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# Emotional and cognitive processes in psychotherapy for complex mental health disorders: Linguistic analyses of significant therapist-patient interactions

Kye L. McCarthy  
*University of Wollongong*

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**Emotional and cognitive processes in psychotherapy for  
complex mental health disorders: Linguistic analyses of  
significant therapist-patient interactions**

A thesis submitted in partial fulfilment of the requirements  
for the award of the degree

**DOCTOR OF PHILOSOPHY**  
**(Clinical Psychology)**

**From the University Of Wollongong**

**by**

**Kye L. McCarthy**

**BPsyc(Hons)**

School of Psychology

2015

## **CERTIFICATION**

I, Kye L. McCarthy, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy (Clinical Psychology), in the School of Psychology, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Kye L. McCarthy

2015

## TABLE OF CONTENTS

<b>CERTIFICATION.....</b>	<b>i</b>
<b>TABLE OF CONTENTS .....</b>	<b>ii</b>
<b>LIST OF TABLES.....</b>	<b>vi</b>
<b>LIST OF FIGURES.....</b>	<b>vii</b>
<b>LIST OF PUBLICATIONS AND PRESENTATIONS FROM THIS THESIS ....</b>	<b>viii</b>
<b>ABSTRACT.....</b>	<b>ix</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>x</b>
<b>CHAPTER ONE</b>	
<b>INTRODUCTION AND AIMS .....</b>	<b>1</b>
1.1. PSYCHOTHERAPY RESEARCH .....	1
1.1.1. Significant Change Events .....	1
1.1.2. Linguistic Processes in Psychotherapy.....	3
1.1.3. Emotion and Cognition and Neurological Outcomes in Psychotherapy .....	5
1.1.4. Diagnostic Considerations in Psychotherapy Research .....	7
1.2. RATIONALE OF THE THESIS .....	9
1.2.1. Theoretical Considerations .....	10
1.2.2. Limitations of Previous Research.....	11
1.3. AIMS OF THE THESIS .....	13
1.4. OUTLINE OF THE THESIS .....	14
<b>CHAPTER TWO</b>	
<b>STUDY 1: PSYCHODYNAMIC CHANGE IN PSYCHOTHERAPY: CYCLES OF PATIENT-THERAPIST LINGUISTIC INTERACTIONS AND INTERVENTIONS.....</b>	<b>16</b>
2.1. INTRODUCTION .....	17

2.2. METHOD .....	22
2.2.1. Data.....	22
2.2.2. Measures .....	23
2.2.2.1. <i>The Therapeutic Cycles Model (TCM).</i> .....	23
2.2.2.2. <i>The Operationalized Psychodynamic Diagnosis 2 (OPD-2) and the Heidelberg Structural Change Scale (HSCS).</i> .....	24
2.2.3. Procedure .....	25
2.2.3.1. <i>Data analysis.</i> .....	25
2.2.3.2. <i>Inter-rater reliability.</i> .....	27
2.2.3.3. <i>Statistical analysis.</i> .....	27
2.3. RESULTS .....	27
2.4. DISCUSSION .....	32
 <b>CHAPTER THREE</b>	
<b>STUDY 2: EARLY IN-SESSION COGNITIVE-EMOTIONAL PROBLEM-SOLVING PREDICTS TWELVE-MONTH OUTCOMES IN DEPRESSION WITH PERSONALITY DISORDER .....</b>	<b>39</b>
3.1. INTRODUCTION .....	40
3.1.1. Therapist and Patient Factors in Psychotherapy Process .....	40
3.1.2. Psychotherapy for Major Depression and Personality Disorder .....	41
3.1.3. Emotion and Cognition in Psychotherapy .....	42
3.1.4. The Therapeutic Cycles Model .....	43
3.2. METHOD .....	46
3.2.1. Data Source .....	46
3.2.1.1. <i>Participant selection.</i> .....	47
3.2.1.2. <i>Psychotherapy.</i> .....	49
3.2.2. Measures .....	50

3.2.2.1. <i>The Therapeutic Cycles Model.</i> .....	50
3.2.3. Procedure .....	50
3.2.3.1. <i>Data analysis.</i> .....	51
3.2.3.2. <i>Statistical analysis.</i> .....	51
3.3. RESULTS .....	52
3.3.1. Group Differences in the Temporal Sequence of TCM Variables .....	52
3.3.1.1. <i>0-20 minutes of session.</i> .....	52
3.3.1.2. <i>21-40 minutes of session.</i> .....	52
3.3.1.3. <i>41-60 minutes of session.</i> .....	53
3.3.2. Within Group Temporal Sequence of TCM Variables.....	54
3.3.2.1. <i>Sessions of most improved patients.</i> .....	54
3.3.2.2. <i>Sessions of least improved patients.</i> .....	55
3.3.3. Group Differences on TCM Variables .....	55
3.4. DISCUSSION .....	57
3.4.1. 0-20 Minutes of Session .....	58
3.4.2. 21-40 Minutes of Session .....	60
3.4.3. 41-60 Minutes of Session .....	61
3.4.4. Overall in Session 3 .....	62

## CHAPTER FOUR

<b>STUDY 3: SIGNIFICANT CHANGE EVENTS IN PSYCHOTHERAPY: IS COGNITION OR EMOTION MORE IMPORTANT? .....</b>	<b>66</b>
4.1. INTRODUCTION .....	67
4.2. METHOD .....	70
4.2.1. Data Sample.....	70
4.2.2. Measures.....	71

4.2.3. Procedure .....	75
4.2.3.1. <i>Data and statistical analysis</i> .....	75
4.3. RESULTS .....	76
4.4. DISCUSSION .....	78
<b>CHAPTER FIVE</b>	
<b>OVERALL SUMMARY AND FUTURE DIRECTIONS.....</b>	<b>83</b>
5.1. INTEGRATION OF RESULTS .....	83
5.2. LIMITATIONS AND STRENGTHS .....	86
5.3. FUTURE DIRECTIONS .....	88
<b>REFERENCES .....</b>	<b>90</b>
<b>APPENDIX A.....</b>	<b>108</b>
<b>APPENDIX B .....</b>	<b>109</b>
<b>APPENDIX C.....</b>	<b>110</b>



## LIST OF TABLES

### Chapter Three- Study 2

Table 1. <i>Comparison between Characteristics of Most Improved Patients and Least Improved Patients at 12-Month Follow-up (N=20).</i> .....	49
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Table 2. <i>Comparison between Most Improved Patients and Least Improved Patients at 12-Month Follow-up on TCM variables in Session 3 (N=20).</i> .....	57
---	----

### Chapter Four- Study 3

Table 1. <i>Description of HAETCAS Categories and Rules for HAT Ratings</i> .....	73
---	----

Table 2. <i>Occurrence of HAETCAS Categories in Significant Events</i> .....	77
--	----

Table 3. <i>Emotional and Cognitive Language used in Significant Events Compared to Non-events</i> .....	78
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## LIST OF FIGURES

### Chapter Two- Study 1

*Figure 1.* Graphical output from the Therapeutic Cycles Model for patient and therapist language separately. .... 28

*Figure 2.* Analysis of the Michael case examining the Therapeutic Cycles Model emotion-abstraction patterns (Mergenthaler, 2008) separately for patient and therapist, and their correspondence over the course of the 16 sessions..... 29

*Figure 3.* Heidelberg Structural Change Scale ratings by session for the four foci of identity, guilt, mother and wife (for further information, see the text). .... 31

### Chapter Three- Study 2

*Figure 1.* Between group differences in time spent in TCM patterns during three segments of session 3 (Combined therapist-patient data;  $N=20$ )..... 54

## LIST OF PUBLICATIONS AND PRESENTATIONS FROM THIS THESIS

### Publications

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## ABSTRACT

Background: Significant change events are defined moments within psychotherapy that provide rich data on effective processes. The therapist-patient conversation reveals complex emotional-cognitive linguistic features of these processes. This thesis aimed to investigate how these variables contribute to psychotherapeutic outcomes. Method: Three sequential studies were undertaken investigating patients with complex mental health disorders, primarily utilising the Therapeutic Cycles Model (Mergenthaler, 1996) method. Study 1 explored the correspondence between therapist-patient emotional-cognitive dialogue and the patient's dynamic structural change in focal problems across four months of a single case. Study 2 investigated the sequence of therapist-patient linguistic processes in early sessions ( $N=20$ ) in relation to long-term treatment outcome. Study 3 further examined the emotional-cognitive characteristics of the change events identified in Study 2 using observer-ratings and computerised analysis. Results: Change events were identified and emotional-cognitive process analyses yielded new discoveries about structural dynamic change (Study 1). Emotional-cognitive change events in the third session of therapy predicted 12-month clinical outcomes (Study 2). Therapist-patient dyads most improved spent significantly more time early in session in change events, whilst least improved moved into change events late in session (Study 2). Within change events, there were more positive and negative emotion words, more cognitive insight words, greater awareness and insight into thoughts and feelings, and instances of strengthening of the therapist-patient alliance (Study 3). Conclusion: The therapeutic dialogue is a powerful vehicle connected to dynamic change, with both patient and therapist playing important roles. Together the results underscore the importance of the interaction between emotional engagement and cognitive insight that promote successful outcomes in psychotherapy.

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*“All speech, written or spoken, is in a dead language until it finds a willing and prepared hearer”* – Robert Louis Stevenson, Lay Morals (1879).

# **CHAPTER ONE**

## **INTRODUCTION AND AIMS**

### **1.1. PSYCHOTHERAPY RESEARCH**

Psychotherapy has consistently been found effective (Luborsky, Singer, & Luborsky, 1975; Wampold, 2000, 2001). A question that remains in the field of psychotherapy research is *how* psychotherapy works (Miller, Hubble, Chow, & Seidel, 2013). Research into psychotherapeutic methods continues to look for ways to improve outcomes for patients (Lambert, 2007). Change process research investigates the nature of therapeutic change in terms of both in-therapy processes, as well as the unfolding sequence of client change (Elliott, 2010; Krause et al., 2007). Understanding of the mechanisms of change within therapy has been recognised as a critical area of inquiry in order to continually develop, in terms of design and implementation, effective therapeutic interventions (Ablon, Levy, & Katzenstein, 2006; Kopta, Lueger, Saunders, & Howard, 1999). Researchers have long investigated psychotherapeutic variables that are related to outcome, including common therapeutic factors, specific therapeutic techniques, patient variables and therapist variables (Lambert, Bergin, & Garfield, 2004). Fewer studies, however, have investigated in-depth what successful and unsuccessful sessions look like at the level of the patient-therapist interaction. Further, few methodologies have been found to be capable of disentangling complex associations between patient, therapist, their relationship, and outcome in studies of these psychotherapeutic processes (Norcross & Wampold, 2011).

#### **1.1.1. Significant Change Events**

Identifying helpful moments in psychotherapy is an established method of exploring the patient-therapist processes linked to outcome. Investigating such significant events

in therapy provides rich data on psychotherapeutic processes, and has been a long-standing approach beginning with experiential therapies (Elliott, 1985). Research into significant events has spread to various types of therapies with employment of different methods of identifying helpful events.

