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A Meta-~~Analytic~~ analytic Review of Acceptance-~~Based~~ based Interventions for the Treatment of Anxiety

A DOCTORAL PAPER
PRESENTED TO THE FACULTY OF THE
GRADUATE SCHOOL OF PROFESSIONAL PSYCHOLOGY
OFFICE OF GRADUATE STUDIES
UNIVERSITY OF XXXX

IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
DOCTOR OF PSYCHOLOGY

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XXXXXXXXXX

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Abstract

The use of acceptance-based interventions for the treatment of psychological problems ~~is~~ has been on the rise ~~in~~ over the last ~~twenty~~ 20 years. Therapies such as the Acceptance and Commitment Therapy and the Acceptance-~~Based~~ based Behavioral Therapy are two ~~such~~ approaches with empirical support. The purpose of this meta-analysis is to combine multiple studies that use~~d~~ acceptance-based interventions to demonstrate the efficacy of this class of intervention and determine an overall effect size. After conducting a comprehensive search of the literature, I used 18 studies ~~were used~~ for this analysis. An effect size was calculated using the standardized mean gain procedure for both, the acceptance-based interventions and the traditional cognitive-based interventions, ~~and~~ along with the waitlist control groups. ~~Results~~ The results demonstrate a large effect size for the acceptance-based interventions (Weighted mean ES = .83) and a medium effect size for the cognitive-based interventions (Weighted mean ES = .60). ~~Waitlist~~ The waitlist control groups demonstrated a small effect size (Weight mean ES =

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.24). Based on this analysis, I conclude that ~~the author concludes~~ the acceptance-based interventions should perhaps be more widely taught and utilized in ~~psychology~~ graduate programs and internships in Psychology.

Keywords

Introduction

The Acceptance and Commitment Therapy (or ACT) is a relatively new approach to dealing with psychological problems. It is a part of the so-called third-wave of cognitive-behavioral therapies, and was formally developed and outlined by Hayes et al. in *Acceptance and Commitment Therapy: ~~an~~ An experiential approach to behavior change* (Hayes, Strosahl~~, and~~ & Wilson, 1999). As the name suggests, a core component of the ACT is acceptance, which although difficult to define, can be described as a nonjudgmental stance toward one's private experiences that ~~is~~ are characterized by approach and openness instead of escape and avoidance. Due to the relatively young lifespan of the ACT, particularly with regard to empirical

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studies, this meta-analysis is being conducted to determine the extent to which ACT and other acceptance-based approaches ~~are~~ may be effective ~~for~~ in the treatment of anxiety.

Traditional cognitive-behavioral therapies from which ACT evolved involved a focus on distressing thoughts, maladaptive behaviors, and symptom reduction. The first wave of behavioral therapy was a stark contrast to traditional analytic models, and ~~the~~ its purpose was to focus therapy and change efforts on observable, measurable behaviors, ~~and to~~ while moving away ~~move away~~ from hypothetical constructs and the underlying fears and drives. The second wave of behavioral therapy was the cognitive revolution, which focused on how maladaptive and irrational thoughts, beliefs, and core schemas ~~were~~ could ~~influencing~~ influence behavior. The goal was to challenge ~~the~~ negative thoughts and replace them with more rational thoughts, which would then lead to more appropriate and effective behaviors (Hayes, 2011).

ACT, as part of the third wave of cognitive-behavioral therapies, offered a new approach to behavioral therapy, ~~as~~ since the goal ~~is~~ was not to eliminate or change distressing or irrational thoughts and beliefs, but rather to live more fully and flexibly in the presence of those thoughts and other private experiences. While previous studies have shown the efficacy of ~~effectiveness of~~ thought-changing and thought-suppressing interventions in the ~~short~~ short-term, ACT researchers and clinicians have noticed that there is a high relapse rate or "rebound effect" ~~with~~

when using such interventions where worrisome thoughts actually become more distressing in frequency and intensity (Iijima ~~and~~ & Tanno, 2012). ~~Thus~~Therefore the motive to use ACT was ~~, the purpose of ACT was~~ to develop a more robust model of intervention that could be applied to any kind of distressing private experience and give the client hope for long-term change (Eifert ~~and~~ & Forsyth, 2005; Hayes, 2011).

