-disorder/>). The fact that CBT theories are (1) integrated in the larger information processing paradigm, where the causal role of explicit or implicit cognitions in generating emotions and behaviors is already well-established, (2) continuously evolving based on both cumulative and critical research on themselves, and (3) integrated into a larger picture of science (e.g., psychology, neurogenetics) makes CBT a progressive research program.

4. CBT theory and CBT practice

Before the era of the evidence-based framework, the mental health care field was in the era of etiopathogenetic theories (see also David, 2018). Indeed, clinical practice was often derived from etiopathogenetic theories. In this logic, if A generates B, then it was assumed that in order to change B, one just needs to change A. Put in CBT terms, if irrational beliefs activated by events (A) generate dysfunctional feelings/behaviors (B), then the CBT practice should be focused on changing irrational beliefs. However, from a logical point of view this is a mistake (i.e., denying the antecedent): not-A does not necessary imply not-B (and B does not necessarily implies A – affirming the consequent). Only modus tollens (A is true, therefore B must be true) and modus ponens (B is not true, therefore, A cannot be true) are valid arguments. That is why the clinical utility of non-A should be tested in clinical trials, thus exploring the probability that non-A generates non-B (David, 2018).

More recently, David and Montgomery (2011) argued that an evidence-based psychological treatment should have both the protocol and its underlying theory validated (see Table 3). The underlying theory could be related to the etiopathogenetic mechanisms of the clinical condition (and thus the treatment is an etiopathogenetic one) or other mechanisms (and thus the treatment is a symptomatic one). More than 15 major clinical conditions have been already evaluated by this framework, in David, Lynn, and Montgomery (eds. 2018)'s book (Evidence based psychotherapy. The state of the science and practice: Wiley-Blackwell).

Table 3. A new evaluative framework of psychotherapy
(reproduced with permission, after David and Montgomery, 2011).

Therapeutic Package	Theory		
	Well Supported ^a	Equivocal: No, Preliminary, or Mixed Data ^b	Strong Contradictory Evidence ^c
Well Supported^d	Category I	Category II	Category V
Equivocal: No, Preliminary, or Mixed Data^b	Category III	Category IV	Category VII
Strong Contradictory Evidence^c	Category VI	Category VIII	Category IX

- ^a Well-supported theories are defined as those with evidence based on (1) experimental studies (and sometimes additional/adjunctive correlational studies) and/or (2) component analyses, patient–treatment interactions, and/or mediation/moderation analyses in complex clinical trials (CCTs). Thus, the theory can be tested independent of its therapeutic package (e.g., in experimental studies and sometimes their additional/adjunctive correlational studies) and/or during a CCT. “Well supported” within this framework means that a theory has been empirically supported in at least two rigorous studies, by two different investigators or investigating teams.
- ^b Equivocal evidence for therapeutic package and/or theory means no data (data not yet collected), preliminary data (there is collected data, be it supporting or contradictory, but it does not fit the minimum standards), or mixed data (there is both supporting and contradictory evidence).
- ^c Strong contradictory evidence for therapeutic package and/or theory means that it has been empirically invalidated in at least two rigorous studies, by two different investigators or investigating teams.
- ^d Well-supported therapeutic packages are defined as those with randomized clinical trial (or equivalent) evidence of their efficacy (absolute, relative, and/or specific) and/or effectiveness. “Well supported” within this framework means that a package has been empirically supported in at least two rigorous studies, by two different investigators or investigating teams.
- The darker backgrounds (Categories V–IX) signify pseudoscientifically oriented psychotherapies (POPs); the core of the POPs is Category IX. The lighter backgrounds (Categories I–IV) signify scientifically oriented psychotherapies (SOPs); the core of the SOPs is Category I. Depending on the progress of research, a psychotherapy could move from one category to another.