Patient-selected significant events in experiential therapies were found to involve improvement of the therapeutic relationship or personal change (Elliott, Watson, Greenberg, Timulak, & Freire, 2013). In cognitive-behavioural therapies, significant events have been identified as containing problem solution processes (where ways of coping are worked out and rehearsed in the session), with cognitive change found in critical sessions prior to early treatment sudden gains identified by researchers (Llewelyn, Elliott, Shapiro, Hardy, & Firth-Cozens, 1988; Tang, DeRubeis, Beberman, & Pham, 2005). Insight moments in psychodynamic therapy were often linked to themes from previous sessions and involved awareness of painful emotions, and were often moments of awareness and contact with the therapist (Elliott et al., 1994; Llewelyn, et al., 1988). Recent work in narrative therapy has identified action, reflection, protest, reconceptualisation, and performing change (or behavioural change) as types of significant events rated by independent researchers using the Innovative Moments Coding System (Gonçalves, Ribeiro, Mendes, Matos, & Santos, 2011). Innovative moments have been linked to therapeutic outcomes (Matos, Santos, Gonçalves, & Martins, 2009). It is interesting to note that there is limited literature investigating significant events specifically in behaviour therapy, however, behavioural change is often noted to be contained within significant events across therapeutic orientations.

Methods have also been employed to examine significant moments across therapeutic orientations. Krause, et al. (2007) adopted a hierarchy of 19 generic change



indicators used by independent researchers to identify change moments in therapy. These indicators included acceptance, expression, questioning, manifestation of new behaviour or emotions and discovery of things like problems, emotions, and relationship to self and others. Llewelyn (1988) developed the Helpful Aspects of Therapy (HAT) form, where patients and therapists reported, described and rated moments in therapy that they considered to be particularly helpful or hindering to a session. To further delineate the nature of the moments reported using the HAT, Robert Elliott developed the Helpful Aspects of Experiential Therapy Content Analysis System (HAETCAS) which was modified in the more recent study by Castonguay, et al. (2010) and includes categories such as awareness, insight, positive views, metaperception, alliance strengthening, relief and problem clarification and solution. Castonguay, et al. (2010) conducted a large study of 1500 therapeutic events identified by patients and therapists across therapy orientations, finding that events classified as being high in self-awareness were considered the most helpful to therapy.

### **1.1.2. Linguistic Processes in Psychotherapy**

To investigate the roles of the patient and therapist in the therapeutic process, and, in particular, to do this via the examination of significant events in psychotherapy, new sensitive methods continue to be developed. Linguistic processing technologies are one such innovative window into clinical progress. Computer based linguistic measures first began to be developed in psychotherapy research over 40 years ago, with computer-assisted content analysis, first introduced by Stone, Dunphy, Smith and Ogilvie (1966) with their General Inquirer system. Stone et al. (1966, p. 5) defined content analysis as “any research technique for making inferences by systematically and objectively identifying specified characteristics within text.”

A modern general content-analysis program which has been found useful to study the psychological aspects of speech and text is the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007). This computer-assisted method studies emotional, cognitive and structural aspects of an individual's verbal or written expression. The LIWC compares transcripts to its dictionary, and provides counts of words within the transcript that tap into various domains or word categories. The 66 thematic word categories relate to the dimensions of Linguistic Processes, Psychological Processes, Personal Concerns and Spoken Categories. The LIWC has been validated across a number of studies, and the language categories have been linked to various psychological processes (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007).

Russell (1989) introduced the concept of using linguistic technologies in psychotherapy process research, and importantly highlighted the need for such a technology to be based in a strong theory for the process of change it would measure. Whilst there have been a number of computer-assisted content analyses used in psychotherapy research, few have provided a comprehensive theory for the processes of change occurring within a therapy session that is not specific to one brand of psychotherapy. In 1996, however, Mergenthaler presented a newly developed computer-assisted text analysis for verbatim transcripts of therapy sessions- the Therapeutic Cycles Model (TCM). The TCM arose out of a theory for the mechanisms of change across schools of psychotherapies and has been shown to reliably and objectively identify significant change events across various therapies (Mergenthaler, 2008). The TCM identifies significant change events as 'connecting cycles,' describing particular aspects of the interaction between client and therapist that have greater complexity and depth, classified by high levels of emotion and cognition. Research using the TCM has

attested to the validity of the method, consistently showing that therapies with good outcomes are characterised by an increasing number of these significant change events with high emotional tone and cognition, even from early sessions (Mergenthaler, 2008). Mergenthaler (2008) outlines the Resonating Minds Theory (RMT) as the theoretical basis for the TCM. “Resonating minds” refers to the specific communication and interaction between the mind of the patient and therapist, at both a psychological and neurobiological level (Mergenthaler, 2008). The RMT identifies three factors simultaneously at work in the process of therapeutic change: affective experiencing, cognitive mastery, and behaviour (Mergenthaler, 2008). According to the RMT, the therapeutic process involves a “deepen-and-provide” state, which functions as problem activation, as well as a “broaden-and-build” state, which functions as problem solving (Mergenthaler, 2008). Deepen-and-provide involves the retrieval of conflictual material to be worked on in therapy and is typically accompanied by negative emotion, whereas broaden-and-build involves a focus on more positive emotions alongside cognitive processing, in order to work through problems and achieve new insights (Mergenthaler, 2008). TCM literature suggests that negative emotion occurs first in a therapeutic session for problems to be elicited (known as ‘deepen-and-provide’) followed by an increase in positive emotion for key moments of problem solving to begin (known as ‘broaden-and-build’; Mergenthaler, 2008). A body of research has shown connecting cycles to be related to a number of psychological and therapeutic processes including attachment style, psychophysiological processes, metaphor use in therapy, and plan activation behaviour (Buchheim & Mergenthaler, 2000; Gelo & Mergenthaler, 2012; Lepper & Mergenthaler, 2005, 2007, 2008; Villmann, Liebers, Bergmann, Gumz, & Geyer, 2008; Walter et al., 2010).

### **1.1.3. Emotion and Cognition and Neurological Outcomes in Psychotherapy**

Although research into emotion and cognition in psychotherapy is not new, more recent literature has consistently found both to be important variables in the therapeutic process. Functional neuroimaging studies have investigated the neural effects of psychotherapy. Such studies have found that treatment response is associated with significant metabolic changes in limbic and cortical regions (Benelli et al., 2012; Goldapple et al., 2004; Linden, 2006). Long-term therapy for depression has been found to induce changes in neural pathways implicated in emotional reactivity and control (Buchheim et al., 2012), and a recent meta-analysis found that brain structures relevant to cognitive control for internal, emotional, self-referential material were modulated in psychotherapies for depression and anxiety (Messina, Sambin, Palmieri, & Viviani, 2013).

A number of studies have also investigated the relevance of emotional and cognitive language use in sessions to outcome in psychotherapy. Isen, Daubman and Nowicki (1987) found a relationship between positive emotion and cognitive abilities of the patient. These authors particularly found that positive emotions improve creative problem solving skills by increasing the tendency to combine and relate material in new ways. Fredrickson (1998, 2001) first introduced the broaden-and-build model of positive emotions, stating that positive emotions broaden one's thought-action repertoire, which in turn has the effect of building one's personal resources, including psychological, intellectual, social and physical resources. Joiner et al. (2001) tested the broaden-and-build model of positive emotion in the treatment of suicidal patients. These authors found that patients with higher positive affectivity had fewer suicidal symptoms, and that this was primarily due to more positive problem-solving attitudes. Hölzer, Pokorny, Kächele and Luborsky (1997) interestingly found a relationship between the therapist's emotional language and outcome for the patient in

psychotherapy. They found that therapists verbalised more emotions than their patients, and that more successful therapists named more emotions within sessions.

#### **1.1.4. Diagnostic Considerations in Psychotherapy Research**

Major depression is a prevalent diagnosis worldwide, linked to significant functional impairment and morbidity (Bromet et al., 2011; Kessler et al., 2005). Further, major depression is often persistent and recurrent, with research suggesting that of the patients who have had one major depressive episode, up to half will have another in their lifetime, and of those patients that have had at least 2 episodes, 70-90% will have a third (Lin et al., 1998). Psychotherapy is considered to be the primary treatment for major depression (National Institute for Health and Clinical Excellence, 2009b). However, major depression is a highly comorbid diagnosis, which may complicate the course of treatment (American Psychiatric Association, 2013).

Personality disorders commonly co-occur with major depressive disorder (APA, 2013). Research has investigated the impact of comorbid personality disorder on the course of depression, finding that personality disorder significantly heightens the risk of persistence of major depression (Levenson, Wallace, Fournier, Rucci, & Frank, 2012; Skodol et al., 2011). Personality disorders are highly prevalent in mental health services, are associated with substantial morbidity and functional impairment, and have been associated with high rates of suicide (Leichsenring, Leibing, Kruse, New, & Leweke, 2011). Personality disorders may variously be marked by pervasive and chronic patterns of self-defeating behaviours, along with an inability to form and maintain interpersonal relationships (Skodol et al., 2002). Psychotherapy is also considered to be the primary treatment for personality disorders (NICE, 2009a), however, psychotherapy with these patients can be highly challenging (Zanarini, 2009). This is due to tendencies for patients with personality disorders to enact chronic

maladaptive relationship patterns and self-defeating behaviours in their relationship with their therapist (Bourke & Grenyer, 2010; Hollon, Thase, & Markowitz, 2002; Zannarini, 2009).

Major depression further co-occurs frequently with substance use disorders (APA, 2013). In particular, cannabis use disorder has been found to co-occur with major depression at a rate of 11% (APA, 2013). Personality disorders have also been found to have high rates of comorbidity with cannabis use disorder, with rates as high as 18% for antisocial, 19% for obsessive-compulsive, and 18% for paranoid personality disorders (APA, 2013). Cannabis is reported to be one of the most widely used illicit drugs, and, in Australia, Canada and the USA, is the most common type of drug dependence after alcohol and tobacco (Hall & Degenhardt, 2009). Recent reviews into the treatment of cannabis use disorders found that psychotherapy is effective (Benyamina, Lecacheux, Blecha, Reynaud, & Lukasiewicz, 2008; Copeland, Clement, & Swift, 2014; Nordstrom & Levin, 2007). Further, it was found that no one therapy was more effective than others at that time (Nordstrom & Levin, 2007).

Psychotherapy for such prevalent and comorbid disorders evidently is important, yet can be complex, and hence, research into psychotherapy for such patients is particularly necessary. Psychotherapeutic processes may also be discovered by comparing and understanding them in relation to patient diagnosis. A new method of examining the therapeutic change process in the context of diagnosis is the Operationalized Psychodynamic Diagnosis-2 (OPD-2), and the corresponding Heidelberg Structural Change Scale (HSCS). In 1992 a group of psychodynamically oriented researchers and clinicians developed a multiaxial diagnostic system in addition to the ICD-10 and the DSM-IV, geared towards aspects of psychodynamic diagnosis (OPD Task Force, 2008).

In 2008, the OPD Task Force released a revised version of the Operationalized Psychodynamic Diagnosis (OPD), the OPD-2.