A guiding principle in ACT ~~is~~ emphasizes ~~to~~ focus on the function, rather than the form, frequency, or intensity of private events (thoughts, feelings, and memories), and behaviors. The context within which these behaviors and private events occur is also of ~~upmost~~ utmost importance from ~~this~~ the perspective of the functional contextualist ~~perspective~~ in order to determine the motivating antecedents and consequences of any behavior (Hayes, 2011). In ACT, the therapist and client need not be bogged down by symptoms as being the problem, but rather, attempts at controlling or avoiding these symptoms and private experiences is the problem. It is this radical position (acceptance of distressing private events, including anxiety) that will be examined in this meta-analysis in order to determine its overall effectiveness as well as how ~~its~~ this efficacy~~effectiveness~~ compares ~~to~~ with more traditional symptom-control interventions. Anxiety itself may not be the problem or the cause of human suffering, but rather, attempts at avoiding it and controlling it are the problem (Eifert ~~and~~ & Forsyth, 2005).

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There are six core processes of the ACT, which will be described briefly below~~ and~~ in the context of how they relate ~~to ~~with anxiety disorders. ~~Current ~~The current DSM-IV descriptions of anxiety fall short of being useful for interventions because anxiety is defined by ~~having symptoms of anxiety~~its symptoms. ACT, conversely, defines six core behavioral processes which can be assessed to determine how the function of the client's behavior is likely to maintain~~ing~~ and/or worsen~~ing~~ anxiety-related suffering and ~~stifling ~~stifle more effective, valued living (Eifert ~~and ~~& Forsyth, 2005). The first process, acceptance, ~~is the process that ~~will be the focus of significant attention ~~focused on most ~~in this paper, as it is the alternative solution to experiential avoidance and control. Experiential avoidance describes the ~~process of ~~attempts at escaping, avoiding, and controlling that which largely cannot be controlled, and this includes ~~including~~ thoughts, feelings, memories, images, and sensations (Hayes, Strosahl~~,~~ ~~and ~~& Wilson, 1999; Luoma et al., 2007). In anxiety disorders, it is the continued escape from and avoidance of situations that provoke anxiety~~-provoking situations~~ that enable the ~~allows for the~~ escape from and avoidance of distressing private experiences that maintains the anxiety response over time (Friman, Hayes ~~and ~~& Wilson, 1998; Eifert ~~and ~~& Forsyth, 2005). Thus, if one can learn to accept and approach anxious thoughts, feelings, and sensations, instead of avoiding them, they can then, be free to move towards meaningful and otherwise pleasurable and rewarding behaviors, and

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experiences, as well as experience a decrease in ~~have the side benefit of their~~ anxi~~ous~~ety symptoms ~~decreasing~~ over time through extinction.

The second process, defusion, is the skill developed to counteract cognitive fusion, which refers to how individuals fuse with, or become significantly emotionally invested in the content of the thoughts they experience. Cognitive fusion becomes especially problematic when people allow these thoughts to rigidly dictate their behavior in ways that lead to a narrowing ~~and~~ or a constricting of living (Hayes, Strosahl~~, and~~ & Wilson, 1999). An example is when an individual fuses to the fear "No one will enjoy talking to me at this party" and this fusion influences the behavioral choice to stay home and not attempt to connect ~~to~~ with new people. Defusion, thus, is the process of noticing the process of thinking, rather than becoming attached to the content of the thoughts. The third process, present-moment awareness, is essentially the practice of mindfulness, ~~and~~ living, and focusing one's attention on the here and now. This can again be a useful strategy for getting out of ~~the~~ battle with distressing or anxiety-provoking thoughts and memories about the past and the future (Luoma~~,~~ et al., 2007). The fourth process known as self-as-context refers to one's ability to recognize that ~~he or she~~one is not simply defined by ~~his or her~~one's experiences, but rather is the context from which one observes all private and public experiences throughout one's life. Rather than defining one~~'s~~ self as "I am an anxious person," the self-as-context perspective would ~~be~~ involve ~~to be able~~the ability to take a step back and observe that the