CBT explicitly moved in this direction, testing its theory not only in clinical research, but also in various clinical trials. For example, a recent meta-analysis of depression showed that CBT changes the cognitions involved in depressed mood and that the changes in cognitions were associated with the changes in the depressed mood (Cristea et al., 2015). Similar changes in cognitions were found by Cristea et al. (2015) in other psychotherapies - although CBT was slightly more efficient for core beliefs -, thus bringing the cognitive mediation idea of Aaron T. Beck (see Beck and Haight, 2014) into discussion. Indeed, as one of the CBT founders, Aaron T. Beck, posited if any psychotherapy has a clinical effect, it must be realized by changing cognitions (be it intentional or incidental). Of course, one could argue that the change in cognitions is an effect of reducing symptomatology, which is however a less strong argument if one takes into account the dozens of experiments showing the causal role of various cognitions targeted in CBT in generating dysfunctional feelings and behaviors (see also Lorenzo-Luaces et al., 2015 supporting specifically the causal role of cognitive change in depression).

The answer might depend also on the type of investigated cognitions (e.g., automatic thoughts might be more sensitive to the change in symptomatology than core beliefs). Indeed, Szentagotai et al. (2008) found that while both CBT (in the form of CT and REBT) and pharmacotherapy (i.e., fluoxetine) reduced self-reported cognitions (e.g., automatic thoughts) in major depressive disorder patients, only CBT changed the core implicit cognitions (i.e., measured by ATSS) that then partially predicted the relapse. Moreover, the core beliefs investigated in Cristea et al. (2015) have been previously shown to be sometimes less dependent on symptomatology (e.g., there is a high level of specific dysfunctional attitudes in former depressed patients – dependency scale, Power et al., 1995). However, future research should further explore the stable causal direction, also taking into account a potential bidirectional relationship.

In summary, at this moment there is no psychotherapy in which the relationship between its practice and the underlying theory is better investigated and/or supported by research. On the contrary, in various clinical guidelines there are discrepancies between the efficacy/effectiveness of the psychological treatments and their underlying theory. For example, as mentioned above, while the efficacy of psychoanalytical psychological treatments for panic is probable, the underlying theory is labeled controversial (see at <https://www.div12.org/psychological-treatments/treatments/psychoanalytic-treatment-for-panic-disorder/>). Interpersonal psychotherapy – which has a good support for its practice, for some clinical conditions (e.g., depression) even comparable to CBT - is still in its infancy regarding the theory of change (see Lipsitz & Markowitz, 2013). Moreover, some psychotherapies remained in the era of the etiopathogenetic theories and, worse, some of those theories are not even evidence-based (see for an analysis Lilienfeld et al., 2013).

5. Discussion and Conclusions

CBT is a science-oriented psychotherapy and therefore it is not static, but a progressive research program, constantly testing and developing its theory and practice. Although, there was a tendency to follow the psychotherapy tradition and establish various segregated CBT schools (e.g., Beck's cognitive therapy, Ellis' REBT, etc.), in the end, CBT seems to have chosen the science tradition as it is gradually moving from schools to an Integrative and Multimodal CBT/IM-CBT, which can generate powerful CBT-based psychological treatments for specific clinical conditions. Therefore, comparing CBT with behavior therapy/behavioral activation, REBT, SFT, DBT, ACT is meaningless and less scholarly, as CBT is an umbrella category for these CBT-based psychological treatments, not a specific psychological treatment. However, a comparison of specific CBT psychological treatments among themselves (e.g., BA vs CT, CT vs. CBT, CT vs. ACT, etc.) is important both theoretically (to develop the integrative theory of CBT) and practically (to better understand the multimodal practice of CBT).

Of course, this movement to Integrative and Multimodal CBT/IM-BT raises important issues. For example, if three out of four CBT-based psychological treatments are validated for major depressive disorder, can we consider CBT to be an evidence-based system for major depressive disorder? We suggest designing clear criteria for granting the label of evidence-based treatments to the more general systems from which specific psychological treatments are derived. This aspect can have important implications for training and psychotherapy dissemination. Moreover, IM-CBT could later even serve as a platform for psychotherapy integration, thus moving the current fragmented field of psychotherapy to a scientific psychotherapy/an evidence-based psychotherapy (i.e., Integrative and Multimodal Psychotherapy). We should pay more attention to this potentially important movement, forcing ourselves - for the sake of the science and clients - to think beyond personal biases/preferences, in an evidence-based context.