The Heidelberg Structural Change Scale (HSCS) was developed to better articulate the processes of therapeutic change within the OPD findings (Cierpka et al., 2007). The HSCS examines psychotherapeutic change at the level of the patient's dynamic structural change, that is, change on deeper levels of personality and habitual patterns. It thus allows the quantitative rating of therapeutic change based on the most relevant therapeutic focus points indicated by the OPD-2 (OPD Task Force, 2008). Each stage of the HSCS represents a therapeutically significant step, from a point where a focus problem is warded off, through varying levels of awareness and acceptance of the problem, to integration and resolution in the problem area (Grande, Rudolf, Oberbracht, Jakobson, & Keller, 2004). The HSCS is a reworked version of the Assimilation of Problematic Experiences Scale (APES; Stiles et al., 1990), however, is orientated towards a psychoanalytic model of change processes and anchored to a diagnostic system, the OPD-2 (Grande, Rudolf, Oberbracht, & Pauli-Magnus, 2003). Studies have used the HSCS to predict follow-up outcomes (Grande et al., 2009; Grande, et al., 2003), but also to track the therapeutic processes and progress of the patient and therapist on the key diagnostically-informed focus problems across the course of therapy (Grande, et al., 2004).

## **1.2. RATIONALE OF THE THESIS**

Psychotherapy research is a continually developing area of inquiry moving towards investigating the processes of how therapy works (Miller, et al., 2013). However, few methodologies have been found to be capable of disentangling complex associations between patient, therapist, their relationship, and outcome in studies of

psychotherapeutic processes (Norcross & Wampold, 2011). Neuroimaging studies and studies of language use in psychotherapy have shown that emotion and cognition of both patient and therapist are important to therapeutic outcome, across different brands of psychotherapy (Buchheim, et al., 2012; Hölzer, et al., 1997). The investigation of significant change events in psychotherapy provides an opportunity to identify and examine key moments between patient and therapist that are helpful to outcome. Emotional-cognitive linguistic computerised methods such as the Therapeutic Cycles Model (TCM) and the Linguistic Inquiry and Word Count (LIWC), traditional observer-based methods of identifying and classifying significant events such as the Helpful Aspects of Therapy (HAT) scale and the Helpful Aspects of Experiential Therapy Content Analysis System (HAETCAS), along with diagnostically-informed methods such as the Operationalized Psychodynamic Diagnosis-2 (OPD-2) and the Heidelberg Structural Change Scale (HSCS), provide tools to examine significant events in psychotherapy in novel ways, stepping towards clarifying the roles of patient and therapist in relation to outcome. This is particularly salient in therapies for patients with complex comorbid presentations.

### **1.2.1. Theoretical Considerations**

The impetus for this thesis came from the work of Mergenthaler (1996), who reported compelling and novel findings that the emotional and cognitive language of the patient and therapist in the psychotherapy session could be used to identify and describe key clinically significant moments. Mergenthaler (2008) describes the theoretical model for this work, as discussed above, the Resonating Minds Theory (RMT). The RMT posits that affective experiencing, cognitive mastery and behaviour are the three factors of therapeutic change, and that these are brought about in therapy via the patient and therapist's communication. This communication is proposed to be both inter- and



intrapersonal, a system of interactive communication of the minds of the patient and therapist, which can be examined through their verbal exchanges (Mergenthaler, 2008). Hence, in line with this theory, this thesis aims to further investigate the verbal interactions between patient and therapist, and their relation to therapeutic outcome. To contribute to the body of work examining the relationship between patient-therapist communication and outcomes, it is important that this thesis aims to investigate both patient and therapist language and its dynamic interaction to find how the therapeutic processes that occur between them contribute to outcome, rather than identifying isolated characteristics of either patient or therapist. The temporal location of specific change events between patient and therapist in session has not been identified before. The method chosen allows such an analysis, and is proposed to be investigated here for the first time.

It is acknowledged that causality is central to this theoretical model, that is, that the dynamic verbal interactions between patient and therapist are causal determinants of change. However, the key variables of interest in this model are complex, and determining causality in relationships between variables and therapeutic outcome is challenging. Preliminary investigation of non-causal relationships between the complex key variables in this model is an important preliminary stage of research and will be the focus of this thesis. It is hypothesised based on previous research that this thesis will find significant relationships between patient-therapist language variables and outcome. However, finding a relationship between only patient or only therapist language to outcome, or no relationship between verbal variables and outcome, would cast doubt over the RMT model.

### **1.2.2. Limitations of Previous Research**

Previous research into significant events in psychotherapy has predominately used qualitative methods of event selection, such as patient, therapist or researcher selection or rating of events (Elliott, et al., 1994; Gonçalves, et al., 2011). Whilst these methods are very useful and informative, they are likely influenced by a range of factors in selection. Studies have rarely utilised more objective and quantitative measures of event selection, either alone or in combination with qualitative measures.

The Therapeutic Cycles Model (TCM) provides a method for quantitative selection and investigation of significant events that are related to outcome and well documented in research (Mergenthaler, 2008). However, although the TCM further provides an opportunity to investigate the individual alongside the combined contributions of both patient and therapist in the therapy process, research using the TCM is primarily lacking in analysis of the patient and therapist data separately. Such analysis would be beneficial in order to identify the individual roles of each speaker within the change process, in particular, the interventions of the therapist. The only study that has examined and compared the patient and therapist scores on the language variables separately was Mergenthaler (1996), however this was only done in the single case study, and the use of this method was not fully explored. No further known study has examined patient and therapist language separately within a sample using the TCM. Further, few studies have investigated the nature of early sessions, and the processes in early session that are useful to patients. Research using the TCM has been used in one study to identify change processes in early sessions (Mergenthaler, 1996), but has thus far not investigated the interior sequence of early session language in relation to longer-term outcome.

Studies into significant events have investigated the characteristics of such events across therapeutic orientations. Whilst some common themes emerge, what makes

significant events helpful to treatment is not entirely clear. TCM studies have not comprehensively examined the qualities of emotion and cognition in the identified key moments, and questions regarding the valence of emotion and the type of cognitive contributions remain. Only one previous study has investigated some aspects of the nature of the language of significant change events measured by the TCM, finding greater frequency and length of topics (Lepper & Mergenthaler, 2008).

Research is further limited in utilising a combination of quantitative and qualitative approaches to explore significant events in psychotherapy, in order to collate and compare a variety of information. Whilst the Helpful Aspects of Therapy (HAT) scale is an established method of identifying significant events, it has never been used in concordance with the TCM in order to compare clinically versus linguistically selected events. Further, whilst the Heidelberg Structural Change Scale (HSCS) provides a tool to qualitatively track patient and therapist progress on the focus problems of the therapy over time, including during significant events, few studies have comprehensively done this over the course of a complete therapy. No studies to date have investigated HSCS and TCM concordance.

### **1.3. AIMS OF THE THESIS**

The three studies in this thesis aim to advance the field of psychotherapy research by investigating in-session therapist-patient interactions. This thesis aimed to contribute to the improvement of psychotherapeutic effectiveness by identifying the aspects of these in-session interactions that were helpful, as well as how and why they were helpful. The specific aims were as follows:

1. To investigate the correspondence between two levels of psychotherapeutic processes, firstly at the quantitative level of the patient and therapist emotional

and cognitive dialogue, and secondly at the qualitative level of the patient's dynamic structural change on critical therapeutic focus problems (Study 1).

2. To develop a novel variant of the TCM method separating therapist and patient narrative events to conduct a more in-depth investigation, via a single and complete case of psychotherapy, of the interaction between the individual language used by the patient and therapist, and, in particular, the role of the therapist's language use in the change process (Study 1).
3. To characterise the interior sequence of therapist-patient processes in a therapy session in relation to patient outcome, comparing language during early (minutes 0-20), middle (minutes 21-40) and end (minutes 41-60) segments of session (Study 2).
4. To investigate group differences between therapists and most and least improved patients in their use of emotional-cognitive language across the entirety of a session (Study 2).
5. To qualitatively identify and classify significant change events in a sample of sessions and compare the selection and characteristics of these to linguistically selected events (Study 3).
6. To focus on the linguistic emotional-cognitive significant change events identified in a sample of sessions and explore the characteristics of the language used during these events compared to that used in non-event periods of the therapeutic sessions (Study 3).

#### **1.4. OUTLINE OF THE THESIS**

This thesis consists of three sequential and programmatic studies. Chapter 2 contains the complete manuscript of Study 1, investigating linguistic significant change events at

an in-depth level for the therapist and patient individually throughout a complete 16-session course of psychotherapy. Qualitative and quantitative measures are employed to maximise the richness of understanding of identified therapeutic processes, examining the correspondence of connecting cycles to structural dynamic processes of change measured qualitatively throughout the therapy. Appendices A and B provide additional details of some of the methods used in Study 1. Chapter 3 contains the complete manuscript of Study 2. This study builds on the findings of Study 1, investigating the in-session interior sequence of therapeutic processes in regards to patient outcome, and identifying early-session significant change events classified by high levels of emotion and cognition in a larger sample. Chapter 4 contains the complete manuscript of Study 3, and further extends the findings of Studies 1 and 2 by examining the qualities of the significant change events identified in Study 2, comparing these to qualitatively identified significant events, and investigating what makes these significant change events helpful to the therapeutic process. Additional details of methods used in Study 3 can be found in Appendix C. Chapter 5 discusses the findings from the series of studies contained in this thesis, and highlights useful conclusions that can subsequently be drawn about helpful emotional and cognitive processes in therapy.

## **CHAPTER TWO**

### **STUDY 1: PSYCHODYNAMIC CHANGE IN PSYCHOTHERAPY: CYCLES OF PATIENT-THERAPIST LINGUISTIC INTERACTIONS AND INTERVENTIONS**

This chapter has been published as a paper in the journal *Psychotherapy Research*.

Minor modifications were made to this published paper to conform to the thesis review process.

McCarthy, K. L., Mergenthaler, E., Schneider, S., & Grenyer, B. F. S. (2011). Psychodynamic change in psychotherapy: Cycles of patient–therapist linguistic interactions and interventions. *Psychotherapy Research*, 21(6), 722-731. doi:10.1080/10503307.2011.615070

## 2.1. INTRODUCTION

The field of psychotherapy research has increasingly moved from an interest in simple symptomatic changes over time between different schools of therapy, to an intensive study of what actually changes within therapy (Grenyer, 2002). Elliott (2010) identified change process research as investigating the nature of therapeutic change in terms of both in-therapy processes and the unfolding sequence of client change. To aid this new analytic study, new measures and methods sensitive to change within the therapeutic hour continue to be developed. Linguistic processing technologies are one such innovative measure of clinical progress. These focus on studying clinical changes in vivo, studying the language in session by session transcripts to identify 'sudden gains' and 'significant events' associated with clinical improvement (Comninou & Grenyer, 2007). The investigation of significant change moments within therapy have been a developing area within the literature. In particular, the recent work by Valdés et al. (2010) investigated verbal emotional expressions within moments of change within sessions identified by Krause et al.'s (2007) hierarchy of generic change indicators. A number of different measures have been developed that analyse the linguistic nature of psychotherapy, many greatly contributing to psychotherapy research and enriching the understanding of one or more aspects of psychotherapy and its processes. Linguistic measures first began to be developed in psychotherapy research over 30 years ago. In an early study, Reynes, Martindale and Dahl (1984) used the computer-assisted Regressive Imagery Dictionary to show that in working sessions of psychotherapy (as opposed to resistance and neutral sessions), there was more primary process content and higher lexical diversity. Hölzer, Mergenthaler, Pokorny, Kächele and Luborsky (1996) showed that certain features of vocabularies could be linked to aspects of process and outcome in psychotherapies, using computer-assisted text analysis. By analysing patient and

therapist vocabulary separately, Hölzer et al. (1996) found that therapists in successful cases tended to accommodate to the language of the patient more than therapists in unsuccessful cases. The connection between non-verbal activity and language was measured by Mergenthaler and Bucci (1999), who developed a computer-assisted procedure to model Referential Activity scales. The Linguistic Inquiry and Word Count (LIWC) text analysis program has been used in research to count words in psychologically meaningful categories, finding language correlates to attentional focus, emotional state, social relationships, thinking styles and individual differences (Tausczik & Pennebaker, 2010).

