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Using Session-by-Session Measurement to Compare Mechanisms of Action for Acceptance and Commitment Therapy and Cognitive Therapy

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Debate continues about the extent to which postulated mechanisms of action of cognitive behavior therapies (CBT), including standard CBT (i.e., Beckian cognitive therapy [CT]) and acceptance and commitment therapy (ACT) are supported by mediational analyses. Moreover, the distinctiveness of CT and ACT has been called into question. One contributor to ongoing uncertainty in this arena is the lack of time-varying process data. In this study, 174 patients presenting to a university clinic with anxiety or depression who had been randomly assigned to receive either ACT or CT completed an assessment of theorized mediators and outcomes before each session. Hierarchical linear modeling of session-by-session data revealed that increased utilization of cognitive and affective *change* strategies relative to utilization of psychological *acceptance* strategies mediated outcome for CT, whereas for ACT the mediation effect was in the opposite direction. Decreases in self-reported dysfunctional thinking, cognitive "defusion" (the ability to see one's thoughts as mental events rather than necessarily as representations of reality), and willingness to engage in behavioral activity despite unpleasant thoughts or emotions were equivalent mediators across treatments. These results have potential implications for the theoretical arguments behind, and distinctiveness of, CT and ACT.

Keywords: ACT; CBT; psychotherapy mechanisms; mediation

Cognitive behavior therapy (CBT) is a broad model of psychotherapy that targets changes in the content and/or context of behaviors, thoughts, and feelings in the treatment of a variety of psychological disorders.

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When defined broadly (Forman & Herbert, 2009), CBT includes established models such as behavioral activation (BA; Jacobson, Martell, & Dimidjian, 2001; Jacobson et al., 1996) and Beckian cognitive therapy (CT; Beck, 1976, 1991), as well as newer "acceptance-based" behavior therapies including acceptance and commitment therapy (ACT; Hayes & Strosahl, 2005; Hayes, Strosahl, & Wilson, 1999), dialectical behavior therapy (DBT; Linehan, 1993), and mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002; see Herbert & Forman, 2011, for a full consideration of acceptance and mindfulness approaches in CBT). Over the past decade, a series of studies have supported the efficacy of acceptance-based models of CBT, particularly ACT, with some indications of advantages of ACT over traditional forms of CBT (for reviews, see Hayes, Levin, Plumb, Boulanger, & Pistorello, in press; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Levin & Hayes, 2009). On the other hand, one moderately large randomized controlled trial (RCT) found that ACT and CT were equally effective for treating anxiety and depression (Forman, Herbert, Moitra, Yeomans, & Geller, 2007), and several recent reviews (Öst, 2008; Powers, Zum Vörde Sive Vörding, & Emmelkamp, 2009) have raised questions about the methodological rigor of studies evaluating ACT outcomes.

Much debate has also arisen as to whether ACT is meaningfully distinct from traditional models of CBT, such as CT (e.g., Arch & Craske, 2008; Hayes, 2008; Herbert & Forman, in press; Hofmann & Asmundson, 2008). Upon review, CT and ACT have striking similarities and differences in both their philosophical frameworks and intervention components (Forman & Herbert, 2009). For example, CT and ACT both stress the importance of learning processes in the development, maintenance, and treatment of psychopathology, and both CT and ACT make use of behavioral intervention techniques, such as psychoeducation, experiential learning, exposure, BA, problem solving, role playing, and modeling, among others. However, the two models differ in their underlying theories of psychopathology. CT theory attributes psychopathology to maladaptive cognitions resulting from systematically biased information processing (Beck, Rush, Shaw, & Emery, 1979). ACT theory attributes psychopathology primarily to psychological inflexibility caused by emotional avoidance, problematic attempts to control internal experiences, and fusion with thoughts and emotions (Hayes et al., 1999). Both CT and ACT allow for symptom reduction; however, only CT posits this as an explicit aim, whereas ACT prioritizes behaving consistently with one's chosen values. In terms of technology, CT helps patients identify, label, challenge, and restructure dysfunctional automatic thoughts, schemas, attributional styles, and core beliefs. ACT helps patients recognize that direct attempts to control internal experiences are problematic, and teaches skills to promote the acceptance of difficult experiences while simultaneously engaging in goal-directed behavior. ACT emphasizes increased awareness of present-moment experiences, clarification of core life values, and increased commitment toward value-consistent behavior. Although ACT emphasizes "cognitive defusion" (i.e., psychologically "stepping back" from one's thoughts and appreciating the fact that they are merely thoughts and not truths), it has been pointed out that CT engages the patient in a similar exercise implicitly if not explicitly through the process of cognitive disputation (Forman & Herbert, 2009).

In addition to issues of theory and technique, important questions exist about the extent to which mechanisms of action differ between the two treatments and how consistent such mechanisms are with each framework's respective theoretical foundation. That is, compared to ACT, is change in CT treatment more highly driven by movement from dysfunctional to more adaptive thinking, and less highly driven by acceptance of internal experiences (i.e., experiential acceptance), cognitive defusion, and willingness to engage in goal-directed behavior?

Most studies of CT have not investigated mediating mechanisms, but those that did have produced mixed results. Some studies (e.g., Casey, Newcombe, & Oei, 2005; Hofmann, 2004; Smits, Powers, Cho, & Telch, 2004; Smits, Rosenfield, McDonald, & Telch, 2006) have found evidence that changes in dysfunctional attitudes mediated outcome, whereas many other studies have not demonstrated such cognitive mediation (e.g., Burns & Spangler, 2001; DeRubeis et al., 1990; Longmore & Worrell, 2007; Teasdale, et al., 2001). In addition, there is little evidence indicating that even when postulated mediating mechanisms are detected they are differentially active for patients receiving different treatments, such as CT and pharmacotherapy (Longmore & Worrell, 2007). Relative to studies of CT, investigations of ACT have been both more likely to measure mediators and to obtain evidence for theorized mechanisms of action, in particular decreases in experiential avoidance (e.g., Bach & Hayes, 2002; Bond & Bunce, 2000; Gaudiano, Herbert, & Hayes, 2010; Gifford et al., 2004; Zettle, 2003; Zettle & Hayes, 1986; Zettle & Rains, 1989).

Especially rare have been studies that directly compare proposed mechanisms of CT and ACT.