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individual is the context where the thought "I am having an anxious thought" is experienced (Luoma~~,~~ et al., 2007). The fifth process is the clarification of one's values, that is, what does one want one's ~~the individual want her~~ life to represent~~stand for~~. A devastating consequence of experiential avoidance is that it often interferes with one's ability to connect ~~to~~ with or even identify ~~her~~ one's chosen values, and ~~her~~ one's life then, becomes dominated by trying to escape or avoid anxiety (Hayes, 2005). The sixth and final core process of ACT is committed action, which refers to developing one's willingness to take action toward those articulated values. If an individual values close relationships and his connection ~~to~~ with others, but experiences anxiety when meeting new people, it is committed action that will allow ~~someone~~ him to confront his anxiety in service of moving toward his larger value of building relationships (Hayes, 2005).

According to one study, it is estimated that the lifetime prevalence rate of anxiety disorders worldwide is 16.6% (Somers, JM et al., 2006). A recent "healthy minds" study conducted at university campuses across the United States reported findings of a 10~~%~~ %-anxiety prevalence rate in the university student population (Eisenberg, 2012). Patients with somatic complaints and Generalized Anxiety Disorders were also found to have significantly higher estimated medical care costs than those ~~patients~~ with somatic complaints alone and lower anxiety levels (Olfson ~~and~~ & Gameroff, 2006). Given these numbers, it is imperative for psychologists to determine the most effective form of treatment for such~~a~~ costly and pervasive

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conditions. From the perspective of ACT, one can ~~see~~ visualize how different anxiety symptoms and disorders ~~can~~ may be conceptualized as being functionally similar. While the form may differ in terms of what an individual is anxious or fearful of, the function of the individual's behavior ~~is~~ will be similar among those struggling with Social Anxiety Disorder (SAD), Panic Disorder (PD), Generalized Anxiety Disorder (GAD), Obsessive-~~Compulsive~~ compulsive Disorder (OCD), Post-traumatic Stress Disorder (PTSD), Specific Phobia, or subclinical but still distressing levels of anxiety. Overt behavioral avoidance for individuals with SAD, GAD, or PD, might take the form of one remaining ~~in one's~~at home, avoiding contexts or environments where there will be strangers, or avoiding places where one might experience a panic attack. Other easily observable avoidance behaviors could include a person with a fear of snakes leaving the room when in the presence of an image of or an actual snake, or someone with OCD washing his hands after touching a handrail. Or, for someone with GAD or PTSD, more covert ~~behavioral~~ behavioral-avoidance strategies could include ruminating on distressing thoughts, or abusing substances. All of these behaviors serve the same function of enabling ~~allowing~~ the individual to change from a context with anxiety thoughts and feelings present, to a context where ~~ithout~~ those distressing private experiences are absent~~present~~. As explained by the principles of negative reinforcement, the frequency of these behaviors will increase over time, as the consequence of the behavior for the person ~~is~~ will entail the ~~the~~ removal of an aversive stimulus (the distressing private experience). While