Mergenthaler (1996) developed the Therapeutic Cycles Model (TCM), a computer-assisted text analysis investigating psychotherapeutic processes at the level of the patient and therapist emotional and cognitive dialogue. Unlike some of the previous content analyses discussed, the TCM is applicable to all types of psychotherapy; its theory is not rooted in the theory of any specific brand of therapy. Rather, the TCM is based in a theory of how improvement occurs throughout therapy sessions via interaction between the therapist and patient measured in their verbalisations (Mergenthaler, 2008). In the primary study, the TCM was demonstrated to be sensitive to outcome, as well as reliable in the identification of key moments (termed cycles) within psychotherapies (Mergenthaler, 1996). The TCM was shown to be able to identify emotion-abstraction patterns (relaxing, reflecting experiencing and connecting), that correspond to different therapeutic phases based on the predominating type of language used within a session (Mergenthaler, 1996). Due to the variation of the linguistic variables being inherent in texts, with all words within a text included in analysis the four patterns are expected to be identified. The TCM has been used in a number of studies to identify clinically significant events (marked by the connecting



pattern) that indicate progress in transcripts of psychotherapy interviews (e.g. Lepper & Mergenthaler, 2007, 2008). In particular, the study by Lepper and Mergenthaler (2007) shows the potential for the use of the TCM to identify interventions of the therapist, however no study to date has compared the language patterns of the patient and the therapist in an in-depth manner. The TCM has further been shown to have discriminant capacity between various types of text units, as Buchheim and Mergenthaler (2000, 2002) were able to show differences between attachment groups on the emotion-abstraction patterns identified by the TCM. In recent research, Villmann, Liebers, Bergmann, Gumz, & Geyer (2008) found a relationship with the emotional aspect of speech measured by the TCM and psycho-physiological processes in a single case study. Walter et al. (2010) investigated the connection between sequential interpersonal plan activation and emotion-abstraction patterns, finding a relationship to the connecting pattern.

Another new method of examining the therapeutic change process is the Operationalized Psychodynamic Diagnosis-2 (OPD-2), and the corresponding Heidelberg Structural Change Scale (HSCS). In 1992 a group of psychodynamically oriented researchers and clinicians developed a multiaxial diagnostic system in addition to the ICD-10 and the DSM-IV, geared towards aspects of psychodynamic diagnosis (OPD Task Force, 2008). In 2008, the OPD Task Force released a revised version of the Operationalized Psychodynamic Diagnosis (OPD), the OPD-2. Like its predecessor, the OPD-2 is a diagnostic manual which includes fundamental psychodynamic dimensions as an expansion to the standard symptom and description oriented classification of mental disorders (OPD Task Force, 2008). According to Schneider, Klauer and Freyberger (2008), the OPD-2 further includes procedures for treatment planning, measuring change, identifying key focus areas for treatment, and developing treatment

strategies. A review by Cierpka et al. (2007) of research based on the first version of the OPD, reports good reliability of the OPD in a research context, as well as good validity of the individual axes. Research using the OPD-2 is still in its infancy, however a German study by Benecke et al. (2009) showed that the structure axis of the OPD-2, the axis most changed from the first version of the OPD, showed sufficient to good inter-rater reliability, and high correlations to a number of DSM-IV diagnoses indicating good validity.

The Heidelberg Structural Change Scale (HSCS) was developed to better articulate the processes of therapeutic change within the OPD findings (Cierpka, et al., 2007). The HSCS examines psychotherapeutic change at the level of the patient's dynamic structural change, that is, change on deeper levels of personality and habitual patterns. It should be noted that "structural change" is a concept distinct from the "structure axis" of the OPD mentioned above. "Structural change" refers to the modification of such personality and habitual patterns in terms of increased awareness of problematic relationship, conflictual and structural patterns as measured by the OPD (Grande, et al., 2009). The "structure axis" specifically measures the structural patterns of the patient that are encompassed by the term "structural change." The axis identifies vulnerabilities of personality, disposition for illness and capacity to process internal conflicts and external stressors (OPD Task Force, 2008). The HSCS thus allows the quantitative rating of therapeutic change based on the most relevant focus points indicated by the OPD-2 (OPD Task Force, 2008). The HSCS is a reworked version of the Assimilation of Problematic Experiences Scale (APES) (Stiles, et al., 1990). Stiles, Meshot, Anderson and Sloan Jr. (1992), for example, previously applied the APES to a 20 session single case of completed psychotherapy where they showed that if an insight moment (level 4 on the Scale) was identified, this theme was able to be traced and rated

using the Scale before and after the insight, showing the development of change over the 20 sessions (Stiles, et al., 1992). The HSCS differs from the APES in that it is orientated towards a psychoanalytic model of change processes anchored to a diagnostic system, the OPD-2, yet follows the same approach of tracing themes over treatment (Grande, et al., 2003).

Grande et al. (2003) examined whether the extent to which inpatients gained insight into their central psychological problems affected their ability to cope with life after discharge. They were able to use the HSCS as an indicative measure of coping, insight and change by rating at intake and discharge, and then by separately assessing progressive changes in the patient's life at follow-up. Grande et al. (2003) were able to show that the level on the HSCS achieved upon discharge largely determined progressive changes in patients' lives after discharge. Grande et al. (2009) examined the predictive value of pre-post changes on the Global Severity Index (Derogatis, 1994), Inventory of Interpersonal Problems (Horowitz, Strauss, & Kordy, 2000) and the Heidelberg Structural Change Scale, for retrospective patient outcome assessments at 1 and 3-year follow-ups, reporting that only structural changes as measured by the HSCS were significant at these two follow-ups (Grande, et al., 2009). Grande, Rudolf, Oberbracht, Jakobsen and Keller (2004) explored the use of the HSCS in a single case of psychoanalytic treatment, and were able to track the patient's progress on the HSCS on 5 critical focus points over the course of the therapy. No studies to date have investigated HSCS and TCM concordance.

The present study aimed to investigate, within a single and complete case of dynamic psychotherapy, the interaction between the language used by the patient and therapist and in particular the role of the therapist's language use in the change process. This study further aimed to investigate the correspondence between two levels of

psychotherapeutic processes, firstly at the level of the patient and therapist emotional and cognitive dialogue, and secondly at the level of the patient's dynamic structural change on critical therapeutic focus problems. We will use the TCM to identify key moments and periods of therapeutic change at the first level, and the HSCS to articulate and weight the nature of change over the time course of the psychotherapy at the second level. We are interested in exploring two specific questions: firstly, can we use the TCM to compare the linguistic processes of the patient and the therapist, and, in particular, to identify the role of the therapist in bringing about change; and secondly, can we simultaneously track changes across sessions on identified therapeutic foci using the Heidelberg Structural Change Scale. We are interested in testing the hypothesis that change as measured in the therapist-patient dialogue and the patient's level of dynamic structural change, will correspond. We specifically hypothesize that: average change scores on the HSCS will be significantly higher in sessions within a cycle, than sessions outside a cycle, as identified by the TCM; and, that change scores on the HSCS will significantly differ depending on the emotion-abstraction pattern (that is reflecting, relaxing, experiencing or connecting) of the session, as identified by the TCM.

## **2.2. METHOD**

### **2.2.1. Data**

The data is a complete transcript of 16 hours of a successful dynamic psychotherapy with 'Michael Angel', an Australian 42 year old male with comorbid cannabis dependence, major depression and cluster C personality disorder. The archival transcript of Michael's case was drawn from previous psychotherapy research with patients seeking treatment for cannabis dependence through attendance at sixteen weekly sessions of individual supportive-expressive dynamic psychotherapy (Grenyer &

Solowij, 2006; Luborsky, 1984). Patients provided specific written informed consent following Institutional Review Board approval for their data to be included in research. In these individual sessions, all therapist-patient transactions were tape-recorded with consent and then transcribed. Michael's case was chosen at random from the 35 patients from the original sample who were considered good outcome patients, who had good engagement with the therapist. Michael began therapy with a score of 18 on the Beck Depression Inventory (BDI; A. T. Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and terminated with a BDI score of 1. At session 3, Michael had a score of 56 on the Penn I Helping Alliance Questionnaire (Luborsky, 1984), indicating that he saw his relationship with the therapist as positive and helpful, and the alliance was strong at this stage. Further, Michael's case was suitable for transcript analysis due to his attendance at all 16 sessions of psychotherapy. Therapy sessions were conducted by an experienced female dynamic psychotherapist who was trained in the use of SE dynamic psychotherapy.

### **2.2.2.Measures**

#### **2.2.2.1. The Therapeutic Cycles Model (TCM).**

The TCM (Mergenthaler, 1996) was used to identify significant therapeutic events within the transcript. The TCM measures the occurrence of words from preset dictionaries: emotional tone and abstraction, as well as words indicating narrative style (Mergenthaler, 2008). Marker words of emotional tone are affective language, markers of abstraction are of conceptual language, and markers of narrative style indicate storytelling and narration. For each scoring unit (usually session or word block) one of four conditions, or emotion-abstraction patterns, result, each indicating a specific type of therapeutic discourse: relaxing (emotional tone and abstraction below the mean), experiencing (emotional tone above and abstraction below mean), connecting

(emotional tone and abstraction above mean) and reflecting (emotional tone below and abstraction above mean) (Mergenthaler, 1996).

Significant events are measured as cycles, which indicate improvement. Cycles can be identified as any sequence of blocks that contains at least one connecting block with a relaxing block before and after (Mergenthaler, 2008). Shift events indicate where conditions are met for a connecting phase to begin, and thus an insight or change is to occur (Mergenthaler, 2008). These can be identified where positive emotion changes above the mean after a negative period (Mergenthaler, 2008).

#### **2.2.2.2. The Operationalized Psychodynamic Diagnosis 2 (OPD-2) and the Heidelberg Structural Change Scale (HSCS).**

The OPD-2 was used to analyse changes occurring throughout the transcript at a contextual level. The multiaxial approach of the OPD-2 allows for the tracking of clinical progress on four different aspects over sessions (OPD Task Force, 2008). The OPD-2 is based on five axes, defined as: I: experience of illness and prerequisites for treatment, II: interpersonal relations, III: conflict, IV: structure, and V: mental and psychosomatic disorders (in line with chapter V (F) of the ICD 10). Therapeutic foci are then determined based on Axes II, III and IV. Based on Fleiss' (1981) judgements regarding kappa, the first version of Axis II has been shown to have good reliability, with Cierpka et al. (2007) reporting weighted kappas between 0.56 and 0.62. Cierpka et al. (2007) also report good reliability for Axis III, with weighted kappas between 0.48 and 0.71, as well as for Axis IV, with weighted kappas between 0.62 and 0.78. Within the OPD-2, the HSCS measures the changes in a patient's mode of coming to terms with, and gaining insight into, the therapeutic foci identified by the OPD-2 (Grande, et al., 2003). The HSCS is therefore not only measuring the extent to which a patient has gained insight, but more critically the quality of this insight, both cognitively and

emotionally, into the dysfunctional interpersonal relationships, conflicts and structural vulnerabilities which are central to their condition (Grande, et al., 2003). The OPD Task Force (2008) reports good to very good inter-rater reliability for the HSCS, between  $r=.77$  and  $r=.88$ , as well as good validity, with the HSCS correlating more highly with the global outcome assessments of the therapeutic team than any other outcome measure.

