A TASK ANALYSIS OF HOW CLIENTS FORMULATE REAPPRAISALS IN COGNITIVE-BEHAVIOR THERAPY FOR DEPRESSION

by

Laura Gollino

A thesis submitted in conformity with the requirements
for the degree of Doctor of Philosophy
Applied Psychology and Human Development
Ontario Institute for Studies in Education
University of Toronto

© Copyright by Laura Gollino 2016
A TASK ANALYSIS OF HOW CLIENTS FORMULATE REAPPRAISALS IN
COGNITIVE-BEHAVIOR THERAPY FOR DEPRESSION

Doctor of Philosophy 2016

Laura Gollino

Department of Applied Psychology and Human Development
University of Toronto

Abstract

The generation of adaptive appraisals of self are theorized to play a key role in the
effective treatment of depression in cognitive-behavior therapy (CBT), yet there are few
descriptive analyses of clients’ in-session behavior during dysfunctional appraisal tasks. The
primary objectives of this investigation were to develop a model to describe how clients resolve
a dysfunctional appraisal task in CBT for depression (Rice & Greenberg, 1984), and to examine
the relationship between higher degrees of resolution of a dysfunctional appraisal, and good
outcomes in psychotherapy.

A task analysis was used to develop and test a model of resolution of dysfunctional
appraisals. In the first phase, a rational model of the expected sequence of client processes was
developed from a review of relevant literature. An empirical model was then derived by
comparing resolved and non-resolved events within 13 transcripts from archival data of a CBT
for clinical depression treatment (Goodridge & Hardy, 2009). The rational and empirical models
were synthesized. The sequence of components described by this model are: the Dysfunctional
Appraisal task marker, Elaboration, Accessing Vulnerability, Shift: Softening and/or Shifting
Perspective, Evaluating New Perspective, and Reappraising (task resolution).
In the second phase, the validity of the model was examined. A measurement tool, the Degrees of Resolution Scale of a Dysfunctional Appraisal task (DRS-DA), was created. The DRS-DA is an observer-rated 7-point measure representing the presence of the components of the derived model. Higher ratings on the DRS-DA indicate higher degrees of resolution of the dysfunctional appraisal task. To investigate the relationship between the model and outcome, 22 transcripts were used from archival data of a CBT for clinical depression treatment (Watson et al., 2003). Results demonstrated that there was a relationship between DRS-DA score and post-session change. Moreover, DRS-DA scores differentiated between good and poor outcome clients, and good outcome clients were more likely to demonstrate Evaluating New Perspective in their highest reported change sessions than poor outcome clients. This study provides preliminary support for the model.
Acknowledgements

This work could not have been possible without the mentorship of Dr. Jeanne Watson; I am so very grateful to you for your inspiration, guidance, and wisdom. Sincere thanks to my committee members Dr. Abby Goldstein and Dr. Lana Stermac who have provided encouragement, thoughtful feedback, and warm support throughout my graduate work. Thank you as well to Dr. Heidi Levitt for her insightful comments and suggestions, and to Dr. Gillian Hardy for the use of her data set.

I deeply appreciate the raters and volunteers who helped make this project happen: Claire Barnes, Mallory Campbell, Anna Francis, Nicole Publicover, Amanda Tong; colleagues and friends who lent a listening ear and a helping hand: Clare Brett, Lara Cartmale, Olesya Falenchuk, Monique Herbert, Jane King, Evelyn McMullen, Olga Oulanova, Aline Rodrigues, Denise Russell; and my family for their unending support: Carlos, Emily & Willie Gollino, Juli Mori, and my darling husband Jeff and the Brown family. I couldn’t have done this without you.
Table of Contents

Abstract ........................................................................................................................................... ii

List of Tables .................................................................................................................................... viii

List of Figures .................................................................................................................................... ix

Chapter 1: Introduction ......................................................................................................................... 11

Review of the Literature ......................................................................................................................... 15
  Theories of Change in CBT for Depression ......................................................................................... 15
  Cognitive model of depression ........................................................................................................... 15
  The role of dysfunctional appraisals in depression ............................................................................. 18
  Theories of change in CBT for depression ......................................................................................... 19

Methods in Change Process Research ................................................................................................ 26
  Task analysis: a significant events approach .................................................................................... 36

Existing Research into Change Processes in CBT for Depression ....................................................... 47
  Importance of working with dysfunctional appraisals ....................................................................... 48
  Therapist process when working with dysfunctional appraisals ....................................................... 51
  Client process when working with dysfunctional appraisals ............................................................... 56
  Existing task analyses of the dysfunctional appraisal task ............................................................... 60
  Additional client processes that may be involved in the dysfunctional appraisal task ................. 65

Conclusion ......................................................................................................................................... 73

Rationale for the Current Investigation ............................................................................................... 75

Objectives of the Current Investigation .............................................................................................. 82

Chapter 2: Methods of the Discovery Phase ......................................................................................... 86

Sample for the Preliminary Step Preceding the Task Analysis .............................................................. 86

Empirical Analysis Sample .................................................................................................................. 87

Procedure ......................................................................................................................................... 88
  Preliminary Step Preceding the Task Analysis ................................................................................ 88
  Task Analysis Step 1: Specification of the Task .............................................................................. 89
  Task Analysis Step 2: Explicating the Investigator’s Cognitive Map ............................................. 89
  Task Analysis Step 3: Specification of the Task Environment ....................................................... 90
  Task Analysis Step 4: Rational Analysis ......................................................................................... 90
  Task Analysis Step 5: Empirical Analysis ....................................................................................... 91
  Task Analysis Step 6: Synthesizing the Rational-Empirical Model .............................................. 93
  Task Analysis Step 7: Explaining the Rational-Empirical Model ............................................... 93
  Developing Criteria for Objective Measurement of Components ............................................ 93

Research Questions of the Discovery Phase ....................................................................................... 94
  Investigating the Relevance of a Task Analysis of the Dysfunctional Appraisal task ................ 94
  Identifying Observable Shifts .......................................................................................................... 94
  Creating a Measure to Test the Model ............................................................................................ 95
Chapter 3: Results of the Discovery Phase

Preliminary Step Preceding the Task Analysis

Research Questions 1 and 2: Investigating Relevance of a Task Analysis

Task Analysis

Research Questions 3 and 4: Identifying Observable Shifts

Step 1: Specification of the task

Step 2: Explicating the investigator’s cognitive map

Step 3: Specification of the task environment

Step 4: Rational analysis

Step 5: Empirical analysis

Step 6: Constructing the rational-empirical model

Step 7: Explaining the rational-empirical model

Research Question 5: Creating a Measure to Test the Model

Chapter 4: Methods of the Validation Phase

Validation Phase Sample

Process Measure

Degree of Resolution Scale for Dysfunctional Appraisal tasks (DRS-DA)

Session Outcome Measure

Client Task Specific Change Measure – Revised (CTSC-R)

Treatment Outcome Measures

Beck Depression Inventory (BDI)

Dysfunctional Attitudes Scale (DAS)

Inventory of Interpersonal Problems (IIP)

Rosenberg Self-Esteem Inventory (RSE)

Symptom Checklist-90-Revised (SCL-90-R)

Procedure

Session Selection

Process Ratings

Session and Therapy Outcome Data

Research Questions of the Validation Phase

Discerning Components of the Model

Relating Process to Session Outcome

Relating Process to Treatment Outcome

Investigating the Structure of the Rational-Empirical Model

Chapter 5: Results of the Validation Phase

Sample Characteristics
# List of Tables

Table 1: Some Benefits of Deriving an Empirically-Based Model of Task Resolution............ 76
Table 2: Overview of the Investigation: Discovery .......................................................... 84
Table 3: Overview of the Investigation: Validation Phase ............................................. 85
Table 4: Difficulties in Applying the TACTD Resolution Model .................................... 97
Table 5: Comparison of TACTD & Rational Models of Resolution for Good Outcome Cases 105
Table 6: Results of the Empirical Analysis ................................................................... 107
Table 7: Relationship between Empirically-Derived and Rationally-Derived Components..... 111
Table 8: DRS-DA Data Indicating Component Counts Per Transcript .............................. 142
Table 9: Descriptive Statistics for DRS-DA Scores by Session Group & Total Sample .......... 143
Table 10: Descriptive Statistics for CTSC-R Scores by Session Group & Total Sample ......... 144
Table 11: Sequences Indicating Order of First Emergence of Each Component within a Session, Sorted By DRS-DA Score .............................................................................. 232
List of Figures

Figure 1. Revised TACTD model of resolution................................................................. 98
Figure 2. Rational model of the resolution of the dysfunctional appraisal task ............... 102
Figure 3. Rational-Empirical model. .............................................................................. 113
Figure 4. Distribution of DRS-DA scores........................................................................ 143
Figure 5. Distribution of CTSC-R post-session scores.................................................... 144
Figure 6. Box plot of the distribution of Lowest & Highest Reported Change Session DRS-DA scores within the Good Outcome group................................................................. 147
Figure 7. Box plot of the distribution of CTSC-R scores by DRS-DA score...................... 148
Figure 8. Box plot of the distribution of DRS-DA scores for Poor & Good outcome groups .. 150
Figure 9. TACTD Good outcome model of dysfunctional appraisal tasks....................... 219
Figure 10. TACTD poor outcome resolvers ..................................................................... 220
List of Appendices

Appendix A: TACTD Models ........................................................................................................... 219
Appendix B: DRS-DA Rater Training Manual .................................................................................. 221
Appendix C: Component Sequences (Table 11) ............................................................................. 232
Chapter 1: Introduction

Numerous studies and meta-analytic reviews support the healing effects of psychotherapy in alleviating symptoms of depression, alone and in combination with pharmacotherapy (e.g., Bell & D’Zurilla, 2009; Cuijpers, van Straten, Warmerdam, & Andersson, 2009; Driessen et al., 2010; Imel, Malterer, McKay, & Wampold, 2008; Mazzucchelli, Kane & Rees, 2009; Watson, Gordon, Stermac, Kalogerakos, & Steckley, 2003). One group of therapies in particular, cognitive-behavior therapies (CBT), boast a large volume of randomized controlled trials supporting the efficacy of this approach in the treatment of depressive symptoms (Parikh, et al., 2009). But how does CBT work? Now that sufficient empirical evidence has accumulated supporting this treatment’s efficacy, the specific mechanisms contributing to symptom change in clients undergoing CBT need to be identified, to enhance both treatment and our overall understanding of depression (Kazdin, 2007, 2009; Meyer & Scott, 2008; Oei & Free, 1995). It is not just the specifics of how this group of therapies functions within a person to produce and maintain change which must now be illuminated, for example whether CBT functions through the learning of compensatory skills (e.g., Barber & DeRubeis, 1989; Clarke & Goosen, 2009; Strunk, DeRubeis, Chiu & Alvarez, 2007), through changes in cognitions (e.g., Garratt, Ingram, Rand & Sawalani, 2007; Quilty, McBride & Bagby, 2008; Whisman, 1999), and/or through other factors. Another basic question must also be answered: what are clients and therapists doing within CBT through which these unknown mechanisms of change may be realized? Describing client behaviors during moments of change can help identify contributors to adaptive shifts in cognition, affect, and behavior.

Observation is an important part of scientific inquiry. Aaron Beck, whose landmark 1979 book detailing a cognitive approach to understanding and treating depression continues to inform
current CBT for depression treatment, described the development of his cognitive theory of depression as arising from “fresh clinical observations and experimental and correlational studies and repeated attempts on my part to try and make sense out of the evidence,” (Beck, Rush, Shaw & Emery, 1979, p. ii). Indeed, observation is an important part of building robust theories that can meaningfully explain research findings (Camic, Rhodes & Yardley, 2003). For this reason, following the general consensus that psychotherapy “works”, researchers have articulated the need for rigorous observation of the change processes involved in the alleviation of distress and the resolution of problems so as to build robust theories of change (e.g., Elliott, 1983; Garfield, 1990; Goldfried & Wolfe, 1996; Mahrer, 1988a; Safran, Greenberg & Rice, 1988). For example, Rice and Greenberg (1984) argued that psychotherapy research must turn toward scientifically rigorous and intensive observation if it is to discover cause-and-effect relationships between specific acts of therapy participants and temporally-near changes in clients or “sub-outcomes”, including both immediate effects within a therapy session and intermediate effects post-session. In other words, observed sequences of behaviors in psychotherapy can point to cause-and-effect relationships between these behaviors. Identifying these micro-moments of change and describing their components in evidence-based models as is done in task analysis (Rice & Greenberg, 1984) is therefore an important step toward understanding the active ingredients of psychotherapies like CBT (Whisman, 1993).

The range of current treatment approaches under the CBT umbrella, including well-being therapy and mindfulness-based cognitive therapy, are characterized by the shared assumption that cognition is an important factor in the development, maintenance, and treatment of depression (Garratt et al., 2007; Hollon & DeRubeis, 2004; Scher, Segal & Ingram, 2004), and by the use of interventions aimed at altering or enhancing cognitive processing. These
approaches represent extensions of Beck’s cognitive theory (Beck et al., 1979), which places cognition front and center in terms of cause, maintenance, recurrence and remission of depression. A characteristic quality of CBT treatments is the focus on evaluating, challenging, and modifying pathogenic cognitions (e.g., Blagys & Hilsenroth, 2002). CBT researchers and theorists suggest that addressing clients’ pathogenic cognitions is a key mechanism of change leading to therapeutic improvement (e.g., Garratt et al., 2007), and several measures have been developed to assess changes in endorsement of these cognitions as a result of CBT treatment, e.g., the Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980), Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978), and Cognitive Bias Questionnaire (Krantz & Hammen, 1979). One particular type of cognitive change, the generation of more adaptive appraisals of self, self-in-relation-to-others, self-in-relation-to-world or self-in-relation-to-future through a reappraisal process, is an important task in CBT (Barber & DeRubeis, 1989; Barlow, Allen & Choate, 2004; J. Beck, 1995; Beck et al., 1979; Berlin, Mann & Grossman, 1991). Thus it is likely that investigating the specific sequences of client processes involved in engendering this change can identify some active ingredients in CBT for depression.

The task of moving from dysfunctional to more adaptive reappraisals about the self in the context of CBT for depression is the focus of the current investigation. It is named the dysfunctional appraisal task because client statements that reflect dysfunctional appraisals serve as a marker that this specific type of problem is a useful target of psychotherapy. The specific sequence of client processes that is of interest in this investigation therefore begins with a dysfunctional appraisal task marker consisting of client endorsement of a dysfunctional appraisal, and ends with a resolution consisting of client statements of more adaptive appraisals about the self. This sequence of processes represents a set of client behaviors that are considered
essential components of resolving a dysfunctional appraisal task. Few descriptive analyses have been undertaken of client in-session behavior during those moments when therapists and clients are engaged in this dysfunctional appraisal task in CBT, despite acknowledgement that the examination of in-session behaviors is an underutilized but likely fruitful research paradigm for learning about the processes of change in CBT (Haubert & Dobson, 2007; Whisman, 1993).

Furthermore, despite the theorized importance of CBT cognitive restructuring interventions to facilitating change (e.g., Beck et al., 1979; J. Beck, 1995; Neimeyer & Feixas, 1990; Persons, Davidson & Tompkins, 2001; Strunk, et al., 2007; Teasdale & Fennell, 1982), few studies have been undertaken to describe observed sequences of client behaviors during these interventions. Therefore, the essential components of resolving a dysfunctional appraisal task in CBT for depression remain unclear. Given recent findings which suggest the healing effect of CBT for depression has decreased steadily since the late 1970s (Johnsen & Friborg, 2015), observational analysis of successful sequences of client activities in CBT appears particularly useful.

The purpose of the current investigation is to use systematic observation to identify client change processes during a theoretically important event in CBT for depression, the resolution of a dysfunctional appraisal task. The specific objective of this exploratory investigation is to develop and test a model of how clients successfully resolve a dysfunctional appraisal task in CBT for depression. Task analytic methodology (Rice & Greenberg, 1984; Greenberg, 2007) is a strategy for developing and testing models of change in psychotherapy during significant events such as the dysfunctional appraisal task.

This investigation begins with a review of CBT theory as it relates to the development and treatment of depression, and identifies theory-based predictions of client in-session behaviors associated with the amelioration of depression. The investigation of such behaviors is
part of a broad program of change process research that seeks to explain how people engage in and change through talk therapy (Greenberg & Foerster, 1996). Methods in change process research are therefore presented next to set the frame for reviewing existing empirical research. Existing change process research investigating dysfunctional appraisals in CBT for depression is then reviewed. The specific benefits of using a task analytic approach to investigate client change in CBT for depression are then considered. The formulation of specific objectives for this investigation concludes the chapter.

**Review of the Literature**

**Theories of Change in CBT for Depression**

Cognitive theories of change in the treatment of depression posit that working with cognition is sufficient for engendering enduring change (Johnsen & Friborg, 2015). A review of CBT literature indicates an evolution in the ways change has been conceptualized by these theorists. Albert Ellis first created a comprehensive cognitive therapy based on the idea of rational and irrational beliefs in the early 1970s (Emmelkamp, Ehring & Powers, 2010), soon followed by Beck and colleagues’ (1979) landmark manual of cognitive therapy for depression. This latter work described a model of the development and maintenance of depression and guidelines for its treatment that continues to be the foundation upon which today’s CBT is based. This review therefore begins with Beck’s model of depression and associated theories of change.

**Cognitive model of depression.** Beck’s cognitive theory proposes that people are constantly immersed in the tasks of seeking, processing, and acting on information. Over time, systematic errors can be introduced in the way we go about these tasks, resulting in faulty information processing that can lead to depression. For example, depressed individuals may misattribute the cause for their depression to some “disgraceful deficiency” in the self (Beck et
al., 1979, p. 190). These systematic errors can result in increased saliency of the negative aspects of experiences, leading to unrealistically negative and pessimistic appraisals of the self and current context. Maladaptive cognitive structures known as *schemas*, relatively enduring bodies of knowledge which are used to organize and give meaning to new information, develop as a result of these systematic errors (Beck et al., 1979; Clark, Beck & Alford, 1999). At any point in time, these structures may be either dormant or activated. Once activated, these structures can influence thoughts, feelings and behaviors, for example by directing attentional resources and influencing memory (Scher et al., 2004).

Depressogenic cognitive structures or maladaptive schemas are considered problematic both in content – e.g., based on invalid premises or unrealistic goals – and in form – i.e., rigid, inflexible, impervious to disconfirming information. These structures are also unhealthy when they represent negative views of the self and are based on few and primarily external sources of information; more healthy structures are theorized to incorporate positive views of the self, and to be based on varied and primarily internal sources of information. Depressogenic structures can leave individuals vulnerable to depression if they become activated. When a pre-existing depressogenic cognitive structure becomes activated, individuals come to experience what Beck termed “the negative cognitive triad” of self-world-future: negative view of self, negative view of self-in-relation-to-other, negative view of self-in-the-future. All apexes of this triad can be seen as representing some type of negative belief about the self. Negative beliefs about the self, or negative core beliefs, can leave individuals vulnerable to depression by serving as an activating force for depressogenic structures. Additionally, these maladaptive schemas may include conditions or contingencies of self-worth (Clark et al., 1999; Rogers, 1959); failure to
meet these “if-then” beliefs about what the self must do to be worthwhile can also negatively impact mood, and serve as a trigger for the underlying depressogenic structures.

Depressogenic structures activate what Beck and colleagues call a “primal mode” of thinking (Clark et al., 1999). Two cognitive-affective-physiological-behavioral-motivational modes of thinking are described: primal modes gear up the organism for survival or defense of resources, akin to highly emotional experiential states (Greenberg, 2002), while constructive modes are more focused on increasing necessary resources. The capacity for intimacy, achievement strivings, and creativity all reflect constructive modes. One consequence of depressogenic cognitive structures is that they recruit attentional resources to focus on assessing whether any feature of the environment represents a threat to the organism – i.e., activate primal modes. With repeated activation, primal modes become strengthened, and more stimuli are evaluated as being relevant to the self. The dysfunctional and maladaptive beliefs associated with depressogenic cognitive structures are imposed on the stimulus by the depressed individual, reinforcing the activation of primal modes and resulting in a distorted construction of situations or people in relation to the self. Thus the depressed individual can demonstrate a number of dysfunctional appraisals, evaluations that reflect distorted constructions of situations or people.

Furthermore, depressed individuals are unlikely to reflect on these dysfunctional appraisals. Beck differentiates between two levels of cognitive processing (Clark et al., 1999). Automatic processing is effortless or unintentional, unconscious, rapid and difficult to regulate, requires minimal processing capacity, relies on parallel processing with minimal analysis, and is “stereotypic,” involving familiar and highly practiced tasks. In contrast, controlled or strategic processing is effortful or intentional, fully conscious, slow and easier to regulate, requires considerable processing resources, relies on serial processing with high levels of cognitive
processing, and can deal with unfamiliar and unpracticed tasks. While all individuals experience dysfunctional appraisals from time to time, it is theorized that a healthy individual reacts to a dysfunctional appraisal by engaging in some sort of “reality testing” using strategic levels of cognitive processing, and then uses this critical examination to develop a more constructive appraisal (J. Beck, 1995). In contrast, depressed individuals do not engage in strategic levels of cognitive processing to assess the validity or utility of their cognitions, instead exhibiting an over-reliance on automatic levels of processing.

**The role of dysfunctional appraisals in depression.** As noted, in the cognitive model of depression dysfunctional appraisals are seen to arise from depressogenic structures or schemas that contain negative core beliefs about self and contingencies of self-worth. Thus client statements that reflect dysfunctional appraisals can be conceptualized as manifestations of underlying maladaptive schemas. In general, appraisals are evaluations of whether and how events relate to the self (Cervone, Caldwell, Fiori, Orom, Shadel, Kassel & Artistico, 2008); appraisals are immediate, and potentially more related to intuitive emotional reactions to events than to effortful cognitive processing (Safran & Greenberg, 1982). Dysfunctional appraisals reflect problematic evaluations of events. For example one client negatively evaluated a neutral situation in which she overheard people talking, as reflected in the statement, “They’re out there [on the porch] and they’re talking about me … and I feel like I’m no good” (Mann, 1999, p. 165). The events being appraised may be external, like a situation or person, or internal, like a bodily response or emotion (Barlow et al., 2004).

These dysfunctional appraisals are problematic in both content and form (Beck et al., 1979; Clark et al., 1999). Content-wise, dysfunctional appraisals lack validity in the face of objective evidence, or utility for the individual (J. Beck, 1995); instead they contain distorted
constructions of whether and how events relate to the self. With regards to form, dysfunctional appraisals are associated with a primal mode of thinking concerned with issues of defending existing resources, and additionally indicate an automatic level of cognitive processing that does not involve reflection. Thus clients may make statements that indicate over-estimations of threat and danger, in particular miscalculations of the actual probability of a negative event, and of the extent of the consequences if that event did happen (Barlow et al., 2004). One type of appraisal, the appraisal of self-efficacy with regards to coping with problems, has a particularly strong relationship with depression. Individuals who perceive themselves as poor problem-solvers, i.e. to whom many situations are threatening or dangerous, appear to be more likely to have difficulties with depression, and clients’ low ratings of problem-solving capacity have improved alongside depressive symptoms in one study investigating group CBT treatment for depression (Chen, Jordan & Thompson, 2006). Therefore dysfunctional appraisals associated with depressogenic structures reflect some sort of underlying negative view of self or contingency of self-worth alongside distorted evaluations of the threat or danger posed by an event, and/or of self-efficacy in coping with this event.

**Theories of change in CBT for depression.** Based on this model of the processes involved in the development and maintenance of depression, Beck and colleagues (Beck et al., 1979; Clark et al., 1999) posited that altering cognitive processes could alleviate depression. They described several cognitive strategies through which the amelioration of depressive symptomatology may be effected, including:

- Re-evaluating thoughts, feelings and behaviors (that arose from information being processed in an automatic preconscious way) in a more elaborative, conscious way;
- Modifying the meaning ascribed to affective experiences;
• Testing inferences against real-life contexts;
• Viewing a situation from multiple perspectives to achieve a conceptualization that will facilitate mastery or coping;
• Activating compensatory schemas that deactivate or counter dysfunctional cognitive structures;
• Shifting from seeking to satisfy basic organismic needs, to seeking to achieve personal goals or group norms; and
• Correcting negative biases in the information processing system.

Additionally, over time two perspectives from behavioral therapy became integrated with cognitive therapy (Westbrook, Kennerley & Kirk, 2011). Avoidance behaviors were recognized as playing an important role in the development and maintenance of depression, and behavioral strategies became recognized as potent ways to facilitate cognitive change. The treatment thereby evolved into a cognitive-behavioral treatment of depression; CBT for depression has continued to evolve, for example recognizing the importance of problem solving and behavioral changes in improving quality of life. A “third generation” of CBT has since emerged that focuses on helping clients enact behavioral changes in the face of negative affect (Emmelkamp et al., 2010).

Despite these evolutions, CBT therapists nevertheless continue to aim to alleviate suffering primarily by altering cognitive processes (e.g., Bennett-Levy, 2003; Dobson & Dobson, 2009). For example, problem solving interventions are conceptualized as important because they require that clients use strategic levels of cognitive processing and other cognitive skills, and because the self-referential information of self as capable of solving problems that emerges from finding solutions can be used to challenge depressogenic beliefs about the self. Similarly,
behavioral modification strategies such as activity scheduling are conceptualized as ways to elicit new information about the self that can be used to challenge distorted cognitions, e.g. self as actually more engaged or capable of joy than previously thought (Dobson & Craig, 1996; Persons et al., 2001).

There are various theories regarding how cognitions change as a result of this treatment (Crits-Christoph, Connolly Gibbons & Mukherjee, 2013; Hollon, Evans & DeRubeis, 1988, in Barber & DeRubeis, 1989): change via modification of underlying cognitive structures, via the deactivation of maladaptive underlying cognitive structures, and/or via the development of compensatory skills in the face of unchanged maladaptive structures. Although these theories are concerned primarily with mechanisms of change, i.e., what changes within a person to ameliorate depression, these theories also suggest different active ingredients that may be present in the therapy for these mechanisms to be realized, i.e., the behaviors or processes in which a person engages so as to engender the changes that ameliorate depression.

CBT theorists who stress the importance of the modification of maladaptive cognitive structures for enduring change to occur argue that all CBT interventions should have two goals: first, they should aim to illuminate the client’s idiosyncratic construals of specific situations; second, they should aim to modify assumptions, rules and other cognitive structures which contribute to a dysfunctional organization of information (Beck et al., 1979; Clark et al., 1999). These goals are considered overlapping, whereby the “discovery by the patient of his peculiar construction of reality” (Beck et al., 1979, p. 143) serves to stimulate reflection on both specific events and the meanings attached to these events. Beck and colleagues argue that this sequence of awareness and reflection makes possible a subsequent objective assessment of cognitions, and that this objective assessment – a meta-cognitive process – that results in the necessary
modification of problematic cognitive structures. Similarly, Safran, Vallis, Segal and Shaw (1986) have noted that novice therapists experience difficulty in choosing which cognitions may be most appropriate for achieving the long-term goals of CBT therapy. They propose that rather than simply using techniques to change individual thoughts, therapists should first focus on identifying networks of associated thoughts (see also Persons, 2008). These linked cognitions can then be used by the therapist to infer underlying dysfunctional self-evaluations. Distressing dysfunctional self-evaluations should then be made explicit, so that the client may link biases in information processing with these underlying dysfunctional self-evaluations.

This theory of how cognitions change in CBT for depression elaborates an important step between identification of idiosyncratic construals and reflection: making explicit the link between problematic thought content and underlying dysfunctional cognitive structures. Safran and colleagues (1986) argue that once this link has been made, any strategy that invalidates thought content thereafter serves to alter or refute the associated dysfunctional cognitive structures. They therefore caution against early challenging of dysfunctional thoughts, stressing that exploration of these thoughts should continue until a rich assessment of self-evaluative networks has been accomplished. Specifically, the therapist should continue to focus on exploration until a self-referencing construal is made, so that the full intrapersonal meaning of the dysfunctional thought can be understood. Although the authors concede that additional change mechanisms may exist in psychotherapy, for example developing an awareness of self as agentic co-constructor of reality through the successful modification of “peripheral” automatic thoughts, they suggest potent interventions are those which target idiosyncratic depressogenic assumptions of the client, in particular self-referent cognitions or appraisals about the self. Thus for this group of theorists, accessing underlying maladaptive structures is a necessary component
in generating adaptive reappraisals about the self, and these adaptive reappraisals represent a transformation of the underlying structure. In this formulation, a potent intervention in CBT for depression would explore a dysfunctional appraisal until an idiosyncratic intrapersonal meaning is understood; then, associated assumptions or rules about the self would be challenged, or the meaning associated with this event would be reflected upon. Subsequently, the client would be seen to generate or endorse more adaptive appraisals of the self.

In contrast, another group of theorists posit that making links between problematic thoughts and related depressogenic structures is not vital to the amelioration of depression. Dobson and Dobson (2009) propose that work with underlying maladaptive cognitive structures like core beliefs or assumptions about the self should take place later in therapy, if at all. As in other CBT training texts (e.g., Persons et al., 2001; Persons, 2008), these authors stress the importance of identifying core beliefs and their relationship with emotions, behaviors and life events as part of early case formulation. However, Dobson and Dobson argue that little evidence exists that suggests protracted interventions focusing on modifying underlying cognitive structures adds to CBT treatment outcomes. Instead, they formulate the primary goal of CBT as helping clients to resolve problems; enacting this change may require formal cognitive restructuring interventions, but may instead arise from simple problem-solving or behavioral activities.

These authors envision cognitive restructuring interventions as ways to enact behavioral change; meta-cognitive change is still important, but only insofar as it facilitates behavioral or symptomatic change. For this and other reasons, e.g. impact on working alliance, they propose that early cognitive interventions can and should be aimed at the level of appraisals or automatic thoughts rather than at the level of underlying assumptions or beliefs. They state that therapists
can effect change by working on any number of emotionally salient, highly endorsed thoughts that occur frequently or in several situations. For example, Dobson and Dobson (2009) argue that simply helping clients identify negative thoughts can increase their capacity to attain emotional distance from their reactions. Other meta-cognitive strategies can then be taught to the client, for example assessing the validity and utility of the thoughts, or practicing alternative ways to appraise the triggering situation. In this theory, the value in targeting dysfunctional appraisals is not related to underlying schema change, but rather to compensatory skill development or schema deactivation; the maladaptive schema need not be addressed directly for change to occur. Changes in content of appraisals are viewed as representative of the acquisition and use of new skills or knowledge about the self (Barber & DeRubeis, 1989). In this formulation, a potent intervention targeting dysfunctional appraisals would directly challenge these appraisals without clients necessarily making links to or accessing underlying schemas. After skill acquisition or accessing positive self-knowledge, clients would endorse more adaptive appraisals about the self.

Judith Beck (1995; 2005) presents a vision of CBT which “splits the difference” between these two theories. She conceptualizes early cognitive restructuring work with automatic thoughts as a necessary precursor to later work with underlying cognitive structures. She notes that symptom abatement and successful thought-change attempts can make clients more willing to consider the validity, utility and inevitability of negative self-evaluations and more hopeful of change. Moreover, she argues that early symptom abatement can positively influence the therapeutic alliance. Finally, she notes that client understanding of how dysfunctional structures negatively impact their daily life can build motivation to change these structures. Although much like Dobson and Dobson, J. Beck also recommends beginning the work of therapy by targeting more “superficial” cognitions such as automatic thoughts, and also emphasizes the importance of
helping to solve current problems, she additionally notes that effective therapy requires an understanding of how any one automatic thought is related to underlying dysfunctional cognitive structures. Similar to Safran et al. (1986), she posits that understanding these linkages through thorough case conceptualization helps therapists be selective about which cognitions are chosen for modification, such that those cognitions related to maladaptive schemas should be targeted in the hope of schema change. This formulation suggests that there is likely to be a period early in therapy wherein clients engage in the reappraisal of situation-specific problematic evaluations but do not directly access maladaptive schemes nor generate adaptive reappraisals about the self. While these situation-specific reappraisals are nevertheless likely to be thematically linked to one or more underlying maladaptive schemas, these depressogenic structures would be addressed at a later time during a separate process of reappraising the self.

These theories therefore suggest three different hypotheses about the client activities that may be observed while clients shift from dysfunctional appraisals to more adaptive appraisals about the self. As noted, it may be observed that clients make explicit links between a dysfunctional appraisal and its underlying depressogenic cognitive structure before the dysfunctional appraisal is challenged, and a new more adaptive appraisal about the self is endorsed. It may instead be observed that clients do not make links between dysfunctional appraisals and a related depressogenic cognitive structure prior to challenging these appraisals. Alternatively, it may be observed that clients first successfully challenge one or more dysfunctional appraisals without making links to underlying schemas, and then make these links and engage in a separate process of reappraising depressogenic construals about the self.

As is evident in this brief review, CBT for depression aims to influence the way that information is processed by changing both the content and form of cognitive structures, or to
effect some type of meta-cognitive change (Hollon & DeRubeis, 2004; Jarrett, Vittengl, Doyle, & Clark, 2007). Thus shifts from maladaptive to adaptive beliefs about the self, from primal to constructive modes of thinking, and from automatic to strategic levels of cognitive processing are all desirable. While there appears to be agreement that working with dysfunctional appraisals is important to CBT for depression, the desired end-state of interventions at the level of dysfunctional appraisals remains unclear: the value in targeting these appraisals may be in presenting an opportunity to develop compensatory skills, or it may alternatively (or additionally) be in facilitating a modification to underlying maladaptive schemas. The essential in-session sequences of behaviors or processes by which working with dysfunctional appraisals could result in these types of meta-cognitive changes are also unclear. Yet, identifying the client processes associated with dysfunctional appraisals could help illuminate one avenue for change during CBT for depression.

For this reason, some researchers have begun to examine client and therapist in-session activities that could be associated with good outcomes in psychotherapy. Research aimed at identifying processes that contribute to successful outcomes in psychotherapy is part of the larger field of study of change process research (Elliott, Greenberg, Watson, Timulak & Freire, 2013; Greenberg & Foerster, 1996). A general overview of methods in change process research is presented next to set the framework for reviewing existing change process research related to working with dysfunctional appraisals in CBT for depression.

**Methods in Change Process Research**

Change process research aims to discover the ways by which change is effected through psychotherapy. Its roots lie in Carl Rogers’ search for conditions that facilitate change in psychotherapy (Rogers, 1958), and Eugene Gendlin’s quest to define and measure successful
client engagement in psychotherapy through deepening experiencing (Gendlin, 1969; Elliott et al., 2013). These research questions are emblematic of the types of queries that continue to be investigated by change process researchers, those that seek to clarify the therapy processes that contribute to change in psychotherapy. In this case, process refers to the continuous flow of events that happens during treatment (Gendlin, 1961). Thus change process researchers focus on therapy process rather than treatment outcome. This focus reflects the goal of making causal inferences regarding change in psychotherapy, which is not possible when considering outcome alone (Haubert & Dobson, 2007). By observing occurrences during treatment, these researchers seek to discover the “mechanisms of action” within a psychotherapy, or a therapy’s active ingredients by which change may be realized. These active ingredients tend to be observable and occupy a more macroscopic and interpersonal space than “mechanisms of change,” which tend to be more specific intrapersonal capacities or processes that are situated almost invisibly within the client. Although there are certainly strong overlaps between process and outcome research, and between mechanisms of change and active ingredients, through its greater focus on observable processes occurring during therapy sessions, change process research methodologies are characterized by a reliance on observational strategies aimed at investigating within session activities.

These strategies are complementary with but differ significantly from the statistical methods more commonly used in the investigation of change in psychotherapy. The preponderance of statistical methods in this research have arguably turned psychotherapy research into “a science of statistical inference in which the true relations of phenomena disappear in the average and result in findings that apply only to population means” (Greenberg, 1984b, p. 124), and indeed these methodologies have shed little light on mechanisms or
ingredients of change involved in CBT (e.g., Haaga, 2007; Kazdin, 2007, 2009; Persons, 2007). Nevertheless researchers continue to focus on testing statistical hypotheses about almost-invisible “mechanisms of change” in CBT rather than the systematic observation of real phenomena (e.g., Christopher, Jacob, Neuhaus, Neary & Fiola, 2009; Coleman, Cole & Wuest, 2010; Dozois et al., 2009; Zettle, Rains & Hayes, 2011). There are at least two methodological factors that contribute to this state of the field.