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this ~~might~~ may help one feel better or experience some ~~relieving~~ relief in the short-term, this process of avoidant responding will only strengthen~~s~~ the intensity of the anxiety symptoms in the long-term. Avoidance of negative emotions, especially feelings of uncertainty, has been found to be a behavior strongly correlated with GAD (Roemer ~~and~~ & Orsillo, 2007). This negative reaction to emotions and the unwillingness to tolerate them, including a negative reaction toward worrying behavior, correlates with the severity of the GAD symptoms (Roemer, Salters, Rafa ~~and~~ & Orsillo, 2005). Equally ~~as~~ important, the individual who avoids others often loses contact with his chosen values, ~~as~~ since many of these valued activities ~~might~~ may also ~~be~~ provoke anxiety~~-provoking,~~ and ~~thus~~therefore, ~~are~~ be~~being~~ avoided. The client then, not only continues to live a restricted life ~~restricted~~ by avoiding the element of anxiety, but, he also misses out on the fulfillment of a flexible and meaningful living ~~flexibly and meaningfully~~ in accordance with ~~one's~~ his values. Acceptance, therefore, is the perfect ~~counter~~ counter-strategy to this destructive cycle, as it allows the client to make a new choice and adopt a new approach, rather than resort to avoiding~~,~~ anxiety-provoking situations (Roemer ~~and~~ & Orsillo, 2007). Through this process, the client learns ~~she can~~to tolerate the feelings of anxiety and ~~can now put~~ use the energy previously being ~~that was being~~ used to control and avoid anxiety-provoking situations toward more valued directions in life.

In order to precisely compare ~~exactly how effective~~the efficacy of a particular treatment or intervention ~~is~~, one can use a meta-analysis to analyze and compare

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the results of multiple studies at one time. Previous researchers ~~have begun~~ conduct~~inged~~ed meta-analyses examining the effectiveness of ACT and other third-wave behavioral approaches (DBT, mindfulness)~~,~~ for a variety of presenting issues. Ost, in 2007, concluded that ACT and the Dialectical Behavior Therapy (DBT) produced moderate mean effect sizes and that the practices in each randomized controlled trial (RCT) analyzed, were less ~~methodologically~~ methodologically sound than those utilized in previous Cognitive-Behavioral Therapy (CBT) studies. Ost included 13 ACT and DBT studies in his meta-analysis, and concluded that third-wave cognitive-behavioral therapies were no more effective than the usual treatment~~ as usual~~, and that due to the methodological flaws ~~of~~ in the studies, one could not draw any conclusions about the true effectiveness of these approaches (Ost, 2007). A second meta-analysis using 18 studies of ACT showed that the ACT was overall more effective than waitlist control and placebo conditions (Powers, Vording~~, and~~ & Emmelkamp, 2008). However, the authors of this analysis concluded that ACT was no more effective than other established treatments, nor was it more effective than control groups for the treatment of “distress problems” including anxiety and depression (Powers, Vording~~, and~~ & Emmelkamp, 2008). While these authors were not as concerned with the methodological rigors of the studies analyzed, the data used produced minimal effect sizes when comparing ACT with established treatments.

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In 2011, Soo, Tate, and Lane-Brown published a review of ACT for the treatment of anxiety. They chose to include 4 studies of ACT that were RCTs for the treatment of some sort of anxiety disorder including OCD, Trichotillomania, ~~math~~ Math anxiety, and ~~mixed~~ Mixed anxiety and depression. They did not calculate an overall effect size due the limited numbers of studies ~~they found~~ that met their criteria. In reviewing the studies, the authors concluded that ACT was an effective treatment for anxiety disorders; however, they were unable to conclude that it was more effective than other treatments including ~~cognitive~~ Cognitive ~~therapy~~ Therapy and ~~systematic~~ Systematic ~~desensitization~~ Desensitization (Soo, Tate~~, and~~ & Lane-Brown, 2011). Further~~more~~, they found that the lack of control groups utilized ~~to be~~was problematic in ruling out the possibility that participants in these studies ~~might~~ could have shown improvements in their symptoms anyway~~s~~ (Soo, Tate~~, and~~ & Lane-Brown, 2011).

Vollestad, Nielsen, and Nielsen recently published a meta-analysis on mindfulness and acceptance-based interventions (MABIs) for the treatment of anxiety disorders in October 2012. These authors concluded that MABIs produced a strong effect size for the treatment of anxiety symptoms. ~~This~~ However, this meta-analysis did not compare the effect size of the MABIs with the established treatments, so they were unable to conclude whether MABIs were more effective than other treatments. One other conclusion derived from this study ~~was~~ stated

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that the MABIs were more effective for samples of clients with mixed anxiety disorders (Vollestad, Nielsen~~, and~~ & Nielsen, 2012).