### **2.2.3. Procedure**

#### **2.2.3.1. Data analysis.**

**TCM:** The University of Ulm used the Cycles Model software to perform a macroanalysis of the transcript, measuring the proportions of emotional tone (as well as indicating whether this was positive or negative tone) and abstraction within each session. These proportions were standardised and provided in two ways: a) graphically, indicating if these measures were above or below the mean in each session; the onset and end of a cycle are also determined from this data, and b) as quantitative scores for statistical assessment.

**OPD-2 and HSCS:** The OPD-2 was rated on the sessions of supportive-expressive dynamic psychotherapy which this patient engaged in, rather than rated on specifically designed interviews. Supportive-expressive dynamic psychotherapy is based on the Core Conflictual Relationship Theme (CCRT) method (Luborsky, 1984). Therefore, to break the sessions into manageable sections with enough information for analysis with the OPD-2, we looked at the number of relationship narratives told across the 16 sessions, and divided the sessions into phases of approximately equal relationship episodes (RE's; as described in the CCRT method). The transcript was grouped into an early phase, (sessions 1-4 with 12 RE's), four middle phase (sessions 5-6 with 8 RE's, 7-8 with 15 RE's, 9-10 with 14 RE's and 11-12 with 15 RE's) and a late phase (sessions

13-16 with 12 RE's). The three axes of the OPD-2 necessary for foci selection (relationship, conflict and structure) were then rated, and therapeutic foci determined, on each of these six phases. This rating process was completed by each of two independent trained raters in order to determine inter-rater reliability for their foci selections. All data was scored twice, by the two raters; for rating instructions see OPD-2 (OPD Task Force, 2008). In this case the foci used are purely research foci, determined from the transcript after the completion of therapy, and were therefore unknown to the therapist or patient during the course of therapy, although the CCRT themes that form part of the treatment would have informed core areas of focus. OPD-2 ratings were done for each phase separately in order to give a more detailed picture of the development of the case. Rating in this way not only allowed change to be observed graphically across phases on each Axis, but also allowed more precise determination of foci. The most prevalent 4 foci across the 6 phases were then chosen for rating on the HSCS. Unlike other studies, a 5<sup>th</sup> focus was not used as no other foci were sufficiently represented across sessions to allow the tracking of their change throughout the entire therapy. This extends the method of foci selection by Grande et al. (2003), who selected foci based solely on an interview at therapy intake. The four foci were then rated on the HSCS in each of the 16 sessions, by two independent raters. A mean change score was also calculated for each session. Rating in this way again gives a more detailed picture of the course of change throughout the therapy. This also extends the HSCS rating method of Grande et al. (2003), who rated the foci on the HSCS at only two points, intake and discharge, using mean change scores. The rating method used here also provides a different focus than the single case study by Grande et al. (2004), who also tracked progress on the HSCS over the course of therapy, but at 3-month intervals rather than session by session.



#### **2.2.3.2. Inter-rater reliability.**

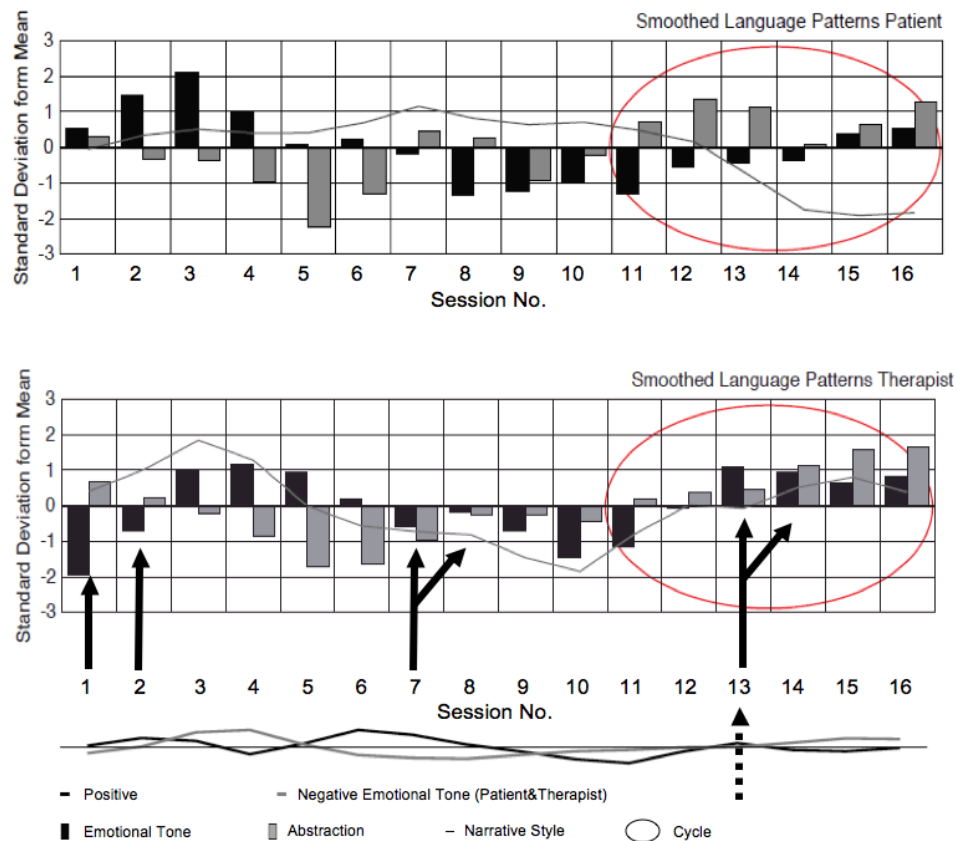
Cohen's kappa was calculated to assess inter-rater reliability from the two independent raters within all foci selections made from the OPD-2 ratings from the six phases (5 foci selections made for each phase by each rater). A good level of agreement was found between the two raters,  $\kappa=.71$ ,  $p<.000$  (Fleiss, 1981). These two raters then came to an agreement on the four most prevalent foci across the 6 phases and rated these on the HSCS in each session. Inter-rater reliability was also determined for the HSCS scores given by the two raters of all 4 foci across all sessions.

#### **2.2.3.3. Statistical analysis.**

We chose to analyse the TCM data from two perspectives: first, patient language scores were analysed, and second, therapist language scores were addressed. All analyses were done using nonparametric tests as normal distributions were not assumed. To examine the correspondence between the linguistic variables and the HSCS scores across sessions, correlations between scores on the HSCS across sessions and emotional tone, abstraction and narrative word z-scores were determined using Spearman's rho. In accordance with the single case study by Lepper and Mergenthaler (2008), comparisons between the TCM data and HSCS scores, that is, to examine whether the HSCS scores differed in sessions within a cycle, and in the emotion-abstraction patterns, were done using Mann-Whitney U tests, and effect sizes determined using Cohen's  $d$ . It should be noted that due to the single case nature of this study confidence intervals and  $d$ -scores are expected to be high. Percentages of sessions spent in each emotion-abstraction pattern by the patient and the therapist were calculated as the sum of sessions spent in a pattern as a percentage of the number of sessions of the therapy in total.

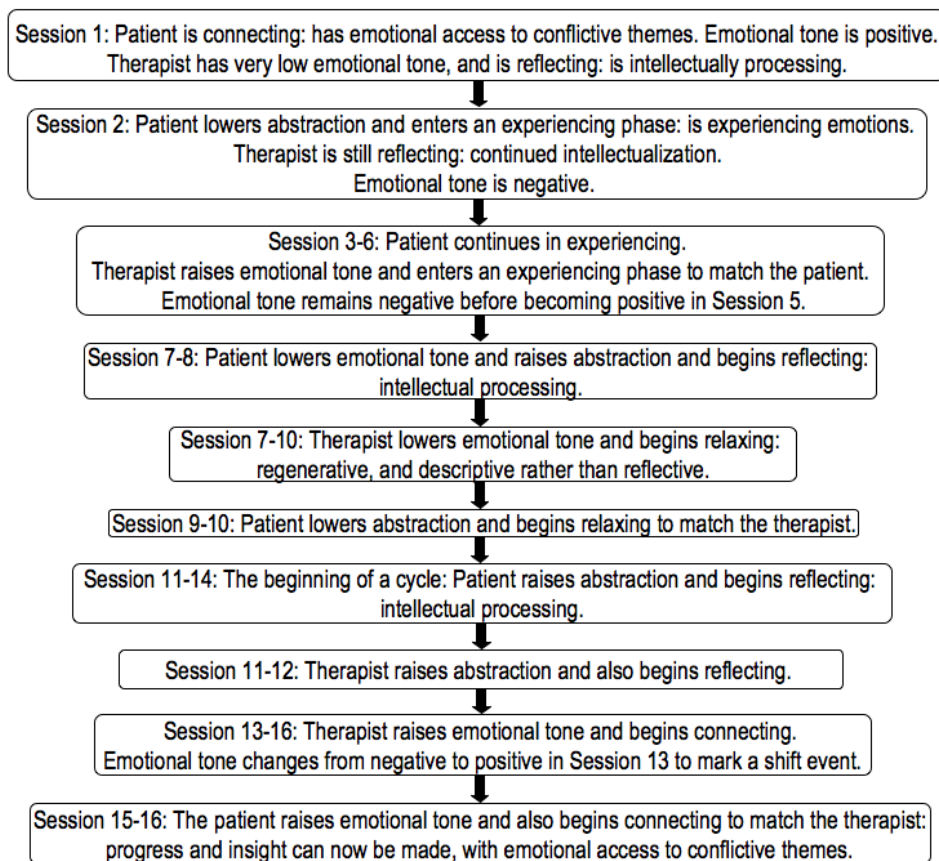
### **2.3. RESULTS**

*Can we use the TCM to compare the linguistic processes of the patient and the therapist, and, in particular, to identify the role of the therapist in bringing about change?*



*Figure 1.* Graphical output from the Therapeutic Cycles Model for patient and therapist language separately.

Figure 1 shows that both the patient's and therapist's language was in a cycle from session 11 until the end of therapy. The broken arrow indicates a shift event into a connecting phase from session 13. The solid arrows indicate where the therapist language differs to the patient, which is explained in Figure 2 below.



*Figure 2.* Analysis of the Michael case examining the Therapeutic Cycles Model emotion-abstraction patterns (Mergenthaler, 2008) separately for patient and therapist, and their correspondence over the course of the 16 sessions.

Figure 2 shows the difference between the emotion-abstraction patterns occurring for the patient and the therapist language patterns separately, as well as giving a description of what happens therapeutically in each phase. This allows the identification of the input and activity of each person separately. Figure 1 and 2 show that the patient spent 18.75% of sessions in a connecting phase, 12.5% in relaxing, 31.25% in experiencing and 37.5% reflecting. However, the therapist spent 25% of sessions in each phase. This may suggest that the therapist is working to increase time in connecting and relaxing phases, and to decrease time in experiencing and reflecting phases.