First, the labour-intensive nature of the task is a significant barrier to methods relying on rigorous and extensive observation (Elliott, 2010). For example, in empirically deriving a model of how clients resolve a particular problem in psychotherapy, the collection of a sample itself can be a rigorous and subjective process that involves the scanning of all client sessions to identify those in which clients seem to resolve the same type of problem. These sessions must then be minutely analyzed and compared with each other to identify and then distinguish between essential and non-essential components, while creating a model that does not average results but rather remains a true descriptor of all cases. Systematic observation is therefore an involved process of discovery which by its nature is ill-suited for publication in scientific journals whose primary purpose is to archive the results of investigations rather than their process (Greenberg & Newman, 1996). Thus the question of cost versus payoff can serve as a significant obstacle for the individual researcher.

Doss (2004) has proposed a second reason that observational research on in-session processes of change lags behind experimental studies examining mechanisms of change. He speculates that observational research must be informed by mechanisms-of-change research that has yet to bear fruit. That is, before considerable time and resources are invested in detailed observational research, the underlying agents of change within the person should first be
identified. For example, research indicating that changes in cognition are associated with abatement of depressive symptomatology would lead the fruitful search through in-session materials for ways in which changes in cognition are effected through psychotherapy. While some evidence is emerging that this is indeed the case, further research is necessary to confirm that changes in cognition are a significant mediator of change in CBT for depression (Crits-Christoph et al., 2013).

Interestingly, a similar caution can be made regarding premature mechanisms of change research. It may be that this research has resulted in ambiguous findings due to impoverished theories. Greenberg (2007) argues that psychotherapy research must shift into a science of analyzing what clients actually do in therapy before attempting to answer questions regarding the mechanisms through which change occurs. Along with others (e.g., Rogers, 1958; Whisman, 1993), Greenberg argues that direct observation of change phenomena is the only way to perceive qualitative and contextual features which may be important to change but have not yet been identified or are inadequately assessed with existing process measures. Studying mechanisms of change outside of the complex context of the therapy session also risks oversimplifying change processes (Russell, Jones & Miller, 2007). Furthermore, scientific research at best represents an interplay between data and theory, such that theories are used to interpret findings, and findings shape and illustrate theories (Safran et al., 1988). Findings from mechanisms of change research therefore need to be interpreted in the context of rich theories of change that have been informed by direct observation of actual change events.

Despite the challenges posed by process research, several researchers have begun to study the processes by which change occurs in psychotherapy. For example, practitioner-researchers working primarily from a process-experiential (PE) perspective have developed
evidence-based descriptions of some change processes associated with their interventions; therapist and client behaviors have been modeled in the successful resolution of problematic reactions (Rice & Saperia, 1984; Watson, 1996), unfinished business (Greenberg & Foerster, 1996; Greenberg & Malcolm, 2002; Greenberg, 2007), and attachment injuries in couples (Makinen & Johnson, 2006). Researchers from a variety of therapeutic approaches have also articulated the importance of studying sub-outcomes to answer more general questions regarding how therapy works (e.g., Muran et al., 1995), and have begun to use intensive observation to investigate what clients actually do in therapy at key moments such as during alliance ruptures and repairs (e.g., Aspland, Llewelyn, Hardy, Barkham & Stiles, 2008; Bennett, Parry & Ryle, 2006; Safran & Muran, 1996; Watson & McMullen, 2005). Together, these change process researchers have developed several methodologies to enhance the reliability of their observational approach.

Elliott (2010) describes and evaluates three basic methodological approaches towards change process research. He argues that these research designs are the building blocks by which change process researchers seek to become a science of intense observation: process-outcome, qualitative “helpful factor”, and sequential process designs.

In process-outcome designs, researchers sample a particular process in therapy sessions, and quantitatively relate the presence or dosage of this process to therapy outcome. These studies are vulnerable to a number of limitations including measurement problems and internal validity problems that leave findings vulnerable to multiple interpretations. For example, a very successful intervention may be offered more frequently to clients who, because of their own impoverished internal resources, respond with less amelioration than clients to whom the intervention was offered less frequently (Stiles, 1988). The resulting negative correlation
between intervention and outcome would obscure the helpful nature of the intervention. It is for reasons such as these that process-outcome research should be based on strong theories of change that can interpret findings in a meaningful way. Nevertheless, Elliott (2010) notes that a process-outcome design is valuable for researchers who seek to discover, one at a time, processes which are associated with change regardless of the contexts in which they occur.

Qualitative helpful factor designs ask participants to describe their experiences and perceptions of therapeutic processes. These designs are characterized by using a phenomenological approach to investigate a broad range of processes, and is valuable in identifying helpful and unhelpful aspects of therapy as well as discovering the covert, intentional and private information of participants (Levitt, 2016, private communication). As with other research that relies on participant self-report, the results of these investigations may be negatively affected by participant lack of awareness, biases, or simple inaccuracy. Furthermore, synthesizing meaning from results across studies can be challenging, for example clients and therapists report different therapeutic events as significant (Timulak, 2010). Nevertheless these designs enrich theories of change by expanding the existing set of potential change factors and illuminating obstacles (Elliott, 2010).

In sequential process designs, researchers examine turn-by-turn client-therapist interactions to derive relationships among processes. These designs describe specific within-session changes, but these changes may not have any relationship with treatment outcome. Furthermore, sequential process designs are vulnerable to third-variable causation, wherein unknown co-occurring or preceding variables may be significantly influencing the observed processes. Sequential process studies also require much time, effort, and training. Nevertheless,
this design is valuable in its description of sequences of events, making it possible to address questions regarding cause-and-effect.

These three basic approaches are best seen as parts of a larger program of study for researching change in psychotherapy, as no one study or methodology can accurately observe, theorize about, and validate knowledge about the way people change (Greenberg, 2007; Slife & Gantt, 1999). Some research strategies therefore combine elements of all three of these basic approaches to change process research. A significant event design, such as task analysis, is one such strategy that represents a “disciplined investigative strategy” (Greenberg, 1984b, p. 127) for understanding change. Studies employing this design investigate moments in therapy that clients, therapists, or researchers have identified as facilitative or obstructive to change, using a helpful factor strategy to identify these moments as necessary. They then typically use a sequential process strategy to develop a description of what is occurring during these moments, and a process-outcome strategy for linking sub-outcomes temporally near these moments to overall treatment outcomes (Elliott, 2010). For example, Rogers began his process research studies with a significant events design. In his 1958 report, Rogers described an intensive analysis of significant events during which clients appeared to change in psychotherapy. Using his strategy, “to approach the phenomena with as few preconceptions as possible, to take a naturalist’s observational, descriptive approach to these events, and to draw forth those low level inferences which seem most native to the material itself,” (Rogers, 1958, p. 142), Rogers identified client behaviors that indicated a deepening of experience, a deepening which would later be linked to good outcome in psychotherapy in numerous process-outcome studies (Elliott et al., 2013).

Rice and Greenberg (1984) note that significant events researchers also share a set of assumptions that guide their quest for understanding psychotherapy change processes. These
assumptions, which are here called the assumptions of multiplicity, specificity, agency, and observation, shape the methodology of significant events research, including that of a specific method called task analysis.

Multiplicity refers to the assumption that there is no single process through which people change in psychotherapy, but rather a set of processes. The broad construct of “change in psychotherapy” is thereby atomized into a larger set of more specific change phenomena (Rice & Greenberg, 1984). These phenomena can take place in a moment, such as a sudden awareness of physiological responsiveness, or across the whole therapy, like the therapist-client relationship. Change phenomena may therefore be divided into any number of temporal units - or, like a verbal exchange, into various units of meaning; they may be intrapersonal or interpersonal; they may be directly observable or must be inferred from what is known of information processing. Researchers considering change processes in psychotherapy must therefore specify the exact nature of the phenomenon under investigation. One such phenomenon is the “change event,” defined as a moment during which change occurs in psychotherapy. This somewhat loose definition reflects that significant events in psychotherapy may be a single client-therapist interaction, a whole session, or an entire stage of the treatment. A diverse multitude of change events are assumed to occur during therapy, each composed of its own combination of client and therapist processes before, during, and after the change event. One client may experience many change events in sequence, or multiple change events at the same time. For example, a client engaged in an exposure exercise with their therapist may benefit both from the regulating effects of continued stimulation of the fear network in the absence of aversive consequences and from active engagement in positive reappraisal of the feared stimulus (Ray, 2009). This stance
interprets the current broad range of empirically-validated treatment approaches as a reflection of the diversity of processes by which people can change (Greenberg, 1975).

A second assumption is that some if not all change processes are context-specific (specificity). Therefore, the processes through which people change will differ depending on context. So for example evoking a vivid image of a specific situation might be an aspect of a change phenomenon in one context (e.g., the resolution of a problematic reaction; Watson, 1992) but not in another (e.g., the repair of alliance ruptures; Safran & Muran, 1996). The matter of identifying and observing change processes is therefore not only a matter of seeking differences in the quantity of a particular act, but also a matter of seeking differences in the qualities of that act – its relational sequence to other acts, the broader context in which it occurs, client’s current expressive style, etc. Thus in the case of vivid images, not only is their presence or quantity in a therapy session in general associated with good outcomes in psychotherapy (Langs, Bucci, Udoff, Cramer & Thomson, 1993; McMullen, 2013; Watson, 1996), but within a specific task they may be additionally important to change when preceded by a client’s description of a problematic reaction and followed by an increase in arousal (Rice & Saperia, 1984). This stance implies that a sequential process analysis must be undertaken if we are to fully understand the role of a particular component within a client’s overall change process. Process-outcome and sequential analysis are complementary designs in this respect; the interpretation of quantitative process-outcome findings is informed by the contextualizing qualitative strength of sequential analysis descriptions, while the importance of observed processes can only be established by studies that can link these processes with significant clinical outcomes (Elliott, 2010).

The assumption of context-specific change additionally positions therapist behaviors as part of the environment in which client change occurs (Rice & Greenberg, 1984). Essential and
hindering change components or their sequences may differ as a function of the environment in which the client is trying to resolve a problem. In other words, models of change derived from different treatment approaches may differ even when similar clients are attempting to resolve the same kinds of problems.

A related assumption is that people are agentic and goal directed. This assumption influences how these researchers conceptualize change, and the way in which they view person-environment interactions. With regards to change, the assumption implies that people intentionally engage in a particular change process in an attempt to achieve a particular goal. This stance views clients not as a homogenous group who react similarly to therapist interventions, but rather as individuals who strategically engage in therapeutic change processes according to their own motivational goals at a particular time. Sampling change events which show structural similarities is therefore more likely to result in a homogeneous research sample than sampling an array of change events from similar individuals or even from the same individual, as motivational goals shift across time. A fruitful study of change processes thus takes the form of the study of structurally similar events occurring within and across individuals.

With regards to person-environment interactions, the assumption of agency implies that people construct their own knowledge through active engagement with their inner experience, the world, and others. This constructivist view (Piaget, 1952; Vygotsky, 1978) thereby situates the behaviors of interest in the agentic constructive client, who is after all the locus wherein change occurs (Greenberg, 2007). Therapist statements and behaviors may be part of the environment in which change occurs, however at any one point in time in therapy, clients may be engaging with this environment, or attending to their own inner experience. Methodologically,
this implies that in the quest to thoroughly describe a client’s change process, the focus of observation must be on what the client says or does.

Significant events researchers also make the assumption that intensive human observation of therapeutic events can extract valuable and contextually meaningful information (Rice & Greenberg, 1984). The human and therefore the necessarily subjective element of observation implies that the researcher’s own sense of what change looks like and what is important in therapy will shape the selection and observation of change phenomena. To ensure that meaningful information is derived from observational studies, Rice and Greenberg (1984) suggest three design restrictions. First, the researcher’s implicit theories about the change process under observation should be made explicit. This explication serves to contextualize the research by revealing what types of acts hold saliency for the observer (Mahrer, 1988b), and what assumptions about change underlie the meaning of these acts for the observer (Greenberg, 2007). Second, a systematic approach for observation of the specified task should be developed. Finally, a broad sample of similar change events should be analyzed to verify the observed results.

**Task analysis: a significant events approach.** Task analysis for psychotherapy research (Rice & Greenberg, 1984) originated as a significant events approach to studying the process of change in psychotherapy. The term was drawn from Newell & Simon’s (1972) strategy for investigating human problem-solving (Safran et al., 1988). In the original problem-solving task analysis, the researcher begins by using logic to derive an expected sequence or pathway of internal psychological events that a person will experience on the path to solving a logical problem. This pathway serves to set a boundary on the behaviors that researchers are likely to observe in the problem-solvers actual performance. This pathway then is one theory of the
resolution of a problem, out of a finite set of possible theories that can be logically deduced. The theory then undergoes two tests of validity. First, it is considered in light of what is known about human information processing: while the theory is logically possible, is it humanly feasible? Second, the theory is tested on its ability to predict an actual performance: were the behaviors actually exhibited during a successful problem-solving task within the boundaries predicted by the theory? The purely logical theory is revised to better reflect the actual performance and basic understanding of human functioning. This refined theory is then tested against another successful performance, refined again, tested again, and so on in a process of successive approximations until a model with strong predictive validity is derived.

Safran et al. (1988) describe two significant challenges to translating the problem-solving task analysis strategy to psychotherapy. First, to adequately test and refine a model of problem-solving performance, the experimental environment must be controlled so that individual differences in problem-solving performance can be said to be due to deficiencies in the model’s predictive validity and not as a result of differences in the environment. Therefore, the environment in which the task under investigation is undertaken must be controlled in some way. Second, logical problem-solving tasks differ significantly from the subjective tasks that clients attempt to resolve in psychotherapy. These real-world problems are vague and ambiguous; unclear and incomplete information make it difficult to grasp an appropriate direction or goal for problem-solving (D’Zurilla & Goldfried, 1971). This introduces indeterminacy into the problem-solving process. The problems attempted to be solved in psychotherapy are highly personal and emotionally salient, not purely problems of logic (Rice & Greenberg, 1984). Even the purest cognitive understanding of depressogenic cognitions roots these difficulties and their solutions within the context of personal meaning: what is depressogenic for one client is not necessarily so
for another. This subjectivity means that no “correct” solution can be pre-determined and thereafter used to test the theory’s predictive ability.

Additionally, these ill-defined personal problems do not lend themselves well to purely logical derivations of theories in the first place; not being purely problems of logic, rational speculations about pathways to resolution of such problems cannot rely solely on logic. Instead, in addition to logical deductions from existing theory and empirical data, psychotherapy process researchers must use an empathic imaginal process to intuit hypotheses about potential pathways. Greenberg and Rice argue that the researcher, by virtue of a shared humanity, has “empathic access” to the human psychological processes involved in the phenomena under investigation. This implicit way of knowing must be relied upon to derive a testable theory of the resolution of ill-defined personal problems. While there is a long history of empathy as an investigative strategy for understanding human processes (e.g., Allport, 1924; Kohut, 1959; Langfield, 1947; Southard, 1918), reliance on a researcher’s subjective “knowing” adds further indeterminacy to this research process.

Several methodological requirements were proposed by early psychotherapy researchers to address the challenges of controlling the testing environment, and the added indeterminacy introduced by client and researcher subjectivity. First, it was proposed that the controlled testing environment be operationalized as the manualized therapist intervention or technique (Rice & Greenberg, 1984; Safran et al., 1988). This extreme proposition would exert much control, but would restrict task analysis to the study of change events occurring during discrete interventions in manualized therapies only. While there is a strong overlap between significant change events and therapy tasks when one is studying therapist interventions – in fact they are functionally equivalent as a significant change event is the client resolution of a cognitive-affective problem
within an intervention—in actuality other types of tasks are possible which are not as obviously conceptualized as significant change events (Greenberg, 2007). For example, phenomena such as the development of change processes over time, or across a series of attempts at resolution, have become of interest to researchers (e.g., Greenberg & Malcolm, 2002; Sicoli & Hallberg, 1998).

Operational separation of task from change event has suggested other ways of addressing the problem of a controlled environment. Interested in the resolution of emotional distress in psychotherapy, Pascual-Leone and Greenberg (2007) held the environment constant by dictating global qualities of the therapist-client interaction that must be present when clients attempt to resolve this task. In this case, the client’s task of distress resolution, regardless of the exact nature of therapist intervention, was the phenomenon of interest. The researchers therefore specified only that the environment must be supportive of emotional processing through validation and empathy, must not be content-directive, must minimally interrupt emotional continuity, and must focus the client’s felt experiencing. Alternatively, a group of researchers interested in problems in the therapeutic relationship (e.g., Aspland et al., 2008; Bennett, Parry & Ryle, 2006) have investigated all instances of threats to the therapeutic alliance within sessions of a particular treatment approach, regardless of when they occurred in the treatment. The environmental control in these studies was the specific treatment approach. Environmental control in the task analysis of psychotherapy research can therefore be realized in a number of ways, and can differ greatly depending on the context in which the investigator proposes that the task occurs—within a specific intervention, in many interventions, or even across the whole therapy.

The problem of indeterminacy, or areas of uncertainty that must be addressed in the research design, is two-fold. First, the resolution of an ill-defined personal problem is a
subjective rather than definitive one. The client’s cognitive-affective sense of resolution is therefore the best indicator to researchers that a solution to a problem has been found (Safran et al., 1988). This means that the performance against which a theory’s predictive validity is tested must be assessed using methods that are sensitive to shifts in client’s cognitive-affective states. Given the purpose of psychotherapeutic treatment in general, Safran and colleagues noted that a “correct” solution to a therapy task would ultimately lead to good therapy outcome. If one can identify a group of “sub-outcomes” which are theoretically related to good therapy outcome, these sub-outcomes themselves can serve as measures of resolution. For example, client-reported changes in automatic thoughts or changes in clients’ level of experiencing are sub-outcomes which are theoretically linked to overall good therapy outcomes; change on a sub-outcome measure after a particular session can therefore serve as an indicator that a therapy task has been successfully resolved in that session. These measures can additionally be used to link within-session and post-session changes (immediate and intermediate outcomes) to overall treatment outcome.

Embedded in this methodology is the assumption of tasks as significant change events that have a more or less direct impact on outcome; more recently, researchers have considered other ways in which resolutions can be identified. In two of the examples already described, Pascual-Leone and Greenberg (2007) and Bennett et al. (2006) both predefined resolution on the basis of the tasks under investigation. The first set of researchers, investigating emotional distress, defined resolution as client indicators of advanced emotional processing, including expression of new emotional experiences, meaning making, positive self-evaluation, active agentic stance, and clear identification of the emotional concern. The second set of researchers, investigating threats to the therapeutic alliance, defined resolution as client’s expression of
understanding accompanied by evidence of an affective shift. In both cases, multiple raters assessed the data for resolution events. In these cases, the researchers were not primarily interested in the relationship between resolutions and outcome, but rather in descriptive modeling of the ways in which clients resolve these two tasks. This use of task-specific behaviors as markers of task resolution is further away from treatment outcome than using sub-outcome measures of change to determine resolution; a significant linear relationship between resolution and outcome cannot therefore be assumed when this type of categorical measure of behavior is used. In other words, clients may exhibit behavior that indicates they have solved a particular problem, but the solution to this particular problem may not have a direct effect on the outcome of their therapy. Depending on the interest of the investigators then, client resolution then may be operationally defined by sub-outcome measures, by categorical descriptors, or by some combination of both.

The second problem of indeterminacy is the subjectivity of the researcher in selecting appropriate criteria for determining components of the model. To address this issue, Safran et al. (1988) suggest that a categorical measure based on the observed performance should begin to emerge once a theorized model of resolution has begun being tested and refined. This measure can then attain convergent validity by being used alongside one or more previously established measures to assess subsequent performances. In this way, researcher-identified performance shifts become associated with one or more established measures; the shift from one step to another should be captured by at least some of these measures, and different steps should have different profiles across these measures. The new researcher-created categorical measure can then be used in future investigations into the task.
Formal hypothesis testing also helps to address the problems of indeterminacy introduced by researcher and client subjectivity. Although Safran and colleagues (1988) strongly oppose the testing of poorly formed hypotheses and reiterate the need for recursive intensive observations of single cases to develop a hypothesis “worth testing,” verification of the model or of its components with aggregate data is eventually necessary to validate the derived model. There are many forms of validation, depending on the hypotheses formed. For example, clients can be grouped into “resolvers” versus “non-resolvers” depending on whether they demonstrated resolution-related components of the model under investigation; these groups are then compared on outcome measures to determine whether this grouping is predictive of outcome (Greenberg & Webster, 1982, in Safran et al., 1988). Alternately, the model can simply be tested against another set of therapy transcripts to establish its descriptive power. Pascual-Leone and Greenberg (2007) used this method of validation, noting that their interest was in determining good in-session process, based on the assumption that good in-session process is necessary for good therapy outcome. They concede that later studies will be required to link in-session process with outcome. In all cases, Safran et al. (1988) argue that hypothesis testing cannot be the end of the scientific process, but rather that all models must be subjected to a perpetual process of refinement and testing.

The formal methodology of task analysis emerges from these assumptions of change, and the struggles of addressing environmental control and indeterminacy. The very language of task analysis reflects its history. Although not solely restricted to the investigation of change events, task analysis nevertheless focuses on an event. An event is operationally defined as a clinically meaningful client-therapist interaction characterized by a) some type of client marker as a beginning point, b) the subsequent client-therapist performance, and c) some type of resolution
as an end point (Rice & Greenberg, 1984). A task is conceptualized as the underlying cognitive-affective problem that is expressed, worked through, and resolved during the event; the term reflects the way that clients seem to be repeatedly trying to resolve a problem, as if it is a task that must be completed (Greenberg, Rice & Elliott, 1996).

Task analysis begins with the identification of a particular change episode or task to be analyzed. At its most basic level, task analysis involves the dissection of this task into its component steps by observing how successful participants complete that task; it is a strategy for identifying procedural competencies (Greenberg, 1984b). Expressed in change process research terms, task analysis involves the dissection of a cognitive-affective task into its component experiential steps by observing how clients with successful outcomes resolve that task; it is a strategy for developing a testable microtheory of change (Whistman, 1993). That experiential steps are sought by the researcher-observer reflects the underlying assumption of agency that situates change within the client, and the understanding that client subjective experience of resolution or change is the best indicator of such. Thus it is not only shifts in verbal and non-verbal behavior which are tracked by the observant researcher, but also qualitative shifts in the client’s cognitive-affective state of mind as evidenced by stylistic and content changes (Greenberg, 1984b). Thus the researcher plays close attention to all observable behavior to make inferences about shifts in experiential processes. For example, a change in a client’s awareness and conceptualization of her cognitive-affective task strongly suggests a new experiential step.

Greenberg (2007) has formalized task analysis in nine steps, differentiated into two phases. In the discovery phase, the researcher moves from initial specification of a task, through rational-empirical analyses, to the construction and explication of a model. In the validation phase, the researcher validates the model and relates process to outcome. These steps and phases
reflect the historical development of task analysis from its roots in problem-solving to its application for answering a broad set of questions about psychotherapy process.

In the discovery phase of task analysis, the researcher begins by describing the set of client behaviors associated with a particular problem that is to be worked through in psychotherapy; this set of behaviors functions as a marker for the task that is the target of the investigation (step 1: specifying the task). The researcher then makes explicit any knowledge or assumptions which frame the research (step 2: explicating the clinician-investigator’s cognitive map), and describes the context inside of which the task occurs, i.e., the treatment intervention (step 3: specifying the task environment). The researcher is then able to construct a rational model of how the task might be resolved in this environment by drawing from the literature, colleagues, and their own knowledge base (step 4: construct the rational model). This model includes clear descriptions of both the beginning and end of the task, termed task marker and resolution respectively. A sequential process approach involving intensive observation of a small number of in-session performances, typically derived from one or more clients exhibiting good therapy outcome, is then used to determine the essential components leading from task marker to resolution of the problem, and also serves to refine both task marker and resolution with this empirical data (step 5: conduct the empirical task analysis). At this point, the observed behavioral indicators of each component can be used to build ways of measuring these components. The rational and empirical models are then synthesized (step 6: synthesizing a rational-empirical model), and the psychological processes that underlie the in-session performance are proposed in an attempt to fully describe the task (step 7: explaining the model: theoretical analysis).
In the validation phase, the researcher confirms that the model adequately distinguishes between resolved and unresolved attempts at completing the task (step 8: validation of the components of the model), and tests the hypothesis that the components of the model and/or the resolution of the task are related to outcome (step 9: relating process to outcome). This formulation of task analysis situates it uniquely as a significant events approach, in particular through its requirement of relating process to outcome.

Greenberg’s (2007) steps elucidate the procedural demands of a task analytic program of research in which any one study represents just one part of a task analysis. Greenberg notes that his formulation is not intended as a rigid and discrete sequence of steps. Instead, he envisions task analysis as an iterative process whereby researchers repeatedly induce, refine, and verify a “best fit” understanding of each step in successively more accurate attempts at discovery. A task analysis is therefore both a lifetime of studies, and a single refinement. For example, Greenberg (2007) described his analysis of the unfinished business task (UFB) as a 15 year journey from task specification to hypothesis testing. Despite the length and intensity of the process, each step and iteration of the analysis was accompanied by the clarification of change in psychotherapy.

Three important limitations must be considered with regards to task analysis. First, the volume of workload involved in this program of study is significant, and requires familiarity with both qualitative and quantitative methodologies to derive meaningful results. For this reason, researchers typically do not sample sessions until saturation has been reached during discovery phase analyses. Thus, the results of initial attempts at modeling are difficult to generalize and must be validated and refined with additional data. Additionally, within any significant event approach it is important to recognize that the “start” of a significant event may exist long before the sampled process, and “end” long after the theoretically determined
resolution point. While these start and end points are theoretically and empirically informed, interpretation of results must consider that unsampled processes may also be at play. Finally, a task analytic approach typically relies on observer-investigators; in addition to the issues of subjectivity previously noted, this also places limits through lack of access to phenomenological data of the participants. Nevertheless, engaging in this program of study can yield a variety of clinically meaningful findings.

**Sample yield of the task analytic approach.** In Greenberg’s task analysis of UFB alone, he and his colleagues derived treatment principles from Gestalt theory (Greenberg, 1975) and verified their importance to task resolution (e.g., Greenberg & Clarke, 1979; Greenberg & Dompierre, 1981; Greenberg & Rice, 1981); identified three different types of client conflicts that arise in psychotherapy including the unfinished business conflict (Greenberg, 1979); contributed empirical support to the importance of in-session depth of experiencing during UFB (Greenberg, 1975, 1980; 1999); developed an idealized performance model of the UFB task through rational analysis (Johnson, 1980, cited in Greenberg, 1984a); contributed to the validation of a rational-empirical model of UFB and demonstrated a link between components of the intervention and outcome (Greenberg, 1983, in Greenberg, 2007; Greenberg & Webster, 1982; McDonald, 1982, cited in Greenberg, 1984a); refined the model (Foerster, 1990; Greenberg & Foerster, 1996); manualized a treatment protocol based on the model (Greenberg et al., 1996); examined the treatment efficacy of an intervention used to resolve the UFB task (Paivio & Greenberg, 1995); and verified the validity of the refined model in predicting outcome at termination and at 18 months post-termination (Greenberg & Malcolm, 2002; Greenberg & Pedersen, 2001, cited in Greenberg, 2007).
The contributions of this program of study clearly extend beyond a well-validated description of client operations related to change in psychotherapy. Greenberg (2007) notes that rational-empirical descriptions have hermeneutic value in generating theories about change that transform observation to understanding; that the task analytic process operationalizes the constructs that serve as a framework for observation (e.g., specifying Gestalt treatment principles) and results in rigorous yet clinically relevant research; and that the iterative nature of this research strategy promotes the continued refinement of models. This approach therefore offers exciting opportunities to learn more about CBT change processes (Safran et al., 1988; Whisman, 1993). An empirically-based model of how clients resolve a task in CBT for depression is a testable microtheory of change from which rich theories regarding mechanisms of change can be built and tested. Furthermore, this information could be used to create new process measures that are sensitive to change in CBT and thereby also facilitate discovery of additional change processes. Given the important role of targeting dysfunctional appraisals in CBT for depression, the process by which clients work to resolve their dysfunctional appraisals to generate more adaptive appraisals about the self seems a particularly useful target.

Crits-Christoph et al. (2013) argue that change process research focused on CBT for depression rests on a “meager evidence base” (p. 317), and that much more research is needed to link specific interventions to symptom change. Nevertheless, some researchers have already begun to examine the within-session activities of both clients and therapists that may contribute to change in CBT for depression. This research forms the foundation of the current investigation.

**Existing Research into Change Processes in CBT for Depression**

This review of CBT change process literature is not exhaustive but rather concentrates on existing empirical research investigating active ingredients of change in CBT for depression, and
specifically on those processes which may be involved in resolving the dysfunctional appraisal task which is the focus of this investigation.

**Importance of working with dysfunctional appraisals.** Research that indicates client self-reported change in the endorsement of problematic beliefs is associated with good treatment outcome provides support for the importance of working with dysfunctional appraisals in CBT for depression. For example, Muran et al. (1995) created specific sub-outcome measures to evaluate relationships between in-session process and therapy outcome in a course of CBT for depression. Clients were given a post-session questionnaire in which they were asked, among other items, to “Please describe the belief, thought, attitude or expectation that was worked on during the session” followed by “How much did this belief, thought, attitude or expectation change during the session?” which used an 11-point Likert scale. This latter item was found to have a positive relationship with outcome. This relationship increased over time, such that it co-varied with more outcome measures in the second half of treatment than in the first half, indicating that ratings of client-perceived cognitive change had a stronger relationship with treatment outcomes in the second half of therapy compared to the first. This suggests that while working to change cognitions may be helpful throughout therapy, its utility – or client capacity to change these cognitions – may increase as treatment progresses.

Existing research indicates that therapists frequently target dysfunctional appraisals in CBT for depression. Castonguay, Hayes, Goldfried and DeRubeis (1995) investigated therapist behaviors to investigate the frequency with which various aspects of client functioning were the targets of therapeutic focus in a time-limited cognitive therapy for depression. This can be conceptualized as a study of therapist behaviors. These researchers used a pantheoretical tool, the Coding System of Therapeutic Focus (CSTF; Goldfried, Newman & Hayes, 1989), to assess the
frequency of occurrence of a rationally-derived list of categories of therapist behaviors. They applied the CSTF to segments of session transcripts \( (n = 30) \). In the “general intervention” category of therapist behaviors, “challenging distorted beliefs” occurred more frequently than any other behavior.

Research investigating the links between this process of therapist targeting dysfunctional appraisals, and the outcome of client amelioration of depression, is less clear. The Castonguay et al. (1995) study was extended to examine the relationship between therapy outcome and the specific intervention of therapist making links between client’s distorted beliefs and depressive symptoms (Castonguay et al., 1996). Reviewing this study is important because “making links” may be one way by which therapists seek to enact change. Results indicated that increased therapist focus on making links between distorted beliefs and depressive symptoms was related to poorer therapy outcomes, a relationship which fell away when the quality of the therapeutic alliance was controlled. This unexpected finding suggested that this focus may have interfered with alliance formation, thus affecting outcome. These findings prompted an informal post-hoc descriptive analysis of those sessions wherein therapists exhibited this focus. In those that received above average alliance ratings, the “making links” focus was accompanied by active therapist attempts to help clients develop new ways of coping. In contrast, in sessions that received below average alliance ratings, therapists increased their adherence to the cognitive therapy model in the face of client unresponsiveness and negativity. The investigators suggest that an inflexible application of manualized techniques which fails to account for client readiness can negatively impact therapeutic alliance and thereby interfere with therapy outcome. This set of studies indicates that while challenging distorted beliefs is a frequent occurrence in CBT, its
utility varies strongly depending on the context of this intervention, in terms of subsequent therapist behaviors, client readiness, and quality of the alliance.

A related series of process-outcome studies by Kanter (Kanter et al., 2009; Kanter, Schildcrout & Kohlenberg, 2005) and Goldfried and colleagues (Goldfried, Castonguay, Hayes, Drozd & Shapiro, 1997; Goldfried, Raue & Castonguay, 1998; Hayes, Castonguay & Goldfried, 1996) have since attempted to relate quantity of therapist focus on a particular content area (e.g., emotions) with post-session or post-treatment outcome. The Goldfried et al. (1997, 1998) studies are notable in using therapist perception of a session as “significant” or having “high impact” as the outcome index; in contrast, the Hayes (1996) and Kanter et al. (2005, 2009) studies used client-reported measures of change as outcome indices. Across this group of studies, the relationship between a particular category of therapist focus and outcome varied, even for those studies in which outcome indices were similar. This variation in findings may reflect an inherent problem of process-outcome designs, namely that the sampled process must facilitate change regardless of the context in which it occurs for the investigation to have enough power to link process to outcome. It may also reflect another challenge of this type of research, namely that the simple frequency of a behavior is not necessarily a reflection of the importance of this behavior to change (Shoham-Salomon, 1990; Stiles, 1988).

There are three possible interpretations of the variation in findings of these process-outcome studies. First, it is possible that the quantified behaviors do not facilitate change at all. This interpretation is unlikely given that CBT therapy has been shown effective in the treatment of depression; some therapist behaviors then are, somehow, facilitative. A second interpretation is that these behaviors are context-bound – that is, these behaviors may be facilitative only at certain times during the therapy session. Interestingly, in the discussion section of Kanter et al.’s
(2005) study, the researchers reported observing many “opportunities lost” (p. 229) wherein therapists briefly commented on client displays of emotion but did not pursue this line of inquiry to any great depth. These findings reinforce the Castonguay et al. (1996) results which indicated that the quality of the therapeutic alliance may mediate the relationship between therapist behaviors and client outcome. Finally, a third interpretation is that therapist behaviors may not have direct effects on client outcome. As change, or amelioration in depressive symptoms, is experienced and exhibited by the client (Greenberg, 2007), studies which focus exclusively on therapist behaviors without considering client variation in response to these behaviors may lack the specificity needed to link process to outcome. In this case, a sequential process design would offer a great opportunity to compare what happens to client process when therapists do take advantage of opportunities to pursue emotion versus when they do not. Sequential process designs such as task analysis may therefore facilitate the identification of therapist behaviors that support client change, and the specific contexts in which they do so.

**Therapist process when working with dysfunctional appraisals.** The specific interventions which therapists use to challenge dysfunctional appraisals appears to vary. The dismantling or component study, in which a therapeutic component is separated from the treatment package to test its relationship with outcome measures more directly, is an experimental design that has been used to investigate therapist processes which may contribute to change in CBT for depression. Through the experimental control of therapist in-session behaviors, dismantling studies appear to have the potential to establish cause and effect relationships between therapeutic components and outcome (Holtforth, Castonguay & Borkovec, 2004). However, Doss (2004) notes three significant limitations to the conclusions that can be drawn from dismantling studies in psychotherapy research: first, there is still little understanding
of what true therapeutic components of change are and how they may be manipulated; second, methodologies have yet to be developed to adequately illuminate the specific effects of these manipulations; and third, components are unlikely to be independent and self-contained, but rather to be quite dependent on the skill of the therapists doing the implementation.

In an empirical review of CBT dismantling studies (n = 13), Longmore and Worrell (2006) found no evidence that cognitive interventions added to the treatment effectiveness of behavioral intervention alone. For example, in a dismantling study comparing the efficacy of behavior therapy (BT) versus cognitive therapy (CT) components of CBT, McNamara and Horan (1986) compared these two conditions with a cognitive-behavioral (CBT) condition, and a client-centered (CC) control (n = 40). A strong rationale for the efficacy of behavioral reinforcement versus cognitive change was included in the BT versus CT conditions; rationale was not a focus in either the CBT or CC conditions. Client expectations of future gains assessed mid-way through treatment indicated greater expectations in the BT and CT conditions than in the CBT or CC ones, despite no actual therapeutic differences amongst the groups at this time. Outcome at two months following 8 to 10 sessions of treatment indicated a non-significant trend for clients in the CT condition to demonstrate improved depression scores than clients in the other three conditions, although clients in all four conditions demonstrated significant gains as a result of the interventions.