The present meta-analysis wanted to go beyond these previous meta-analyses and tried to ~~be able to~~ include more studies. In order to do this, it was decided that acceptance could be studied as a functional class of intervention, and that studies could be included beyond the strictly ACT studies. This paper aimed at examining how ~~It is the purpose of this paper to examine how~~ effective even brief acceptance interventions could be versus either no intervention or interventions aimed at control or avoidance of symptoms. One challenge with this approach ~~is~~ lay in recognizing the fact that ~~given~~ symptom reduction ~~is~~ was not the goal, ~~and~~ but that the willingness to approach and accept anxiety symptoms in service of taking action toward valued living ~~is~~ was the ~~goal~~ aim of the intervention~~,~~. Given this, it ~~is~~ would be difficult to measure progress. If a client's symptoms ~~do~~ did not decrease in a given study, the treatment ~~might~~ could still be effective because the intervention did not aim at ~~goal of the intervention was not to~~ decrease~~e~~ing or ~~eliminate~~ eliminating anxiety symptoms. While acceptance may be seen as often ~~leads~~ leading to a decrease in reported anxiety symptoms, the therapist must be clear not to confuse clients by telling them this is a goal,~~ a~~ since~~s~~ that would be in direct contrast to the principles of ACT and the ~~acceptance~~Acceptance-based interventions. To mitigate these problems, the meta-analyst could analyze variables measuring symptoms, such as, the Penn State Worry Questionnaire, as well as the variables

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measuring action toward valued living, including the Acceptance and Action Questionnaire; however, the statistical analysis of the acceptance and action measures is beyond the scope of this paper.

Method

~~-~~A broad search was conducted utilizing various databases including PsycInfo, PsycArticles, Medline, and Google Scholar. The keywords used to conduct the search included Acceptance and Commitment Therapy, acceptance, anxiety, and randomized controlled trial. It was determined that if an article did not use the word ‘acceptance’ in either the title or the abstract, then, acceptance ~~was~~ would most likely not be a part of the essence of what the authors were trying to study. This is an important distinction because several studies have been published on similar therapies and interventions including Dialectical Behavior Therapy, Mindfulness~~--Based~~ based Cognitive Therapy, and Mindfulness-~~Based~~ based Stress Reduction and these ~~were~~ have been excluded in the ~~not included in the~~ present meta-analysis. The rationale for this is that acceptance is a core principle of ACT, and we have attempted to r~~were~~ efrain from~~attempting to not~~ straying too far from examining the ~~looking at the effectiveness~~efficacy of ACT or other interventions that ~~were~~ are based on ACT and acceptance-based methodologies.

The purpose of this meta-analysis ~~is~~ was to determine if acceptance-based interventions ~~are~~ were effective ~~for~~ in reducing anxiety~~;~~. ~~therefore~~Therefore, we

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decided to only include studies that utilize~~d~~d pre/post test design and ~~could~~ could demonstrate a quantitative measurable difference, whether statistically significant or not, between how the person thought, felt, or behaved before and after the acceptance intervention. In other words, there needed to be at least one dependent variable that was a relevant measure of anxiety in each study. This measure also had to be a widely-used and accepted construct or assessment instrument.

The original keyword search yielded several hundred articles, mostly published after ~~the year~~ 2000. Articles were first scanned by title to determine if they were related to anxiety and ACT, or the acceptance-based interventions in any way. If yes, then, those abstracts were read to understand the further details of the study and ~~to~~ determine their relevance and fit with the current meta-analysis. ~~Between~~ Of the 100 to 200 ~~one hundred and two hundred~~ abstracts ~~were~~ scanned, we discarded most ~~most of which were discarded~~ upon discovering they were either not ~~a~~ stud~~y~~ies with measurable outcome data, or ~~they were not~~ if they did not ~~utilizing~~ utilize an acceptance-based intervention~~,~~. Also, the papers were discarded if ~~or~~ the primary focus ~~on~~ of the paper was not deemed to be closely ~~enough~~ related to anxiety. This left us with 34 articles to be analyzed in ~~more~~ greater depth for methodological quality, pre/post test design, sufficient n, and the anxiety measures utilized. The final analysis produced 18 studies to be included in this meta-analysis. Of th~~e 18 studies~~e shortlisted 18, there were 12 RCTs, five non-RCT studies, and one unpublished dissertation. Five of the studies were used in Vollestad, Nielson and