*Can we simultaneously track changes across sessions on identified therapeutic foci using the Heidelberg Structural Change Scale?*

There were four foci in total selected from the rating of the OPD-2 to be subsequently rated on the HSCS. Two were from Axis II (Relationship): Mother and Wife, and two were from Axis III (Conflict): C5 Guilt and C7 Identity. It was evident from the OPD-2 ratings that relationship, conflict and structural foci were fluctuating. One may be important in one session, before being overtaken by another more important at that time, only to return later to be worked on again. The four foci chosen reflect the two most common relationships and the two most common conflicts of the choices from the two independent raters over the six phases. There was a high level of agreement between the raters on HSCS scores selected for the four foci across the 16 sessions, represented by a strong Spearman's rho correlation above  $r_s=.90$ , significant at  $p<.000$ . In this case study a second rater was used as a check for the reliability of HSCS scores rather than as data. The HSCS scores allocated by the most experienced rater were used for analysis in order to avoid regression to the mean. Analysis using the scores of the second rater made no significant difference to the results, as inter-rater reliability was high.

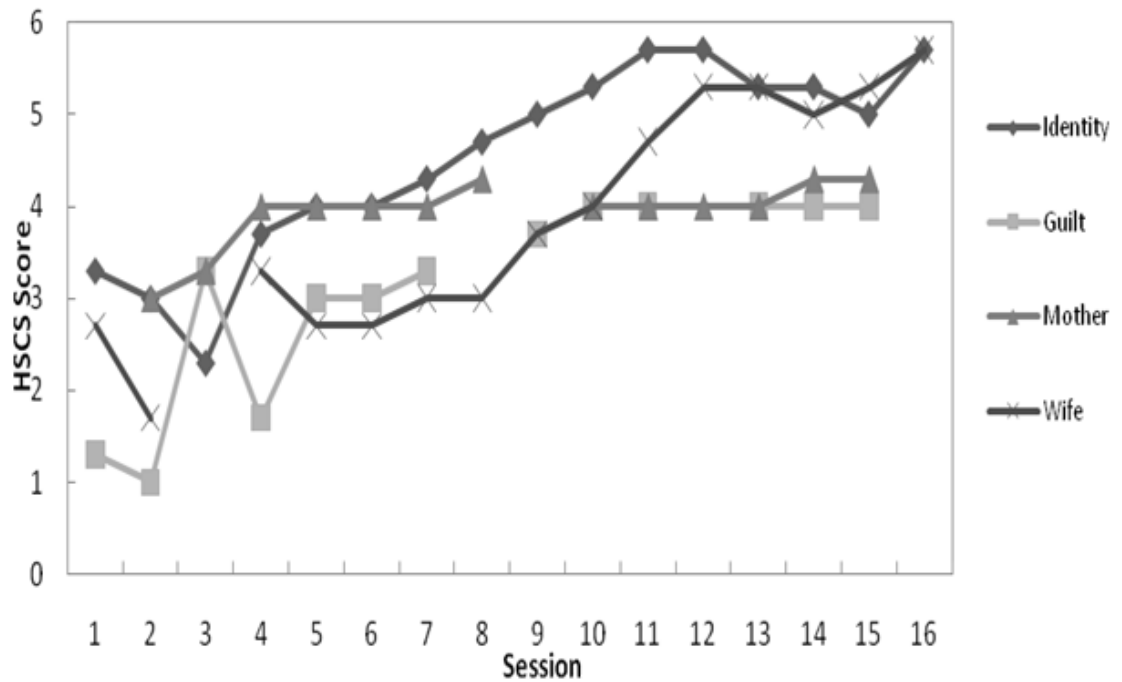


Figure 3. Heidelberg Structural Change Scale ratings by session for the four foci of identity, guilt, mother and wife (for further information, see the text).

Figure 3 shows the HSCS ratings for each focus point in each session. In some instances, as seen in Figure 3, a focus was not prevalent enough in a session to be rated for that session. The progression of change on HSCS scores across the 16 sessions is still clear, however.

Spearman's rho indicated a strong positive correlation between ranked HSCS scores on the wife focus and abstraction levels in the therapist language output,  $r_s=.56$ ,  $p=.031$ , two tailed,  $N=15$ . For both sets of TCM data (Figure 1), the average HSCS score for a session was found to be significantly higher in sessions within a cycle ( $M=4.88$ ,  $SD=0.43$ ,  $n=6$ ) than in sessions outside a cycle, ( $M=3.37$ ,  $SD=0.71$ ,  $n=10$ ),  $U=.00$ ,  $p<.001$ ,  $d=2.57$ . Some change scores were found to be significantly higher in a

particular emotion-abstraction pattern, and this differed between TCM language outputs (see Figures 1 and 2 for the attribution of individual sessions to emotion-abstraction patterns). In analysing the patient language scores, HSCS change on the identity and the wife foci, as well as the average HSCS score, were all found to be significantly lower in sessions that were in an experiencing phase, than in sessions that were not ( $M=3.40$ ,  $SD=0.92$ ,  $n=4$ ) vs. ( $M=4.89$ ,  $SD=0.81$ ,  $n=12$ ),  $U=5.50$ ,  $p=.020$   $d=1.72$ , ( $M=2.47$ ,  $SD=0.68$ ,  $n=3$ ) vs. ( $M=4.22$ ,  $SD=1.12$ ,  $n=12$ ),  $U=3.50$ ,  $p=.031$ ,  $d=1.90$ , and ( $M=3.05$ ,  $SD=0.65$ ,  $n=4$ ) vs. ( $M=4.23$ ,  $SD=0.88$ ,  $n=12$ ),  $U=6.50$ ,  $p=.030$ ,  $d=1.52$ , respectively. In analysing the therapist language scores, HSCS scores on the wife focus in sessions in a connecting phase ( $M=5.33$ ,  $SD=0.35$ ,  $n=12$ ) were significantly higher than in sessions that were not ( $M=3.51$ ,  $SD=1.13$ ,  $n=12$ ),  $U=3.00$ ,  $p=.031$ ,  $d=2.19$ . There were no significant differences found in any HSCS scores dependent on whether a session was or was not in a reflecting phase or a relaxing phase, and no significant differences found on the guilt and mother foci on the HSCS in any emotion-abstraction pattern.

## 2.4. DISCUSSION

This study aimed to investigate the correspondence between psychotherapeutic change processes on two levels: the patient and therapist emotional and cognitive dialogue, and the dynamic change of the patient. This was examined in a complete case of dynamic psychotherapy, using the Therapeutic Cycles Model (TCM) to identify key periods of therapeutic change in the dialogue between patient and therapist, and using the Heidelberg Structural Change Scale (HSCS) derived from the OPD-2 to gauge the level and nature of dynamic change in the patient over the time course of therapy. In considering these results, the limitations inherent in any single case study need to be acknowledged, particularly limitations in power, along with the decision to apply a

diagnostic tool, the OPD-2, to every session. To these authors' understanding, this is the first time such a technique has been applied, and the limitations inherent in applying such a tool to transcribed sessions is acknowledged and requires further research.

One key moment of change was identified from session 11 to session 16 using the TCM. Further investigation revealed the role of the therapist in initiating this key moment: the therapist began connecting two sessions before the patient connected, and worked to increase the patient's emotional experiencing. Tracking changes across sessions on identified therapeutic foci using the HSCS revealed how average change scores on the HSCS were significantly higher in sessions within a cycle, than sessions outside a cycle. It is important to note here that it is the nature of the therapeutic process that change is a development over time rather than an occurrence immediately at the beginning of treatment or randomly distributed across the treatment. Thus time is not confounding but a necessary precondition. This finding of HSCS scores coinciding with the cycle is therefore due to the concepts behind the two measures rather than the fact that time has passed. We would expect that in unsuccessful therapies, we would not find such a result, as cycles would not be present. Change scores on the HSCS also significantly differed depending on the emotion-abstraction pattern (that is reflecting, relaxing, experiencing or connecting). These results most importantly show that when the patient and therapist were connecting or engaged in a cycle, dynamic structural change in the patient was higher.

Consistent with previous research, one cycle was found from session 11-16 in each of patient and therapist TCM language outputs. According to Mergenthaler (1996), in macroanalyses of short-term therapies, no more than one cycle is expected to occur. As the literature indicates that a cycle is the key period of change and improvement, these results suggest that the majority of change occurred from session 11 until the end of

therapy, and also might reinforce the non-linear nature of clinical improvement. Similarly, this finding may support the benefits of 16 session time-limited short-term dynamic psychotherapy, compared with a shorter duration (e.g. Shapiro et al., 2003), and reinforce the importance of single case designs in understanding these processes, including their relevance to complex substance dependence treatment (Solowij, Grenyer, Chesher, & Lewis, 1995).

By comparing the separated language outputs (Figure 1), we were able to see the individual inputs of both the patient and the therapist. Perhaps the most interesting finding from this comparison is that the therapist is connecting for two sessions before the patient begins to connect. This suggests that the work of the therapist is critical, working for two sessions to bring the patient into a phase conducive to change, in this case raising the level of emotional tone and increasing emotional experiencing. A study by Milbrath et al. (1999) examined how therapists' interventions related to the patients' verbal disclosures and defensive patterns that followed. In particular, Milbrath et al. (1999) found that therapists' interventions oriented toward asking specific questions, associating to or clarifying patients' comments, or addressing contractual aspects of the therapeutic situation were followed by fact and information giving by the patient. Alternatively, it was found that when therapists actively interpreted patient disclosures, this was followed by emotional discourse where patients either shared emotions and realizations or made insightful connections (Milbrath, et al., 1999). In terms of the TCM, perhaps the first type of intervention Milbrath et al. (1999) describe would result in increased abstraction language for the patient, and the second in increased emotional tone. When we examine our comparative TCM results, it is evident that in these two sessions where the therapist only appears to be working to connect, the patient needs to raise emotional tone to reach this phase. When we examine the qualitative results from



the OPD-2, we see that in these two sessions the relationship focus is between the patient and therapist. The therapist is working towards termination of therapy, and interprets the patient's disclosures about having a 'bad week' as resisting the termination of therapy. When the patient accepts these interpretations two sessions later, and begins a grieving process, we see the emotional tone in the TCM output for the patient rise, and a connecting phase begin. Milbrath et al. (1999), in agreement with Mergenthaler (2008), suggests that a sequence such as this represents particularly important moments in therapy, and significant therapeutic work.

Tracking HSCS scores over the 16 sessions of therapy revealed that change scores on any foci never reached level 6. However, according to Grande et al. (2003), short term psychotherapies would rarely reach the upper levels of the scale (ratings of 5-7). An unexpected finding was the correlation between abstraction levels within the therapist language scores and the HSCS scores on the wife focus. The therapist's abstraction language is at its highest during the cycle (Figure 1), as are HSCS scores. We understand this to be another example of the therapist working hard to use language that leads the patient to find new gains. The wife focus was a particularly important and pervasive focus throughout the therapy, which may be why it is the focus that has correlated to the language scores. As expected, it is significant that structural change was highest within the identified cycle. We understand this to mean that as the therapist and patient entered the connecting phase towards the end of therapy, significant gains in resolving the patient's interpersonal conflicts occurred. In short, as the therapist-patient relationship intensified, the patient's relationships outside of therapy (particularly with the wife) paralleled and followed these gains made inside the therapy room. According to ratings from the OPD-2 axes, from session 11 onwards (when the cycle begins) there is a shift in the way conflicts are processed to the patient taking a more active role,

involving taking on responsibility for conflict in relationships, particularly with his wife, rather than blaming others. Further, considering the documented relationship between psychodynamic structural change and symptomatic change in psychotherapy, it would have been interesting to examine the relationship between these variables and patient-therapist communication in the current study using relevant measures of symptomatology such as the Symptom Checklist 90-R or the Inventory of Interpersonal Problems. This may be considered for future research.