In discussing these results, the authors noted that the measures used to assess outcome may have been more sensitive to cognitive change than to behavioral change, and that their group of therapists was generally more experienced in providing cognitive therapy than the other three conditions. Other than suggesting that a strong rationale can influence client expectations early in treatment, this study seems most of all to exemplify the difficulties of dismantling
studies noted by Doss (2004). It is not clear that any manipulation of actual therapeutic components of change occurred, that measures were sensitive to real changes that may have occurred, and that the effect of the components was independent of the skill of the therapist. The results of this study are representative of Longmore and Worrell’s findings (see also Ahn & Wampold, 2001), leading these investigators to argue that this lack of additive effect supports the view that strong links exist between cognition, affect, behavior, and physiology such that effective targeting of one system likely results in change to all systems. That is, the results of dismantling studies support the position that cognitive interventions are just as effective as behavioral ones and not more so, and have not added significantly to the identification of therapeutic components of change associated with good outcomes in psychotherapy.

Investigations which specifically investigate therapist challenges to dysfunctional appraisals suggest a broad range of strategies may be helpful in working with dysfunctional appraisals. In an additive experimental design, Teasdale and Fennell (1982) introduced thought-change and thought-exploration procedures into the ongoing CBT therapy of moderately to severely depressed women who had previously been assessed as treatment-resistant. Each session began with client-reported assessment of severity of depressed mood and a psychomotor index of depression, the length of time it took the client to count from 1 to 10 twice. Experimental sessions proceeded as usual until a depressive thought marker was identified by the therapist. This marker had two criteria: the expressed thought was depressive and distorted in content, and the thought seemed central and active in the current depression. Clients once again completed the two measures of depression and rated their belief in the cognition. In the “thought change” condition, the therapist was permitted to use any one of a range of CBT techniques aimed at instilling cognitive change, for example evaluating evidence or reviewing alternative
courses of actions. In the “thought exploration” condition, the therapist explored the content of the thought through questioning and reflective statements but did not engage in any cognitive-affective processing of the thought. After approximately 30 minutes, clients re-rated their belief in the thought and completed the two measures of depression. Results indicated that both depressed mood and belief in the identified thought decreased significantly more in the thought change condition than in the thought exploration condition; the results of the psychomotor measure were inconsistent.

This study is of interest to the current investigation for two reasons. First, the results link process to outcome by providing support for the claim that CBT interventions aimed at modifying cognitions have both positive effects on depressed mood and the capacity to facilitate cognitive change. Second, this study demonstrates the lack of specificity with which CBT techniques are applied in the quest for change, i.e. a broad range of therapist interventions were considered suitable for the “thought change” condition. Thus in the investigation of client change in CBT, the constancy of therapist actions when working with dysfunctional appraisals cannot be assumed; instead, a general therapeutic environment of cognitive challenging is more likely representative of clinical practice.

Similarly, DeRubeis and Feeley (1990) observed therapist behavior to examine the relationship between client therapy outcome and specific and non-specific factors, both early (sessions 2 through 3) and midway (sessions 4 through 6) through treatment. Four sessions were sampled from the short-term CBT treatment of 25 adults with depression, and rated on an observer rated measure of adherence to determine the extent to which a session was characterized by (a) therapist behaviors specific to CBT, and (b) non-specific facilitiative condition behaviors such as warmth and empathy. Factor-analysis of CBT-specific behaviors
revealed that one set of “concrete” therapist acts that occurred early in therapy was positively related to improved outcome as measured by symptom reduction on the Beck Depression Inventory (BDI and BDI-II; Beck, Ward, Mendelson, Mock & Erbaugh, 1961; Beck, Steer & Brown, 1996). This set of acts included asking for specific examples of beliefs, asking clients to report and record cognitions verbatim, labeling cognitive errors, examining evidence concerning beliefs, practicing rational responses with the client, and assigning homework and self-monitoring activities. These results were generally replicated by Feeley, DeRubeis and Gelfand (1999). On the basis of these findings, it is expected that the therapeutic environment in which dysfunctional appraisals are targeted is one wherein therapists support or encourage clients to provide specific examples of beliefs, to report and record cognitions verbatim, to become aware of cognitive errors, to examine evidence regarding their beliefs, to practice rational responses to their beliefs, and to engage in homework and self-monitoring activities.

A more recent study of therapist behaviors in CBT for depression investigated the relationship between a specific strategy for helping clients develop new perspectives, Socratic questioning, and session-to-session symptom improvement (Braun, Strunk, Sasso & Cooper, 2015). Observers rated the frequency of therapist Socratic questioning for sessions 1 through 3 of a 16-week cognitive therapy treatment for depression ($n = 55$), and found that increased use of this strategy in one session predicted symptom improvement the following session. Although the relation of these findings to post-treatment outcomes was not specified, researchers noted that the sample as a whole demonstrated substantial symptom improvements. This study demonstrates a preliminary link between the increased use of Socratic questioning and positive outcomes; while it is unclear whether this specific strategy is used to target dysfunctional appraisals, the general
therapeutic environment of therapist challenging may include specific attempts to generate new perspectives through Socratic questioning.

**Client process when working with dysfunctional appraisals.** Several investigations into client process during CBT for depression have been undertaken, both in general and specifically when working with dysfunctional appraisals.

Clients engaged in CBT for depression generally act in theory-consistent ways. One type of process-outcome study, the P-technique study, relates a large number of process variables sampled many times, usually in a single individual, to outcome. The P-technique study as it relates to process research represents a type of factorial analysis aimed at discovering consistencies across individuals’ behavior in psychotherapy (Russell et al., 2007). Stiles and Shapiro (1995) examined therapist-client exchanges in CBT and psychodynamic-interpersonal psychotherapies. Raters classified speech acts grammatically and with consideration for affective states using the Verbal Response Mode (Stiles, 1992, in Stiles & Shapiro, 1995) system of coding, which offers a potential 144 categories of verbal response modes. The researchers identified 32 categories present in these sessions that represented 8 types of speech exchanges of which 6 characterized CBT. These were Revealing, Storytelling, Explaining, Inquiring, Prescribing and Reframing. The latter four of these refer to therapist initiated exchanges, respectively giving information, asking for information, assigning homework, or interpreting client information.

Temporal analysis revealed that, as might be expected, information-gathering exchanges dominated early therapy sessions while giving information, assigning homework, and interpreting were stable across sessions. The researchers did not relate the presence or frequency of these exchanges to a particular outcome measure. Instead, they noted that, on average, clients
overall had demonstrated significantly improved scores on outcome measures for both types of therapy and therefore all cases were drawn from a successful treatment protocol. Thus the results of this study reflect that client revelations and storytelling, and therapist initiated explaining, inquiring, prescribing, and reframing are all characteristic of CBT. An important extension to this study would be to identify which of these speech exchanges are related to change events, which may be necessary and which may be hindering, the contexts in which particular types of exchanges are helpful versus hindering, and how these could be tailored to more effectively target client change. Nevertheless it is likely that client behaviors when engaged in a dysfunctional appraisal task will include one or more of these speech exchanges characteristic of CBT.

Clients undergoing CBT may engage in developing new narratives about the self, become more self-assertive, and become better able to engage in external reattribution as a result of this therapy. Giovannoli (2003) used a type of sequential process design, a hermeneutic-narrative process to compare transcripts of master CBT therapists. His findings indicate that clients may undergo a significant meaning-making component as part of treatment, engaging in deconstructing problem-saturated stories and articulating preferred narratives. Elliott et al. (1994) used a significant events approach to analyze moments in CBT therapy associated with insight. Following sessions of therapy for depression and/or anxiety, clients \((n = 3)\) were asked to identify significant insight events. Transcript excerpts of these events were intensively analyzed, and common themes across the events were extracted. A key theme that emerged from the analysis was that during these significant events, therapists helped clients to externally reattribute negative events, i.e., to attribute negative qualities to external elements such as a controlling other rather than to the self. In this study, external reattribution occurred in the context of
therapist reassurance and encouragement of client self-assertion. Although limited by the extremely small sample size, the results of this study suggest that as clients become more self-assertive, they are better able to engage in external reattribution, which in turn facilitates insight. Engagement in these processes may play a role in the resolution of a dysfunctional appraisal task.

Some research suggests that a significant event design such as task analysis would be useful to learn more specific information about client process in CBT for depression. Tang, DeRubeis and colleagues (e.g., Tang & DeRubeis, 1999; Tang, DeRubeis, Beberman & Pham, 2005; Tang, DeRubeis, Hollon, Amsterdam & Shelton, 2007) identified and investigated the phenomenon of sudden gains in CBT, defined as client-reported clinically significant improvement on symptoms of depression between two consecutive sessions. Across these studies, clients who reported sudden gains had better outcomes at the end of treatment and were less likely to relapse than those who did not show at least one sudden gain during their course of treatment. Two studies (Tang & DeRubeis, 1999; Tang et al., 2005) additionally used an observer-rated measure based on cognitive theory to compare cognitive changes in the session prior to the sudden gain, the pregain session, with those in a control session, the session preceding the pregain session (the pre-pregain session). Observers rated the extent to which clients self-reported seven categories of cognitive changes: (a) bringing a belief into awareness; (b) identifying an error in cognitive process or belief; (c) arriving at a new belief on a specific issue; (d) bringing a schema into awareness; (e) identifying an error in a schema; (f) arriving at a new schema; and (g) accepting a new cognitive technique.

In both studies greater cognitive change was reported by clients in the pregain session than in the pre-pregain session. A later study failed to differentiate between pregain and control
sessions (Greenfield, 2009), however this study used an analysis of case notes of trainee therapists to investigate process differences between sessions. In contrast, Goodridge and Hardy (2009) applied Stiles et al.'s (1990) APES assimilation model of problematic experiencing to transcripts of the pregain, aftergain and pre-pregain sessions. In this study, both the pre-pregain ($n = 5$) and pregain sessions ($n = 5$) were characterized by APES Stage 4 processing, wherein the problem is formulated and understood, associated with negative or painful affect but also positive affect in the form of pleasant surprise. However, the researchers report that the APES measure did not fully capture the qualitative differences that raters observed between these two sessions. Namely, in the pre-pregain session, clients seemed to demonstrate understanding into a problematic experience that appeared transient, prompted by “the affective or the incidental content” of the transcript. Furthermore, APES Stage 5 or higher processing was not present in transcripts until the aftergain session. These stages are characterized by using the understanding to work through a problem, solving the problem, and a general mastery related to solving this class of problems. Together, these findings suggest that insights or understanding gained in the pre-pregain and pregain sessions were consolidated in the aftergain session (Goodridge & Hardy, 2009). Far from being “control” sessions then, insights and understandings in pre-pregain sessions are necessary for further resolution in the pregain and aftergain sessions.

The researchers additionally observed “clients’ repeated attempts to make sense of their problems” across all three of these sessions (Goodridge & Hardy, 2009, p. 121). This observation is consistent with the task analytic premise that clients repeatedly try to resolve their cognitive-affective problems in a task-like way (Greenberg et al., 1996). Overall, these findings suggest that clients may be engaging in a recursive yet overall linear process of task resolution that is
suitable for task analysis, and suggest that an early stage of the dysfunctional appraisal task may involve formulating the problem, while a later stage involves working through the problem.

**Existing task analyses of the dysfunctional appraisal task.** Two task analytic programs of study have previously addressed the dysfunctional appraisal task: the works of Safran (1985) and Berlin and colleagues (Berlin et al., 1991; Mann, 1999). Safran’s (1985, in Safran & Segal, 1990) investigation identified two types of client markers present in CBT for depression, the fully immersed and the divided awareness markers. In the first type, clients are so convinced of the veracity of their evaluation of a situation, that they do not question their problematic appraisal in any way. In the second type, clients are able to notice the problematic nature of their evaluation. He notes that challenging interventions are more appropriate to the first type of marker, as any disconfirmatory evidence discovered by a cognitive or behavioral intervention will be perceived as new, this newness allowing for a shift in perspective that is not attainable by a client who already has had access to this evidence. Instead clients who exhibited the divided awareness marker demonstrated change through a new awareness of the problematic construal. In both cases a process of decentering emerged as an important component of change, whereby clients enact a constructivist stance and become open to new perspectives. Although Safran did not pursue this line of research (J. D. Safran, personal communication, April 21, 2014), his findings suggest that the dysfunctional appraisal task likely begins with a fully immersed marker, and that the enacting of a constructivist stance is an important part of task resolution.

The second program of study which aimed to model modern CBT-based interventions is the work done by Berlin and colleagues in the field of social work (Berlin et al., 1991; Mann, 1999). These researchers investigated significant events \( n = 14 \) extracted from a sample of depressed women engaged in cognitive-integrative therapy (CI; Berlin, 1996). Mann (1999) has
described CI as an extension of CBT in which additional focus is placed on the environment. Modifications to treatment included directing clients to the environment as well as their cognitions for sources of problems/resolutions, intervening in the social environment directly if necessary, and integrating guidelines for the resolution of problematic reactions (Rice & Saperia, 1984), an intervention from process-experiential psychotherapy.

These modifications, in particular the inclusion of an experiential stance toward the unfolding of problematic reactions, makes it difficult to generalize results from this program of study to other types of CBT. This is because many elements of the resolution of problematic reactions incorporated in CI, which include focusing on salient characteristics of the situation, focus on self in the situation, focus on feelings, and focus on desires and wants, are not simply techniques for distilling content that can later be used in cognitive therapy, but are in themselves part of the experiential change process (Rice & Saperia, 1984; Watson, 1996). For example, focus on feelings may be be an integral part of attaining distance as the awareness and labeling of feelings are important steps in affect regulation (Kennedy-Moore & Watson, 1999). In other words, CI interventions introduce additional change processes beyond those proposed by and manualized in cognitive therapy, and thus models derived from an analysis of CI may not reflect the same change processes prevalent in traditional manualized CBT treatments. Nevertheless, this program of study is important first because it uses a sequential process design to directly investigate the components important to CBT-based interventions, and second because the results cautiously inform the theory upon which to build a model of how dysfunctional appraisal tasks are resolved in traditional CBT.

Berlin and her colleagues identified two reoccurring significant events that occurred in CI therapy in their Task Analysis of Cognitive Therapy for Depression project (TACTD; Berlin et
al., 1991): (1) the generation of more constructive appraisals or recognition of the core meaning of a pattern of dysfunctional appraisals, and (2) generating more constructive core assumptions. The generating more constructive appraisals task focused on the process of reappraising interpersonal situations and personal reactions to specific situations in new ways that allow for greater freedom and an increased sense of efficacy. The revising core assumptions task focused on the process of shifting basic conclusions about the self into more complex, elaborated, and presumably more adaptive assumptions about the self (Berlin et al., 1991). The operational definitions of resolution in both cases may be problematized in their focus on the content of new appraisals/assumptions rather than client subjective sense of a problem having been resolved. Nevertheless, these definitions do incorporate some elements of a positive shift in client experiencing: a sense of greater freedom and sense of efficacy in the case of the dysfunctional appraisal task, and more positive assumptions about the self in the revising core assumptions task.

Dysfunctional assumptions were conceptualized as the client’s recognition that a particular dysfunctional appraisal was “a recurring and basic theme in her meaning-making pattern” (p. 10). In other words, the operational definitions of appraisals and assumptions were functionally equivalent but for the addition of awareness of recurrence or theme to the dysfunctional appraisal. It seems likely that the revising assumptions task components represent a later stage of the dysfunctional appraisal task, in which the dysfunctional appraisal has been situated within a pattern or theme. In support of this conceptualization, a strong overlap was noted in the steps to resolution of the two tasks, and the exploration of a series of appraisals or perceptions of interpersonal situations did appear as an early step in the revising assumptions task. Furthermore, revising core assumptions involved a focus on inner factors rather than
external ones, more exploration of early experiences, and more consideration of the cross-situational prevalence of the assumption. These activities reflect deeper, more elaborated processing than present in the activities of the dysfunctional appraisal task. Mann (1999) modeled how clients from the same data set but with poor therapy outcomes approached the dysfunctional appraisal task, describing an alternative pathway and identifying obstacles to resolution. The investigation focused on the dysfunctional appraisal task only because it was noted that clients with poor outcomes rarely engaged in the revising assumptions task, further suggesting that the dysfunctional appraisal task as defined by Berlin et al. is a precursor that must be resolved prior to working on core assumptions.

A comparison of the performance models derived from clients working on the dysfunctional appraisal task with good therapy outcomes (Berlin et al., 1991) versus poor outcomes (Mann, 1999; see Appendix A for both models) revealed differences in process. Clients with good outcomes spent time reflecting upon and elaborating both their dysfunctional appraisals and more constructive alternatives, then demonstrated evidence of “distancing” from the dysfunctional appraisal, and subsequently engaged in counterposing. Counterposing was defined as “a dynamic process of continuing to place information from one category (supporting the dysfunctional appraisal) in opposition to information from the other category (building toward an alternative),” (Berlin, et al., 1991, p. 166). In contrast to clients with good therapy outcomes, clients with poor therapy outcomes engaged in counterposing prior to elaborating either their dysfunctional or alternative appraisals. Mann (1999) has proposed that clients’ inability to clarify and attain distance from the dysfunctional appraisal prior to seriously considering an alternative interferes with their ability to effectively engage in later components of the dysfunctional appraisal task. These results highlight the importance of modeling the
precise sequence of components if one is to distinguish between good and poor outcomes in psychotherapy.

This task analytic research requires further validation, both to demonstrate that the model is able to be replicated, and to clarify the relationship between the model of resolution and psychotherapy outcomes. Nevertheless, these TACTD studies demonstrate the feasibility of modeling how change occurs within the context of CBT-type interventions. Although the generalizability of results to CBT psychotherapy is limited by the integration of experiential change processes noted earlier, and possibly too by the expectations of the social work context in which both clients and therapists were functioning, their results contribute to our knowledge of the processes by which people can change. Their resultant models not only describe viable components involved in a change process; they also illustrate sequences for these components that lead to specific resolutions, and through the articulation of obstacles, also pinpoints the locations at which therapist action may be most necessary. Furthermore, the researchers’ identification of reappraising of situations and revision of core assumptions about the self as frequent tasks in this CBT-based treatment is in line with other research supporting the prevalence of dysfunctional appraisal task in CBT (Castonguay et al., 1995; Goodridge & Hardy, 2009; Tang & DeRubeis, 1999; Tang et al., 2005), and supports the importance of modeling the resolution of this task in traditional CBT.

The results of one additional task analytic study are presented here. Caro (2004) investigated change processes in linguistic therapy of evaluation (LTE). Caro identifies LTE as an antecedent of modern cognitive theories, situating this study in the CBT literature. In the 2004 study, the task of interest was the way in which the client participated in the LTE intervention of orders of abstraction, an intervention which significantly overlaps with the CBT intervention of
Daily Record of Dysfunctional Thoughts. The results of this study indicate that clients’ overly-generalized abstractions become increasingly differentiated and specific as they progress through the intervention. These results are congruent with CBT theory suggesting clients shift from primal modes of thinking that utilize automatic levels of cognitive processing, to more constructive modes of thinking that use strategic levels of processing. There may therefore be evidence of a similar shift during the dysfunctional appraisal task.

**Additional client processes that may be involved in the dysfunctional appraisal task.**

Moving for just a moment outside of the context of therapy altogether, the results of one helpful factor study with a non-clinical population suggest that re-evaluating one's previous interpretation of a problem is part of the process of resolving that problem. This study is included in this review because of its focus on cognitive construal of events; while the change process under investigation did not occur in the environment of CBT, its findings may contribute to our understanding of what is involved when people try to solve problems in general. Higginson and Mansell (2008) interviewed a small sample of students (n = 6) who had experienced a problem, resolved it in some way, and were willing to discuss their resolution process with a researcher. The ways in which these individuals described the resolution of their problems were qualitatively analyzed into themes. One relevant cluster consisting of two themes was described as *putting the problem into perspective*. First, individuals reported that having a more realistic, comprehensive, and rational understanding of their problem gave them insight into how their prior conceptualization had been inaccurate, incomplete or damaging. Second, participants reported that re-evaluating their past experience in light of this new information allowed them to accept that experience without negative feelings such as regret or bitterness. These results suggest that becoming aware of the problematic aspects of a dysfunctional appraisal, and the process of re-
evaluation in light of this new awareness, are likely important processes in the generation of more adaptive appraisals about the self.

Working with dysfunctional appraisals may require some experiential learning or affect regulation capacity within the client. Bennett-Levy (2003) asked student-practitioners who practiced behavioral experiments and automatic thought records on themselves as part of CBT training ($n = 22$) to reflect on the effects of these two common CBT interventions in an exploration of the differences between behavioral and cognitive components of CBT. Behavioral experiments are a method for testing the validity or utility of beliefs out in the world that involves predicting the results of the test, engaging in the test, and reflecting on the results. The automatic thought record, or daily record of dysfunctional thoughts form, is a method for rationally reflecting upon puzzling or distressing experiences that involves considering evidence for and against affectively distressing thoughts. Student-practitioners reported that they perceived behavioral experiments to be significantly more effective at changing their beliefs and behavior than automatic thought records and to produce more compelling evidence for doing so. They also noted that their behavioral experiments were accompanied by more anxiety and required more bravery and persistence to complete than automatic thought records in general. However when prompted to recall working with a *hot thought* during the completion of an automatic thought record – a thought or image associated with strong negative affectivity – participants reported difficulties in the form of avoidance, inability to counter these thoughts, or even a snowball effect of rumination on negative cognitions.

These results suggest first, that an experiential quality in the way that new information or an alternative perspective is attained facilitates cognitive change, and second, that clients may begin to access painful experiences when attempting to work with meaningful cognitions, to the
extent that further processing can stall at this stage. These results are significant in their illumination of the ways in which cognitive, affect, behavioral and physiological systems all seem to be recruited to tackle the “cognitive” task of changing beliefs (Longmore & Worrell, 2006), and suggest that those who resolve the dysfunctional appraisal task move beyond this point in some way.

Investigations into self-efficacy also suggest that emotional regulation strategies may be important to the dysfunctional appraisal task. Cervone (2004, in Cervone et al 2008) has proposed a model by which people formulate self-efficacy appraisals, the Knowledge-and-Appraisal Personality Architecture (KAPA) model. This model proposes that self-knowledge contributes to cross-situational consistency in appraisals. Important to this model is the distinction between self-knowledge and appraisal: self-knowledge is stored in relatively enduring cognitive structures, but appraisals are dynamic evaluations of the personal meaning of specific situations that are not stored but rather formed. Thus, two people having the same assumption about the self may differ in their appraisals of whether that assumption is relevant to a particular situation. Cervone and colleagues (2008) used an experimental design to investigate an important prediction of the KAPA model: that self-knowledge is relevant in some situations but not others, such that priming this self-knowledge should affect appraisals in some situations but have no effect on appraisals in other situations. A sample of smokers composed primarily of undergraduate students and some community members (n = 77) participated in four experimental sessions. In session 1, participants were asked to identify the one trait that exemplifies their most significant personal strength in resisting smoking, and the one trait that exemplifies their most significant personal weakness in doing so. Participants were then asked the extent to which each trait would hinder, help, or be irrelevant in the attempt to avoid smoking in 20 situations. In
sessions 2 and 3, participants completed a questionnaire designed to prime either their strength or weakness (order of presentation was randomly determined for each participant), and then completed an assessment of how effective they would be at avoiding smoking in the same 20 situations. In session 4, participants completed the self-efficacy assessment in the absence of cognitive priming. Thus researchers were able to investigate whether cognitive priming would impact perception of self-efficacy, and whether participants do report idiosyncratic perceptions of high risk smoking situations.

Results indicated that even participants endorsing the same personal strengths and weaknesses appraised situations differently in terms of perceived difficulty in avoiding smoking. Furthermore, whether participants evaluated a strength or weakness as helpful, hindering, or neutral depended on the situation. In spite of this idiosyncrasy, when self-efficacy at resisting smoking data was aggregated across the two priming conditions and the one control condition, a significant relationship emerged between personal strengths and assessments of self-efficacy. Specifically, participants reported higher self-efficacy estimates in those situations in which personal strengths were considered highly helpful than in those wherein the strength was considered hindering or neutral, but reported generally similar self-efficacy estimates regardless of whether personal weakness was considering helpful, hindering or neutral.

As personal strengths appeared to affect self-efficacy in avoiding smoking across 20 situations more than personal weaknesses for this sample, Cervone et al. focused their priming analyses on only situations influenced by differences in the reported ability of personal strengths to be helpful, hindering, or neutral. Comparison of the two priming conditions indicated that when personal strengths were primed, participants reported higher self-efficacy in avoiding smoking in situations where personal strengths were considered beneficial than when personal
weaknesses were primed, and that there was a non-significant trend for self-efficacy to be lower in situations wherein personal strengths were considered to have a negative impact. Self-efficacy in situations in which personal strengths were considered to have a neutral impact was not affected by priming. These findings indicate that the idiosyncratic ways that people appraise their capacity to resist smoking in various situations can be affected by the priming of personal strengths in this area, so that personal efficacy beliefs are strengthened by this priming in a context-consistent way. In other words, appraisals of self-efficacy in specific situations appear to be based on context-specific underlying assumptions or self-knowledge, such that priming self-knowledge enhanced appraisals in some contexts but not others. If self-efficacy beliefs can be strengthened by priming positive self-knowledge, as demonstrated in Cervone et al.’s (2008) study, then this suggests the possibility that priming of positive self-knowledge may be one micro-strategy used by CBT therapists to encourage clients to reappraise events in more adaptive ways and thereby alleviate depressive symptoms. It is therefore likely that one key component on the path to adaptive reappraisals about the self – and in particular those related to self-efficacy – is client accessing of positive self-knowledge.

Additionally, Cervone and colleagues’ (2008) review of appraisal literature suggests that appraisal processes and emotional experience share a reciprocal relationship. The authors propose that appraisals influence emotional experience, and that emotions prime the accessibility of self-knowledge and cognitive processing strategies used in appraisals. Given the potential interaction between appraisals and emotion, and the affect regulating capacity of cognitive reappraisal, it seems likely that CBT techniques incorporate micro-strategies for working with emotion in some way to effect change. It is therefore possible that client accessing of emotional
experience may play an important role in the resolution of the dysfunctional appraisal task within CBT for depression, particularly in facilitating access to self-knowledge.

The client task of reappraising a dysfunctional cognition in the context of psychotherapy is separate but related to the affect regulation strategy of positive reappraisal. This strategy may nevertheless play an important role in the dysfunctional appraisal task. The strategy of positive reappraisal involves the intentional interpretation of emotionally evocative stimuli in emotionally neutral terms (Gross, 1998a). This cognitive strategy has been found to decrease both experienced and expressed emotion, altering the valence of the experienced emotion so that it is not experienced as negatively while nevertheless exerting little effect on arousal (Ray, 2009).

The flexible and appropriate use of positive reappraisal and other adaptive cognitive strategies may be critical to mental health (Gross, 1998b).

However, the context in which positive reappraisal is used also matters. In DeLongis and Holtzman’s (2005) review of coping research, the authors note that the results of process-outcome studies overall have not resulted in the absolute identification of adaptive versus maladaptive strategies for coping with stressful events. Instead, the utility of a particular coping strategy has been found to vary with contextual factors such as the nature of the event itself, the social context in which it emerges, and personality differences. The positive reappraisal strategy has been found to be generally helpful when coping with future stressors, but less effective when used to cope with current situations involving harm or loss. While positive reappraisal can be helpful when the consequences of a situation are not yet known and presumably are still able to be controlled, reappraising information in a positive or neutral way can be maladaptive when it involves denial of adaptive negative affect or when action must be taken. These findings suggest that attempting to reformulate affectively negative appraisals of events in a more positive or
affectively neutral light may be an impediment when working with adaptive negative emotions such as anger, fear, or sadness in the face of real loss, and that this strategy works best when it is future-focused. Moreover, Ray (2009) argues that the use of a positive reappraisal strategy may involve the creation of a new contextual framework for interpreting a situation, such that once a new contextual framework has been formulated, it can be used in future appraisal attempts. Thus in successful reappraisals in psychotherapy, it is unlikely that clients will use a positive reappraisal strategy while concurrently experiencing a maladaptive negative emotion but instead primarily use this strategy when considering future events. Furthermore, the repeated use of this strategy may result in new contextual frameworks for appraising future events.

The theorized specific effects, or resolution, of the dysfunctional appraisal task that are associated with good outcome in psychotherapy are still unclear. As noted earlier, the theoretical goal is to generate a shift in cognitive processing characterized by increased references to personal goals for intimacy, achievement or creativity (constructive mode of thinking), and increased engagement in effortful, conscious thinking including “reality testing” of automatic thoughts (strategic levels of cognitive processing). Reappraising is a reflective process that considers a larger set of information than is used in initial evaluative reactions such as dysfunctional appraisals (Safran & Greenberg, 1982); reappraising therefore refers to a process of re-evaluation in the context of more information and may be the process by which clients generate new adaptive reappraisals about the self.

This process of reappraising to generate adaptive reappraisals may be related to self-reflection and self-discovery. Levitt, Butler and Hill (2006) used a helpful factor design in a study designed to empirically derive principles of treatment. Participants who had recently completed various types of psychotherapy ($n = 26$) were interviewed using a qualitative
grounded theory approach. Participants reported that they found therapist facilitation of self-reflection and self-discovery particularly helpful. Among other benefits, they reported that this process of self-reflection allowed them to reformulate problems. An additional finding of this study with regards to therapist process was that direct challenges by the therapist were generally considered unhelpful by clients, except when a) clients were aware of attempting to manipulate the therapy, and b) when the challenges facilitated client self-reflection and self-discovery. These findings are consistent with those reported in an early helpful factors study that included one case of cognitive-behavior therapy (Elliott, James, Reimschuessel, Cislo & Sack, 1985).

Additionally, in follow-up study with expert psychotherapists ($n = 14$; Levitt & Williams, 2010), therapists reported that they used challenges and interpretations to facilitate growth that they perceived was being blocked by dysfunctional beliefs or by difficulties with processing. Therapists reported that they used these in support of a larger goal of facilitating client awareness: challenges were utilized to stimulate client reflection on whether to keep or discard a belief, while interpretations were employed to focus client attention on maladaptive or obstructing processes. These findings suggest that client self-reflection is perceived by both clients and therapists as a key mechanism in reformulating problems (see also Castonguay et al., 2010), and that therapist challenges may facilitate client self-reflection when this process is blocked by dysfunctional beliefs. Thus self-reflection and self-discovery may be specific effects of therapist challenging of dysfunctional appraisals.

Another likely specific effect is a positive change in affect. Persons and Burns (1985) used a process-outcome design to investigate the relationship between change in belief of dysfunctional appraisals – *automatic thoughts* related to a situation which are associated with strong negative affect – and end of session changes in mood, an intermediate effect or sub-
outcome. Using the Daily Record of Dysfunctional Thoughts form or thought record, a CBT tool which asks the client to describe and rate feelings and thoughts related to an event, generate evidence for and against emotionally salient thoughts, and formulate a more adaptive response, investigators calculated within session change in mood intensity and belief in dysfunctional cognitions for clients undergoing cognitive therapy in private practice with the investigators. One session was selected per client ($n = 17$). Decreased belief in dysfunctional cognitions following completion of the thought record demonstrated a positive relationship with decreased negative affect at the end of the session, as did client scores on a measure of therapeutic alliance. The findings suggest that destabilizing clients' belief in dysfunctional thoughts and a strong therapeutic relationship both contribute to intermediate shifts in mood. While there is little evidence that post-session variation in mood is related to overall therapy outcome, these results are nevertheless important in specifying that one immediate effect of resolving a dysfunctional appraisal task may be improvement in mood.

**Conclusion**

Cognitive theories of depression propose several strategies and processes associated with change; this review of CBT change process research indicates there is support for some aspects of the theories, and suggests some extensions are necessary. First, review of the empirical data examining in-session behaviors indicates that clients and therapists in CBT treatments for depression behave by and large in theory-consistent ways. Clients reveal information and tell stories about themselves and their experiences, while therapists psychoeducate, ask for more information, give homework, and attempt to reframe client construals. Therapists and clients successfully complete cognitive restructuring tasks, both behavioral and rational. Clients report cognitive changes and improvements in mood. These findings indicate that the CBT environment
and the actions of its participants are generally consistent with those described in various treatment manuals.

Second, self-discovery and self-reflection may be particularly helpful in allowing clients to reformulate problems in CBT. Although this finding is generally consistent with the discovery-reflection sequence proposed by Beck and colleagues, the importance of a subsequent rational assessment of cognitions phase receives less support. In fact, therapist challenging of distorted cognitions occurs frequently in CBT but seems to work best in two situations: first, when accompanied by therapist attempts to help clients develop new ways of coping, and second, when clients respond to therapist challenging with increased self-reflection and self-discovery (Castonguay et al., 1996; Levitt, Butler & Hill, 2006). Thus the therapist intervention of challenging a distorted thought appears to facilitate change by stimulating a continued process of self-reflection and self-discovery that itself results in reformulations, rather than by stimulating a rational assessment of the validity, utility and inevitability of the cognition itself. Furthermore, this self-discovery/self-reflection sequence likely includes or resembles a meaning making or constructivist component.

Third, addressing dysfunctional cognitions in psychotherapy may reflect an overlap between specific therapy factors, wherein clients begin to challenge problematic cognitions and engage in adaptive ways of coping, and common therapy factors, such as when clients form strong working alliances which foster self-assertion. This research bolsters the importance of observing change processes in the rich environment of full treatment packages, wherein the potentially vital complex interactions between specific and general factors are undisturbed.

Finally, it is important to note that while meta-cognitive change may be an integral part of CBT assumptions about the change process, current measures of outcome and sub-outcome,
such as the Attributional Style Questionnaire (ASQ; Peterson et al., 1982), Dysfunctional Attitudes Scale (DAS Form A; Weissman, 1979), and Self-Efficacy Scale (SEF; Sherer et al., 1982), all assess thought content rather than meta-cognitive skill (Jarrett et al., 2007). That the theorized importance of meta-cognitive skill has not received much support in the literature may be related to the methodological concern that self-report questionnaires of thought content are poor indicators of whether the long-term goal of cognitive therapy, the facilitation of more adaptive information processing, has been attained. The development of a measure of the extent to which clients engage in a re-appraisal process is therefore likely to be helpful in determining the specific effects of cognitive therapies.

**Rationale for the Current Investigation**

Despite what is currently known about how clients change in CBT for depression, the specific “active ingredients” by which clients change in CBT are still unclear. A recent survey of clinicians indicated a need for more practice-based investigations on “issues that are immediately relevant to what is occurring in the room between therapist and client” (Tasca et al., 2015, p. 9). While there seems to be a general agreement that targeting dysfunctional appraisals is important in CBT for depression, the specific effects of this intervention are unknown. The variety of therapist strategies, including thought records, direct challenging, and Socratic questioning, which are used when working with dysfunctional appraisals in CBT may reflect impoverished theories of change which could benefit from a direct observational investigation into the processes associated with change during those moments when clients are engaged in a dysfunctional appraisal task.
Using task analysis to derive an empirically-based model of how clients resolve a dysfunctional appraisal task in CBT for depression could have several benefits, which are presented here, and summarized in Table 1.

Table 1

<table>
<thead>
<tr>
<th>Some Benefits of Deriving an Empirically-Based Model of Task Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Increased treatment effectiveness through identification of a tractable model of change</td>
</tr>
<tr>
<td>2. More appropriate selection of interventions</td>
</tr>
<tr>
<td>3. Increased understanding of task resolution/the immediate effect of an intervention</td>
</tr>
<tr>
<td>4. Increased intervention potency through identification of essential versus non-essential components</td>
</tr>
<tr>
<td>5. Enabling comparisons between models</td>
</tr>
<tr>
<td>6. Increased understanding of human change processes</td>
</tr>
</tbody>
</table>

The development of an evidence-based model of the client change processes involved in the resolution of a particular task or cognitive-affective problem represents the development of a tractable model of change. Empirically derived models are descriptive with regards to the client processes involved in change, and may capture new components or significant sequences of components which theoretically developed interventions may fail to elucidate. Receiving training in empirically derived and validated interventions is an important aspect in increasing therapist competence (e.g., Mansell, 2008). This is especially important in CBT as lack of therapist competence has been implicated in poor CBT therapy outcomes (e.g., Garratt, et al., 2007), and the quality of current CBT training strategies has been questioned (Shafran et al., 2009). Models consisting of clear sequential steps leading to the resolution of particular cognitive-affective problems can be taught to practitioners, thereby maximizing their implementation of effective interventions. Furthermore, trained CBT practitioners can then increase treatment effectiveness by navigating clients through the model.