Other colleagues believe that it is better to invest time in getting various traditional schools empirically validated (i.e., evidence-based/research-supported) rather than having an integrated scientific psychotherapy. Their rationale is that the patients and psychotherapists could choose depending on the clinical conditions, patients' and psychotherapists' characteristics. Basically, they support a plurality approach, rather than a scientific integrated psychotherapy. In our view, such a choice is possible, only if we define evidence-based in terms of the efficacy/effectiveness of psychological treatments. However, such an approach is limited and dangerous, as it allows various pseudoscientific (e.g., astrology/horoscope) and/or non-scientific (e.g., voodoo) approaches to get into the healthcare system. Indeed, in clinical trials such approaches could overcome various weaker control conditions (e.g., no intervention, wait list, less active placebo (e.g., pill placebo). Therefore, if one extends the definition of evidence-based to also include the underlying theories of researched-supported psychological treatments (see the model proposed by David & Montgomery, 2011; Table 3), then in the end we avoid such contamination and different psychological treatments will be integrated theoretically, thus moving the field to a science of psychotherapy.

In summary, it is true that a large proportion of CBT clinical trial-based research is of low quality and/or has weak comparisons (e.g., wait list). However, there is an enough proportion of high quality and strong comparisons (e.g., placebo/active comparators) studies to assure the best representation of CBT in clinical guidelines. Whereas, for other psychotherapies, the proportion of high quality and strong comparison studies is very low, and for some close to inexistent. CBT theories are the best investigated and supported theories in psychotherapy and the best integrated with general psychological theories (e.g., learning theories, information processing) and related fields (e.g., neurogenetics). In conclusion, it is fair and safe to say that at this moment there is no other psychotherapy similar to CBT in terms of research support. This is important to acknowledge both in academic and practical settings, because this acknowledgment has crucial consequences. Taking into account that these conclusions are based on the studies, which typically did not include CBT its neobehavioral developmental phase (e.g., acceptance-mindfulness-based interventions), the conclusion is even conservative.

In the academic field, once we acknowledge that CBT is the *gold standard*, there are important consequences: (1) all new or untested psychotherapies should be tested against CBT, where CBT is the *gold standard* and if the reference treatment is aimed to be another psychological treatment (in a clearly defined design: superiority vs. equivalence vs. non-inferiority) and (2) more research should be focused on how to change the “*gold*” *standard* into a “*platinum*” one, as CBT is best research-supported, there is still room for improvements in both its theory and CBT-based psychological treatments.

In practice, patients should be provided with the best supported psychological treatments, and according to the current international guidelines, these treatments are mostly CBT-based. Therefore, the dissemination of CBT by training and services is vital for patients. If other psychological treatments are validated in a superiority design, then they should replace CBT psychological treatments; if they are validated in equivalence or non-superiority designs, they should be added to the clinician’s armamentarium to fight mental disorders.

If one politically denies CBT as the *gold standard* in psychotherapy then: (1) we will continue to validate new or untested psychotherapies based on weak comparisons (e.g., no intervention, waitlist); (2) we will encourage training and dissemination in obsolete psychological treatments; and (3) we will block consumers from access to the best available validated psychological treatments – with all their limitations - opening the market not only to untested psychotherapies, but also to pseudoscience (psychotherapies that proved useless or even dangerous).

To conclude, CBT is the *gold standard* of psychotherapy, meaning that this is the best researched and available psychotherapy system we have, but not the best available system we would like to have. That is why there is room for improvement, and we hypothesize that most of these improvements will come from inside CBT – possibly in the form of IM-CBT, as a progressive research system.

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