The hypothesis that HSCS scores would differ dependent on the emotion-abstraction pattern was supported. HSCS change was significantly lower in sessions that were in an experiencing phase for the identity and wife foci. Figure 1 indicates that the majority of experiencing sessions occurred in the early phase of the therapy, and that the high levels of emotional tone in sessions 3-5 are negative. According to Mergenthaler's (2008) Resonating Minds Theory (RMT), upon which the TCM is based, the finding that two core foci problems are associated with negative experiencing is considered a "deepen-and-provide" state, which functions as a period of problem activation. Here the patient is delving deeply into core conflicts, and activating these core problems to be later worked through. The presence of a deepen-and-provide state is further supported by the high levels of narrative style for the patient, and even higher levels in the therapist's speech, indicated in Figure 1. This suggests that the therapist takes up facts reported by the patient and asks the patient to elaborate, driving and extending this period of problem activation. We further found that HSCS change on the wife focus was higher in sessions that were in a connecting phase in the therapist language output. Figure 1 indicates that the majority of connecting occurred from session 13 onwards, and that negative emotional tone is again high in these sessions. According to the RMT, this reflects a period of working through the core problems which were earlier activated,

termed a “broaden-and-build” state, which functions as a period of problem solving (Mergenthaler, 2008) or mastery of interpersonal conflicts (Grenyer, 2002).

Interestingly, HSCS scores for the wife focus were the ones most consistently found to significantly differ in the connecting and experiencing patterns, as well as being the only focus to correlate with the therapist’s abstraction language scores. As illustrated in Figure 3, of the four most prevalent foci examined, Michael underwent the greatest shift along the HSCS on the wife focus. Although this change can be sensibly explained in dynamic terms, other research looking at within session changes would likely draw similar conclusions (e.g. Stiles, et al., 1992). In early sessions Michael experienced unwanted preoccupation with the problems he was having with his wife, unwilling to accept that any problem existed. For example, Michael reveals that he and his wife “...only share a couple of sentences throughout the day...” but then rejects that this is problematic, stating “...I don't think it is (the relationship) in any jeopardy...I think I might have over-emphasised that last time.” He soon gained a vague awareness of the problems, but was defensive and took no responsibility for the issue. Michael then came to recognize the relationship as problematic, and as something he needed to explore and work on, and began to take some responsibility for his role. Michael gradually began to lose and cut off his old modes of relating to his wife, and perceived his own deficiencies which contributed to the problem. By the end of the therapy Michael had begun to reorganize his relationship with his wife, and was beginning to find new and more effective modes of communication which followed on from new learnings in communication with his therapist.

This study presented two methods for identifying and tracking change within psychotherapy, firstly within the therapist-patient dialogue, and secondly within the dynamic structure of the patient. When the dialogue of the patient and therapist is in a

cycle and/or in a connecting phase in terms of the emotional tone and abstract language used, significantly more dynamic change occurs for the patient. These results may underscore the critical role of the therapist in instigating and fostering these changes. The non-linear nature of such changes was also evident, particularly in the shifts in foci from session to session, providing a new perspective on the accumulative nature of gains within the therapeutic encounter.

## **CHAPTER THREE**

### **STUDY 2: EARLY IN-SESSION COGNITIVE-EMOTIONAL PROBLEM-SOLVING PREDICTS TWELVE-MONTH OUTCOMES IN DEPRESSION WITH PERSONALITY DISORDER**

This chapter has been published as a paper in the journal *Psychotherapy Research*. Minor modifications were made to this published paper to conform to the thesis review process.

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### **3.1. INTRODUCTION**

There has been renewed interest in therapist behaviours and qualities that promote a facilitative therapy relationship (Norcross & Wampold, 2011). Psychotherapy has consistently been found to be effective (Luborsky, et al., 1975; Wampold, 2000), yet how it works in terms of in-therapy processes and sequences of change requires research (Elliott, 2010). This is a critical area of inquiry in order to continually develop effective therapeutic interventions (Ablon, et al., 2006; Lambert, 2007). The therapeutic alliance between patient and therapist has long been recognised as a psychotherapeutic variable related to treatment outcome (Horvath, Del Re, Flückiger, & Symonds, 2011). However, the recent task force on evidence-based therapy relationships highlighted that few studies have explored the process of how the therapist-patient relationship facilitates improvement in therapy, with few methodologies capable of disentangling complex associations between patient, therapist, their relationship, and outcome (Norcross & Wampold, 2011).

#### **3.1.1. Therapist and Patient Factors in Psychotherapy Process**

Research has long investigated therapist factors and techniques related to improvement in psychotherapy, with therapist skill and capacity to establish a therapeutic alliance showing robust relationships to positive therapeutic outcomes (Blatt, Sanislow, Zuroff, & Pilkonis, 1996; Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985; Orlinsky, Grawe, & Parks, 1994). Recent research suggests that therapist contribution to the alliance is actually more important to the correlation between alliance and therapy outcome than is the patient contribution- therapists who formed better alliances had better outcomes (Baldwin, Wampold, & Imel, 2007; Del Re, Flückiger, Horvath, Symonds, & Wampold, 2012; Dinger, Strack, Leichsenring, Wilmers, & Schauenburg, 2008). Whilst therapist techniques have been linked to patient

expression of affect and better alliance in therapy (Ackerman & Hilsenroth, 2003; Town, Hardy, McCullough, & Stride, 2012), there have been few studies examining the interior nature of successful and unsuccessful sessions at the level of the therapist-patient dialogue. Recent literature has begun to examine therapist-patient discourse to identify therapist and patient contributions to significant change processes within therapy (Levitt & Piazza-Bonin, 2011). In particular, Valdés et al. (2010) found that within change moments patients brought up a number of different emotions and therapists explored these emotions rather than introducing new ones.

Evidence suggests that successful therapy is recognisable from early sessions (Comninos & Grenyer, 2007). Studies of brief cognitive therapies for depression have found that patients least improved by session 3-4, were also least improved at long-term follow-ups of 12-18 months (Fennell & Teasdale, 1987; Gilboa-Schechtman & Shahar, 2006). It is less clear what makes early sessions so useful to some patients, as such studies have not further characterised the interior of the early session for early improved patients or their therapists. One possible line of inquiry is the relationship between early session language use by the therapist and patient, and outcome. One study found that in session 3 of 14 sessions of therapy, therapist statements that were subtly hostile and controlling correlated with self-blaming statements of the patient, and were associated with poorer outcome (Henry, Schacht, & Strupp, 1990).

### **3.1.2. Psychotherapy for Major Depression and Personality Disorder**

Both major depression and personality disorders are highly prevalent, recurrent and persistent, often comorbid, and are linked to significant functional impairment and morbidity (Bromet, et al., 2011; Kessler, et al., 2005; Leichsenring, et al., 2011; Lin, et al., 1998). Personality disorders have been increasingly investigated as a factor in the outcome of major depressive disorder, with recent findings indicating that a comorbid

diagnosis of personality disorder elevated the risk of persistence of major depressive symptomatology (Levenson, et al., 2012; Newton-Howes, Tyrer, & Johnson, 2006; Skodol, et al., 2011). Psychotherapy is considered primary treatment for both major depression and personality disorders (National Institute for Health and Clinical Excellence, 2009a, 2009b). However, psychotherapy with these patients can be highly challenging due to chronic patterns of self-defeating behaviours, inability to form and maintain interpersonal relationships, and their tendency to enact maladaptive relationship patterns in their relationship with their therapist (Bourke & Grenyer, 2010; Hollon, et al., 2002; Skodol, et al., 2002; Zannarini, 2009). Hence, there seems to be a heightened need to investigate therapeutic change processes, particularly in terms of the therapist-patient relationship, for patients with such chronic comorbid diagnoses.

### **3.1.3. Emotion and Cognition in Psychotherapy**

Psychotherapy literature has long discussed the likely relevance of emotion and cognitive constructs. Recent functional neuroimaging studies have found that therapy outcome is associated with significant metabolic changes in limbic and cortical regions (Benelli, et al., 2012; Goldapple, et al., 2004; Linden, 2006), and specifically, that long-term therapy for depression induces neurobiological changes in neural pathways implicated in emotional reactivity and control (Buchheim, et al., 2012). There have also been empirical attempts to study the benefits of therapeutic processes which lead to affective and cognitive integration. Patient mastery of emotional self-control and cognitive self-understanding has been found to be related to improvement in symptoms (Grenyer & Luborsky, 1996). A relationship has also been found between the therapist's emotional language within therapy and outcome for the patient, particularly when therapists named more emotions in sessions (Hölzer, et al., 1997). A number of studies have particularly investigated positive emotion and its relationship to cognition.



These have found a relationship between positive emotion and cognitive abilities of the patient, that is, positive emotions improve creative problem solving skills by increasing the tendency to combine and relate material in new ways (Frederickson, 1998, 2001; Isen, et al., 1987; Links, Bergmans, & Cook, 2003).

#### **3.1.4. The Therapeutic Cycles Model**

Linguistic methods have been used to measure emotion and cognition expressed through dialogue within therapy. Linguistic processing technologies are an innovative window into the interactions between therapist and patient, and provide an opportunity to investigate verbal processes in relation to the outcome of therapy. Reviews of computer-assisted linguistic research approaches can be found elsewhere (Mergenthaler & Bucci, 1999; Pennebaker, Mehl, & Niederhoffer, 2003). The Therapeutic Cycles Model (TCM) is a computer-assisted text analysis investigating psychotherapeutic processes at the level of the therapist and patient emotional-cognitive dialogue (Mergenthaler, 1996). The TCM may also been used to analyse the dialogue of therapist and patient individually (McCarthy, Mergenthaler, Schneider, & Grenyer, 2011), demonstrating the usefulness of the TCM as a tool to separate therapeutic processes of patient and therapist.

The TCM measures the frequency of marker words for emotional tone (affective language tapping into emotion), abstraction (conceptual language tapping into cognition), and narrative style (storytelling marker words that are neither emotion nor abstraction) (Mergenthaler, 2008). Research has found differences in overall emotional and cognitive language use in session based on patient outcome, particularly that emotion and cognition is higher in sessions of improved patients (Mergenthaler, 1996). The TCM also measures four conditions, or emotion-abstraction patterns. Each indicates a phase of therapeutic discourse (Mergenthaler, 1996, 2008). Relaxing is

where emotional tone and abstraction are below the mean; discourse is regenerative and descriptive. Reflecting occurs when emotional tone is below and abstraction above the mean; a phase of intellectual cognitive processing. Experiencing is identified where emotional tone is above and abstraction below the mean; emotions are experienced. Connecting is where emotional tone and abstraction are above the mean; there is emotional access to conflictive themes, theorised as necessary for change to occur. The critical connecting pattern has been associated with treatment success across a number of theoretical orientations and across diagnostic groups (Mergenthaler, 2008). However, the relationship between relaxing, reflecting and experiencing patterns in sessions, and treatment outcome, is unclear (Mergenthaler, 2008).