A related benefit of modeling how clients resolve particular problems is that models can help therapists choose interventions more appropriately. Modeling in task analysis requires first
the identification of a \textit{task marker}, the set of client in-session behavior that indicates a particular type of task is beginning, and of \textit{resolution}, the set of client in-session behaviors that indicate the problem has been resolved and the task has ended. Then, modeling links this specific task marker with a particular sequence of therapy acts that result in resolution. In this way, the intervention becomes associated with specific cognitive-affective changes, as the indicators of task resolution are also the immediate specific effects of the intervention – insight, an alternative cognition, etc. (Goldfried, Greenberg & Marmar, 1990). Models can therefore greatly facilitate therapist decision-making by describing practice-based marker-intervention links, and identifying the immediate effects of that intervention.

Currently, CBT training manuals have little to offer in terms of decision-making strategies for selecting among interventions. For example, Persons et al.’s (2001) manual \textit{Essential Components of Cognitive-Behavior Therapy for Depression} states, “Most decisions therapists make (e.g., whether to use activity scheduling or cognitive restructuring) cannot be made on an empirical basis,” (pp. 215-216). In contrast, process-experiential training manuals link empirically-derived client “markers” to specific interventions, e.g., a client’s puzzlement at her own reaction to a situation serves as a marker to the therapist that the Systematic Evocative Unfolding intervention is likely to be helpful (Elliott et al., 2004). Although CBT therapists routinely respond to client statements that represent “distorted cognitions” with interventions aimed at challenging the validity or utility of those statements, there are few prescribed links between particular types of client statements and the specific interventions that will result in the desired resolution (although see Safran, 1990, for a discussion of “interpersonal markers” in CBT). The lack of marker-guided interventions results in a need to rely on “clinical wisdom” (Safran et al., 1988), and likely contributes to the difficulty in establishing standardized levels of
clinician competence in CBT. As therapists are not yet able to specify which CBT intervention results in a particular type of symptom change or cognitive-affective resolution (Ahn & Wampold, 2001), the clinician’s ability to choose among CBT interventions to select the ones most likely to yield a desired effect is hampered. Models of change that describe markers and the resolutions associated with particular interventions can therefore greatly facilitate therapist decision-making so that interventions are selected with less reliance on “clinical wisdom.”

Describing how a particular problem is resolved in psychotherapy also makes it possible to develop better hypotheses of what is required of the client at that time. Understanding these requirements or demand characteristics can help mitigate what Kiesler (1966) terms “the uniformity myth” of assuming all clients benefit equally from all treatments. Better hypotheses regarding the psychological processes likely involved in a particular intervention also enhances matching between intervention and clinical problem, an important step in identifying mechanisms of change in CBT (Freeman, Garety, McGuire & Kuipers, 2005). Furthermore, Kanter, Kohlenberg and Loftus (2004) have argued that treatment rationale can have a profound effect on client in-session behavior, such that clients seek to conform to therapist expectations. Greater clarity regarding what clients are actually being asked to do can therefore also facilitate meta-communication of expectations to clients and thus indirectly contribute to outcome.

Models of how a client solves a particular task in psychotherapy would also allow current interventions to be subjected to a refinement process. The development of new and better strategies for treatment is an ongoing challenge for psychotherapy in general (Mahrer, 1999). Despite the weight of research supporting a therapeutic effect for CBT treatments for depression, reviews of this same research suggest that the clinical significance of CBT’s effect – how much CBT treatments reduce depressive symptoms – is unacceptably small (Cuijpers, van Straten,
Bohlmeijer, Hollon, & Andersson, 2010; Lynch, Laws, & McKenna, 2010). Furthermore, the percentage of participants to be successfully treated by a course of CBT has not increased since its development in the 1970s (Emmelkamp et al., 2010). Empirically-derived models could help increase the potency of interventions by distinguishing those components which are essential for clients to resolve specific problems from those whose presence may unnecessarily dilute or impede resolution. These models can then be tested against other samples and other models, and their components can be experimentally manipulated to refine what is required for change. An indirect related benefit is that components derived from successful change events can then inform the development of new process measures that are more sensitive to CBT-specific change (Whisman, 1993).

Models of the resolution of tasks in psychotherapy also facilitate comparisons between interventions drawn from different treatments. CBT is just one of the treatment approaches that have empirically supported claims to being effective in the treatment of depression, e.g. interpersonal and process-experiential therapies (Parikh, et al., 2009). Furthermore, cognitive changes in the form of automatic thought reduction or changes in dysfunctional attitudes are also evident in the outcomes of several different treatment approaches that use different interventions (e.g., Watson et al., 2003). These findings raise the possibility that the supposedly “unique” interventions offered by these approaches actually different brands of the same product (e.g., see Ablon & Jones, 2002).

To date, the primary level of comparison between treatments has been global, at the level of treatment package. At this level, similarities in outcomes across treatments fail to support specific effects in one treatment package compared to another. Outcome similarity among treatment packages has led some researchers to conclude that the bulk of the effect of
psychotherapy is likely due to factors which are common across these packages, and therefore research should focus on explicating and strengthening these common factors (e.g., see Wampold, 2005). This argument undermines any claim that CBT interventions used in successful randomized controlled trials have stand alone “empirical validity” (e.g., as claimed by Persons et al., 2001) because these interventions co-occur with known and as yet unknown common factors. However, the noted similarities in outcome across treatments do not necessarily imply that non-specific factors are the key agents of change; alternative interpretations of these results are also possible. Rice and Greenberg (1984) presented a viable alternative view, arguing that the treatment effects of specific interventions are weakened through inconsistent application by therapists, and that overall treatment potency for a particular package could be increased by increasing the effectiveness of treatment-specific factors: “… [T]he present level of understanding of the active components of change within these different approaches is still too imprecise to produce differential effects on a consistent basis,” (p. 11). They argue that the investigation and refinement of treatment-specific factors is a fruitful area of research (see also DeRubeis, Brotman & Gibbons, 2005), and that models of micro-change processes can illuminate specific factors within a treatment approach. A third and likely interpretation of similarities in outcome is that specific techniques work synergistically with common factors to produce positive outcomes (Watson, Schein & McMullen, 2010; see also Lampropoulos, 2000, for an additional 12 possible explanations for similarities in outcome across treatments). In summary, comparisons at the level of treatment packages rather than treatment interventions have not been successful in clarifying the common versus specific factors debate.

Comparisons at the treatment package level are problematic because any package such as CBT includes a variety of treatment-specific interventions in addition to common factors such as
the working alliance. The mobilizing and stabilizing forces of change, measured at any point in
time from the first session onward, are likely to result from the package as a whole – from
package-specific critical ingredients and from common factors such as client expectations
(DeRubeis & Feeley, 1990; R. Greenberg, Constantino, & Bruce, 2006; Muran et al., 1995). Yet,
continuing to study change in complete treatment packages, rather than relying on reductionistic
approaches such as dismantling studies, is important, as change must be understood in the
context of the subtle and complex relationships among known and as yet unknown components
of change that were in operation when the change occurred (Greenberg, 1999). Comparing
models of resolution of the same client tasks derived from different treatment packages is one
way in which differences between treatments can be investigated at a more discrete level,
without tampering with potentially essential qualitative contextual features of treatment.
Similarities in change processes discovered at this level of analysis may facilitate hypotheses
about the mechanisms through which common factors are realized. Understanding similarities
and differences in task resolution across treatments is a necessary precursor to integrating
different interventions in the quest to increase potency of treatment (Goldfried & Safran, 1986, in
Goldfried et al., 1990). Furthermore, without clear understanding of which elements of an
intervention are vitally dependent on each other, or whether critical elements of one intervention
interfere with the potency of a different intervention, it is difficult to assume that disparate
interventions will have additive healing effects (e.g., as in Newman et al., 2011).

A final argument presented here in favor of deriving an evidence-based model of change
is that these models can contribute to personality theory (Kazdin, 2007; Wade & Worthington,
2005; Watson, 2011). These models provide rich descriptions of sequences of processes that are
associated with change. The observed processes take place in the context of therapist-modulated
interventions that presumably influence the acts of the therapy participants and can therefore also serve to reveal what therapists perceive as helpful. Neurological evidence supporting the presence of shared experiencing or “empathic resonance” in healing relationships (Watson & Greenberg, 2008) suggests that the ways in which we attempt to help others arise from a shared human understanding of how we ourselves resolve real world problems and experience emotional relief. Models that describe how people resolve problems within therapy may therefore inform us about the ways people generally resolve cognitive-affective problems.

**Objectives of the Current Investigation**

This investigation aims to address gaps in our understanding of the client change processes involved during the dysfunctional appraisal task in CBT for depression. It is guided by the question, “How do clients move from dysfunctional to more adaptive appraisals in CBT for depression?” and has the dual goals of modeling client change processes and assessing the relationship of these to therapy outcomes. This investigation consists of two phases, a discovery phase to develop the model, and a validation phase to test the model.

**Discovery phase objectives.** The general objective of the discovery phase is to identify how clients resolve the dysfunctional appraisal task. The primary goal of investigations in the discovery phase is to identify the observable shifts in client cognitive and experiential states as they move from maladaptive evaluations of events (dysfunctional appraisals) to more adaptive evaluations of self (reappraisals), and creating a performance model of these shifts. A secondary goal is to create a measure suitable for testing this model of the resolution of a dysfunctional appraisal task. Chapter 2 presents the methods and research questions of the discovery phase; an overview detailing the samples, research questions, and procedures for this phase is provided in Table 2. Chapter 3 presents results of the discovery phase.
**Validation phase objectives.** The general objective of the validation phase is to empirically test the rational-empirical model of resolution of a dysfunctional appraisal task derived in the discovery phase. The primary goal of investigations in the validation phase is to demonstrate that all components of the model can be discerned in a different sample than was used in the discovery phase, and to link client process to outcome by investigating the relationship between the derived model and post-session and post-treatment outcomes. A secondary goal is to examine whether the validation phase data supports the structure of the derived model. Chapter 4 presents the methods and research questions of the validation phase; an overview detailing the samples, research questions, and procedures for this phase is provided in Table 3. Chapter 5 presents results of the validation phase.

Results from both phases are discussed together in Chapter 6, which will also review the limitations of this research and suggest future directions.
### Overview of the Investigation: Discovery Phase

#### Preliminary Step Preceding the Task Analysis

<table>
<thead>
<tr>
<th>Sample</th>
<th>Research Question</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>( n = 25 ) transcripts from the Watson et al., 2003 data set.</td>
<td>RQ1. Are clients engaging in the Dysfunctional Appraisal task in CBT for depression?</td>
<td>Transcripts reviewed to determine whether the task marker and evidence of task engagement could be identified in one session per client.</td>
</tr>
<tr>
<td>Session selection criteria:</td>
<td>RQ2. Does the existing “TACTD” model (Berlin, Mann &amp; Grossman, 1991) derived within modified CBT adequately describe observed client process in this data set?</td>
<td>The TACTD model was applied to the 5 transcripts identified as containing both the task marker and evidence of task engagement.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Analysis</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>( n = 13 ) transcripts from the Goodridge &amp; Hardy, 2009 data set.</td>
<td>RQ3. What are the observable shifts in client behaviour and experiential states as they move from dysfunctional to constructive appraisals?</td>
<td>Task Analysis Step 1 through Step 5.</td>
</tr>
<tr>
<td>Session selection criteria:</td>
<td>RQ4. Can a testable model of resolution of a dysfunctional appraisal task be synthesized from these observed shifts?</td>
<td>Task Analysis Step 6 and Step 7.</td>
</tr>
<tr>
<td>All available sudden gain, pre-gain, and pre-pregain sessions from five clients who demonstrated good psychotherapy outcomes in CBT for depression.</td>
<td>RQ5. Can the rational-empirical model be used to create an observer-rated measure of the model?</td>
<td>Operational definitions for each of the steps of the model were specified.</td>
</tr>
</tbody>
</table>
Table 3
Overview of the Investigation: Validation Phase

<table>
<thead>
<tr>
<th>Sample</th>
<th>Research Question</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 22 transcripts from the Watson &amp; Bedard (2006) data set, which consisted solely of the best and worst outcome cases of the Watson et al., 2003 data:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Outcome</td>
<td>RQ6. Are all components present in the new data set?</td>
<td>The frequency of each component across all transcripts (N) compared to 0 using one-sample median tests.</td>
</tr>
<tr>
<td>Sessions with Lowest Reported Within-Session Change: n₁ = 7</td>
<td>RQ7. Does the highest component reached distinguish between Highest Reported Change and Lowest Reported Change sessions within the Good Outcome group?</td>
<td>Wilcoxon signed rank sum test compared DRS-DA score of Lowest vs Highest change sessions of Good Outcome cases (n₁ &amp; n₂).</td>
</tr>
<tr>
<td>Sessions with Highest Reported Within-Session Change: n₂ = 7</td>
<td>RQ8. Is the highest component reached related to client’s self-reported CTSC-R score?</td>
<td>Spearman’s correlation of DRS-DA with CTSC-R scores across the sample (N).</td>
</tr>
<tr>
<td>Poor Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sessions with Highest Reported Within-Session Change: n₃ = 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session selection criteria:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highest post-session CTSC-R score was used to select Highest Change session, while Lowest post-session CTSC-R score was used to select Lowest Change session.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2: Methods of the Discovery Phase

This chapter describes the research methodology used in the discovery phase of this task analytic investigation. This phase was qualitative and exploratory, with an over-arching purpose to provide a fine-grained analysis of moment-to-moment client change and thereby derive an empirically-based model of the change process.

A preliminary step preceded the task analysis, to confirm the suitability of a task analytic investigation into dysfunctional appraisals in CBT for depression. This preliminary step involved the investigation of a small sample of CBT for depression transcripts to confirm the presence of the dysfunctional appraisal task, and to examine the fit of an existing model of resolution (TACTD; Berlin, Mann & Grossman, 1991).

The task analysis was then undertaken using Greenberg’s (2007) sequence of steps which culminate in a rational-empirical performance model of how clients resolve the dysfunctional appraisal task. Although these analyses are presented as a discrete linear process, in practice these occurred as a recursive dynamic spiral, whereby early understandings were contextualized, refined, and revised, by later analyses. This section presents the basic procedure associated with each step, while the subsequent chapter presents results of the analyses.

**Sample for the Preliminary Step Preceding the Task Analysis**

Transcripts were drawn from a randomized controlled trial of CBT for depression (Watson et al., 2003). Only sessions from clients who demonstrated good outcomes in psychotherapy were considered for this analysis. For the purpose of this study, good outcome cases were defined as those who demonstrated reliably significant change on the BDI (Beck et al., 1961) from pre- to post-treatment. Client case selection was further reduced by excluding cases that could be of interest in a later validation study. This further reduced the number of good
outcome cases available for the analysis to five. First and last sessions were eliminated from session selection as these often focus on project-oriented material such as goal setting and termination issues rather than therapeutic change. Only transcribed sessions were considered. Thus the total transcripts available for this preliminary step preceding the task analysis were \( n = 25 \), with an average of 5 transcripts available per client (\( R = 3–6 \)).

**Empirical Analysis Sample**

Transcripts for the empirical analysis (step 5 of the task analysis) were drawn from the Goodridge and Hardy (2009) data set, which consisted of sessions before, during, and after sudden gains in clients with good treatment outcomes who had undergone CBT for depression. These sessions were judged as highly likely to contain significant events and were therefore selected for the current analysis. The sample consisted of a subset of clients from a larger study of sudden gains in CBT for depression (Hardy, Cahill, Stiles, Ispan, Macaskill & Barkham, 2005). Participants required a diagnosis of major depressive episode as per the Diagnostic and Statistical Manual of Mental Disorders (4th ed; DSM-IV; American Psychiatric Association, 1994) and a BDI-II (Beck et al., 1996) score of at least 15 to be included; those presenting with psychotic or manic symptoms, misusing drugs or alcohol, and those who had received 3 or more sessions of counselling within the past year were excluded from participating in the study. Clients received 8 to 20 weekly sessions of CBT treatment for depression, which was administered according to the guidelines described by Beck et al. (1979). Participating CBT therapists were all trained in the United Kingdom as clinical psychologists and had between 1 and 6 years of post-qualification experience. J. Beck’s (2005) book was used as a manual. All therapists participated in a CBT training program and received weekly supervision from two experienced therapists with specialist post-qualification training in cognitive therapy.
A subset of individuals \( n = 14 \) from the original study were identified as having not only experienced at least one sudden gain session during their course of therapy, but also having BDI-II scores in the range for clinical depression prior to this sudden gain session and never experiencing a reversal of gains after this session, as well as demonstrating good post-therapy outcomes by achieving clinical reliable change as per the criteria established by Jacobson and Truax (1991, in Goodridge & Hardy, 2009): these clients attained BDI-II scores of 13 or less post-therapy, and dropped at least 7 BDI-II points over the course of therapy (Goodridge & Hardy, 2009; Hardy et al., 2005). The Goodridge and Hardy (2009) data set is comprised of \( n = 5 \) participants drawn randomly from this pool of individuals. Transcripts included pre-pregain, pregain, and post-gain sessions from each participant. The post-gain sessions for two participants were unavailable. The final sample of transcripts available for analysis was therefore \( n = 13 \).

**Procedure**

**Preliminary Step Preceding the Task Analysis**

To confirm that the dysfunctional appraisal task was an event in manualized CBT for depression, available transcripts from a Canadian sample \( n = 25 \), Watson et al., 2003) were reviewed until one transcript was identified for each client that met two key conditions. First, the session must contain at least one task marker as defined in the Task Analysis of Cognitive Therapy for Depression project (TACTD; Berlin et al., 1991):

**Marker:** The client reports dysfunctional appraisals (cognitive interpretations and emotions) of a particular situation and indicates she views the appraisal as subjective and troublesome. Appraisals are understood as dysfunctional when they consist of overly restrictive interpretations of events, interfere with the individual’s ability to effectively
cope, and suggest that she feels stuck with some negative trait and/or interpersonal circumstance. (p. 56)

Second, there must be some evidence of engagement in the dysfunctional appraisal task, i.e. that this task is not only brought to therapy by clients, but also worked on within the session.

The TACTD Good outcome model of dysfunctional appraisal tasks (Appendix A; Berlin et al., 1991) was then applied to the resulting pool of five transcripts to investigate the necessity of conducting a new task analysis of this event.

Task Analysis Step 1: Specification of the Task

In this step the dysfunctional appraisal task marker was operationally defined. A task marker describing both the affective and cognitive components of the initial problematic or maladaptive state was proposed and later refined with qualitative description in subsequent analyses.

Task Analysis Step 2: Explicating the Investigator’s Cognitive Map

The investigator sought to make explicit her knowledge and assumptions about the human change process, as these make up the lens through which transcripts would be analyzed. This “cognitive map” was shaped largely by the reviewed literature, in particular the results of the TACTD project (Berlin et al., 1991; Mann, 1999), and by the results of the preliminary step preceding the task analysis of this investigation. This map was also shaped by informal viewing of therapy sessions, reading of publically available CBT for depression transcripts, and by the investigator’s own training and clinical experience. Assumptions arising from these latter experiences were explicated in this step.
Task Analysis Step 3: Specification of the Task Environment

The task environment was specified to ensure that the task under analysis could be sampled consistently, and thus enable comparisons between one client performance and another. As demonstrated in the literature review, little is known about which CBT intervention is most potent at facilitating resolutions of the dysfunctional appraisal task. As this study was exploratory in nature, no sampling restrictions were made based on a specific CBT technique, such as a thought record or downward arrow technique, that could form the task environment. Instead, key features of the CBT environment that could facilitate the resolution of this task were identified and refined through subsequent analyses.

Task Analysis Step 4: Rational Analysis

A rational analysis was conducted to create a hypothetical model of resolution of the dysfunctional appraisal task. This involved the synthesis of understandings gleaned from the reviewed research including the models derived in the Task Analysis of Cognitive Therapy for Depression project (TACTD; Berlin et al., 1991; Mann, 1999; see Appendix A for the full models), subjective assumptions about human change process, and rationally derived conjectures about the steps by which a person might resolve the dysfunctional appraisal task. The resulting rational model represented an initial hypothesis of the sequence or pathway of internal psychological events from task marker to resolution. This model imposed theoretical boundaries on the behaviors that were expected to be observed during the empirical analysis; any observed behaviors that lay outside the boundaries indicated that the model was incomplete or inconsistent with actual performances. Thus, the rational model set the groundwork for the subsequent empirical analyses and also functioned as a hypothesis to be tested.
Task Analysis Step 5: Empirical Analysis

The empirical analysis involved the intense and iterative observational analysis of psychotherapy transcripts from a British sample \((n = 13, \text{Goodridge & Hardy}, 2009)\) containing the dysfunctional appraisal task with the goal of discerning essential steps in the model from task marker to task resolution. Analysis proceeded by studying each transcript numerous times in four distinct phases, and new discoveries were explored and redefined in a dialogical process between investigator and supervisor. Throughout, analysis attempted to stay close to the data, such that observations were primarily descriptive rather than interpretive. Special attention was paid to: client statements that reveal a shift in experiential state, e.g. moving from focusing on feeling to focusing on thoughts; changes in the content of speech, e.g., moving from speaking about a specific situation to what was salient within that situation; shifts in engagement with self-referencing material, e.g. moving from speaking about others to speaking about the self; and in general, to evidence that indicated the presence of components previously discovered in other transcripts. Whenever transcripts were compared with each other, special attention was additionally paid to differences in process, with the goal of capturing all essential components or steps from marker to resolution without introducing idiosyncratic or “auxiliary” components that are not necessary for resolution.

In the first phase of analysis, transcripts were read in their entirety to become familiar with the content, and then re-read to identify task markers. The operational definition of the task marker was refined with each reading.

In the second phase of analysis, transcripts were read to identify segments that signalled the resolution of the dysfunctional appraisal task. At this point it became possible to tentatively classify dysfunctional appraisal task events into resolving versus non-resolving performances;
resolving events were those in which adaptive appraisals about the self were generated, and non-resolving events were all remaining performances. Transcripts of events classified as resolving were then analyzed to more specifically identify the client behaviors that mark the conclusion of the dysfunctional appraisal task. After multiple readings and refinements, these behaviors became the operational definition of task resolution.

The third phase of analysis involved the iterative process of reading and re-reading each resolved transcript to develop individual empirical descriptions of client process between task marker and task resolution. During this phase, a transcript was read with the goal of describing client cognitive-affective process for the duration of the dysfunctional appraisal task, e.g. “naming a problem,” “articulating a wish for something different,” or “expressing sadness.” As other transcripts were described in this way, previous understandings were re-examined, similarities noted, non-essential sequences identified, and an empirical model of resolution began to emerge. Each re-reading of a transcript served to refine the empirical model, which then resulted in a re-reading of previous transcripts to ensure the developing component descriptions and sequences remained accurate for all transcripts.

In the fourth phase, unresolved events were analysed to identify similarities and differences between resolved and unresolved events. The two goals of this step were to better isolate the essential features of resolution that distinguish it from other components of the model, and to identify any processes that may interfere with successful resolution. Special attention was paid to identifying points of “stuckness” and the processes or interactions that preceded and accompanied these points.
Task Analysis Step 6: Synthesizing the Rational-Empirical Model

The rational and empirical models were compared and synthesized into a rational-empirical model. Key questions included, “Do the observed client behaviors fall within the behavioral limits imposed by the rational model?” and “Do observed behaviors occur in the sequence predicted by the rational model?” For each step in the rational model, all components in the empirical model were investigated to determine whether a set of client behaviors fell within predicted limits. Structural similarities and differences between models were also considered, and the models were synthesized with particular emphasis on the empirically derived model.

Task Analysis Step 7: Explaining the Rational-Empirical Model

The rational-empirical model was then explicated. A rational-empirical model captures what a client is doing in the process of resolving the dysfunctional appraisal task, but on its own does not explain how they are going about doing so. Thus for the rational-empirical model to be said to explain how a particular task is resolved, it must be capable of being explicated: there must exist at least one reasonable theory that can explain why and how the observed behaviors occurred in the noted sequence.

Developing Criteria for Objective Measurement of Components

The essential steps or components from the rational-empirical model were used to develop a rating scale, the Degree of Resolution Scale for Dysfunctional Appraisal tasks (DRS-DA). Behavioral descriptions derived during the empirical analysis made up the bulk part of the DRS-DA criteria for each component. These descriptions were supplemented with additional features that were characteristic of each step but not necessarily unique to it, for example whether there was an accompanying fluctuation in degree of emotional arousal or
tension. Thus, the full qualitative essence of each step was elaborated as much as possible to enable accurate measurement of each component.

**Research Questions of the Discovery Phase**

**Investigating the Relevance of a Task Analysis of the Dysfunctional Appraisal task**

It was expected that dysfunctional appraisal task markers and evidence of client engagement in the task would be present in the data:

- **RQ1.** Investigating presence of dysfunctional appraisal tasks: Are clients engaging in dysfunctional appraisal tasks? Transcripts were reviewed to address this question.

- **RQ2.** Investigating applicability of the TACTD Good outcome model (Berlin et al., 1991): Does the TACTD model adequately describe observed client process in the current data? Transcripts were reviewed to address this question.

**Identifying Observable Shifts**

These investigation addressed the general question, How do clients move from dysfunctional appraisals to the adaptive reappraisals about self?

- **RQ3.** Identifying client processes: What are the observable shifts in client behaviour and experiential states as they move from dysfunctional to constructive appraisals? Steps 1 through 5 of the task analysis addressed this question.

- **RQ4.** Modelling client processes: Can a testable rational-empirical model of resolution of a dysfunctional appraisal task be synthesized from these observed shifts? Steps 6 and 7 of the task analysis addressed this question.
Creating a Measure to Test the Model

It was expected that a measure could be created to test the derived model:

RQ5. Developing a suitable measure for testing the derived model: Can the rational-empirical model be used to create an observer-rated measure of the model? A degree of resolution scale for a dysfunctional reappraisal task was created.
Chapter 3: Results of the Discovery Phase

Preliminary Step Preceding the Task Analysis

Research Questions 1 and 2: Investigating Relevance of a Task Analysis

Eight of the available twenty-five transcripts had to be reviewed before one transcript was found for each client that met selection criteria \((n = 5)\). One transcript was reviewed for three clients, two transcripts were reviewed for one client and three transcripts were reviewed for the last client. This result suggests that the dysfunctional appraisal task occurs with sufficient frequency to make a study of its resolution feasible and relevant to change process research.

There were two types of difficulties when attempting to apply the existing TACTD model of resolution (Appendix A; Berlin et al., 1991) to these five transcripts: difficulties of completeness, and difficulties of consistency. Difficulties of completeness were defined as client behaviors in the current sample that did not fit into the existing components of the TACTD model. This included client behaviors that did not fit within the TACTD model unless some components were merged and seen as part of a more general higher-order process. Additionally, two components of the TACTD model were theorized to occur outside of session and therefore were not applicable to this within-session analysis. Difficulties of consistency referred to three components that seemed inconsistent with the methodology of task analysis, in that they described interpretations rather than descriptions of behavior and were therefore difficult to apply to the current sample. A summary of the difficulties identified in the TACTD model is presented in Table 4.
Table 4
*Difficulties in Applying the TACTD Resolution Model*

<table>
<thead>
<tr>
<th>TACTD Components Affected</th>
<th>Difficulty (type)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components in need of refinement</strong></td>
<td></td>
</tr>
<tr>
<td>Describes Dysfunctional Appraisal</td>
<td>Component was at times demonstrated as well as described (completeness)</td>
</tr>
<tr>
<td>Explores Demands / Meaning of DA</td>
<td>Possible interpretation of observed processes of contextualizing (consistency)</td>
</tr>
<tr>
<td>Distances self from DA</td>
<td>Possible interpretation of observed process of questioning (consistency)</td>
</tr>
<tr>
<td>Counterposes</td>
<td>Shift in perspective not always in the form of “pros vs cons” (completeness)</td>
</tr>
<tr>
<td>Synthesizes Alternative Appraisal</td>
<td>Possible interpretation of observed process of emergence of new appraisal (consistency)</td>
</tr>
<tr>
<td><strong>Components that could be merged</strong></td>
<td></td>
</tr>
<tr>
<td>Recognizing Possibility of Alternative /</td>
<td>Both embedded within a re-appraising process (completeness)</td>
</tr>
<tr>
<td>Synthesizes Meaning of DA</td>
<td></td>
</tr>
<tr>
<td>Problem Solves / Explores</td>
<td>Both reflect using new perspective to assess its implications (completeness)</td>
</tr>
<tr>
<td>Cross-Situational DA</td>
<td></td>
</tr>
<tr>
<td><strong>Components that could be dropped</strong></td>
<td></td>
</tr>
<tr>
<td>Between-session change (x2)</td>
<td>Concerned with within-session change events (completeness)</td>
</tr>
<tr>
<td><strong>Components that could be added</strong></td>
<td></td>
</tr>
<tr>
<td>Expressing Feelings</td>
<td>Observed (completeness)</td>
</tr>
<tr>
<td>Empathic Shift (towards self or other)</td>
<td>Observed (completeness)</td>
</tr>
</tbody>
</table>

Based on these difficulties, a decision was made to revise the TACTD model and develop a new one to be used in the empirical task analysis. The results of this analysis, including recommendations for the refinement of the TACTD model, were presented at the Canadian Psychological Association Annual Convention in 2011 (CPA; Gollino & Watson, 2011). The suggested revision is presented in Figure 1.
**Marker: Dysfunctional Appraisal (DA)**
Client expresses negative views of the self or others, or demonstrates negative treatment of self (minimizing, criticizing, invalidating, etc.). These negative statements may be embedded in a situation.

**Contextualizing the Appraisal**
The appraisal is elaborated with description of specific situation(s) (triggering or remembered) associated with it.

**Expressing Feelings**
The client expresses feelings in response to the appraisal.

**Empathic Shift (self or other)**
Client expresses compassion or takes on a protective stance towards self or other, as if concerned to “be fair” or realistic, less demanding.

**Change in Perspective**
Client perceives new aspects of previously recounted situations, recalls situations that challenge the DA, or describes self in a new way.

**Questioning**
Client considers implications of the changed perspective, “If I look at things this way, what does it mean to/about me?”

**Partial Resolution: Conscious Re-Appraising**
Re-appraising self, self-capacities, goals, objectives, what is realistic in light of new knowledge. Includes apportioning responsibility in a more distributed or differentiated fashion, for example considering environmental and interpersonal factors that contribute(d) to the DA.

**Resolution: Emergence of a New Appraisal**
Client expresses an appraisal that is experienced as less problematic to the self. This re-evaluation of the DA is accompanied by improved mood.

*Figure 1.* Revised TACTD model of resolution based on the preliminary step preceding the task analysis.

**Task Analysis**

**Research Questions 3 and 4: Identifying Observable Shifts**

**Step 1: Specification of the task.** The cognitive-affective problem at the heart of this investigation is the maladaptive appraisal of self (e.g., “I am such a fool”), self-in-relation-to-other (“No one loves me”), or self-in-the-future (“I’ll never make it”). The specific task of
interest in this analysis is the dysfunctional appraisal task, which begins with dysfunctional appraisal and continues until the problem is resolved.

In the first iteration of the specification of the task marker, three essential features were established: (a) client statements that reflect a negative view of self, self-in-relation-to-other, or self-in-future; (b) description of a situational context in which this negative view is embedded; and (c) an indication that the situation is experienced as problematic, for example statements about difficulty coping or negative affect in the form of feeling stuck, confused or distressed.

**Step 2: Explicating the investigator’s cognitive map.** The investigator’s assumptions regarding client change process included:

a) Exploration can lead to the discovery of idiosyncratic construals of internal or external events;

b) Reflection on these discoveries can result in reformulation of these events, possibly through a re-evaluation of the meaning of these events;

c) Reformulation of the meaning of events can lead to discovery of negative beliefs about self, which can then be reflected upon and changed.

**Step 3: Specification of the task environment.** Necessary characteristics of the task environment were initially specified as:

a) Therapist adherence to a cognitive-behavior therapy for depression manual;

b) A collaborative therapeutic stance in which both exploration and reflection are supported, as well as the provision of reassurance and the encouragement of external reattribution and self-assertion;

c) Therapist attempts to reframe client construals and to challenge cognitive distortions using a variety of cognitive restructuring tasks that all share the same goal: to
encourage cognitive reflection with the aim of facilitating more adaptive information processing. Although CBT manuals distinguish among challenges that occur during “reality testing” of automatic thoughts and those that occur during “searching for alternative solutions” and other interventions (Beck et al., 1979), the literature reviewed in the previous chapter indicated that therapist challenges in CBT are easily identifiable, frequently used, appear to comprise their own class of intervention, and occur in the context of facilitating reappraisals. Therapist challenging of dysfunctional appraisals was therefore defined as invitations to engage in reality testing, offering alternative appraisals, and questions or statements that imply an appraisal is inaccurate or maladaptive.

**Step 4: Rational analysis.** The initial rational model of the resolution of the dysfunctional appraisal task contained eight components. This model served as the basis for the empirical analysis, and contributed to the final rational-empirical model. Each component is presented here; the complete rational model is presented in Figure 2:

A. **Dysfunctional appraisal of an event.**

The client describes a dysfunctional appraisal of a specific event. The appraisal is judged as dysfunctional when it contains an implicit or explicit negative evaluation of self, self-in-relation-to-other, or self-in-the-future. It is expected that this dysfunctional appraisal will be accompanied by client expressions of negative affect in the form of feeling stuck, confused or distressed.

B. **Articulation of idiosyncratic elements.**

The appraisal is elaborated with description of specific situation(s) associated with it.

These situations may be the triggering situation in which the appraisal is embedded, or a
memory. The client articulates the idiosyncratic elements associated with the dysfunctional appraisal.

C. Reflection/reaction to idiosyncratic construal.

The client reflects on the discovered idiosyncratic elements, or reacts to the discovery with expression of negative feelings, or negative evaluations about the self’s worth or ability to cope. Either way, the personal meaning of these idiosyncratic elements becomes clear.

D. Asserting/validating self.

Alternatively or in addition to broadening (component E), the client begins to validate and reassure the self and begins to speak in self-assertive ways. Client may express compassion or take on a protective stance towards the self, as if concerned to be “fair”, realistic, or making less demands on self.

E. Broadening awareness.

Alternatively or in addition to asserting/validating self (component D), client demonstrates they see the problem more broadly. Client may perceive new aspects of the situation, or may recall situations that directly challenge the dysfunctional appraisal or negative self-evaluation.

F. Reformulation of event.

The client views the triggering event from a new perspective of having sufficient worth/ability to cope. Client may begin to reapportion some responsibility for negative events outside the self (external reattribution).

G. Reflection and re-evaluation.

The client reflects on the meaning of holding a new perspective, as if asking the question,
“If I look at things this way, what does it mean to/about me?” Client evaluates past situations in light of new perspective, becoming aware of underlying assumptions about the self, self-in-relation-to-other, or self-in-the-future.

H. **Reappraisal of negative view of self.**
Client engages in a process of re-appraising the self, what s/he is capable of, goals and objectives, and what is realistic in light of new knowledge. This includes clients’ apportioning responsibility in a more distributed or differentiated fashion, a broader application of external reattribution. This culminates in the client re-evaluating the dysfunctional appraisal and embedded negative self-evaluation, emerging with a new appraisal that is experienced as less problematic and is accompanied by a positive shift in mood.

---

**Figure 2.** Rational model of the resolution of the dysfunctional appraisal task

- A. Dysfunctional appraisal of an event
- B. Articulation of idiosyncratic elements
- C. Reflection/reaction to idiosyncratic construal
- D. Asserting/validating self
- E. Broadening awareness
- F. Reformulation of event
- G. Reflection and re-evaluation
- H. Reappraisal of negative view of self
Comparison of the Rational Model with Existing Research. At this point it seemed fruitful to compare the proposed rational model with the TACTD model (Berlin et al., 1991). While there are many similarities between the rational model of resolution developed above and the TACTD model, results of the preliminary step preceding the task analysis and then the literature review suggested significant modifications. As noted earlier (please refer to Table 4), some components seemed unnecessary or inconsistent with the goal of deriving a performance model of a within-session process, others seemed to be specific instances of a general process and could be collapsed together, and some client behaviors fit into no TACTD components, suggesting the need for additional components. Three components of the TACTD model which were judged to be therapist-driven were dropped: Recognizes possibility for alternative appraisal, Plans for between-session use of alternative appraisal, and Reports experiences based on alternative appraisal. These were discarded first because the current research aims to identify client-driven processes of change, and second because the TACTD model emerged in the context of a modified CBT treatment: therapist actions in the TACTD project were likely to be different from therapist actions in the strictly controlled CBT environment of the samples used for this task analysis.