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Nielson's meta-analysis on MABI's, three were used in Soo, Tate, and Lane-Brown's review, two of the~~se~~ same three studies were used in Powers, Vording, and Emmelkamp's meta-analysis, and one was used in Ost's meta-analysis. ~~See~~ Appendix A ~~for~~ offers a detailed description of all studies used in the present meta-analysis.

Studies were then coded on several variables for purposes of organization and analysis ~~purposes~~. ~~Initial~~ The initial variables coded for organization ~~purposes~~ included study number, publication year, authors, treatment intervention type, and whether the study had been used in previous meta-analyses.

There were three variables used to determine study quality rating: ~~use of~~resort to a widely-used and accepted measure of anxiety; whether or not the study used a Randomized Controlled Trial design, meaning they used a control group (either waitlist control or treatment as usual) and a randomization process for participants; and whether the treatment length was eight sessions or greater. It was determined that interventions utilizing at least eight sessions were more complete as both, treatment manuals and the settings utilizing short-term treatment models often aimed ~~for~~ at, at least eight sessions to be effective, especially for ACT protocols. Ten studies received three points for criteria: ~~the~~ study quality rating, seven studies received two points, and one study received one point. Table 1 lists the frequency of various descriptive statistics in the studies used in the present meta-analysis.

Table 1

Comment [Editor37]: Please insert a reference year in parenthese for all the studies mentioned here

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Comment [Editor39]: Numbers. Number all tables with arabic numerals sequentially. Do not use suffix letters (e.g. Table 3a, 3b, 3c); instead, combine the related tables. If the manuscript includes an appendix with tables, identify them with capital letters and arabic numerals (e.g. Table A1, Table B2).
Titles. Like the title of the paper itself, each table must have a clear and concise title. When appropriate, you may use the title to explain an abbreviation parenthetically.
Example: *Comparison of Median Income of Adopted Children (AC) v. Foster Children (FC)*
Headings. Keep headings clear and brief. The heading should not be much wider than the widest entry in the column. Use of standard abbreviations can aid in achieving that goal. All columns must have headings, even the stub column (see example structure), which customarily lists the major independent variables.
Body. In reporting the data, consistency is key: Numerals should be expressed to a consistent number of decimal places that is determined by the precision of measurement. Never change the unit of measurement or the number of decimal places in the same column.

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Breakdown of percentage of studies with various characteristics

Characteristic	**Number of Studies**	**Percent**
Widely-used and accepted anxiety measure utilized	18	100
Randomized Controlled Trial design	12	67
Sample size n greater than or equal to 20 total participants	13	72
Treatment length was 8 or more sessions	15	83
Had comparison group using CBT or other non-acceptance based measure	7	39
Had waitlist control group receiving no treatment	5	28
Utilized individual (not group) therapy/treatment intervention	14	78
Used standard ACT protocol with at least 8 sessions	9	50
All participants had formal DSM-IV Anxiety diagnosis	11	61
Majority of participants were female	14	78
Mean age of participants was under 40	13	72
Majority of participants were white	16	89

One can see from the statistics that the majority of the participants across all studies were Caucasian, female, and less than 40 years of age. The n of each study ranged from three to 376, and the mean age of participants in each study ranged from 20 to 71 years. Most interventions were delivered via individual therapy, and four studies used group therapy or interventions (both, acceptance and non-

acceptance). Nine studies utilized eight or more sessions of the traditional ACT therapy, and there were 12 RCT's out of the 18 studies.

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