Several components were collapsed, as it seemed likely that these would occur jointly. For example, Explores interpersonal demands and Explores/clarifies meaning of appraisal were merged as they both seemed to reflect a process of becoming aware of idiosyncratic meaning. Distances self from appraisal was also combined into this new component, “Awareness of idiosyncratic elements” as the investigators noted that this “distance” was recognizable by the ability to explore the meaning and context of an appraisal. Similarly, it seemed likely that the
process of “Broadening” better captured the primarily cognitive and non-sequential/co-occurring behaviors noted mid-way in the TACTD model.

Finally, three new processes were added to the model. “Asserting/validating self” was added as this common change process in psychotherapy may be important to client reformulations in CBT (Elliott et al., 1994). “Reflection and re-evaluation” was appended to the model to reflect findings of the preliminary step preceding the task analysis. “Reappraisal of negative view of self” was appended to reflect the ultimate theorized goal of the task, to move beyond reappraisals of events (the “Reformulation of an event” component) and into reappraisals of the self. A full comparison between the original TACTD model and the rational model is presented in Table 5; to facilitate structural comparison, the TACTD components are numbered to represent their structural sequence, i.e. both components 2a and 2b occur after component 1 and before component 3.
### Table 5
Comparison of TACTD & Rational Models of Resolution for Good Outcome Cases

<table>
<thead>
<tr>
<th>TACTD Model</th>
<th>Rational Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describes dysfunctional appraisal</td>
<td>A. Dysfunctional appraisal of an event</td>
</tr>
<tr>
<td>2a. Explores interpersonal demands</td>
<td>B. Articulation of idiosyncratic elements</td>
</tr>
<tr>
<td>2b. Explores/clarifies meaning of appraisal</td>
<td></td>
</tr>
<tr>
<td>3. Distances self from appraisal</td>
<td></td>
</tr>
<tr>
<td>4. Recognizes possibility for alternative appraisal</td>
<td></td>
</tr>
<tr>
<td>5. Synthesizes central meaning of dysfunctional appraisal</td>
<td>C. Reflection/reaction to idiosyncratic construal</td>
</tr>
<tr>
<td>6a. Information the flows from and supports alternative appraisal</td>
<td>D. Asserting/validating self</td>
</tr>
<tr>
<td>6b. Obstacles to implementing alternative appraisal</td>
<td></td>
</tr>
<tr>
<td>7a. Problem solves to generate solutions to situational or interpersonal problems</td>
<td>E. Broadening awareness</td>
</tr>
<tr>
<td>7b. Recognizes/explores cross-situational dysfunctional appraisal pattern</td>
<td></td>
</tr>
<tr>
<td>8. Synthesizes alternative appraisal</td>
<td>F. Reformulation of an event</td>
</tr>
<tr>
<td>9. Plans for between-session use of alternative appraisal</td>
<td></td>
</tr>
<tr>
<td>10. Reports experiences based on alternative appraisal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G. Reflection on reformulation</td>
</tr>
<tr>
<td></td>
<td>H. Reappraisal of negative view of self</td>
</tr>
</tbody>
</table>

**Step 5: Empirical analysis.** All thirteen transcripts in the sample demonstrated at least one client marker of the dysfunctional appraisal task and therefore all were included in the first phase of the empirical analysis, creating an operational definition of the task marker. At this point it became evident, as two or three sequential transcripts were available for each client, that clients often worked on the same task in multiple sessions. Subsequently, the resolution component of the rational model “H. Reappraisal of negative view of self” was used to identify resolution events; seven resolution events were identified.

At this point, the rational model was put aside in favour of observational analysis. Individual empirical descriptions or performance models of client process between task marker...
and task resolution were derived for the resolving events. Performance models were compared and synthesized, and 23 distinct components emerged. Each component is a descriptor of a type of client behaviour, e.g. the component “Empathic Shift” describes client behaviour characterized by “Client expresses new compassion for self/other”.

Sequential process analysis suggested that these components were organized in 7 steps, such that the performance models for each fully resolving event contained at least one component from each step, in sequence. These steps were empirically derived, and are independent from those proposed by the rational model. There appeared to be two alternate pathways between Steps 3 and 5: Step 4a and Step 4b. It was observed that some clients demonstrated one or more components from 4a or 4b, but none from the other, and that some clients demonstrated one or more components from both 4a and 4b in either order. Both Step 4a and Step 4b components are also unique in that they represent the only instances wherein there were observations of client process that were at times impossible to fully distinguish from therapist process, e.g. when therapists enacted an exploratory stance and the client “went along” with the exploration.

All components are described in Table 6 and are organized by step. The first component presented for each step reflects the general process for that step. The remaining components at that step represent client behaviours that were distinct enough to merit differentiation.
Table 6
Results of the Empirical Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>Description of Client Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td>1. Dysfunctional Appraisal(^a)</td>
<td>Client expresses negative views of self or others, or demonstrates negative treatment of self (minimizing, criticizing, invalidating, etc.). These negative statements may be embedded in a problematic situation. These statements may reflect a lack of distance/subjectivity, and rigidity.</td>
</tr>
<tr>
<td>2. Negative Evaluation</td>
<td>A “hot thought”, or negative evaluation of the self, self-in-relation to other, self-in-the-future - regardless of whether it is obviously “dysfunctional” – that arises in a particular situation</td>
</tr>
<tr>
<td>3. Belief or Action Tendency</td>
<td>A problematic rule, assumption, belief or attitude, or an element of a problematic schematic structure particularly action tendencies.</td>
</tr>
<tr>
<td>4. Core Belief</td>
<td>A problematic core belief without a poignant felt sense.</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
<tr>
<td>5. Contextualizing the Appraisal(^a)</td>
<td>The DA is elaborated with a description of specific situation(s) (triggering or remembered) associated with it. The DA becomes further differentiated in this stage. There is a narrowing of scope of when something applies, what it implies; concrete examples and differentiated statements are used to try to identify a representative concept. Statements tend to be emotionally laden or demonstrate a lack of distance from the DA.</td>
</tr>
<tr>
<td>6. Dysfunctional Assumptions</td>
<td>Statements may reflect problematic rules or action tendencies, or contain cognitive distortions such as minimizing, catastrophizing, mind reading, polarized thinking, etc. Client statements reflect dysfunctional assumptions about the self, other, world.</td>
</tr>
<tr>
<td>7. Meaning of Negative Evaluation</td>
<td>A picture begins to emerge regarding how the client construes the self/events, e.g. blames self for being too trusting. The meaning of the negative evaluation embedded in the DA becomes clearer.</td>
</tr>
<tr>
<td>Component</td>
<td>Description of Client Behaviors</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
</tr>
<tr>
<td>8. Accessing Vulnerability⁠[^a]</td>
<td>Client expresses vulnerability. This may express itself emotionally where vulnerability or weakness is the “aboutness” of the emotion.</td>
</tr>
<tr>
<td>9. Victimization or Blame</td>
<td>Client describes emotional &quot;costs&quot; or negative consequences, often using vivid and poignant language, but the self/other is victimized or blamed.</td>
</tr>
<tr>
<td>10. Acknowledging Vulnerability</td>
<td>Client sees self/other as vulnerable to pain, weak, or limited/having limits.</td>
</tr>
<tr>
<td><strong>Step 4a</strong></td>
<td></td>
</tr>
<tr>
<td>11. Empathic Stance⁠[^a]</td>
<td>Enacting a protective stance toward self or other, as if concerned to “be fair” or realistic; the therapist may take on this stance on behalf of client.</td>
</tr>
<tr>
<td>12. Accepts Vulnerability</td>
<td>Client accepts self as vulnerable in a compassionate (rather than victimizing or blaming) way; evidence of enough self-empathy to admit and allow weakness.</td>
</tr>
<tr>
<td>13. Wish or Need</td>
<td>Evidence of enough self-empathy to wish for something different, or to acknowledge that something is needed.</td>
</tr>
<tr>
<td>14. Empathic Shift</td>
<td>Client expresses new compassion for self/other.</td>
</tr>
<tr>
<td>Component</td>
<td>Description of Client Behaviors</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Step 4b</strong></td>
<td></td>
</tr>
<tr>
<td>15. Shifting Perspective&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Problem considered from a different perspective; therapist may take on an exploratory stance on behalf of the client.</td>
</tr>
<tr>
<td>16. Disconfirmatory Evidence</td>
<td>Becomes aware of or newly allows into consciousness evidence that challenges the DA, e.g. situations where DA has caused problems.</td>
</tr>
<tr>
<td>17. Considering a Change</td>
<td>There is a sense that an alternative perspective is desirable or even imaginable to the client, even if it is currently being dismissed or judged to be unattainable. The client demonstrates recognition of the possibility of a different way of being.</td>
</tr>
<tr>
<td>18. Change in Perspective</td>
<td>Client describes self or &quot;the problem&quot; in a new way, perceives new aspects of previously recounted situations, or recalls situations that oppose, challenge, or diffuse the DA. This may include seeing the situation as part of a larger pattern.</td>
</tr>
<tr>
<td><strong>Step 5</strong></td>
<td></td>
</tr>
<tr>
<td>19. Questioning&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Client considers the implications of the new perspective, &quot;If I look at things this way, what does it mean to or about me?&quot;</td>
</tr>
<tr>
<td>20. Evaluation</td>
<td>Considering the implications or consequences of what it would mean to hold a new perspective, e.g., articulating fears such as that newly perceived inter or intrapersonal demands are too great. The consequences being assessed may be benefits or costs.</td>
</tr>
<tr>
<td><strong>Step 6</strong></td>
<td></td>
</tr>
<tr>
<td>21. Early resolution - Reflective Appraising&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Re-appraising self, self-capacities, goals, objectives, what is realistic in light of new knowledge. Includes apportioning responsibility in a more distributed or differentiated fashion, for example considering environmental and interpersonal factors that contribute(d) to the DA, or making space for self and other.</td>
</tr>
</tbody>
</table>
### Component Description of Client Behaviors

#### Step 7

<table>
<thead>
<tr>
<th>Component</th>
<th>Description of Client Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>22. Culminating Resolution - Reappraisal(a)</td>
<td>Client expresses an appraisal that is experienced as less problematic to the self. This re-evaluation of the DA is accompanied by improved mood (e.g., laughter).</td>
</tr>
<tr>
<td>23. Constructivist Stance</td>
<td>The client re-evaluates the DA as separate from the self. There is a sense of recognition that holding the appraisal is a choice, or that the appraisal may have been constructed by the self, but is not about the self.</td>
</tr>
</tbody>
</table>

\(a\) General process component for that step.

These 23 components generally appeared in the sequence presented above. However, as their operational definitions became more robust and easier to identify, later readings indicated that components occurred in unexpected sequences as well. Specifically, Steps 5, 6 and 7 components were at times observed early in the session without earlier components other than a reference to the task marker. An analysis of the sessions with non-resolving events helped to clarify this observation. In three instances non-resolving sessions immediately preceded one of a session containing an out-of-sequence component. Comparison of the paired sessions revealed that the earlier sessions contained the missing early sequences of components. In other words, it seemed that some clients not only re-engaged in the dysfunctional appraisal task from session to session, but also “picked up where they left off” in the task resolution sequence, resolving the task across sequential sessions rather than within a single session. These findings receive some convergent validity from the results of Goodridge and Hardy’s (2009) examination of the same data set, in which they identified higher levels of cognitive-affective processing as rated by the APES (Stiles et al, 1990) occurring in the last sessions.

**Step 6: Constructing the rational-empirical model.** The rational model (Figure 2) was compared with the empirical data (Table 6) and a new rational-empirical model was synthesized.
The majority of observed behaviors confirmed the presence and sequence of the rationally derived components of the rational model, however three rational-model components underwent significant revision in light of the empirical data. Furthermore, two empirically observed components, “Victimization or Blame” and “Considering a Change”, were recognized as “stuck points” for clients rather than essential components in the resolution of the dysfunctional appraisal task. See Table 7 for a summary of the relationship between the empirically derived behavioral components, and the individual components of the rational model.

Table 7
*Relationship between Empirically-Derived & Rationally-Derived Components*

<table>
<thead>
<tr>
<th>Empirical Data</th>
<th>Rational Model Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysfunctional Appraisal</td>
<td>Dysfunctional appraisal of an event, evincing negative evaluation of self</td>
</tr>
<tr>
<td>Negative Evaluation</td>
<td></td>
</tr>
<tr>
<td>Belief or Action Tendency</td>
<td></td>
</tr>
<tr>
<td>Core Belief</td>
<td></td>
</tr>
<tr>
<td>Dysfunctional Assumptions</td>
<td></td>
</tr>
<tr>
<td>Contextualizing the Appraisal</td>
<td>Articulation of idiosyncratic elements</td>
</tr>
<tr>
<td>Meaning of Negative Evaluation</td>
<td></td>
</tr>
<tr>
<td>Accessing Vulnerability</td>
<td>Reflection/reaction to idiosyncratic construal</td>
</tr>
<tr>
<td>Accepts Vulnerability</td>
<td></td>
</tr>
<tr>
<td>Acknowledging Vulnerability</td>
<td></td>
</tr>
<tr>
<td>Empathic Stance</td>
<td>Asserting/validating self</td>
</tr>
<tr>
<td>Wish or Need</td>
<td>Reformulation of an event</td>
</tr>
<tr>
<td>Empathic Shift</td>
<td></td>
</tr>
<tr>
<td>Shifting Perspective</td>
<td>Broadening</td>
</tr>
<tr>
<td>Disconfirmatory Evidence</td>
<td>Reformulation of an event</td>
</tr>
<tr>
<td>Change in Perspective</td>
<td></td>
</tr>
<tr>
<td>Questioning Evaluation</td>
<td>Reflection and re-evaluation</td>
</tr>
</tbody>
</table>


Empirical Data

| Reflective Appraising                  | Reappraisal of negative view of self |
| Resolution - Reappraisal              |                                       |
| Constructivist Stance                 |                                       |

"Components “Victimization and Blame” and “Considering a Change” were discarded.

The final rational-empirical model is presented in Figure 3, including a brief description of each component. What follows is a description of each component of the rational-empirical model, illustrated with transcript excerpts. While the processes involved in each component are qualitatively distinct from each other in sum, some features of these processes exist on a continuum, or can oscillate before settling into a particular state (e.g., figure-ground reversals, like shifting attention from trees to the forest and back to the trees before settling on attending to the forest). Transcript excerpts which are as distinct from each other as possible have been selected; nevertheless to increase clarity key phrases that best embody the component of interest have been italicized in the transcript excerpts. All excerpts are extracted from multiple sessions of the same client.
1. Dysfunctional Appraisal

There is an overly rigid, invalid, or maladaptive appraisal. Inflexible, over-generalized, focus on negative aspects of the experience.

2. Elaboration

Differentiating what the dysfunctional appraisal is about. A narrowing of scope of when something applies, what it implies. Idiosyncratic elements are identified.

3. Accessing Vulnerability

Sense of self as vulnerable or weak; statements suggest accessing or acknowledging vulnerability. Self as limited, or resources as insufficient.

4. Shift: Softening

A compassionate or protective stance, as if concerned to be “fair” or realistic.

4. Shift: Shifting Perspective

An exploratory stance of broadening awareness; a new perspective emerges.

5. Evaluating New Perspective

Applying new perspective, considering what it would mean to hold new perspective. Probes memories, becomes aware of what might need to be accommodated to consolidate change.

6. Reappraising

Re-assessing beliefs about the self, what is realistic in light of new knowledge. Makes room for self and others, plans for behavioral change.

Figure 3. Rational-Empirical model.

**Dysfunctional Appraisal.** The task marker is client’s expression of a dysfunctional (overly restrictive, invalid, or maladaptive) cognition, usually as a negative view of self or other, as negative behaviors towards self, e.g. minimizing, criticizing, invalidating, or as cognitive distortions, e.g. discounting the positive, “shoulding”, personalizing, blaming, emotional reasoning. Note the overly restrictive or maladaptive nature of these examples from Session 4:

C: My biggest problem is trying to say "well I can do everything"

C: I've always viewed myself as being quite weak if I indulge in being negative

A dysfunctional appraisal may also be embedded in a situation, as in this example from Session 5:

C: I was moving some furniture downstairs the other day with my wife and I did the first bit on my own and she decided to join in for the second bit. And I said well, "We’re
gonna do it this way". And the answer was "Well why?" And my answer was "Well we're just doing it that way because it will work that way". And I found myself absolutely unable to explain why I was doing it my way - what I was doing was saying well "I’m doing it that way - that’s just all there is to it." And I'm not a control freak but- I did have a difficulty - and we fell out at that moment quite radically. Because I just found myself unable to slow myself down to say "The reason is – this." It sounds terrible doesn't it? *I felt that I was right and what was I doing wasting my time having to explain something* that would be done in two minutes and I'd already done it once already successfully without asking myself why. […] I was very resentful that *I was being challenged* about something that really was of no consequence to me.

When feelings are expressed, these are directly related to the conclusion or appraisal that results from a dysfunctional cognitive process. Note the personalizing and possibly invalid reaction without reflection that is evident in the client’s statement above “I felt that I was right”; the client appears to be fully immersed in reacting from implicit knowledge “my wife accused me of being wrong”, with no sense of alternatives being possible, despite the only evidence in this regard being the wife asking for an explanation. The client clearly experienced his reaction as problematic, “I did have a difficulty … unable to slow myself down … It sounds terrible doesn’t it?” and endorses negative feeling, resentment, related to his unevaluated assumption that his wife was challenging him.

**Elaboration.** The dysfunctional appraisal is then elaborated and contextualized with description of episodic memories, including specific situation(s) associated with it. The client begins to try to differentiate this type of problematic experience from other types of problematic
experiences, as if trying to get a sense of the scope or shape of the problem, or to explain what is so problematic. In these examples from Session 4, the client shares thoughts and memories in a stream that may seem disconnected in terms of situational context, but are clearly related in terms of quality of the problematic experience:

C: [After describing conflict with wife] I feel very guilty. Because whatever was going on must be - I mean I've written it down here "I feel it must be my fault" […] I think she blames me

C: [My friend] rang me up the other night and he just said, "How you’re doing - you know - enjoying yourself sitting around doing nothing?" And I (laugh) felt so resentful.

C: [My other friend] said he was very disappointed in me […] “I thought you had more spunk." […] And I had to say I think that hurt me.

Another way of elaborating is to maintain focus on the triggering situation, again with the sense of trying to discover what it is about this situation that is problematic, as in this example from Session 5:

C: The problem is my wife has a very strong character you see - a very strong character!

T: But was that the automatic thought do you think?

C: I think that may well be it.

T: Right. She thinks I’m…

C: *I'm doing it wrong* -

T: Right - she thinks I'm doing it wrong - Right, right - shall we write that down?

C: (laughs) you are pinning me to the wall on this aren’t you?

T: Well it’s…
I feel guilty - what I know it is - is that here you go - I’ve become instinctively
defensive when challenged about something that I organized - and I defend rather
than explain. […] if just somebody - anybody else appeared and said "Oh why are
you doing it that way" and I'd probably have taken the time […] me and my wife are
two different animals

**Accessing Vulnerability.** In this component, the client expresses vulnerability, either
directly or emotionally e.g. sadness about perceiving self as weak, vulnerable, or limited; feeling
stretched too far, beyond coping, etc. There is a sense of poignancy for example perceiving self
as being unlovable, and often weeping and tears. The client is hurt by seeing him or herself, self
in relation to others, or self in relation to the world in this way, and experiences emerging
information as distressing and/or problematic. There is a sense that the client is
allowing/acknowledging/confessing painful information, or beginning to access an activated core
belief. This example of _acknowledging_ vulnerability from Session 4 continues from his memory
of being told “I’m disappointed in you”:

C: And - the danger is he’s right. The problem is part of me knows he’s right because
I’m always the person who says I don’t get beaten – yeah? And the difficulty was of
of course is that the end of this year I reached a situation when I had to say - things are
going to go catastrophic unless I say I’m beaten now

The following _experiencing_ vulnerability example from Session 5 emerges as the client
describes a situation that erroneously he had assumed was confrontational; the poignancy of the
language indicates that the client is likely experiencing vulnerability in the moment.
Vulnerability of this type often takes on a confessional tone, as suggested in this example by the
lowered voice:
C: The doctor was quite annoyed actually that I felt this was all very confrontational, and
all I’m saying is "look just somebody - you know who’s not got an axe to grind - give
me some opinion on where I stand" [quiet voice] and I suppose you know when I
answer these questionnaires it's thinking that do I expect to be punished and the
answer is always bloody yes! And I look at that and all my sense of well being just
suddenly diminishes and, and … (pause) erm, arh,

T: So you've got this very clearly written here haven't you -

C: And if it's not black it's white, and if it's not white it's black and even I know that the
world is actually that vast area in-between but I find myself - like with that - suddenly
I’m feeling fine then I get a phone call saying like, "speak to this solicitor now,
outline what you want" - and suddenly you know the whole bottom just suddenly
drops out of everything yeah? Because, not because - because I fear that what's gonna
happen is is that it's gonna turn into a confrontation and it's quite counter to my
nature to be confrontational and that's what I said the doctor was a bit annoyed at
actually that I was even being - getting to feel that that was one of the objectives here
- everyone then says to me "no, it’s not the objective", but that's not how I
instinctively feel about you - intellectually of course I know it shouldn't be – it should
be fairly civilised. But deep down in my little heart I think no

Shift: Softening. The client enacts a considerate, compassionate or protective stance
towards self or other. This may present as wanting to be fairer or more realistic in his or her
assessment of self or other. Alternatively, the therapist enacts a softening stance towards the
client, and the client accepts this stance and responds in a way that indicates they are clearly
following with the therapist. There is a sense that the client is validating or asserting self/other in
a way that challenges a previously negative evaluation. This shift is situationally-constrained, i.e. is in direct reference to the particular issue or piece of information contained in the dysfunctional appraisal, associated elaboration, and vulnerability. In this example of Softening, the client is “appalled” to realize that he punishes himself with guilt and begins to notice that he has failed to take care of himself; the client appears to be considering himself and his actions with more self-compassion:

C: Yeah, yeah, I mean actually one of the things that bothered me was that I had er - once a week now I've gotten into having a day of playing music and creating things - really… creative.

T: Good.

C: Yeah but normally I finish at sort of about two in the morning. But last week it started at about 10 o’clock in the morning and finished at 6 o’clock and I spent the evening feeling really guilty because I was enjoying myself. Whereas had I gone on till two in the morning we would have all just gone to bed and that would have been the end of it. And now the little man says "hey that was good", but instead, in my conscious day at the end of it, I sat here and I thought "Christ I've just been enjoying myself for the last 6-8 hours what did I do?" I mean, I hate to say this but you can always imagine these Iranians sort of people who used to - you used to see them flagellating themselves - And I hate to say it but I got an awful feeling -

T: But that’s what you - that’s what you do.

C: But there is something metaphorically like that going on and I find it appalling to be honest you know that - you know really for someone who's relatively intelligent - I'm only now spotting this.
C: The other thing is like - just to give an example - you know if the others went shopping I just can't stand - now rationally I should be able to say "well it's only going to take another half an hour it’s not a problem but" - just thinking about time is erm ah it’s curious actually I'm just trying to think that through [quiet tone]. *I just noted as well that getting caught up in a job makes me a magnet to do other jobs* and that's one of the things that my wife was - that isn't on there but the other day she was saying, "Oh well if you’re gonna do that, will you do that, that and that.” And I’m sitting there thinking, "Oh God, *you know what I want to do is do that and then kind of have a look at the rest."* [from “Oh well” to here in quiet tone]. But I had to do them both but what happened on that day, I can’t remember which day it was, but I didn't eat anything. Suddenly I found myself doing things and it was four o’clock before I even thought about eating yeah? And I stopped at the end of it and I realised that I was just back to the old routine yeah - I ignore all the signals to stop, rest or eat, and I must get the job done before I can switch off - which is what I wrote here - yeah? And I don’t know why - I've written, the need to succeed because there’s no allowance for failing –

Although this Softening component is presented here before the Shifting Perspective component, in actuality clients may engage in only one Shift component or oscillate back and forth between these Step 4 components. The above example emerged after a Shifting Perspective segment, and it is possible to see Shifting Perspective again towards the end of the above excerpt.

**Shift: Shifting Perspective.** In this component, the client considers the dysfunctional appraisal or newly explicit information about the construal from a different perspective,
perceives new aspects of previous dysfunctional appraisals of situations, or recalls information that opposes, challenges, or diffuses the dysfunctional appraisal/construal. This may include seeing the situation or personal reactions as part of a larger pattern. Alternatively, the therapist takes on the exploratory stance. If the latter, the client accepts this stance and responds in a way that indicates they are clearly following with the therapist. There is a sense of gaining distance, expanding focus, seeing more and more broadly, so that the negative evaluative aspect that had been so painful no longer applies. This shift is situationally-constrained, i.e. is in direct reference to the particular issue or piece of information contained in the dysfunctional appraisal, associated elaboration, and vulnerability. In this example of Shifting Perspective from Session 5, the client begins to see his reactions as part of a larger pattern, and considers the negative consequences to himself of his current avoidant approach:

T:  Is this erm something that comes up quite a lot at the moment, this kind of situation.

C:  Well it is beginning to yeah, it is beginning to yeah -

T:  Where you're feeling erm - you're feeling anxious you're feeling this is going to - this is all going to go wrong - Before you'd left work was this - was this happening quite a lot.

C:  *I would say that a lot of that was going on although I didn’t actually register it.  Yeah - I mean - if I said to you my wife would probably tell you there's half the conversations I was having at four o'clock in the morning in my sleep… were along these lines. I mean I never witnessed it by definition but my wife used to tell me "Did you know you were just laying there, saying ‘I can't do this I'm doing the best I can, I just can’t do it.'" And I'd get up the next day and I'd do it. But what was happening apparently is that in my sleep it's just sort of all coming out, the fact that you know
basically it was all just getting too much but my conscious mind was saying no, no, it's all containable, I can manage it all. So I was -

T: So that's a really important theme for you.

C: It must be.

T: Something very key, yeah. [...] one of the things that’s keeping this diary does is it helps you to start to collect the - continuing themes the patterns.

C: Absolutely I was just saying that *I can see the things that are common threads now*…

In this example the client then moves into Softening, although as previously noted clients may engage in either or both Shift components, in either order.

**Evaluating New Perspective.** The client applies the new perspective, as if asking self the question “If I look at things this way, what does it mean to/about me? What could this mean in the context of my life?” The new perspective is evaluated in terms of goodness of fit with other experiences. For example in Session 5:

C: oh yeah - there’s no allowance for failure. I must get the job done before I can switch off. *And I think actually looking back at the way I was dealing with my work workload was exactly that.*

Memories or cognitions that support or modify the new perspective emerge, and it is common to see the new perspective applied to several problematic situations. Recall that in this example, the new perspective being applied is a sense of seeing problematic experiences as part of a larger pattern that hurts him, and well captured by his phrase, “There’s no allowance for failure”:

C: [Applied to work-related issues] There was just so much to do all of the time that the ability to switch off just became minimal [...] just suddenly I lost my ability to switch
it all off and instead it just intruding, intruding, and of course what it was doing was that was governing then my behaviour to everybody else’s without me actually knowing that the reason I was short tempered and irritable and snapping at people was that my mind wasn't actually on what was going on in front of me, it was what was going on with all the things that were you know undermining me.

C: [Applied to wife-related issues] I mean part of the difficulties compared with me and my wife is that - I've probably told you - is that she resigned from her job but they refuse to accept it. And they'd said take a month off- I mean I have to recognise that despite all that she’s got problems of her own, not so dissimilar from mine.

Evaluating is accompanied by a meaning making element, in other words what the new perspective might imply about the self:

T: What stops you saying no, do you think? What is it that feeds into that?

C: Well I think that is one of the things that is worrying me at the moment that I can’t quite put my finger on - I mean I suppose you know - I don't want to be crass here but I suppose it's to do fundamentally with wanting to be liked

The implications of holding a new perspective are also evaluated, including at times articulating fears that a newly perceived intra- or inter-personal demand is too great, for example later this same session:

T: Would you like to be able to say no do you think?

C: Yeah but I'd like to be able to say no to somebody in a way that doesn't – I suppose - yeah it's a good point. I find myself saying it before I've even thought of it. That doesn’t upset them about me.
Reappraising. The client synthesizes one or more new adaptive appraisals about the self or problematic experiences, or enacts a constructivist stance that recognizes that holding the old view of the self is a choice. Reappraising statements demonstrate resilience and are often future focused. This re-appraising is accompanied by improved mood (e.g., laughter). While new adaptive appraisals are situationally-constrained, the process of reappraising itself occurs at a broader more self-referential level. In this example of Reappraising from Session 5, the client expresses a more adaptive appraisal of being unemployed (“an opportunity”) and demonstrates evidence of constructive mode thinking through its emphasis on personal goals:

C: I feel much better after today. I mean.

T: Has there been anything that’s felt more difficult today do you think?

C: Well I think it’s difficult partly because I know that I’m approaching some fundamental truths. In other words I see them coming to - I can't quite give them a shape. Yeah. The thing is I never want to sit still and say well - nice world ain't it! (inaudible) you know as soon as I start thinking that I think ,"Hey hang on there must be something else that" - I'm just beginning to turn that tide about what I'm doing. I mean my view is my company will probably ask me to retire before too long - I spoke to my GP yesterday - gave it a lot of thought and discussion. I think that although it’s not a very good scenario for me taking early retirement on medical grounds is probably a good opportunity that I can apply my energy to something that’s more actually fulfilling. ‘Cause I told you - I actually have an intellectual problem that I spend a lot of time and energy doing things for profit for somebody else. And I'm been (inaudible) by people who say why aren't I jumping up and down ‘cause someone says hey you can have 50% bonus and I say well it’s not what I'm here for is
it. You know I actually feel more and more that I want to use a lot of the skills that have been taken from that but to help people and benefit people not just for profit - yeah. And I suppose you know I haven't had chance to have a look at it really but I think that that's what I'm gonna be looking at doing, whatever it might be. I mean I've a dilemma now because I feel I'm a very creative person and suddenly having the opportunity to be creative is very – but I don't - we go back to about enjoyment don’t we. I think I've got to do some work before I get any enjoyment which means - thinking about oh it would be nice if I could have a career writing music but my answer is well I do that after I've done some good for somebody.

This example of the constructivist stance type of reappraising is from Session 6:

C: But what I would really like to be able to do I think now, is do what we're saying here, - is say look this is not realistic and I CAN'T do it yeah? But again this is all relatively new thinking for me, to even entertain the idea that I can say "Oh well never mind - I can do it tomorrow can't I."

C: But I think what I'm beginning to deduce from today’s session is that's not the be all and end all and other possibilities exist which I'm excluding, which I think is what might be quite a core thing actually.

Clients may also become more self-protective, or indicate room is being made for both self and others. For example from Session 6:

C: Instead of feeling a bit of a victim - yeah? - I’ve suddenly started thinking you can’t be a victim all your life

C: I can say I'm feeling free enough - free enough to listen to me
C: I'm actually saying "well how am I going to deal with that?" which for me is quite a positive step

C: From start to finish I’m suddenly thinking well maybe the finish isn’t quite so important because there's something on the way to finish

C: I think maybe - I'm not different to everybody else

C: Instead of being for someone else’s agenda, I feel that there’s compatibility between the two agendas

This rational-empirical model was presented at Annual Meeting of the Society for the Exploration of Psychotherapy Integration in 2014 (SEPI; Gollino, Watson & Hardy, 2014).

Step 7: Explaining the rational-empirical model. The purpose of this step is to present a viable theory of the sequence of underlying cognitive-affective mechanisms through which the dysfunctional appraisal task is resolved, linking these mechanisms to the components of the rational-empirical model.

People have beliefs about themselves that influence how they see themselves in the world. These beliefs about the self are here called construals. These construals function as lenses through which daily life is evaluated, leading to personalized evaluations of situations or appraisals. Adaptive appraisals, arising from adaptive construals, are growth promoting, hopeful in tone, and tentative, open to whatever may come. In contrast, dysfunctional appraisals, arising from underlying maladaptive cognitive structures, are overly restrictive (“I’ll never get it”), more likely to be invalid (“there's no point in trying”), and maladaptive in their sullen resignation (“Why bother?”). In other words, dysfunctional appraisals are situationally-based manifestations of underlying dysfunctional construals about the self. While people have a range of positive and
negative beliefs about themselves, a person with depression tends to construe the self in a way that contributes to or maintains their depression.

As a dysfunctional appraisal is contextualized by sharing a story of what happened, or describing associated thoughts, memories, feelings, images, or physiological reactions, this process of elaboration begins to activate the underlying depressogenic construal and related memories, cognitions, feelings, etc. In the process of tracking these elements as they are triggered, important information about the construal emerges into awareness. These painful thoughts, beliefs, and memories are increasingly associated with the vulnerable sense of being unacceptable and/or insufficient. Thus the process of accessing vulnerability is necessary to allow the implicit painful aspects of self-related experience that had been embedded within the construal to become accessible for reflection.

Reflection on this newly explicit information can take two forms. Softening can emerge from a sense of needing to be more fair, considerate, or compassionate, of seeing that one has been too harsh or extreme in a negative judgment; self-assertion and self-validation begin to be expressed, or a previously negative or overly rigid stance is softened. Alternatively or in addition to softening, shifting perspective can emerge from an exploratory sense of having missed the bigger picture or of having made some error in judgment; responsibility begins to be redistributed to external sources, memories that provide contrasting evidence to the dysfunctional appraisal may be recalled, or comfort may be taken in seeing the newly explicit information as mistaken. In either case, a shift in perspective emerges. This new perspective represents a potential modification to the underlying construal. This modification may be a simple deactivation (e.g., the triggering situation is seen through a different lens and thus the
depressogenic construal no longer applies and becomes dormant), or a more complex alteration (e.g., the depressogenic construal itself changes).

This shifted perspective is then tested by scanning back through memories that may support or invalidate the shift, applying it to other associated dysfunctional appraisals, and probing beliefs about the self to see what might need to be accommodated. This process of evaluating the new perspective consolidates the modification to the underlying construal.

The self/self-in-relation-to-others can now be re-assessed from the new perspective. This process of reappraising the self through the lens of a more adaptive construal makes it possible to create room for self and others to be vulnerable/get needs met, to be hopeful enough to become proactive about the future, and to endorse more adaptive appraisals of self and others.

**Research Question 5: Creating a Measure to Test the Model**

The Degrees of Resolution Scale for Dysfunctional Appraisal tasks (DRS-DA; Gollino & Watson, Appendix B) was derived to develop a measure suitable for coding psychotherapy transcripts on the presence of components of the rational-empirical model. This observer-rated measure consists of 7 mutually exclusive categories used to code the presence of the 7 components of the model. The specific criteria for assessing the presence of a particular component are drawn primarily from the empirical descriptions created in the empirical analysis, reviews of other degree of resolution scales (e.g., Greenberg & Malcolm, 2002), and theories of cognitive processing (e.g. Toukmanian, 2004). These specific criteria were refined and additional specifiers were added once training was begun, integrating feedback from rater-trainees attempting to apply the model. Final criteria for rating are described in detail in the DRS-DA Training Manual in Appendix B.
Sequence of components within the rational-empirical model were used to derive ordinal indicators of the “degree” of resolution, i.e. a segment coded as “Shift: Shifting Perspective” represents a greater degree of resolution (coded as “4b”) than one coded as “Accessing Vulnerability” (coded as “3”), and the same degree of resolution as “Shift: Softening” (coded as “4a”). There are 6 degrees of resolution classified by the DRS-DA. The DRS-DA therefore generates categorical data indicating the presence of a particular component, and ordinal data indicating degree of resolution. The reliability associated with this measure is investigated in the validation phase of this investigation.
Chapter 4: Methods of the Validation Phase

The validation phase of the proposed study is primarily quantitative and confirmatory. A repeated measures design was used to examine whether the model of resolution of the dysfunctional appraisal task derived in the Discovery Phase can distinguish between productive and unproductive sessions, while an independent measures design was used to examine whether the model can distinguish between good and poor treatment outcomes. The primary purpose of the validation phase was to evaluate the relationship between the within-session processes captured by the model, and session and treatment outcomes. The secondary purpose of this phase was to refine the rational-empirical model, by comparing resolving tasks from the British sample used in the discovery phase (Goodridge & Hardy, 2009) with resolving tasks from the Canadian sample used in the validation phase (Watson & Bedard, 2006).

Validation Phase Sample

Transcripts were drawn from the Watson and Bedard (2006) data set, which consisted of clients with good versus poor treatment outcomes who had undergone treatment for depression. The Watson and Bedard data set consisted of a subset of clients from a larger randomized control trial of depression (Watson et al., 2003). Participants in the larger trial required a diagnosis of major depression according to the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I; First, Spitzer, Gibbon & Williams, 1997) to be included; 51% of the treatment sample were also diagnosed with personality disorders. Participants were assigned to a cognitive-behavior (CBT) or a process-experiential treatment group. Only participants in the CBT group who completed treatment were considered for the current study. Clients received a 16-week CBT treatment for depression, which was administered according to the guidelines described by Beck et al. (1979). It consisted of both cognitive and behavioral components, such as the use of
thought records and behavioral experiments. To ensure adherence to the treatment protocol, an expert trained the therapists according to the manual, while a recognized CBT consultant was consulted on issues that arose during training and treatment. The CBT therapists who participated in the study ranged from 26 to 43 years of age ($M = 32.13, SD = 6.24$), and had between 1 and 14 years of experience with a median of 2 years’ experience ($M = 4.81, SD = 5.40$). Six were female and two were male. Seven were graduate level students in a counselling psychology program and one was a psychologist. All therapists were adherents of the CBT treatment approach.

The Watson and Bedard (2006) subset of CBT clients is comprised of $n = 20$ cases, half of whom demonstrated good outcomes following treatment, and half of whom demonstrated poor outcomes. The Good Outcome group is comprised of those clients who demonstrated the highest clinically significant change over the course of therapy on the BDI (Beck et al., 1961), and who also scored above the median absolute change value on at least three out of the four other outcome measures, the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978), Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño & Villaseñor, 1988), Rosenberg Self-Esteem Inventory (RSE; Rosenberg, 1965) and Symptom Checklist-90 Revised (SCL-90-R; Derogatis, Rickels & Rock, 1976). The Poor Outcome group is comprised of those clients who either demonstrated the least amount of change on the BDI measure compared to the rest of the group, or who deteriorated on the measure, and who also had a posttreatment BDI score of 11 or greater.

To control for potential therapist effects only clients whose therapists had clients in both the Good and Poor Outcome groups were selected for the current investigation (DeRubeis, Gelfand, German, Fournier & Forand, 2013). This reduced the pool to fifteen clients from four
therapists. The final sample of clients available for session selection therefore \( n = 7 \) from the Good Outcome group and \( n = 8 \) from the Poor Outcome group.

**Process Measure**

**Degree of Resolution Scale for Dysfunctional Appraisal tasks (DRS-DA)**

The DRS-DA (Appendix B) is designed to code clients’ progress in resolving dysfunctional appraisal tasks. This observer-rated seven-point measure is applied by trained observers to sessions of psychotherapy, with each rating representing the presence of a particular component of the dysfunctional appraisal task resolution model. Higher ratings on this measure indicate greater degree of resolution of the task. Therefore the DRS-DA generates two types of data: categorical data detailing the presence of specific components, and ordinal data indicating degree of resolution. The specific criteria for assessing the presence of a particular component are described in detail in the results of the Discovery Phase and in the DRS-DA Training Manual presented in Appendix B.

**Session Outcome Measure**

**Client Task Specific Change Measure – Revised (CTSC-R)**

The CTSC-R (Watson et al., 1999) is a client self-report measure of post-session change. It consists of 16 items rated on 7-point scales. The items reflect change events anticipated to occur in client-centered, process-experiential, and cognitive-behavior psychotherapy. A sample item is, “I was able to challenge my negative automatic thoughts.” A recent examination of its reliability and validity (Watson, et al., 2010) indicates good reliability and high internal consistency, as well as good convergent validity, having a strong positive correlation with the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989; \( r = .68, p < .001 \)) and a moderate one with the Barrett-Lennard Relationship Inventory (BLRI; Barrett-Lennard, 1962;
Higher CTSC-R scores were also associated with better outcomes on BDI at termination ($R^2 = .30, p < .001$) in that study.

### Treatment Outcome Measures

**Beck Depression Inventory (BDI)**

The BDI (Beck et al., 1961) is a commonly used client self-report inventory of current depressive symptoms. The inventory itself consists of 21 items rated on a 4 point fully anchored scale. Scores of 10 and above on this measure are generally regarded as indicative of depression. This test demonstrates good internal consistency ($\alpha = .73$ to $.93$, Beck, Steer & Garbin, 1988) and adequate test-retest reliability ($r = .65$, Ogles, Lambert & Sawyer, 1995).

**Dysfunctional Attitudes Scale (DAS)**

The DAS (Weissman & Beck, 1978) is a 40-item client self-report inventory of negative attitudes associated with depression. Higher scores represent fewer adaptive beliefs and more cognitive distortions. This test demonstrates very good internal consistency ($\alpha = .84$ to $.92$), excellent concurrent validity (Kuiper & Olinger, 1989), and excellent stability ($r = .80$ to $.84$).

**Inventory of Interpersonal Problems (IIP)**

The IIP (Horowitz et al., 1988) is a 127-item client self-report inventory of distress associated with interpersonal situations. Higher scores indicate greater distress related to interpersonal problems. This test demonstrates good internal consistency, validity, and reliability (Horowitz et al., 1988), as well as high test-retest reliability ($r = .90$, Hansen & Lambert, 1996).

**Rosenberg Self-Esteem Inventory (RSE)**

The RSE (Rosenberg, 1965) is a 10 item client self-report questionnaire of self-esteem. Higher scores indicate higher self-esteem. This instrument has shown good internal consistency
(α = .89 to .94), good concurrent, predictive and construct validity, and good test-retest reliability
(r = 80 to .90).

**Symptom Checklist-90-Revised (SCL-90-R)**

The SCL-90-R (Derogatis, Lipman, & Cavi, 1973; Derogatis, Rickels & Rock, 1976) is a
90-item client self-report questionnaire of general psychological distress. Higher scores indicate
higher overall distress. Psychometric evaluations for the SCL-90-R indicate good internal
consistency (α = .77 to .90), good concurrent, construct, and discriminant validity (Derogatis,
1983, 1994; Morgan, Wiederman, & Magnus, 1998), and good test–retest reliability (r = .80 and
.90; Derogatis, 1983, 1994).

**Procedure**

**Session Selection**

Clients’ self-reported CTSC-R post-session scores were used as the basis for data
selection. First and last sessions were eliminated from session selection as these often focus on
project-oriented material such as goal setting and termination issues rather than therapeutic
change. Additionally three sessions affecting two clients both in the Good-Outcome group [C41-
S13, C51-S14 and C51-S15] were eliminated due to missing CTSC-R scores. In both cases, these
sessions occurred just following their highest rated session.

For both Poor Outcome and Good Outcome groups, the session with the highest CTSC-R
post-session score was selected for analysis for each client. When two sessions tied for highest
CTSC-R score, the method of selection differed slightly between groups based on Watson et al.’s
observation that poor outcome cases can demonstrate a slower progression of change compared
to good outcome cases in psychotherapy (Watson, Goldman & Greenberg, 2007). Thus for the
Poor Outcome group the latter of the tied highest rated sessions was selected as most
representative of the Highest Reported Change session \((n=1)\), while for the Good Outcome group, the first of the tied highest rated sessions was selected as their Highest Reported Change Session \((n=2)\). Due to poor audio quality one session affecting one client of the Poor Outcome group was not available, so the second-highest rated change session was selected instead. This second-highest rated session was rated only 0.12 points lower than the highest-rated session (on a 7 point scale) and occurred later in the treatment. For the Good Outcome group, the session with the lowest CTSC-R score was selected for each client.

A total of \(n=22\) transcripts were selected, seven Good Outcome Highest Reported Change sessions, eight Poor Outcome Highest Reported Change sessions, and seven Good Outcome Highest Reported Change sessions. Transcripts were reviewed by the investigators for the presence of a Dysfunctional Appraisal task marker. All transcripts contained at least one task marker.

**Process Ratings**

To minimize researcher allegiance effects on data collection, the investigator was not involved in any of the ratings. One masters’ level graduate in counselling psychology, a doctoral level student in clinical psychology, and one registered social worker rated sessions using the DRS-DA. All raters were CBT-trained therapists with 1-8 years of psychotherapy experience. They were trained in the use of the DRS-DA (DRS-DA Training Manual, Appendix B) to an acceptable level of agreement with the expert (primary investigator), Cohen’s kappa > .70. This method of estimating inter-rater reliability assumes categorical rather than ordinal ratings and is therefore an underestimate of rater performance on ordinal scales like the DRS-DA, however this standard was set as a minimum to ensure that raters completed training with the capacity to reliably identify every component of the DRS-DA as if each was a separate category. Raters met
for weekly training sessions that lasted from 1 to 2 hours, during which they were exposed to and then rated transcripts of sessions which included few, some, or all components of the DRS-DA. Transcripts were drawn from three sources: publically available transcripts of CBT for depression \((n = 2)\), Discovery Phase transcripts \((n = 11)\), and unused transcripts in the Watson et al. (2003) data set \((n = 6)\). Transcripts drawn from this last data set were selected from five CBT for depression clients whose cases did not meet the inclusion criteria for the Validation Phase study. Raters reached agreement with the expert at different rates, ranging from 11 to 17 training sessions. Due to the different rates of completion of training, it was not possible to calculate an intra-class correlation for the group prior to data collection.

A 100% overlap was planned for data collection, such that each session was rated twice. Additionally 6 sessions were rated by all raters to establish inter-rater reliability for the DRS-DA. Two transcripts were randomly selected from each of the transcript groups (Good Outcome Lowest-Change, Good Outcome Highest-Change, and Poor Outcome Highest-Change) for this purpose, and the remainder were randomly assigned to raters.

Prior to rating, transcripts were anonymized by a colleague not involved in the investigation to keep the investigator and raters blind to the outcome group and session type. The primary investigator then prepared the transcripts for rating by identifying all task markers (Dysfunctional Appraisal components) in the anonymized transcripts, as well as any segments of transcript that were not relevant to the current study, e.g. suicide risk assessment and turning down the thermostat in the room. Transcripts were therefore segmented into “tasks” which began with the Dysfunctional Appraisal marker and continued until the end of session or another marker, whichever came first. Transcripts were not otherwise segmented. Raters were instructed to identify any components of the DRS-DA present in the session regardless of sequence. Raters
were therefore free to identify any number of components within a session, in any order. When disagreements between two raters were identified during data entry, the transcript was submitted for rating by the third rater.

After data collection, raters were interviewed by the primary investigator. This semi-structured interview concerned five areas: (a) confirming raters were unaware of study hypotheses, including differences in types of transcripts; (b) assessing quality of rating, including any significant deviations in application or interpretation of the DRS-DA as well as sources of difficulty in applying the scale; (c) requesting feedback regarding the DRS-DA and Training Manual; (d) requesting feedback regarding therapist interventions; and (e) overall reflection on what it was like to participate in this process.

**Session and Therapy Outcome Data**

All client self-report data were collected as part of the Watson et al. (2003) study. Clients completed the CTSC-R after each session of therapy. They completed the BDI, DAS, IIP, RSC, and SCL-90 both before and after treatment.

**Research Questions of the Validation Phase**

**Discerning Components of the Model**

The rational-empirical model derived in the Discovery Phase (Chapter 3) predicts that there are six essential steps in resolving a dysfunctional appraisal task beyond the task marker. It was therefore expected that six categories of the DRS-DA would be present in the data:

RQ6. Investigating presence of components: Are all components present in the Validation Phase data? This question was investigated in two ways: first with one sample median tests, and second with a descriptive analysis of the distribution of each component by transcript group.
**Relating Process to Session Outcome**

These investigations address the general question, Can Lowest Reported Change sessions be distinguished from Highest Reported Change sessions on the basis of the rational-empirical model?

RQ7. Investigating the importance of degree of resolution: Does the highest component reached distinguish between Highest Reported Change and Lowest Reported Change sessions within the Good Outcome group? This question was investigated with a Wilcoxon signed rank sum test; this non-parametric test is appropriate for ordinal data.

RQ8. Investigating the relationship between degree of resolution and client self-report of post-session change: Is the highest component reached related to client’s self-reported CTSC-R score? This question was investigated with a Spearman’s correlation; this non-parametric test is appropriate for ordinal data.

**Relating Process to Treatment Outcome**

These investigations address the question, Can Poor Outcome cases be distinguished from Good Outcome cases on the basis of the rational-empirical model’s components?

RQ9. Investigating the importance of presence: Are components present in differing proportions in the Good Outcome versus Poor Outcome transcripts? This question was investigated with Fisher’s exact tests; this test is appropriate when expected cell counts are less than 5.
RQ10. Investigating the importance of degree of resolution: Does the highest component reached distinguish between Good Outcome and Poor Outcome cases? This question was investigated with a Wilcoxon-Mann-Whitney test; this test is appropriate for ordinal data.

Investigating the Structure of the Rational-Empirical Model

These investigations address the question, Does Validation Phase data support the structure of components proposed by the rational-empirical model?

RQ11. Investigating the importance of multiple components: Is the number of components observed in a session related to degree of resolution of the dysfunctional appraisal task? This question was investigated with a Spearman’s correlation; this non-parametric test is appropriate for count data.

RQ12. Investigating sequence: Are the patterns in which components emerged in the Validation Phase consistent with the rational-empirical model derived in the Discovery Phase? This exploratory investigation used descriptive analysis to identify patterns in the Validation Phase data set.
Chapter 5: Results of the Validation Phase

The Statistical Package for the Social Sciences, version 22 was used to run all analyses. The significance level for statistical analysis was set to $p < .05$.

**Sample Characteristics**

The sample consisted of three transcript groups, two sets of transcripts from Good Outcome cases and one set of transcripts from Poor Outcome cases. General characteristics of Good and Poor Outcome cases were compared. Outcome groups did not differ on age ($t(13) = .878, p = .396$), gender (Fisher’s exact $p = .662$), marital status (Fisher’s exact $p = .152$), education (Fisher’s exact $p = .079$), or race (all clients were Caucasian). There was no significant difference in the session number of the Highest Reported Change session chosen for each outcome group ($t(13) = 1.703, p = .112$). These results indicate Good and Poor Outcome clients belong to the same general population with respect to demographics, and that their Highest Reported Change sessions occurred at approximately the same time in treatment.

**Process Ratings**

**Inter-Rater Reliability of the DRS-DA**

Inter-rater reliability was examined in two ways. First, the degree of agreement among raters on the presence of a particular component within a particular session was examined. Secondly, as each transcript was segmented into tasks it was also possible to examine degree of agreement on the presence of a particular component within a particular task. In both cases, intraclass correlations were calculated for every combination of paired ratings individually and as a group overall. The reliability between pairs across all transcripts demonstrated moderate to strong agreement between any pair of raters, ICC(2,2) = .616, .699 and .746, $p < .000$.

Considering only the cases wherein all three raters coded the same transcript, reliability analysis
indicates strong agreement, ICC(2,3) = .759, p < .000. The reliability between pairs across all tasks demonstrated moderate agreement between any pair of raters, ICC(2,2) = .559, .695, and .701, p < .000. Considering only the cases wherein all three raters coded the same tasks, reliability analysis indicates strong agreement, ICC(2,3) = .717, p < .000.

**Integrity of the DRS-DA Ratings**

Raters were kept blind to the hypotheses under study, confirmed in post-rating interviews. Six transcripts were reviewed by the primary investigator and supervisor and confirmed that the DRS-DA had been applied appropriately, i.e. that session content matched ratings. Exploratory analyses considered three additional potential threats to data integrity. First, as the DRS-DA is based on the performances of clients who go on to have good outcomes in psychotherapy, it was important to examine whether the DRS-DA could be applied to clients with poorer psychotherapy outcomes. Inter-rater reliabilities were analyzed separately for the Good and Poor Outcome groups to examine whether raters had more difficulty consistently applying the DRS-DA to the Poor Outcome group. While one rater pair did indeed agree more frequently on components in Good Outcome cases (ICC(2,2) = .802, p < .000) than they did on the components of the Poor Outcome cases (ICC(2,2) = .622, p < .000), no other rater combinations or group inter-rater reliabilities demonstrated this trend, suggesting that the DRS-DA was able to be applied to both groups.

Second, systematic difficulties in application of the DRS-DA were considered. Post-rating interviews with raters indicated that they encountered difficulty distinguishing between the two Step 4 Shift components, as noted by Rater 2:
I found it difficult to distinguish [between the two], because both are clearly a shift of seeing things a different way and standing from a different position, it’s not as discrete as one or the other … [they] seemed to blend together. (Rater 2)

Third, systematic bias in the application of the DRS-DA was considered. Raters were asked to share their own internal theories regarding the utility and sequencing of components, to ensure that raters were not introducing their own expectations of progress into ratings. No systematic bias was identified, instead raters shared their own curiosity as they observed skipped or missing components, and rued the energy involved in managing their own expectations and remaining vigilant.

**DRS-DA Data**

Only ratings for which there was independent agreement between at least two out of three raters were included in the analysis. Raters had to be referring to the same segment of transcript for the rating to be retained. Excluding agreement on lack of observed components (no DRS-DA score) and task marker (DRS-DA score of 1), and considering only DRS-DA ratings of 2 or higher, rates of data retention per rater ranged from 85% to 87%, with a cumulative total of 73% of all observations rated 2 or higher retained.

As noted earlier, raters reported difficulty in distinguishing between the two Shift components Softening and Shifting Perspective. At times the same segment of transcript received a rating of 4a (Softening) from one rater and 4b (Shifting Perspective) from another rater. As a result of these difficulties, the two components were collapsed into a single Shift component for the purposes of analysis. This was appropriate as both components represent a DRS-DA rating of 4, both represent a Shift in stance or perspective, and both were qualitatively equivalent to raters. The resulting DRS-DA data set is summarized in Table 8.
Table 8  
**DRS-DA Data Indicating Component Counts Per Transcript**

<table>
<thead>
<tr>
<th>Sessions (^a)</th>
<th>1. DA (^b)</th>
<th>2. Elab</th>
<th>3. Vuln</th>
<th>4. Shift</th>
<th>5. Eval</th>
<th>6. Reapp</th>
<th>DRS (^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Good Outcome</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C14 – LC</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C14 – HC</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C27 – LC</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C27 – HC</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C41 – LC</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C41 – HC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C51 – LC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>C51 – HC</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C54 – LC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>C54 – HC</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C61 – LC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>C61 – HC</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>C79 – LC</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>C79 – HC</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Poor Outcome</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C09 – HC</td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>C31 – HC</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>C39 – HC</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C44 – HC</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>C46 – HC</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C53 – HC</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>C55 – HC</td>
<td>5</td>
<td>2</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>C72 – HC</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>52</td>
<td>35</td>
<td>12</td>
<td>25</td>
<td>11</td>
<td>4</td>
<td>n/a</td>
</tr>
</tbody>
</table>

\(^a\) LC and HC denote Lowest and Highest Reported Change sessions respectively.

\(^b\) Number refer to counts of Dysfunctional Appraisal, Elaboration, Accessing Vulnerability, Shift, Evaluating New Perspective, and Reappraising components respectively.

\(^c\) Highest degree of resolution of a dysfunctional appraisal task within the transcript

**Descriptive Analysis of the Process and Outcome Measures**

**DRS-DA**

The mean number of dysfunctional appraisal tasks, as indicated by the occurrence of a dysfunctional appraisal task marker, was 2.00 (SD = 1.36) per transcript, the median and mode were also 2.00, with a total of 52 tasks within the sample of 22 transcripts. There was no significant correlation between degree of resolution reached on the DRS-DA and number of tasks within the session, \( r_s = .336, p = .126 \). The mean, standard deviation and range for
DRS-DA score within each transcript group and the sample as a whole is presented in Table 9.

There was no significant skewness or kurtosis in the distribution of DRS-DA scores. A non-parametric Levene’s test for ordinal data confirmed homogeneity of variances among groups 

\( p > .05 \). The distribution of DRS-DA scores is shown in Figure 4.

Table 9

<table>
<thead>
<tr>
<th>Session Type</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Outcome, Highest Reported Change</td>
<td>( n_2 = 7 )</td>
<td>5.14</td>
<td>0.69</td>
<td>4-6</td>
<td>-0.174</td>
<td>0.336</td>
</tr>
<tr>
<td>Poor Outcome, Highest Reported Change</td>
<td>( n_3 = 8 )</td>
<td>3.88</td>
<td>1.36</td>
<td>2-6</td>
<td>-0.165</td>
<td>-0.166</td>
</tr>
<tr>
<td>Good Outcome, Lowest Reported Change</td>
<td>( n_1 = 7 )</td>
<td>3.57</td>
<td>0.79</td>
<td>3-5</td>
<td>1.115</td>
<td>0.273</td>
</tr>
<tr>
<td>Total Sample of Transcripts</td>
<td>( N = 22 )</td>
<td>4.18</td>
<td>1.18</td>
<td>2-6</td>
<td>-0.194</td>
<td>-0.590</td>
</tr>
</tbody>
</table>

Figure 4. Distribution of DRS-DA scores.

CTSC-R

The mean, standard deviation and range for CTSC-R post-session score within each transcript group and the sample as a whole is presented in Table 10. There was no significant skewness or kurtosis in the distribution of CTSC-R scores, however the distribution of scores
was clearly bimodal as seen in Figure 5. A non-parametric Levene’s test for this non-normally distributed data indicated homogeneity of variances could not be assumed among the three groups, $F(2,19) = 12.157$, $p < .000$.

Table 10

<table>
<thead>
<tr>
<th>Session Type</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Outcome, Highest Reported Change</td>
<td>$n_2 = 7$</td>
<td>6.62</td>
<td>0.56</td>
<td>1.50-5.19</td>
<td>0.358</td>
<td>-0.854</td>
</tr>
<tr>
<td>Poor Outcome, Highest Reported Change</td>
<td>$n_3 = 8$</td>
<td>4.63</td>
<td>1.44</td>
<td>2.13-6.17</td>
<td>-0.573</td>
<td>-0.599</td>
</tr>
<tr>
<td>Good Outcome, Lowest Reported Change</td>
<td>$n_1 = 7$</td>
<td>3.19</td>
<td>1.29</td>
<td>5.44-7</td>
<td>-1.929</td>
<td>4.005</td>
</tr>
<tr>
<td>Total Sample of Transcripts</td>
<td>$N = 22$</td>
<td>4.80</td>
<td>1.80</td>
<td>1.50-7.00</td>
<td>-0.366</td>
<td>-1.194</td>
</tr>
</tbody>
</table>

Figure 5. Distribution of CTSC-R post-session scores.

Research Question 6: Discerning Components of the Model

The one-sample median test is a non-parametric equivalent to a one-sample $t$-test appropriate for use with count data. One-sample median tests were conducted to assess whether the median number of times Elaboration, Accessing Vulnerability, Shift, Evaluating New Perspective, and Reappraising components were each identified in the transcripts ($n = 22$) was
significantly greater than 0. Four components met this criterion, Elaboration ($p < .000$), Accessing Vulnerability ($p = .001$), Shift ($p < .000$), and Evaluating New Perspective ($p = .008$). The frequency of the Reappraising component was not statistically significantly different from 0, $p = .102$, present in only 3 out of 22 transcripts. These results suggest that the Reappraising component was a rare event in this data set, occurring in only 13.6% of transcripts compared to 23.1% (3 out of 13) of transcripts in the discovery phase sample.

**Elaboration**

Five of the 7 Good Outcome Highest Reported Change sessions (71%) contained the Elaboration component, and all of the Poor Outcome Highest Reported Change and Good Outcome Lowest Reported Change sessions contained Elaboration. This suggests Elaboration is a frequently occurring component in both lowest and highest change sessions.

**Accessing Vulnerability**

Few of the Highest Reported Change sessions of either outcome group contained the Accessing Vulnerability component. Only 2 out of the 7 (28.6%) Good Outcome Highest Reported Change sessions, and 3 out of the 8 (37.5%) Poor Outcome Highest Reported Change sessions, contained Accessing Vulnerability. In contrast, 6 out of 7 of the Good Outcome Lowest Reported Change sessions contained Vulnerability (85.7%). Thus Vulnerability was characteristic of sessions in which good outcome clients reported their lowest degree of post-session change.

**Shift**

All of the Good Outcome Highest Reported Change sessions (7 of 7, or 100%) contained the collapsed Shift component, as did most of the Poor Outcome Highest Reported Change sessions (6 of 8, or 75%). In contrast, approximately half of the Good Outcome Lowest Reported
Change sessions contained Shift (3 of 7, or 42.9%). This suggests Shift is highly characteristic of sessions in which clients report their highest degree of post-session change, regardless of outcome group, and only somewhat characteristic of sessions in which clients report their lowest degree of post-session change.

**Evaluating New Perspective**

Six out of 7 of Good Outcome Highest Reported Change sessions (85.7%) contained the Evaluating New Perspective component. In contrast, only 1 out of 8 (12.5%) Poor Outcome Highest Reported Change sessions, and 1 out of 7 (14.3%) of Good Outcome Lowest Reported Change sessions contained this component. This suggests Evaluating New Perspective is more characteristic of sessions in which good outcome clients reported their highest degree of change than either their own lowest reported change sessions, or the highest reported change sessions of poor outcome cases.

**Reappraising**

Reappraisal occurred infrequently in the sample. Two out of 7 (28.6%) of Good Outcome Highest Reported Change sessions, 1 out of 8 (12.5%) of Poor Outcome Highest Reported Change sessions, contained Reappraising, and none of the 7 (0%) Good Outcome Lowest Reported Change sessions contained this component. However, when it was observed, Reappraising was present only in those sessions that clients reported their highest degree of change.

**Research Questions 7 and 8: Relating Process to Session Outcome**

Research Question 7 compared the Lowest Reported Change \( (n_1 = 7) \) and Highest Reported Change \( (n_2 = 7) \) sessions within the Good Outcome group. A Wilcoxon’s signed rank sum test investigated whether degree of resolution differed between the Lowest Reported Change
and Highest Reported Change sessions of the Good Outcome Group. The mean DRS-DA score of Lowest Reported Change sessions was 3.57 (SD = 0.79), with a mode and median of 3 and a range of 3-5, while the mean DRS-DA score of Highest Reported Change sessions was 5.14 (SD = .69), with a mode and median of 5 and a range of 4-6. The median DRS-DA score of Lowest Reported Change sessions was significantly lower than that of Highest Reported Change sessions, Wilcoxon’s z = -2.050, p = .040. The mean of the ranks in favor of Highest Reported Change session (85.7% of paired sessions) was 4.33, and the mean of ranks in favor of Lowest Reported Change session (14.3% of paired sessions) was 2.00. A rank-biserial correlation $r = 0.714$ indicates a moderate to strong effect size (Kerby, 2014). The distributions of scores is shown in Figure 6. These results indicate that clients demonstrated a higher degree of resolution of a dysfunctional appraisal task in their Highest Reported Change session as compared to their Lowest Reported Change session.

![Box plot](image)

Figure 6. Box plot of the distribution of Lowest and Highest Reported Change Session DRS-DA scores within the Good Outcome group.

Research Question 8 examined the relationship between client self-reported change and observer-rated degree of resolution of a dysfunctional appraisal task across the full sample ($N = 22$). A Spearman’s correlation test was used. Considering all transcripts, DRS-DA score
demonstrated a positive statistically significant relationship with CTSC-R score, $r_s = .493$, $p = .020$ indicating a moderate effect size. A box plot of scores CTSC-R by DRS-DA scores is shown in Figure 7. These results indicate that client who had a higher degree of resolution of a dysfunctional appraisal task also reported more within-session change.

![Box plot of the distribution of CTSC-R scores by DRS-DA score.](image)

*Figure 7.* Box plot of the distribution of CTSC-R scores by DRS-DA score.

**Summary of Results Relating Process to Session Outcome**

Clients demonstrated higher degrees of resolution in their Highest Reported Change sessions as compared to their Lowest Reported Change sessions. This relationship was also seen across the sample with a positive linear relationship between client-reported post-session change and observer-rated within session change, such that sessions rated as higher in change by clients were also judged as demonstrating higher degrees of resolution of the dysfunctional appraisal task by observers.
Research Questions 9 and 10: Relating Process to Therapy Outcome

As only Highest Reported Change sessions were selected for the Poor Outcome group, only the Highest Reported Change session scores were used in all comparisons between Good Outcome \((n_2 = 7)\) and Poor Outcome \((n_3 = 8)\) groups.

All transcripts contained the Dysfunctional Appraisal component. Five Fisher’s exact tests were conducted to investigate whether outcome groups differed on the proportion of transcripts that exhibited a particular component at least once. Elaboration, Accessing Vulnerability, Shift and Reappraising were not present in different proportions in the Good Outcome and Poor Outcome groups \((p > .05)\). However, Evaluation of New Perspective was present in 85.7% of Good Outcome sessions, and present in only 12.5% of Poor Outcome sessions. This difference was statistically significant, Fisher’s \(p = .010\), Cramer’s \(V = .742\), \(p = .010\) indicating a moderate to strong effect size. These results indicate that clients in the Good Outcome group were more likely to demonstrate Evaluation in their Highest Reported Change session than clients in the Poor Outcome group, and that the presence of other components did not differ between groups.

A Mann-Whitney test was used to investigate whether degree of resolution differed between outcome groups. Clients in the Good Outcome group \((Mdn = 5)\) had higher DRS-DA scores than clients in the Poor Outcome group \((Mdn = 4)\); this difference was statistically significant, \(U = 11.00, p = .040, r = .530\). The mean of the ranks in favor of Good Outcome was 10.43, and the mean of ranks in favor of Poor Outcome was 5.88. The distributions of scores is shown in Figure 8.
Figure 8. Box plot of the distribution of DRS-DA scores for Poor and Good outcome groups, Highest Reported Change sessions only.

Summary of Results Relating Process to Treatment Outcome

The Highest Reported Change sessions of the Good Outcome group were more likely to contain the Evaluating New Perspective component than the Highest Reported Change sessions of the Poor Outcome group. Furthermore, degree of resolution of the dysfunctional appraisal task differentiated between outcome groups such that the Good Outcome group exhibited higher degrees of resolution than the Poor Outcome group.

Research Questions 11 and 12: Investigating the Structure of the Rational-Empirical Model

Importance of Multiple Components

The relationship between number of unique components within a session and the degree of resolution of a dysfunctional appraisal task for that session was investigated across the sample using Spearman’s correlation for nonparametric data. There was a statistically significant positive relationship between number of components and degree of resolution, $r_s = .750$, $p < .000$, indicating a strong association between the two. This result indicates that the more
components of the performance model that clients exhibited, the higher degree of resolution they obtained.

**Sequences of Components**

The sequence of components within each session of the Validation Phase data were examined for the presence of patterns. In addition to examining the raw data, sequences of first emergence were also created for each transcript. These sequences were created by recording the first emergence of each component within that transcript, and are shown in Table 11, Appendix C. Two patterns emerged from this analysis: one characterized by Elaboration followed by Accessing Vulnerability followed by Shift, and one characterized by Shift followed by Evaluating New Perspective followed by Reappraising.

**The Elaboration-Accessing Vulnerability-Shift Pattern.** This pattern is characterized by a sequence of Elaboration followed by Accessing Vulnerability, which is at times followed by Shift. Six out of 7 of the Good Outcome Lowest Reported Change sessions (86%) demonstrated a pattern characterized by Elaboration emerging first, then Vulnerability. Four of these 6 sessions contained no other components, while 2 of these 6 cases then moved on to Shift.

It is important to note that 5 of the 8 Poor Outcome Highest Reported Change sessions reported equivalent levels of post-session change as were reported in the Good Outcome Lowest Reported Change sessions, $U = 12.500, p > .05$. These five sessions had CTSC-R scores equivalent to or lower than those of Good Outcome Lowest Reported Change sessions ($R = 2.13–5.06$ and $1.50–5.19$ respectively). Thus while these five Poor Outcome Highest Reported Change sessions may represent the highest level of change reported by these Poor Outcome clients, qualitatively the degree of change that these clients reported was no different from that reported by the Good Outcome clients in their lowest change session. On the basis of this
observation, these two groups of transcripts were compared for within-session process. Two out of 5 of the Poor Outcome sessions (40%) demonstrated the Elaboration-Accessing Vulnerability-Shift pattern. Of the three cases that did not demonstrate this pattern, one did not move beyond Elaboration, and two “skipped” Accessing Vulnerability: of these, one exhibited Shift, then began a new task and exhibited Elaboration, Shift and Evaluation, and the other exhibited Elaboration, Shift, and Reappraising.

The Evaluation-Accessing Vulnerability-Shift pattern is consistent with the proposed sequence of the early components of the model. The bulk of the Good Outcome Lowest Reported Change sessions, and equivalent Poor Outcome Highest Reported Change sessions, contained Elaboration, Accessing Vulnerability, and Shift components, with these components emerging in the sequence proposed by the model. However differences were evident between Good Outcome and Poor Outcome sessions, with 6 out of 7 (86%) of the Good Outcome sessions demonstrating Accessing Vulnerability as compared to only 2 out of 5 (40%) of Poor Outcome clients, and 3 out of 7 (43%) of the Good Outcome sessions demonstrating Shift as compared to 4 out of 5 (80%) of the Poor Outcome transcripts. This indicates that while these Good Outcome and Poor Outcome sessions were rated equivalently in terms of post-session change, within-session process differed. Good Outcome clients accessed or experienced vulnerability in these sessions and sometimes moved on to a shift in perspective, while Poor Outcome clients reporting the same degree of post-session change rarely accessed or experienced vulnerability and were more likely to exhibit some shift in perspective. This suggests that Accessing Vulnerability is an important component of the change process in good outcome cases.

The Shift-Evaluating New Perspective-Reappraisal Pattern. This pattern is characterized by a sequence of Shift followed by Evaluating New Perspective, and at times
followed by Reappraising. Six out of 7 of the Good Outcome Highest Reported Change sessions (86%) demonstrated a pattern of Shift emerging prior to Evaluation; two of these cases moved on to Reappraising.

Three Poor Outcome Highest Reported Change sessions reporting approximately equivalent levels of post-session change as were reported in the Good Outcome Highest Reported Change sessions, \( U = 3.000, p > .05 \). These three sessions had CTSC-R scores equivalent to or greater than Good Outcome Highest Reported Change sessions (\( R = 5.88–6.17 \) and \( 5.44–7.00 \) respectively). These sessions were compared for within-session process. None of the 3 Poor Outcome sessions demonstrated the Shift-Evaluating New Perspective-Reappraising pattern. One transcript did not move beyond Elaboration, and the other two did not move beyond Shift.

The Shift-Evaluating New Perspective-Reappraising pattern is consistent with the proposed sequence of the later components of the model. Nine out of the 10 Good Outcome Highest Change and equivalent Poor Outcome Highest Change sessions (90%) contained a Shift component; when present, Evaluating New Perspective emerged after Shift, and Reappraising emerged after Evaluating New Perspective. Notably, none of the Poor Outcome sessions rated as high change (\( R = 5.88 – 6.17 \)) by clients contained the Evaluating New Perspective or Reappraising components. This suggests that while these Good Outcome and Poor Outcome sessions were rated equivalently in terms of post-session change, within-session process differed. Good Outcome clients experienced a shift in perspective which they subsequently evaluated within a larger context, and occasionally were able to synthesize a new appraisal about the self. In contrast, Poor Outcome clients who reported equivalent post-session change scores also
experienced a shift in perspective but did not demonstrate evidence that they engaged in an evaluative or reappraising process.

**Relationship between Patterns.** The single Good Outcome Lowest Reported Change session that did not exhibit the Elaboration-Accessing Vulnerability-Shift pattern was from the same client as the Good Outcome Highest Reported Change session that did not exhibit the Shift-Evaluating New Perspective-Reappraising pattern. This outlier in the data prompted a within-client analysis of the Good Outcome group, comparing Lowest and Highest Reported Change sessions for each client. In all cases, the Lowest Reported Change session preceded the Highest Reported Change session, although the number of sessions between Lowest and Highest Reported Change session was variable \((R = 2 – 13)\). In no case were the sessions sequential.

Clients who demonstrated Elaboration and Accessing Vulnerability in their Lowest Reported Change session later exhibited Shift, Evaluation and at times Reappraisal in their Highest Reported Change session. The one client who did not demonstrate the Elaboration-Accessing-Vulnerability-Shift pattern in her Lowest Reported Change session did not exhibit either Evaluating New Perspective or Reappraising in her Highest Reported Change session; instead she demonstrated the Elaboration-Accessing Vulnerability-Shift pattern in that session. This implies that the Elaboration-Accessing Vulnerability-Shift pattern is typically an “early” model sequence that occurs before the Shift-Evaluating New Perspective-Reappraising pattern in cases with good treatment outcomes, and that while the Elaboration-Accessing Vulnerability-Shift pattern was associated with the lowest change sessions of these good outcome cases, it may be crucial to achieving higher degrees of resolution of the task. These results suggest that clients with good treatment outcomes generally exhibited model components in the order predicted by the rational-empirical model.
Summary of Results Investigating the Structure of the Rational-Empirical Model

The more components of the performance model that clients exhibited within a session, the higher degree of resolution of a dysfunctional appraisal task they obtained within that session. This result is consistent with the rational-empirical model, which predicts that Elaboration, Accessing Vulnerability, some type of Shift, Evaluating New Perspective, and Reappraising are all essential components of the task. Moreover, the two patterns identified in the data, the Elaboration-Accessing Vulnerability-Shift and Shift-Evaluating New Perspective-Reappraising patterns, are consistent with the component sequences predicted by the rational-empirical model. No client demonstrated all components of the model within one session, thus it is difficult to confirm continuity between the component pattern that characterized the early sessions of the good outcome cases, and the component pattern that characterized the later sessions of these same clients. Nevertheless, these results suggest that the Elaboration-Accessing Vulnerability-Shift pattern, occurring in the earlier Lowest Reported Change sessions, is a precursor to the Shift-Evaluating New Perspective-Reappraising pattern, occurring in the later Highest Reported Change sessions.

Post-Hoc Analysis: Interviews with Raters

An additional point of interest in this study are the post-rating interviews with DRS-DA raters. The interviews were conducted prior to data analysis to investigate questions of data integrity, reviewed earlier. Raters were additionally asked to share any observations regarding therapist behaviors, rater training, and personal growth as a clinician. An informal post-hoc content analysis of these three areas was undertaken.

As raters had been trained to attend to client process, few observations regarding specific facilitative or hindering therapist behaviors were made. However, all three raters shared
frustration regarding “missed opportunities” or moments when therapists seemed oblivious to client emerging process and either cut them off or redirected their attention, and spoke negatively of moments when therapists seemed to have an agenda for client progress that was out of sync with actual client process at the time.

Raters stated a desire for more examples during the training. The concept of attending to client process was identified as particularly challenging. Conversations about “getting the right distance” for observing client process were identified as helpful in this regard, as well as examples of “what something was not” to narrow the focus and set limits around each component. It is important to note these interviews occurred after rating, several months after training was completed.

All three raters reported a shift in their understanding or practice of psychotherapy as a result of involvement in the project, primarily in becoming more aware of client process. Raters shared these reflections of personal growth in their post-rating interviews:

It was surprising to think about what is happening [internally for the client] rather than just what is being said, I wish I could do that in my own therapy and not get sucked in the story, versus where the client is at in the process. … I notice I want to hang on to things more, want to think more this way, for example recognizing that when I’m doing a thought record this is shifting perspective. (Rater 1)

When you think of CBT you think of thought records etc., this is a nice way of seeing the process, of helping the client actually go through the process – it shifted my thinking from what I’m doing to where is the client, and where do I want them to get to? I take less ownership of what I have to do and more about how do I facilitate the client getting to where I think they need to go. (Rater 2)
The tone [of client statements] matters, not just content. It was interesting to see different kinds of vulnerability, noticing differences between people and attending to that.

(Rater 3)
Chapter 6: Discussion

This investigation aimed to enrich existing theories of change, and to empirically investigate clinically meaningful acts in psychotherapy. In line with several of Knobloch-Fedders, Elkin and Kiesler’s (2015) recommendations for psychotherapy process research, this investigation sought to identify ingredients of change by using a discovery-oriented approach of a significant in-session change event; to let the research questions guide methodology by creating a suitable measure for assessing change; to develop a meaningful guide for targeting interventions based on client markers by articulating a sequence of client acts that can be facilitated to enact change; and to incorporate multiple perspectives by using both client self-report and observer-rated measures.

This task analytic investigation examined how clients resolve the dysfunctional appraisal task in CBT for depression to generate more adaptive appraisals about the self. A model of resolution of a dysfunctional appraisal comprised of seven components was derived, and preliminary support for the relevance and structure of the model was established. Each of the components of the model are discussed here in the context of the results of the validation study and existing literature on client change in psychotherapy. Then the results of the examination of the relationship between this model and both session and therapy outcomes are presented, as well as results of investigations into the structure of the model. Implications of the current investigation for theory, practice and research are then considered, as well as the limitations of the investigation.

A Model of the Resolution of a Dysfunctional Appraisal Task

Seven client processes were identified as essential components of the resolution of a dysfunctional appraisal task in CBT for depression. These were the Dysfunctional Appraisal task
marker, Elaboration, Accessing Vulnerability, Shift: Softening, Shift: Shifting Perspective, Evaluating New Perspective, and Reappraising. The full model detailing the relationship among components is shown in Figure 3, which is repeated here for ease of reference. These components were observed in two different datasets of transcripts of CBT for depression, and different observers rated each dataset, indicating that these components can be observed across samples of CBT for depression by multiple observers.

1. Dysfunctional Appraisal
   There is an overly rigid, invalid, or maladaptive appraisal. Inflexible, over-generalized, focus on negative aspects of the experience.

2. Elaboration
   Differentiating what the dysfunctional appraisal is about. A narrowing of scope of when something applies, what it implies. Idiosyncratic elements are identified.

3. Accessing Vulnerability
   Sense of self as vulnerable or weak; statements suggest accessing or acknowledging vulnerability. Self as limited, or resources as insufficient.

4. Shift: Softening
   A compassionate or protective stance, as if concerned to be “fair” or realistic.

5. Shift: Shifting Perspective
   An exploratory stance of broadening awareness; a new perspective emerges.

6. Evaluating New Perspective
   Applying new perspective, considering what it would mean to hold new perspective. Probes memories, becomes aware of what might need to be accommodated to consolidate change.

7. Reappraising
   Re-assessing beliefs about the self, what is realistic in light of new knowledge. Makes room for self and others, plans for behavioral change.

Figure 3. Rational-Empirical model.

Step 1: Dysfunctional Appraisal (Task Marker)

Task markers are client in-session behaviors indicating that the client is interested or ready to work on a particular problem (Elliott et al., 2004). The expression of a task marker is the first step in working on that problem. The model posits that people have beliefs about themselves which function as lenses through which daily life is evaluated. These beliefs are embedded
within schematic cognitive-affective-behavioral structures (Beck et al., 1979; Padesky, 1994), which when activated can influence thoughts, feelings, and behaviors (Scher et al., 2004). It has been proposed that depressogenic schematic structures are overly restrictive, contain invalid information, or are otherwise maladaptive; evaluations of events that arise from active depressogenic structures that are embedded with negative beliefs about the self are therefore also overly restrictive, invalid, or maladaptive. These problematic evaluations have been conceptualized as dysfunctional appraisals. The expression of a dysfunctional appraisal in the therapy session serves as a marker for beginning to work on the dysfunctional appraisal task.

The identification and challenging of these “distorted cognitions” is an important intervention in CBT (e.g., J. Beck, 1995, 2005; Persons et al., 2001; Persons, 2008). Client statements reflecting cognitive errors that are overly restrictive, invalid or maladaptive are fairly common in the treatment of depression (e.g., D’Iuso, Blake, Fitzpatrick & Drapeau, 2009), and the Dysfunctional Appraisal task marker occurred frequently in the validation sample. Within the framework of CBT, dysfunctional appraisals can be considered to reflect a “primal mode” of thinking (Clark et al., 1999) that is concerned with survival and defense of resources, and to arise from automatic cognitive processes that are reactive rather than reflective. However unlike negative automatic thoughts or cognitive distortions which also reflect these cognitive qualities, the Dysfunctional Appraisal task marker refers specifically to statements that are evaluative in nature and contextually-bound within a situation, as if the client is applying some type of implicit knowledge about the self that is overly simplified or abstract to evaluate events (Caro, 2004).

**Step 2: Elaboration**

In the Elaboration phase, clients were observed to engage in a process of elaborating on the dysfunctional appraisal, most often by detailing the context in which the dysfunctional
appraisal arose and attempting to explain their reaction to the therapist. As the client’s idiosyncratic construal of the event is elaborated, so is the underlying depressogenic structure from which the appraisal emerged (Clark et al., 1999; Rogers, 1959). Clients demonstrated Elaboration in almost all sessions of the validation sample. Stiles and Shapiro (1995) note that client storytelling and revealing information exchanges are common in sessions of CBT, and that these types of exchanges dominate early sessions of this therapy.

The Elaboration component extends beyond the description of specific events to the articulation of painful internal experiences such as thoughts, memories, and feelings related to the appraisal. The symbolic representation of these types of experiences into words may be important in helping clients formulate their problems (Watson, 1992), and has demonstrated a relationship with good outcomes in psychotherapy (McMullen, 2013; Watson et al., 2007). Elaboration appears to be particularly important early in the dysfunctional appraisal task; previous research indicates that clients with poor outcomes in psychotherapy spend less time elaborating before building towards an alternative perspective than clients with good outcomes in psychotherapy (Mann, 1999). Elaboration may also serve as an effective way of increasing access to emotional experience (Rice & Saperia, 1984; Safran & Greenberg, 1982; Watson, 1992); as clients seek to explain the connections between the appraisal and other experiences, the underlying depressogenic structure becomes activated in the moment. This activation may contribute to increased client capacity to accurately formulate problems.

**Step 3: Accessing Vulnerability**

The painful thoughts, beliefs and memories being elaborated in the previous step become increasingly associated with a vulnerable sense of being unacceptable and/or insufficient in some way. This third step of the model, Accessing Vulnerability, involves the process of accessing or
experiencing vulnerability, during which painful and previously implicit information about the self becomes explicit. It is as if clients are accessing the underlying problematic construal (Rice & Saperia, 1984). Accessing Vulnerability is also characterized by a sense of poignancy and negative emotion such as sadness about perceiving the self as weak, and by the articulation of a dysfunctional core belief. In the validation study, the lowest rated change sessions of clients who went on to have good outcomes in psychotherapy demonstrated vulnerability, while equivalently rated sessions of clients who went on to have poor treatment outcomes did not. Considering only the good outcome cases, almost all clients demonstrated a pattern of Elaboration followed by Vulnerability, with some of these clients additionally exhibiting a Shift component. All of the good outcome clients who demonstrated this pattern in their lowest self-reported change session went on to have high degrees of resolution of the reappraisal task in their highest change sessions. Additional support for the importance of this step was provided by the raters, who observed that some clients seemed “stuck” until they were able to understand why a particular event might be so poignant for them, or until they were able to “access what it was really like for them,” and one rater noted, “There were times people weren’t getting anywhere and all of a sudden they shift really quickly, it always seemed to be vulnerability, it’s like they cracked and then something would happen; it was rare to see a moment of vulnerability that didn’t go anywhere,” (Rater 2).

The selection of “hot cognitions” or thoughts associated with in-session increases in emotional arousal is an important part of CBT therapy (J. Beck, 1995; Safran & Greenberg, 1982b), as is the identification of negative core beliefs about self that may be embedded in depressogenic schematic structures. However, prior research indicates that CBT therapists tend to redirect away from exploration of emotion and towards cognition, such that clients may
exhibit high emotionality in the beginning and end of sessions of CBT for depression, but little emotionality in the middle (Coombs, Coleman & Jones, 2002). This tendency may interfere with good outcomes in psychotherapy, as in one study indicating that “missed opportunities” for addressing high emotionality in the session were implicated in poor therapy outcomes (Kanter et al., 2009). Furthermore, a review of the findings of neurological research suggests that “hot cognitions” arise from a largely implicit system which is difficult to modify through strictly cognitive means and may require in-session emotional arousal to engender long-term change (Samoilov & Goldfried, 2000).

While the particular combination of these elements that manifests as the acknowledgement or experience of vulnerability has not been articulated as an important early client process during a cognitive restructuring task, a similar process was previously identified by Safran and Greenberg (1982a). They cautioned against the use of reappraising processes too early in cognitive therapy, arguing that clients must understand the way in which their own cognitive processes – or construals – contribute to their problems before they can make use of cognitive restructuring processes, and that for some clients in particular, the experience of feelings of weakness and vulnerability must occur before they can engage fruitfully in a reappraisal process. They propose that one important function of activating emotions related to depressogenic structures, such as a sense of weakness or vulnerability, may be to increase accessibility of cognitive processes and thereby facilitate later cognitive restructuring interventions.

Another important function of accessing vulnerability may be the experience of the emotion itself, as indicated by McMullen’s (2013) research indicating that experiencing emotion is an aspect of productive processing in psychotherapy (cf. Greenberg, 2002; McMullen &
Watson, 2011; Silva, Vasco & Watson, 2013; Watson et al., 2011). Furthermore, the results of a recent meta-analytic review of 109 qualitative investigations into clients’ experiences of psychotherapy, including CBT treatments, indicate that clients value accessing and exploring material that is experienced as vulnerable within the therapy session (Levitt, Pomerville & Surace, in press).

**Step 4: Shift: Softening and Shifting Perspective**

The rational-model posits two alternative pathways emerging from vulnerability, one involving a process of softening towards the self or other, the other involving a process of shifting perspective through exploration. Softening may emerge from a sense of needing to be more compassionate or fair, or from a sense of having been too harsh or extreme in a negative judgment, and is associated with the articulation of positive or valued qualities of self or other, or with a loosening of a previously rigidly held stance. Alternatively – or in addition to softening – Shifting Perspective can emerge from an exploratory sense of having missed the bigger picture or of having made some error in judgment, and is associated with seeing problems as part of a larger pattern, and accessing evidence that directly challenges or diffuses problematic beliefs. While both Softening and Shifting Perspective represent a perspective shift, Softening appears to be an experiential or emotion-based change in perspective, and Shifting Perspective appears to be a more reflective-cognitive process. In both cases, the shift is accompanied by a reduction in statements reflecting negative affect, and clients may express surprise at the shifted perspective.

Due to rater difficulties in distinguishing between these two processes, Softening and Shifting Perspective were collapsed into one component, Shift, for analysis in the validation study. The Shift component occurred more often in sessions in which clients reported their highest degree of post-session change, regardless of outcome group, than in sessions in which
clients reported their lowest degree of post-session change. Considering only clients who went on to have good outcomes in psychotherapy, almost all clients demonstrated a pattern of Shift followed by Evaluating New Perspective, with some of these clients additionally demonstrating Reappraising. These results suggest that Shift is an important component of resolving a dysfunctional appraisal task, and that it precedes Evaluating New Perspective.

**Softening.** Softening towards self or other appears to be an adaptive emotional response to the vulnerability accessed in the previous step. Greenberg and Safran (1987) argue that adaptive emotional responses in the face of negative emotion, such as self-compassion in the face of experiencing the self as weak, provides discrepant information about a negative cognition at an experiential level and are therefore useful in challenging self-critical thinking (see also Welling, 2012). Others have also noted the importance of self-compassion in modulating self-criticism (e.g., Falconer, King & Brewin, 2015; Gilbert, 2009; Joeng & Turner, 2015; Kannan & Levitt, 2013; Watson & Greenberg, in press). Furthermore, an empathic process likely accompanies softening towards others. Watson (2011) differentiates among three types of empathy: emotional, cognitive, and cognitive-emotional empathies. She argues that emotional empathy is based on emotional neural networks and functions independently from cognitive empathy, which is based on different neural systems such as mirror motor neurons and perspective-taking. Cognitive-emotional empathy fuses an emotional understanding of the significance of events with a cognitive understanding of the other’s perspective. Thus clients who react to their awareness of vulnerability with Softening may be accessing emotional neural networks to enact change.

The Softening phase may additionally indicate a deeper level of *emotional experiencing*; deepening emotional experience is characterized by greater involvement with and acceptance of
feelings (Klein, Mathieu, Gendlin & Kiesler, 1969; Klein, Mathieu-Coughlan & Kiesler, 1986; Watson, 2011). A positive correlation between deepening client experiencing and symptom improvement has been identified in cognitive therapy (Castonguay et al., 1996; Kennedy-Moore and Watson, 1999), and therapist use of reflective, acknowledging, affiliative and non-controlling interventions, as occasionally noted during the Softening phase, has been associated with deepening emotional experience (Wiser & Goldfried, 1998). Recognition of the utility of working with emotions in cognitive-therapy continues to grow, including the use of staying with painful emotions such as vulnerability to facilitate emotional change (Thoma & McKay, 2014).

As noted, Softening at times emerged in direct response to therapists enacting a softening stance, i.e. in response to therapist compassion. Therapist compassion, or an empathic prizes and validating stance, has demonstrated a positive association with good outcomes in psychotherapy (e.g., Elliott, Bohart, Watson & Greenberg, 2011). Therapist compassion in response to client emotionality has also been linked with neurological changes. The results of a recent review of investigations into the relationship between neurological correlates of depression and psychotherapy suggest that neurological changes associated with good outcomes in therapy may be largely the result of therapist compassion and attentiveness working to decrease cortisol levels (Sharpley, 2010). These works support Softening, initiated by client or therapist, as an important component in working towards generating more adaptive appraisals about the self.

**Shifting Perspective.** The Shifting Perspective component bears the strongest resemblance to what might be expected as a key client process in cognitive restructuring. By and large, cognitive strategies represent attempts to generate new perspectives. For example, the positive reappraisal strategy serves to generate a shift in perspective. Barlow et al.’s (2004)
proposed strategy of reappraising the actual probability of a negative event occurring, and the extent of consequences, represents an instance of broadening. Similarly, engaging in a strategy of external reattribution can be seen as an instance of diffusing the dysfunctional appraisal, which in turn facilitates insight (Elliott et al., 1994).

These strategies all involve a shift from automatic to strategic or effortful levels of information processing that is an important part of generating more constructive appraisals (Clark et al., 1999; J. Beck, 1995). Toukmanian (1994/2004) describes two levels of perceptual processing, or how clients perceive and process information. Simple (low) levels of perceptual processing are reflected by undifferentiated, simple descriptive, and externally-focused types of client statements. In contrast, complex (high) levels of perceptual processing are reflected by analytic, differentiated, internally-focused, re-evaluative, and integrative statements. It seems likely that the cognitive strategies involved in the earlier Elaboration phase are simpler than those involved in creating a shift in perspective in the Shift phase (analytic statements), or in the later phases of consolidating a shifted perspective during Evaluating New Perspective (re-evaluative statements), or when reappraising the self during Reappraising (integrative statements).

Client statements that reflect perspective taking, abstract reasoning and cognitive flexibility serve as good indicators of Shifting Perspective; these qualities have all been identified as aspects of cognitive empathy (Watson, 2011). Thus clients who demonstrated an empathic reaction towards self or other during Softening may have also demonstrated higher order cognitive processing associated with cognitive empathy. As these processes were defined in the current study as an aspect of Shifting Perspective, this overlap in processes may have contributed to raters difficulty in distinguishing between Softening and Shifting Perspective. Not
only do softened perspectives demonstrate a shift in perspective, the cognitive processes involved in these components are likely the same or so similar at the behavioral level that they are difficult to disentangle.

Therapist challenges that facilitate self-reflection are perceived as helpful by clients and therapists alike (Levitt, Butler & Hill, 2006). In this investigation, Shifting Perspective at times emerged in response to the therapist enacting an exploratory stance, as when the therapist considers the problem from a different perspective, makes conjectures, or uses exploratory questions to elicit information that challenges the dysfunctional appraisal. The Socratic questioning intervention is particularly reminiscent of this exploratory stance, and there is emerging support linking this intervention to symptom reduction (Braun et al., 2015). Examining evidence and practicing rational responses are other therapist-initiated examples of strategies aimed at shifting perspectives that have also demonstrated positive relationships with symptom reduction (DeRubeis & Feeley, 1990). These works support Shifting Perspective, initiated by client or therapist, as an important component in working towards generating new appraisals about the self.

Step 5: Evaluating New Perspective

In the fifth step of the model, the client applies the new perspective derived during a Shift component, as if reflecting on the questions, “If I look at things this way, what does it mean to/about me? What could this mean in the context of my life?” Past memories are scanned to see how the new perspective “fits”, and it is common to see consideration of the implications or consequences of what it would mean if this new perspective was more generally applied. This component may also take the shape of re-examining multiple connected previously articulated dysfunctional appraisals in this new light. Almost all of the good outcome clients’ highest rated
change sessions demonstrated the Evaluating New Perspective component. In contrast, only one of the good outcome clients’ lowest rated change sessions contained this component. Similarly, only one of the poor outcome clients’ highest rated change sessions contained this component. These results suggest that the evaluation of new perspectives is important to both resolving the dysfunctional appraisal task, and to psychotherapy outcomes.

These results are in line with prior research which indicates that people who solve problems tend to reflect upon insights that helped “put the problem into perspective” to then re-evaluate past experiences from this new perspective (Higginson & Mansell, 2008). Clarke (1996, in Gordon, 2007) noted that client experience of surprise, as is often expressed during a Shift component, can trigger a meaning-making process whereby clients evaluate a belief in the context of past and present experiences, and identify what might need to be accommodated for this belief to be integrated (see also the concept of innovative moments by Goncalves and colleagues (2009, 2011, in Ribeiro et al., 2014).

Similarly, Angus (2012) describes a “dialectical dance” between narrative and meaning-making processes, whereby embedding new or previously implicit experiences within stories helps make sense of those experiences. In a recent examination of narrative processes in CBT, clients with good outcomes demonstrated a higher proportion of inchoate and discovery storytelling than clients with poor outcomes (Boritz, Bryntwick, Angus, Greenberg & Constantino, 2014). Inchoate storytelling occurs when a client appears to be struggling to make sense of an experience, with a sense that old stories are being revised. Discovery storytelling occurs when a new story emerges as subjective experience is being described, with a sense of discovery emerging from exploration (see also McMullen, 2013). Thus the Evaluating New Perspective component may represent a consolidation phase, during which the creation of a new
contextual and narrative framework for interpreting events is formulated and both tested against and elaborated with past experiences (Angus, 2012; Ray, 2009).

This component is similar to a set of processes observed in the last steps of resolution of problematic reactions in client-centered therapy (CCT; Rice & Saperia, 1984; Watson, 1992). These researchers observed a “broadening out” whereby clients explore memories associated with a new internal referent and thereafter begin to recognize and examine previously unexamined constructs. This process of reflexively focusing on the self occurs after new realizations are made (Watson, 1992). Overlapping processes were also recently observed in accelerated experiential dynamic psychotherapy (AEDP; Iwakabe & Conceicao, 2015).

Following a self-assertive component similar to Softening, clients in that study were seen to engage in a process of self-reflection whereby they became aware problematic beliefs and patterns. Therefore in all three cases, clients can be seen engaging in an evaluative process that is associated with increased awareness of, and reflection on, problematic functioning, which emerges after some type of shifted perspective.

**Step 6: Reappraising**

The Reappraising component, as the final step of the model, also describes the resolution – and thus the immediate effect – of the dysfunctional appraisal task. In this component, clients begin to reappraise the self in the context of a new perspective, reevaluating beliefs about the self as a person, about the self in relation to other people, or about the self in the future. It involves a process of reassessing personal limits and resources. New adaptive beliefs about the self may be synthesized, or alternatively a constructivist stance is enacted in which negative evaluations are recognized as self-generated and optional. During this process of reappraising, clients are seen to make room for self and others to get needs met, to engage in future-focused coping, and to
endorse more adaptive appraisals about self and others. There is a sense of new resilience, or a shift to a more optimistic stance.

The Reappraising component was infrequently observed in both samples, however when Reappraising was present, it was observed only in those sessions that clients reported a sudden and sustained gain in symptom improvement (discovery sample), or their highest degree of post-session change (validation sample). These findings provide tentative support for Reappraising as a component of resolution. Interestingly, there was a lower proportion of Reappraising in the validation sample than in the discovery sample. This difference may reflect sample variation, but may also be due to differences in sample selection. The discovery sample was selected on the basis of sudden and sustained gains in symptom reduction, each gain indicating significant improvement on symptoms of depression between two consecutive sessions. Thus the sudden gain session presumably occurs one week after a significant change event. In contrast, the validation sample was selected on the basis of post-session indications of change within the therapy session. If the Reappraising phase is an aspect of consolidating change, then it may be more likely to occur in sessions wherein clients are reflecting on past change than in those sessions wherein clients are making the most amount of change.

The Reappraising phase shares similarities with resolution components identified in models derived from other therapies. The evaluative processes previously described in CCT culminate in a re-visioning of self (Watson, 1992) that is associated with loosening and reorganization of constructs (Rice & Saperia, 1984), while the self-reflective process identified in AEDP (Iwakabe & Conceicao, 2015) culminates in client recall of times when “they were able to be the self that they wanted to be” (p. 12) or envisioned themselves coping in the future, and is
associated with a sense of peace. Clarke (1996) also described a future-focused quality to client
terpretations following a meaning-making component.

During the Reappraising phase, clients were sometimes observed to enact a constructivist
stance in which a narrative regarding the development of maladaptive construals, i.e. identifying
and making meaning out of historical antecedents. This constructivist aspect may be particularly
important to outcome. Client awareness of the links between dysfunctional appraisals and
underlying maladaptive schemas, and statements that reflect understanding of the factors
influencing the development and maintenance of these schemas, has been associated with
reduced risk of relapse in a trial of CBT for depression (Strunk et al., 2007). Moreover, memory
has been described as constructive, in that during a retrieval event people can recreate the past
based on what other memories may also be triggered, new information that is currently
accessible, and the demands of the retrieval situation (Hyman & Loftus, 1998). Thus the very act
of recalling related memories in the context of a new perspective, as happens in the previous
Evaluating New Perspective phase, may itself stimulate a constructive process capable of
altering underlying cognitive structures. Mahoney (1985) argues that people create our personal
realities, actively contributing to our own underlying meaning structures. He posits that
becoming aware of and actively participating in one’s own construction of reality, including the
degree to which the body and mind contribute to the perception of reality, is an important aspect
of change in psychotherapy.

Validation of the Model

Relationship of the Model to Session and Treatment Outcome

Results from the validation study indicated that degree of resolution of the dysfunctional
appraisal task demonstrated a positive relationship with post-session change, such that higher
ratings of degree of resolution were related to higher ratings of post-session change. Additionally, clients who went on to have good outcomes in psychotherapy demonstrated significantly higher degrees of resolution in their highest reported change sessions than in their lowest reported change sessions. As degrees of resolution correspond in an ordinal fashion to the sequence of components of the rational-empirical model, these findings suggest that as clients move through the model they report increasing amounts of post-session change.

Results from the validation study also indicated that degree of resolution of the dysfunctional appraisal task demonstrated a positive relationship with treatment outcome, such that good outcome clients demonstrated higher ratings of degree of resolution than did poor outcome clients. Furthermore, good outcome clients were more likely to exhibit the Evaluating New Perspective component than poor outcome clients. These results suggest that clients who have go on to have good outcomes in CBT for depression get further in resolving a dysfunctional appraisal task, and are more likely to engage in evaluation and consolidation of a new perspective, than clients who have poor outcomes.

These findings are important in that they link the specific sequence of within-session client processes described by the rational-empirical model to intermediate post-session outcome, thereby supporting the dysfunctional appraisal task as a significant change event. These findings also link within-session client behaviors to ultimate post-treatment outcome, thereby supporting the dysfunctional appraisal task as an important task within CBT for depression. While previous research had established the commonality of working with dysfunctional appraisals in CBT for depression (Castonguay et al., 1995; Muran et al., 1995), the relationships between this task and intermediate and ultimate outcomes was previously unclear.
These findings are in line with existing research that has indicated that clients who engaged in a task aimed to alter their belief in a maladaptive cognition reported improved mood (Persons & Burns, 1985) and decreased symptoms of depression (Teasdale & Fennell, 1982) at the end of the session.

**Structure of the Model**

Results of the validation study support the sequence of components of the rational-empirical model. First, there was a strong positive association between the number of steps of the performance model exhibited by clients, and the highest degree of resolution of the reappraisal task. This result adds to the validity of the model overall because, while it was possible for that a session to receive a high degree of resolution rating by simple virtue of having a single highly rated component, e.g. receiving a rating of “5” while demonstrating only Evaluating New Perspective, in actuality the positive relationship between higher number of components demonstrated and higher degree of resolution indicates that the components of the model build on each other. This relationship can be seen in Table 11 (Appendix C). Second, there was a strong positive association between highest degree of resolution of the reappraisal task and client self-reported post-session change. This result indicates that as clients attain later steps of the model, they report more change. Together these results suggest that clients experience increasing degrees of post-session change as they “climb” through the model. Additionally, descriptive analysis of the sequence of components within and across sessions of clients who went on to have good outcomes in psychotherapy revealed that a pattern of Elaboration, Accessing Vulnerability, and sometimes Shift characterized the early (lowest reported change) sessions, while a pattern of Shift, then Evaluating New Perspective, and sometimes Reappraising characterized the later (highest reported change) sessions.
While the specific sequence of client behaviors described by the rational-empirical model has not been previously articulated, there is some support in the literature for the overall structure of the model. In one previous process-outcome study, it was noted that helping clients move from little awareness of and poorly formulated problems, as might be reflected by a fully immersed dysfunctional appraisal task marker, to well-formulated problem statements, as those which might be addressed through direct therapist challenging interventions in a shift phase, requires increasing awareness of affectively negative material (Stiles, Shankland, Wright & Field, 1997). Furthermore, clients in CBT for depression may work on a specific problem across several sessions, demonstrating significant cognitive changes in one session that are then consolidated in the next (Goodridge & Hardy, 2009; Tang & DeRubeis, 1999; Tang et al., 2005).

These results regarding the structure of the model are tentative. In addition to the small sample sizes involved, this study did not set out to validate sequence and therefore utilized raters who were aware of the progression of components in the model. While raters were encouraged to rate components as they emerged regardless of sequence, to fully test for sequence raters should be kept blind to the hypothesized sequence of components. Future investigations should additionally consider a case study approach to session selection, as this would allow the investigation of the emergence of components across an entire case, or at the very least between subsequent sessions.

**Implications of Findings**

**Implications for Theory**

The results of the investigation are considered with respect to the three theories of mechanisms of change in CBT for depression reviewed earlier. Applying the change via modification of underlying cognitive structures theory (Beck et al., 1979; Clark et al., 1999;
Safran et al., 1986) to the dysfunctional appraisal task predicts that accessing underlying cognitive structures associated with a dysfunctional appraisal is necessary prior to challenging the appraisal. In contrast, applying the change via compensatory skills theory (Barber & DeRubeis, 1989; Dobson & Dobson, 2009) predicts there would be no evidence of access to underlying cognitive structures, and that clients would be seen to generate more adaptive appraisals about the self by practicing skills and accessing positive self-knowledge. Finally, applying the skills-first theory (J. Beck, 1995; 2005) predicts that clients would first be seen to develop skills in challenging dysfunctional appraisals without making explicit links between these appraisals and underlying cognitive structures, and later generate more adaptive appraisals about the self in a separate set of processes that may involve accessing the underlying structures.

The results of the current investigation suggest that the resolution of a dysfunctional appraisal task is likely a schema modification strategy. As predicted by proponents of this explanation (Beck et al., 1979; Clark et al., 1999; Safran et al., 1986), clients with good outcomes in psychotherapy were observed to explore dysfunctional appraisals until idiosyncratic intrapersonal meaning was made explicit, then engaged in strategies characterized by strategic cognitive processing to enact new perspectives that challenged this meaning, and finally attempted to generalize from this new perspective through an evaluative consolidation process that culminated in the synthesis of new adaptive appraisals about the self. There was additionally evidence that a meta-cognitive process of evaluation is important to reappraising self, however this process was less reminiscent of a rational assessment of the validity and utility of cognitions as proposed by Beck and colleagues (Beck et al., 1979; Clark et al., 1999) and more reminiscent of “a sliding, with an exploratory and observing stance, to other life situations that have the same
experiential quality,” (Rice & Saperia, 1984, pp. 59-61) whereby a newly formulated inference is evaluated on the basis of past and present experience (Watson, 1992).

In contrast to what would be predicted by the compensatory skill explanation, clients from both the Good and the Poor Outcome groups successfully challenged dysfunctional appraisals by generating new appraisals of events, however only the Good Outcome clients engaged in higher-order evaluative processes. Thus the acquisition of the skill of generating a new perspective that occurs midway through resolving the dysfunctional appraisal task may be a necessary but insufficient goal of this task. This finding is supported by existing literature which indicates client use of skills aimed at challenging negative automatic thoughts is not a significant predictor of rate of relapse in CBT for depression (Strunk et al., 2007). Moreover, there was no indication that clients in the Good Outcome group challenged a series of dysfunctional appraisals before eventually accessing the vulnerable component(s) of their underlying maladaptive schematic structures, but instead demonstrated a pattern of accessing their maladaptive construals before challenging dysfunctional appraisals across the two sampled sessions.

Note that this is a pattern of accessing the “superordinate construct” of the schematic structure during Accessing Vulnerability, and then reverting back to reflecting on the “subordinate construct” of the situation-specific dysfunctional appraisal during Shift. Safran et al. (1986) have argued that making explicit the links between a dysfunctional appraisal and its underlying problematic schematic structures plays an important clinical role in modifying these structures, such that once this link has become explicit to the client any future strategies which serve to invalidate or alter dysfunctional appraisals also serve to modify associated dysfunctional structures.
A significant finding that was not predicted by any of the reviewed cognitive theories of change in CBT for depression was the important role of Accessing Vulnerability. Clients with good outcomes in psychotherapy were not seen to rationally derive a “core belief” but rather to come to these more painfully, using poignant language indicative of emotional experience as they accessed implicit maladaptive experiences or self-knowledge. Thus it is likely that clients are not only accessing the problematic cognitive aspects of their underlying structures, but also the emotional meaning associated with these cognitions. Recent works which stress the importance of emotion as a mechanism of change in CBT (Samoilov & Goldfried, 2000; Thoma & McKay, 2014) support the observed use of emotionally evocative language by clients as they work through an important task in CBT for depression.

Another finding not predicted by the reviewed theories was the role of Softening. Although results relating to this component are particularly tentative given rater difficulty in distinguishing between Softening and Shifting Perspective, the presence of a component characterized as an adaptive experiential shift to a maladaptive emotion further supports the capacity of emotion to play an important role in facilitating change in CBT for depression.

This investigation was not designed to be a test of theories mechanisms of change in CBT for depression. Nevertheless, results indicate that the dysfunctional appraisal task has the potential to enact schema modification as well as facilitate coping skill attainment, and that accessing vulnerability may play an important part in cognitive restructuring. Further research, preferably using a case study design, is necessary to confirm this interpretation of the findings.

**Implications for Clinical Practice**

Several recommendations for clinical practice emerge from this practice-near investigation. First, it is recommended that CBT clinicians receive increased training in attending
to client process. A call for increased focus on client process during training has already been
made so as to facilitate awareness of alliance difficulties (D’Iuso, Bake, Fitzpatrick & Drapeau,
2009; Kanter et al., 2009); this lack of awareness of client process has been identified as a
potential explanation for why CBT therapists often miss client withdrawal/disengagement
(Aspland et al., 2008; Castonguay et al., 1996). Seeming lack of awareness of client process by
therapists was also observed by raters in this study; two raters noted that scheduling and
reviewing homework at times interfered with client process, as when therapists interrupted an
emerging client process to schedule or review homework, or when clients and therapists
disagreed on which aspect of the homework to review in the session.

Prior research indicates that the effectiveness of an intervention is dependent on what the
client perceives as the immediate task at hand (Davis, 1994). Therapists would be better able to
target interventions if they could detect the immediate task of the client through increased
awareness of client process. Increased awareness of emotionally charged client process seems
particularly important; all three raters recalled moments when therapists either redirected the
client away from their emerging vulnerability, or seemed unaware of this process as a potential
active ingredient of therapy and simply cut their clients off. These results echo the findings of
Kanter et al. (2005, 2009), who noted that some therapists “missed opportunities” by failing to
attend to client displays of emotion, and those of Coombs et al. (2002) who reported that CBT
therapists often de-emphasize emotion and redirect to cognitive themes, with no associated
increase in positive treatment outcomes, as well as findings from Levitt and Williams (2010) that
indicate a preference among CBT therapists to structure opportunities for vulnerable experience
outside the therapy session rather than within it. A final argument for increasing attunement to
client process emerges from the self-reported clinical growth reported by raters, who all reported
a shift in their practice as a result of becoming aware of client process. For example, one rater
shared her new belief, “It would be better to think of [the thought record columns] as stages to
guide clients through,” (Rater 1). The conceptualization of interventions as facilitative guides for
client process may facilitate tailoring of interventions to suit client need.

This investigation derived a tractable model of client change. This model can be taught to
clinicians to maximize their interventions as they attempt to navigate clients from task marker to
resolution. Furthermore, a more specific understanding of the task marker and resolution
components can help clinicians select interventions more appropriately. As noted by Safran
(1985, in Safran & Segal, 1990), the Dysfunctional Appraisal marker is distinct from the divided
awareness marker also common in CBT, whereby clients simultaneously reveal and invalidate
an implicit maladaptive process. The divided awareness marker has no clear problem statement,
e.g. “I couldn’t care less I mean I’m not expecting anything yet why would it bother me?” rather
than evaluative “It bothered me” or injunctive “It shouldn’t bother me” statements that can be
clearly reappraised. Characterized instead by a self-interrupting quality (Rice & Greenberg,
1984), the task which emerges from the divided awareness marker may require different client
processes to resolve (Safran & Segal, 1990). The Reappraising resolution component indicates
that the dysfunctional appraisal task is best suited for working with distorted cognitions that
reflect an underlying negative appraisal about the self, where a resolution characterized by a
reappraisal of the self would be favorable.

A better understanding of the demand characteristics of the dysfunctional appraisal task
could help tailor intervention to client readiness. These include capacities to focus on the
problematic elements of an event to derive its personal meaning, to access or allow vulnerability,
to consider a different perspective, to reflect on new information in the context of past and
present experience, and to apply a new perspective to the self. Resolution of the dysfunctional appraisal task also seems to involve both low and high levels of perceptual processing (Toukmanian, 1994/2004). As client capacity to engage in these various processes may vary, it is recommended that therapists encourage clients to move from step to step in the model rather than skip steps.

Gradual movement through the model seems especially important with regards to Shifting Perspective. In this investigation, successful shifts in perspective were not by themselves associated with good outcome, suggesting that these shifts in isolation may not be fruitful in the long term. Prior to imagining new perspectives, clients should be encouraged to elaborate their dysfunctional appraisals (Mann, 1999). Although this investigation did not examine therapist actions, interventions such as exploratory reflections or Socratic questioning are likely helpful in this regard, e.g. “And what is that about, what does that mean to you, doing it in front of other people?” or “What does the scary part feel like?” It may also be clinically more direct to facilitate access to vulnerability before attempting to shift perspective, than to attempt to build the skill of perspective shifting before the vulnerability has been accessed (Safran et al., 1986).

That attempts to engage in the dysfunctional appraisal task on one’s own tend to stall at Elaboration (Bennett-Levy, 2003) indicates that therapist facilitation of Accessing Vulnerability may be particularly important. This facilitation may be an important aspect of therapeutic alliance. The results of one investigation on the relationship among therapeutic alliance, cognitive restructuring, and outcome in CBT indicated that cognitive restructuring had a larger effect on symptom reduction in the context of a strong emotional bond between client and therapist, and had only an average effect on symptom reduction in the absence of this bond.
(Rector, Zuroff & Segal, 1999). As Watson (2007) notes, “the implementation of specific techniques is inseparable from how they are communicated and the context in which they are delivered” (p. 268). Thus the use of therapist challenges, aimed at generating new perspectives, is most timely after the dysfunctional appraisal has been adequately elaborated, and the underlying construal associated with vulnerability has been accessed in the context of a strong therapeutic relationship.

Generating new interpretations of events through Shifting Perspectives is an important component of resolution of the dysfunctional appraisal task, however the results of this investigation indicate that going further and testing these new perspectives against past experience is important to good outcomes in CBT for depression. Therefore in the face of a shifted perspective, and particularly in the context of surprising or novel experiences, clinicians are recommended to encourage re-evaluation of past and present memories in light of this new information. Clients should thereafter be encouraged to reappraise beliefs about the self; engaging in this final act provides clients with the opportunity to generate more adaptive appraisals about the self and build resilience by planning for future coping.

The resolution of a dysfunctional appraisal task may be particularly useful for clients who present with low ratings in self-efficacy, i.e. who perceive themselves as limited in their capacity to cope (Chen, Jordan & Thompson, 2006). Clients may improve their perception of self-efficacy by accessing an underlying sense of weakness or insufficiency and associated beliefs about the self, and then accessing positive self-knowledge (Cervone et al., 2008) either through a more compassionate stance towards the self, or by considering the problem from a different perspective. This positive self-knowledge can then be integrated into an underlying schematic framework and used to reappraise beliefs about self-efficacy.
Implications for Future Research

Further research is needed to address the limitations of the current investigation. Replication with a larger sample size is necessary to determine whether the results of this investigation are meaningful for clients in general, or for this specific subset of clients only. The increased statistical power conferred by a larger sample size would also permit a more fine-grained analysis of meaningful associations.

Further investigation into the two Shift components is necessary. The current investigation was unable to confirm the presence of two alternate pathways due to rater difficulty in discerning components, indicating that the current operational definitions of Softening and Shifting Perspective require refinement. Differentiating between “emotional” and “cognitive” processes may be helpful in this regard, capturing more clearly what Samoilov and Goldfried (2000) term “emotional versus intellectual knowing”. Clearer articulation of what a component is not, and more examples, will likely facilitate differentiation of these processes, as would a re-examination of examples after raters have become more attuned to client process. It is also possible that more fine-grained examination of these components is necessary to draw conclusions about this phase of the model. Increased control of therapist guiding statements would be useful in this regard, as therapist statements were deemed particularly capable of influencing client process during this shift phase.

Other recommended improvements to the application of the DRS-DA include the use of continuum ratings rather than binary (present vs absent) which would likely increase interrater reliability, and the use of audiovisual recordings instead of transcripts. In this latter case, the DRS-DA categories would need modification to account for the additional qualities of vocal tone and non-verbal behaviors. Finally, although it was expected that the use of CBT-trained
therapists would facilitate the ability to attain reliability with the expert on this measure, raters reported difficulty in learning to attend to client process. The use of observers previously trained in attending to client process, e.g. through training in humanistic psychotherapies or involvement in other therapy process research projects, may also reduce learning times.

Few of the transcripts reviewed in the current investigation demonstrated full resolution of a dysfunctional appraisal task, the Reappraising component. The selection procedure for the validation phase study may have reduced the likelihood of sampling the Reappraising component, as only the earliest session receiving a highest change rating was selected for the Good Outcome group. Future investigations seeking to replicate or refine the later components of the rational-empirical model could maximize conditions for sampling Reappraising by selecting the later high change sessions, or using a sudden-gains methodology. Another possibility is that the criteria established for full resolution may have been too stringent. While the generation of more adaptive appraisals about the self is an important goal in CBT for depression, it may only be necessary to enact a constructivist stance or to engage in a process of reappraising that does not culminate in a new synthesis. Further research is necessary to clarify the essential qualities of this component.

Qualitative research designs would be important to extend the current research. For instance, Accessing Vulnerability was almost entirely absent from the sessions in which clients reported highest change. A number of questions emerge from this observation. For example, if accessing vulnerability is a growth-promoting process as suggested by the current investigation, is it also perceived as a helpful factor by clients themselves or did its emergence in the lowest rated sessions on change reflect a disregard for this process by clients? Does the specific content
of the vulnerability, or the level of arousal – or working distance from the vulnerability – matter to treatment outcome, or to specific therapist intervention?

As the focus of this investigation was creating a model of the reappraisal task and investigating its relationship with outcome, other important questions regarding the task were not answered. The absolute sequence of the components and essential nature of any one specific component requires verification. A specific investigation into the sequence of Accessing Vulnerability to Shift is necessary. This specific sequence was observed in only 6 out of 22 validation study transcripts (27%), with none of these sessions moving beyond Shift. Furthermore approximately half (12 of 22 sessions) of sessions ended with either Accessing Vulnerability (4 sessions) or Shift (8 sessions). These findings are tentatively interpreted here as a reflection of the CBT emphasis on the importance of homework to seek information that may challenge dysfunctional appraisals and to test new beliefs outside of therapy (see review in Walker & Lampropoulos, 2014). It seems likely that therapists may guide clients towards the creation of homework activities to facilitate client progress from Accessing Vulnerability to Shift, or from Shift to Evaluating New Perspective. It was also observed that 4 out of 7 (57%) of Good Outcome Highest Change sessions began with a Shift component, and raters noted that sessions often began with homework review. A case study design of sequential sessions is necessary to confirm the observations from the discovery phase that clients tended to “pick up where they left off”, and to identify whether the use of scheduling and reviewing homework interventions is associated with the resolution of dysfunctional appraisal tasks.

One important note is that the reappraisal task is just one many potential tasks in psychotherapy, and in fact may be more common in CBT than other therapies. In-depth qualitative case studies are necessary to determine the relative contribution of resolving this task.
to decreased depression symptoms, the “optimum dosage” or frequency of engagement in this task, and for whom the resolution of this task is most necessary. The model derived in the current investigation can also be compared with model of client activities when completing a similar task of self-reappraisal within a different therapy. For example, the model of combating cognitions developed by Greenberg and Safran (1987) within the context of process-experiential psychotherapy could be compared with the current model to examine ways in which clients resolve this task in general, and to investigate potential therapy-specific effects on the change process.

The model of resolution of a dysfunctional appraisal task presents an opportunity for improved control of the therapeutic environment. The present study did not differentiate between the various CBT interventions, controlling only the general environment of therapist challenging of distorted cognitions. Future investigations that seek to identify the therapist behaviors that facilitate client shifts from one component of the model to the next are necessary to create an intervention model. This intervention model can be taught to therapist, who could thereafter consistently provide this intervention model as a controlled therapeutic environment for the study of the dysfunctional appraisal task. Improved control of therapist actions would allow for a more fine-grained analysis of client activities.

The possible contributions of several key covariates were absent from this investigation, for example dyad variables such as the quality of the therapeutic alliance, client process variables such as level of experiencing, and therapist process variables such as empathy or use of Socratic questioning. Extending this research to consider these variables could help illuminate the relationships among general factors, mechanisms of change, and specific factors. Future research investigating therapist facilitation of the Accessing Vulnerability process should be especially
sensitive to the therapeutic relationship in which these acts take place (Levitt & Williams, 2010; Rector, Zuroff & Segal, 1999).

**Limitations**

Although some preliminary validation of the model was established, further exploration and testing, and replication with another and larger sample of events, will be necessary. Task analysis is a labour-intensive process that places real limits on the sample of events that can be evaluated in a single study. Involving exploratory and qualitative components, some findings are vulnerable to biases in the investigator and observer-raters. It is also important to remember that observer-raters, including the investigator, did not have access to clients’ internal states; therefore all ratings of client process reflect observers’ appraisals of client statements.

This study focused on manualized traditional CBT for depression treatment. As these findings were developed within the context of CBT, these findings may not accurately describe the ways in which clients approach the dysfunctional appraisal task in other treatment approaches. Additionally, findings such as the importance of vulnerability to the resolution of the dysfunctional appraisal task may not generalize beyond the treatment of depression, and may represent instead a specific case of a more general process of approaching, in an emotionally evocative way, a core construal.

Raters had difficulty differentiating between Softening and Shifting Perspective in the validation study. This difficulty suggests the need for refinement of the operational definitions of these two components, or for further investigation to confirm that differentiation between these components is necessary.

Finally, two procedures of the validation phase worked to reduce the number of components available for analysis. First, observer-raters did not have access to audiovisual
recordings which may have contained nonverbal indicators of client shifts. As some components, and in particular Accessing Vulnerability and Softening, would be expected to be accompanied by shifts in vocal quality and non-verbal behaviors, e.g. tears, it is likely that working solely from transcripts resulted in some missed or incorrect ratings. Second, to increase the integrity of ratings only those on which at least 2 out of 3 raters agreed were retained. While stringent in ensuring that the data under analysis was observable by multiple raters and reducing the likelihood of confirmation bias or “false positives”, this approach resulted in a reduced data set that may have influenced analysis. For example, despite the noted data retention rate of 73%, in one instance all three raters noted a shift from one state to another however did not agree on the rating. Other methodologies which rely on main raters or consensus would have included this shift and thus may have increased the data set.

Conclusion

Despite the threats to external validity and the limitations discussed above, the present study is important in a number of respects. First, a model for the resolution of the dysfunctional appraisal task was developed that can serve as a tentative map for clinicians as they guide their clients through the reappraisal process. Second, a relationship was established between this model and both session and treatment outcomes. Third, an instrument was created for assessing movement through the model that can be used in future studies. Finally, the results of this investigation support the importance of investigating client change processes even in well-established manualized therapies: this approach serves to promote a better understanding of the ingredients of change in psychotherapies.
References


Gordon, L. (2007). Client perceptual processing in cognitive behavioural therapy and process-experiential therapy for depression. (Ph.D., University of Toronto (Canada)). (NR27871)

Greenberg, L. S. (1975). A task analytic approach to the events of psychotherapy. (Ph.D., York University (Canada)). (NK26630)


Appendix A

Figure 9. TACTD Good outcome model of dysfunctional appraisal tasks (Berlin, Mann & Grossman, 1991, in Mann, 1999, p. 163)
Figure 10. TACTD poor outcome resolvers (Mann, 1999, p. 163)
Appendix B

Degrees of Resolution Scale for Dysfunctional Appraisal Tasks

Rater Training Manual

Introduction: Definition and Purpose of the DRS-DA
The Degrees of Resolution Scale for dysfunctional appraisal tasks (DRS-DA) is an observer-rated categorical measure of client process in psychotherapy. Clients can present with maladaptive appraisals regarding themselves, themselves-in-relation-to-others, or themselves-in-the-world. In psychotherapy, clients may engage in the task of generating more adaptive appraisals, referred to in this manual as the dysfunctional appraisal task. The DRS-DA seeks to capture which components of this task, if any, are present in a particular session of psychotherapy, thus providing a way of describing client process within a session.

The DRS-DA is intended for use by experienced psychotherapists.

Mechanics of the DRS-DA
The unit of analysis for the DRS-DA is the dysfunctional appraisal task. The DRS-DA describes seven distinct components involved in resolving this task. Each component is defined by a unique set of qualitative cognitive-affective features that describes a client’s cognitive-affective processing. Changes in these qualitative features signal the emergence of a new component; each component is rated sequentially as it emerges.
The Dysfunctional Appraisal Task: A Model of Change

The DRS-DA has been developed specifically to determine client’s progress through the dysfunctional appraisal task model which describes how clients resolve this task:

1. Task Marker: Dysfunctional Appraisal

2. Elaboration

3. Accessing Vulnerability

4a. Shift: Softening

4b. Shift: Shifting Perspective

5. Evaluating New Perspective

6. Reappraising

Underlying Theory

People have beliefs about themselves that influence how they see themselves in the world. These beliefs about the self are here called construals. These construals function as lenses through which daily life is evaluated:

Lens through which a situation is seen → Personalized evaluation of the situation

Construal → Appraisal

For example, a person who has the belief, “I’m great at math” (generalized construal) will likely have a different reaction to failing a math test (situation-specific appraisal) than a person who believes they are horrible at math:

P1: I’m great at math → Maybe if I study this more, I’ll eventually understand it

P2: I’m horrible at math → Why bother studying more? I’ll never get it anyway

Note that the reactions of the two people in the above example are starkly different. The first reaction is growth promoting, hopeful in tone, and tentative, open to whatever may come. This is here termed an adaptive appraisal. In contrast, the second reaction is overly restrictive (I’ll never get it), more likely to be invalid (there is in fact a strong positive correlation between studying more and getting better grades), and maladaptive in its sullen resignation (Why bother?). This type of reaction is here termed a dysfunctional appraisal.

While people have a range of positive and negative beliefs about themselves, a person with depression tends to construe the self in a way that contributes to or maintains their depression. Thus a person with depression likely has at least one depressogenic construal about the self, often reflecting themes of self as unlovable/unacceptable, or self as weak/incapable.
Step-by-Step Resolution of the Dysfunctional Appraisal Task: The aim of the *dysfunctional appraisal task* is to help a client generate a more adaptive appraisal of a situation, preferably by altering or deactivating problematic construals.

**Step 1:** Client expresses a dysfunctional appraisal. Dysfunctional appraisals are overly restrictive, invalid, or maladaptive. They tend to reflect some implicit negative belief about the self (“I’m not good enough”), self-in-relation-to-others (“others will leave me”), or self-in-relation-to-the-world (“I can’t cope”).

**Step 2:** Client activates the underlying schematic structure associated with this dysfunctional appraisal; cognitions (symbolic-conceptual elements such as thoughts and beliefs, as well as perceptual-situational elements such as memories), behaviors (including action tendencies and urges), emotions, and physiological reactions emerge. The client elaborates, recalls related appraisals (memories, stories about situations), feelings, images, physiological reactions. A potent mechanism for activating this structure is episodic memory.

**Step 3:** Client allows into awareness painful information associated with a depressogenic construal. The complex flavour of one person’s construal will differ from another’s, however it is likely that most depressogenic construals about the self will express or contain one or both of these two themes: I’m unlovable, or I’m incompetent/helpless.

**Step 4:** Client reacts to the newly explicit information in one of two ways:

- With a sense of needing to be more fair, considerate, or compassionate, of seeing that one has been too harsh or extreme in its negative judgment; the client expresses self-assertion, self-validation, softens a previously negative or overly rigid stance.

- With an exploratory sense of having missed the bigger picture or of having made some error in judgment; the client re-distributes responsibility to external sources, recalls memories that provide contrasting evidence, realizes they misinterpreted information.

Some clients exhibit both reactions, perhaps exploring first and reacting with compassion second, or vice versa. Regardless, a new perspective emerges. This new perspective represents a modification to the schematic structure. This modification may be a simple deactivation (e.g., the triggering situation is seen through a different lens and thus the depressogenic construal no longer applies and becomes dormant), or a more complex alteration (e.g., the depressogenic construal itself changes).

**Step 5:** Client tests this changed perspective (seeing from a different schematic structure, or a changed one) by scanning back through memories that may support or invalidate the change, and probing other beliefs about the self to see what might need to be accommodated for this change to be consolidated.

**Step 6:** Client re-assesses the self/self-in-relation-to-the-world from this new perspective. Clients make more room for self and others to be vulnerable/get needs met, become proactive about their futures, endorse more adaptive appraisals of self and others.
Component Descriptions

1. Dysfunctional Appraisal
Client demonstrates dysfunctional (overly restrictive, invalid, or maladaptive) cognition, usually as a negative view of self or other, or as negative behaviors towards self, e.g. minimizing, criticizing, invalidating. These negative statements may be embedded in a situation. Negative feeling is not associated directly to the dysfunctional cognition; instead, negative feeling is related to the conclusion or appraisal that results from this dysfunctional cognitive process. Problematic core beliefs that are taken as statements of fact/bereft of emotion would be coded here.

Key Criteria: There is an overly rigid, invalid, or maladaptive appraisal. Contextual cues, and level and quality of emotional experience, must be considered.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Flexibility</th>
<th>Statements tend to be global (unlikely to contain dialectical statements such as, “although”), and the client to be fully immersed in this perspective. Appraisals are inflexible, overly-generalized, no sense of alternatives being possible.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stance to the problem</td>
<td>Reaction (to a problem or situation) without reflection</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Beliefs stated as facts or are not evaluated; validity of perspective is not questioned</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense that the client is applying some type of implicit knowledge about the self/other/world that is overly simplistic</td>
</tr>
</tbody>
</table>

Example:
I don't want to be an imposition, so I try to stay out of the way. I'm imposing. She said she didn't really like to be alone and that she was excited for me to stay with her, but she's got to resent it at some level. It's got to be an inconvenience.
2. Elaborating the appraisal

The maladaptive appraisal is elaborated and contextualized with description of episodic (specific, detailed) memories, including specific situation(s) associated with it.

**Key Criteria:** Elaboration and narrowing of what the dysfunctional appraisal is about. It is not necessary to fully grasp underlying assumptions or the maladaptive construal to receive this rating, but the client must show evidence of trying to differentiate *this* problem or experience from other experiences.

**Aspects of client’s process to consider when making judgments:**

<table>
<thead>
<tr>
<th>Stance to the problem</th>
<th>Contextualizes and elaborates a reaction to grasp its meaning: explains why something is problematic; shares episodic memories that help elaborate a problem; provides examples with the intent of sharing/identifying information about the self or problem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>When evaluation is present, process involves accessing or providing evidence “for” pre-existing maladaptive belief</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense that an underlying schematic structure has been activated, and the scope of the problem/its personal meaning is emerging</td>
</tr>
</tbody>
</table>

**Elaboration is not:**
- Re-telling without trying to explain the problem
- Explaining the fears/negative feelings/assumptions that result from having the DA, nor explaining how one copes with these negative effects, e.g., “I don't want to be an imposition [DA], so I try to stay out of the way [how copes with DA]. I’m so angry that I’m imposing [negative feeling as if DA were true]”. These statements have the flavour of the client speaking as if the DA were true, without a need to even “look at the evidence” of why they might believe it so certainly.

**Elaboration is:**
- Trying to explain, e.g., “Well, …” or “I think it’s because…” or “It reminds me of …”
- Looking for the trigger in a situation
- Taking one step away from being fully immersed in, to talking about, or looking at, the DA.

**Example:**

Well, when I went there she didn't know me at all. I guess-I found that kind of surprising, you know? Especially in as big a city as this is. She just said, "Susan, bring her over here" and she handed me the keys to the apartment and said "Come and go as you please" and it made me feel (pause, voice becomes emotional) kind of guilty, I guess. I felt-uhm-like I was taking advantage of her. That maybe I should find some other place that I could stay.
3. Accessing/Acknowledging Vulnerability

Client expresses vulnerability, either directly or emotionally e.g. sadness about perceiving self as weak, vulnerable, or limited; feeling stretched too far, beyond coping, etc. There is a sense of poignancy for example perceiving self as being unlovable. This stage is often associated with negative emotion, weeping, tears. The client is hurt by seeing themselves, themselves in relation to others, or themselves in relation to the world this way, experiences the belief as distressing and/or problematic. There is a sense that the client is allowing/acknowledging/confessing painful information, beginning to access a core belief.

Key Criteria: The allowing of a vulnerable experience of the self must be present; the client must show evidence of accessing and/or acknowledging vulnerability. They must acknowledge the self as limited, the self as wanting things it didn’t get/doesn’t believe it will ever get, etc.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Emotional tone</th>
<th>Poignant, authentic, expresses negative emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stance to the problem</td>
<td>Sees self-as-limited or resources-as-insufficient, including self-as-unlovable or unacceptable</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense that the client has accessed the depressogenic construal, as if some previously implicit knowledge about the self that contributed to generating the dysfunctional appraisal has been allowed into awareness.</td>
</tr>
</tbody>
</table>

Vulnerability is not:
- Blame: self-blame for having failed, other-blame for not being attentive, etc.

Vulnerability is:
- Poignant, at times expressed in evocative images “walking on thin ice”
- Client admitting something about the self, including the admission of guilt (not self-blame)
- Allowing the vulnerability to admit what makes one feel so sad
- Something that you or someone else could use against you to make you feel bad
- Saying something painful out loud (explicitly)
- The implicit is made explicit here: the client must become aware of, or express, what hurts

Example:

I don't want her to feel that she has to go out of her way at all and (pause) I just feel like I'm in the way (voice becomes more emotional). She’ll resent me.
4a. Shift: Softening

Client enacts a considerate, compassionate or protective stance towards self or other. This may present as wanting to be fairer or more realistic in their assessment of themselves/others. Alternatively, the therapist enacts this stance towards client or other, and client accepts this stance and responds in a way that indicates they are clearly following with the therapist.

Key Criteria: There must be evidence of new compassion for self or other: the client must demonstrate some acceptance of self/other as is, a loosening of the negative evaluative aspect or an increased gentleness. A positive evaluation is not necessary to reach this threshold.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Emotional tone</th>
<th>A loosening or decrease in tension; may grow reflective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stance to the problem</td>
<td>Reactive: Perceives maladaptive (e.g. overly harsh) or invalid (e.g. over-generalised) quality in construal</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluative statements generated from a positive or neutral stance; client may begin to share positive or valued qualities of self/other</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense the client is validating or asserting self/other in a way that challenges a previously negative evaluation, as if new knowledge is being applied</td>
</tr>
</tbody>
</table>

Softening is not:
- A shift from blame to sadness, or a focus on what is sore: although these both carry an element of compassion, in both cases the client would likely be demonstrating deepening Vulnerability

Softening is:
- Looking at self in a less painful, more considerate way
- A gentler version of the DA or of a vulnerable statement
- A “bottom-up” process emerging from the experience of vulnerability

Example:

I mean I know I’m not in the way – I know I have a hard time taking. You know, I want to feel like I can say yes and accept help.
4b. Shift: Shifting Perspective

Client considers problem from a different perspective; perceives new aspects of situations, or recalls information that opposes, challenges, or diffuses the dysfunctional appraisal/construal. This may include seeing the situation/reactions as part of a larger pattern. Alternatively, the therapist takes on the exploratory stance. If the latter, the client accepts this stance and responds in a way that indicates they are clearly following with the therapist.

Key Criteria: There must be evidence of seeing more, or more broadly. When clients are at this stage, it is common to see new information emerging; there may be a sense that an alternative perspective is desirable or even imaginable to the client, but it is currently being dismissed or judged to be unattainable. The client must move beyond recognition that a different way of being/new perspective is possible, and take on a new perspective.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional tone</td>
<td>A loosening or decrease in tension; may grow reflective or express surprise at new perspective</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Highly flexible</td>
</tr>
<tr>
<td>Stance to the problem</td>
<td>Reflective: Decoupling reaction from the triggering problem/situation, creating potential for new meaning. Exploring.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Uses new standards for assessing the self/self-in-relation-to-world</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense of gaining distance, expanding focus, seeing more or more broadly, so that the negative evaluative aspect no longer applies to a specific event.</td>
</tr>
</tbody>
</table>

Shifting Perspective is not:
- Multiple shifts across many previously dysfunctional appraisals: that is a new perspective that is being applied in the context of one’s life, so client likely demonstrating Evaluation

Shifting Perspective is:
- Elaborating from a new perspective, e.g. “I used to think this [elaboration], but now with this new information, I can think about the situation in this other way [shifting perspective].”
- New awareness that the DA or Vulnerability is part of a pattern (and NOT that the way the person copes with the DA is part of a pattern), or that self has constructed the problem
- “Evidence against” the DA; noticing the “cost” of holding the DA is a type of evidence-against

Example:
C: I discount her words.
T: Well, for now, what's important is just that you're able to see yourself discounting.
C: I didn't recognize it before, but that's what I'm doing-I do that in everything
5. Evaluating new perspective

Client considers implications of the changed perspective, “If I look at things this way, what does it mean to/about me? What could this mean in the context of my life?” Includes evaluating whether new perspective “fits”.

**Key Criteria:** There must be evidence that the client has applied the new perspective to self. When clients are at this stage, it is common to see consideration of the implications or consequences of what it would mean to hold a new perspective, e.g. articulating fears such as that a newly perceived inter- or intrapersonal demand is too great. If client moves out of task before some new meaning is made – for example if the conclusion is “It just seems really bizarre” – then this indicates they have perceived new aspects of a situation but are not able to evaluate and consolidate its meaning.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Emotion tone</th>
<th>Low tension, reflective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Highly flexible</td>
</tr>
<tr>
<td>Stance to the problem</td>
<td>Proactive: Attention is towards trying to derive the meaning of the new information</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluates the quality of the new information, what it means with regards to old standards (and lets go of old standards). Considers how this new information or way of seeing would affect the self.</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense the client is involved in reflective evaluation, allowing underlying structures to change by checking what might need to be accommodated.</td>
</tr>
</tbody>
</table>

**Evaluation is:**
- Still focused on current or past situations
- A broadening outward to various situations or perspectives
- Applying a new perspective so that it can be evaluated/consolidated across multiple situations

**Example:**
C: *I didn’t recognize it before, but that’s what I’m doing—I do that in everything* (pause), so even if what I wanted is positive reinforcement, I don't accept it even if I get it. … I remember when I wanted to go back home—it was made very clear to me that my parents would tolerate me, but they didn’t really want me to do that. And I think this had an effect on, on the way I feel about anyone going out of their way for me. That I don't want that. I think it would have made things much better if I just stayed home a few months. I hope my children learn a different lesson. I don't want them to think they can't depend on us. … I want them to know that we’re there if they need us.
6. Reappraising

The client has clearly formulated a new appraisal that is experienced as less problematic, or recognizes that holding the old view of the self/other is a choice. This may not always be explicitly stated but may be inferred from what the client says. This re-evaluation is accompanied by improved mood (e.g., laughter).

Key Criteria: There must be a clearly endorsed adaptive appraisal that is thematically or contextually related to the dysfunctional appraisal, OR evidence of taking on a constructivist stance towards the dysfunctional appraisal.

Aspects of client’s process to consider when making judgments:

<table>
<thead>
<tr>
<th>Emotional tone</th>
<th>Laughter, relief, and/or excitement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship to the problem</td>
<td>Proactive stance towards managing/coping with the problem, reassessing personal limits and resources.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluates self/other using a comprehensive knowledge about self/other, including past experiences</td>
</tr>
<tr>
<td>Overall impression</td>
<td>There is a sense the client is attaining a more differentiated understanding of self/other, is re-creating or re-appraising. It is as if new knowledge is being assimilated and applied beyond the immediate situation.</td>
</tr>
</tbody>
</table>

Reappraising is not:
- A “balanced thought” about a current or past situation; the client is likely demonstrating a Shifting Perspective

Reappraising is:
- Future-oriented
- Way of thinking is broader, more expansive; seemingly disconnected experiences may become synthesized in a new and adaptive way
- A commitment to self (or other): taking care; acceptance; validating own feelings; attending to needs, wants, or responsibilities – positive behaviors towards the self
- New room for self and other, e.g. “I realize now there is room for both of our agendas”
- Resiliency, or a shift to a more optimistic stance

Example:
Because people can be there for you. I want to be there for my children. And somehow Susan’s mom being there for me is a part of that.
Rating Rules

1. **Rate the dysfunctional appraisal task:** Clients can engage in a variety of tasks in psychotherapy, e.g., creating a therapeutic alliance, grieving a loss, etc. The DRS-DA is intended to be applied only to the dysfunctional appraisal task. The beginning of this task is marked by the emergence of the Dysfunctional Appraisal component OR by reference to a past Dysfunctional Appraisal task being continued, e.g., “Last week I thought I was an imposition [past DA referred to], but now I see I’m the only one thinking that[shifting perspective]. And when I think about it, I do this to myself a lot [evaluating].” Client processing is then tracked continuously, identifying components as they emerge. If clients move out of task temporarily (e.g., attending to a knock at the door) and return to the task, rate section as “Out of Task” and continue rating.

2. **Rate client behaviors:** The DRS-DA is a measure of client process, therefore ratings are based on client statements. However, therapist statements cannot be fully ignored. Therapist statements often summarize information from previous sessions, or can serve as a guide towards particular content or process. **Clear agreement from the client and subsequent change in client’s content and/or process** serve as indicators that therapist statements should be considered when assigning a rating, for example:

   T: It reminds me of last session when you said, "you have no right to exist."
   C: I think it is. [Agreement] … And it's still there. I mean sometimes there’s still that overwhelming, subconscious feeling that that's the case really. [Change in content]

   In this example, therapist verbalizes for the observer something previously stated. If it is unclear whether client agrees – e.g., “Probably yeah” – or if client continues with previous content/process as if therapist statement was unheard or ignored, then these therapist statements should be disregarded.

3. **To assign a rating, criteria must be met:** It is common to see clients “in the process” of a component, for example, being in the process of generating a new adaptive appraisal. To decide whether there is “enough” evidence that client process has shifted, check the section “Key Criteria” within each component description.

4. **Rate the emergence of a new component:** Client behaviour is often nuanced with both growth-promoting and maladaptive aspects; observers seek indicators that a new client process which meets key criteria has emerged. Therefore, assign the highest rating possible that meets all key criteria.
Appendix C

Table 11
Sequences Indicating Order of First Emergence of Each Component within a Session, Sorted By DRS-DA Score

<table>
<thead>
<tr>
<th>Client</th>
<th>Outcome</th>
<th>Group</th>
<th>Change Session (CTSC-R)a</th>
<th>DRS-DA Scoreb</th>
<th>Sequence of First Emergence of Componentsc</th>
</tr>
</thead>
<tbody>
<tr>
<td>C09</td>
<td>Poor</td>
<td>Highest (3.44)</td>
<td>2</td>
<td>El</td>
<td></td>
</tr>
<tr>
<td>C44</td>
<td>Poor</td>
<td>Highest (6.17)</td>
<td>2</td>
<td>El</td>
<td></td>
</tr>
<tr>
<td>C51</td>
<td>Good</td>
<td>Lowest (1.50)</td>
<td>3</td>
<td>El / V</td>
<td></td>
</tr>
<tr>
<td>C61</td>
<td>Good</td>
<td>Lowest (2.56)</td>
<td>3</td>
<td>El / V</td>
<td></td>
</tr>
<tr>
<td>C79</td>
<td>Good</td>
<td>Lowest (3.75)</td>
<td>3</td>
<td>El / V</td>
<td></td>
</tr>
<tr>
<td>C54</td>
<td>Good</td>
<td>Lowest (4.31)</td>
<td>3</td>
<td>El / V</td>
<td></td>
</tr>
<tr>
<td>C14</td>
<td>Good</td>
<td>Lowest (2.13)</td>
<td>4</td>
<td>El / V / S</td>
<td></td>
</tr>
<tr>
<td>C39</td>
<td>Poor</td>
<td>Highest (2.13)</td>
<td>4</td>
<td>El / V / S</td>
<td></td>
</tr>
<tr>
<td>C72</td>
<td>Poor</td>
<td>Highest (4.38)</td>
<td>4</td>
<td>El / V / S</td>
<td></td>
</tr>
<tr>
<td>C27</td>
<td>Good</td>
<td>Lowest (5.19)</td>
<td>4</td>
<td>El / V / S *</td>
<td></td>
</tr>
<tr>
<td>C46</td>
<td>Poor</td>
<td>Highest (5.88)</td>
<td>4</td>
<td>El / S / V *</td>
<td></td>
</tr>
<tr>
<td>C53</td>
<td>Poor</td>
<td>Highest (6.06)</td>
<td>4</td>
<td>El / S *</td>
<td></td>
</tr>
<tr>
<td>C41</td>
<td>Good</td>
<td>Highest (6.56)</td>
<td>4</td>
<td>El / V / S</td>
<td></td>
</tr>
<tr>
<td>C31</td>
<td>Good</td>
<td>Lowest (2.88)</td>
<td>5</td>
<td>Ev / El / S *</td>
<td></td>
</tr>
<tr>
<td>C51</td>
<td>Good</td>
<td>Highest (5.44)</td>
<td>5</td>
<td>El / S / Ev *</td>
<td></td>
</tr>
<tr>
<td>C27</td>
<td>Good</td>
<td>Highest (6.81)</td>
<td>5</td>
<td>S / Ev</td>
<td></td>
</tr>
<tr>
<td>C14</td>
<td>Good</td>
<td>Highest (7.00)</td>
<td>5</td>
<td>El / S / Ev</td>
<td></td>
</tr>
<tr>
<td>C54</td>
<td>Good</td>
<td>Highest (7.00)</td>
<td>5</td>
<td>S / Ev / El / V *</td>
<td></td>
</tr>
<tr>
<td>C55</td>
<td>Poor</td>
<td>Highest (5.06)</td>
<td>6</td>
<td>El / S / R *</td>
<td></td>
</tr>
<tr>
<td>C61</td>
<td>Good</td>
<td>Highest (6.50)</td>
<td>6</td>
<td>S / Ev / El / R *</td>
<td></td>
</tr>
<tr>
<td>C79</td>
<td>Good</td>
<td>Highest (7.00)</td>
<td>6</td>
<td>S / Ev / R</td>
<td></td>
</tr>
</tbody>
</table>

a Indicates session is the Highest or Lowest Reported Change session for that client, as determined by client self-reported change score, CTSC-R.
b Highest degree of resolution of a dysfunctional appraisal task within the session.
c Sequence of the first appearance of a component reads from left to right. Although multiple occurrences of each component may have been observed in a session, in this summary only the first observation is shown. Components: El=Elaboration, V=Vulnerability, S=Shift, Ev=Evaluation, R=Reappraisal.* Components emerged across multiple tasks within the same session.