The TCM identifies significant events conducive to therapeutic improvement by marking them as connecting cycles. Connecting cycles are presumed significant events that can be identified as a relaxing-connecting-relaxing sequence of language, and indicate where emotion and cognition are elevated and connected for a problem solving phase to occur (Mergenthaler, 2008). A great deal of research has now shown connecting cycles to be consistently related to therapeutic success, and also to a number of psychological and therapeutic processes (Buchheim & Mergenthaler, 2000; Gelo & Mergenthaler, 2012; Lepper & Mergenthaler, 2005, 2007, 2008; Villmann, et al., 2008; Walter, et al., 2010). A “connecting cycle” is a key moment in therapy. It begins and ends with a relaxing pattern, and must contain a connecting pattern (when emotion language and abstraction language are both high). Thus, connecting cycles are significant events of heightened reflection and emotional engagement in the material. Shift events indicate where a connecting phase is to begin, and thus an insight or change is to follow, identified where positive emotion increases above the mean after a negative period (Mergenthaler, 2008). According to TCM literature, positive emotion

words are emotional tone words categorised as representing positive emotions, and are considered to “broaden-and-build” within therapy, that is, initiate a problem solving experience. Negative emotions, similarly, are emotional tone words categorised as negative emotions, and are considered to “deepen-and-provide” within therapy, present where problematic material is being presented (Mergenthaler, 2008).

The present study seeks to investigate individual therapist and patient processes at the in-depth level of their dialogue across a session. Specifically, we will examine how therapist-patient emotional and cognitive dialogue influences therapeutic change for the patient, using the TCM. We are specifically interested in psychotherapy processes with patients with comorbid diagnoses of major depression and personality disorder due to the well documented difficult nature of their psychotherapy. A new variant of the TCM method - separating therapist and patient narrative events - was developed here in order to identify the individual roles of each speaker within the change process.

The TCM has only been used in one study to identify change processes in early sessions (Mergenthaler, 1996), and has thus far not investigated the interior sequence of early session language in relation to long-term outcome. Research reviewed suggested not only that long-term change can be recognised early in therapy, but that differences in the interaction between therapist and patients can also be recognised as early as session 3, through the type of language they use (Fennell & Teasdale, 1987; Gilboa-Schechtman & Shahar, 2006; Henry, et al., 1990). Few studies have investigated the nature of early sessions, and the processes in early session that are useful to patients. To examine this further, session 3 was chosen for investigation in this study as it is a very early session, and follows after the initial relationship establishment and goal setting that occurs in sessions 1 and 2. Therefore, we specifically aimed to investigate group differences between therapists and most and least improved patients (assessed at 12-

month follow-up) in their use of emotional-cognitive language across the time of session 3. Due to a noted lack of research into therapeutic processes throughout the course of a session, we particularly focused on comparing language during early (minutes 0-20), middle (minutes 21-40) and end (minutes 41-60) segments of session, in order to characterise the interior sequence of the session. We planned to examine differences across the time of the session in number of connecting cycles, emotion-abstraction patterns and shift events. We also examined whether therapist-patient emotional and cognitive dialogue differed between most and least improved patients during the entirety of session 3. We planned to examine differences between groups on all variables: connecting cycles, emotion-abstraction patterns, emotional tone and valence, abstraction, narrative style and shift events.

Based on previous research utilising the TCM, we particularly expected that in session 3 the most improved group would pass more connecting cycles than would least improved; and, the proportion of time spent in emotion-abstraction patterns (relaxing, reflecting, experiencing, connecting) would differ between most and least improved groups. Further, we hypothesized that there would be a difference in the relative frequencies of emotional tone, abstraction and narrative style between most and least improved groups; and, those most improved would have higher relative frequencies of positive emotional tone and lower relative frequencies of negative emotional tone.

## **3.2. METHOD**

### **3.2.1. Data Source**

Participants were 20 patients undergoing psychotherapy at a university health service clinic, with DSM-IV diagnoses (American Psychiatric Association, 1994) of major depression and personality disorder (Cluster A: 2, Cluster B: 6, Cluster C: 12, Not

otherwise specified: 8; see Table 1 for sample characteristics). Personality disorder was a consistent diagnosis for all clients, and all met the severity criterion for clinical significance of personality disorder in that the disorder interfered in more than one important part of their life (e.g. work, relationships). The distribution of clusters between the two groups was approximately equal (e.g. the least improved had one cluster A, four cluster B, three cluster C and three NOS, with one patient having both a cluster A and C diagnosis). In relation to the subtypes within clusters, both with a Cluster A disorder were of the Paranoid subtype ( $N=2$ ), most with a Cluster B diagnosis were of the Borderline subtype ( $N=4$ ), and, most in Cluster C were Avoidant ( $N=5$ ) or Dependent ( $N=4$ ). All participants gave written informed consent to participate in this research following Institutional Review Board approval.

#### **3.2.1.1. Participant selection.**

The 20 patients included in this study were carefully selected as a sub-sample of the clinic's clients, and are representative of the continuum of good-poor outcome at 12-month follow-up from the clinic case-mix. A number of criteria were considered when selecting patients according to the aims of this study as follows. Clients of the clinic are either referred by another health professional, or self-referred. To ensure that all participants had the same dosage of treatment, participants were excluded if they did not complete the full course of treatment of 16 sessions, and if they had symptom data missing at intake, termination or follow-up. Participants were also excluded if they commenced treatment with a Beck Depression Inventory (BDI) (A. T. Beck, et al., 1961) score of  $\leq 15$ , as low scores at follow-up therefore would not be representative of a great level of improvement. The 20 patients selected had consistent diagnoses of major depression and personality disorder in accordance with the aim of the study (American Psychiatric Association, 1994). Patients were independently assessed with a structured

clinical interview (SCID-I and SCID-II) (First, Gibbon, Spitzer, Williams, & Benjamin, 1997; First, Spitzer, Gibbon, & Williams, 1996) by an experienced, trained clinician who had achieved excellent reliability on these measures. The following comorbid diagnoses were excluded to ensure homogeneity of diagnoses and thus of symptoms targeted for treatment: current substance dependence, schizophrenia or other psychotic disorder, bipolar disorder, obsessive-compulsive disorder, eating disorder, organic brain disorder or serious medical conditions (e.g. cancer).

According to the aim of the study to investigate therapeutic processes according to patient follow-up outcome, the sample of 20 was also selected to comprise 10 patients whose outcomes were considered to fall at the “most improved” end of the continuum of outcomes, and 10 patients whose outcomes fell at the “least improved” end of the continuum at 12-month follow-up. These two groups of patients were therefore carefully matched for intake diagnoses and measures of symptomatology, as well as demographic variables, but were purposefully mismatched with opposing outcomes at 12-month follow-up. The two equal samples of 10 patients were selected as most and least improved using the recommended cutoff of 16 on the BDI at 12-month follow-up (Cohen, Norris, Acquaviva, Peterson, & Kimmel, 2007; Matthey, Barnett, Ungerer, & Waters, 2000; Pinto & Francis, 1993; Taylor & Klein, 1989). It has been suggested that  $BDI \geq 17$  is most closely associated with depressive states therefore helping to identify those in the study who had not recovered (Kendall, Hollon, Beck, Hammen, & Ingram, 1987). Each patient’s BDI and Global Assessment of Functioning (GAF) were measured at intake, termination and 12-month follow-up. The BDI is a self-report measure of the intensity of 21 depressive symptoms and attitudes. The psychometric properties of the BDI have been well researched, with internal consistency reported as a mean coefficient alpha of .86 for psychiatric populations (A. T. Beck, Steer, & Garbin, 1988). The GAF

is a rating scale (0-100) of psychological, social and occupational functioning (American Psychiatric Association, 1994). Studies have found the GAF to have good inter-rater reliability and concurrent validity (Startup, Jackson, & Bendix, 2002). The 10 most improved patients had mean intake and 12-month scores on the BDI of 26.30 ( $SD=7.75$ ) and 6.40 ( $SD=4.38$ ;  $min=1$ ,  $max=16$ ) respectively, along with mean intake and 12-month GAF scores of 56.2 ( $SD=8.30$ ) and 77.50 ( $SD=6.35$ ). The 10 least improved patients had mean intake and 12-month scores on the BDI of 29.70 ( $SD=5.25$ ) and 21.88 ( $SD=4.34$ ,  $min=17$ ,  $max=28$ ) respectively, along with mean intake and 12-month GAF scores of 49.30 ( $SD=7.67$ ) and 55.56 ( $SD=9.82$ ). Diagnostic and demographic variables across treatment are illustrated in Table 1.

Table 1. *Comparison between Characteristics of Most Improved Patients and Least Improved Patients at 12-Month Follow-up (N=20).*

Variable	Most Improved			Least Improved			<i>t</i>	<i>df</i>	<i>p</i>
	<i>n</i>	Mean	<i>SD</i>	<i>n</i>	Mean	<i>SD</i>			
Intake BDI	10	26.30	7.75	10	29.70	5.25	-1.15	18	.266
Session 3 BDI	10	21.63	9.55	10	28.50	12.06	-1.26	14	.227
Termination BDI	10	7.70	3.30	10	20.00	13.32	-2.83	10	.018
Follow-up BDI	10	6.40	4.38	10	21.88	4.34	-7.73	17	<.000
Age	10	41.90	12.22	10	43.4	13.70	-.25	18	.799
Education in years	10	13.00	2.05	10	13.8	2.53	-.78	18	.448
		%			%				<i>p</i> <sup>a</sup>
Gender									
Male	60	(6/10)		40	(4/10)				.656
Female	40	(4/10)		60	(6/10)				
In a current relationship	60	(6/10)		70	(7/10)				1.000
Currently employed	60	(6/10)		60	(6/10)				1.000
Chronic depression	80	(8/10)		90	(9/10)				1.000

Note. BDI= Beck Depression Inventory; Most Improved= 10 BDI scores  $\leq 16$  at 12-month follow-up;

Least Improved= 10 BDI scores  $> 16$  at 12-month follow-up.

<sup>a</sup>*p* value is Fisher's Exact test (2-sided), as expected frequencies are low in a 2x2 design due to small sample size (Agresti, 1992). No statistic is reported with this test.

### 3.2.1.2. Psychotherapy.

The data used in this study was treatment session 3 of psychotherapy, transcribed verbatim from audio recordings. Treatment consisted of 16 weekly, 60 minute sessions (that is, one session per week) of a specific manualised time-limited version of psychotherapy (Luborsky, 1984; Luborsky et al., 1995), which has received empirical support (Crits-Christoph et al., 2001). This psychotherapy is a well-known, time-limited, relationship-oriented therapy and forms part of the evidence base for dynamic therapies (Leichsenring, 2001; Leichsenring, Rabung, & Leibing, 2004). The treatment was provided at a university health service clinic by ten doctoral-level clinical psychologists with comprehensive training in this psychotherapy applied to depression and personality disorders. A PhD clinical psychologist author with an extensive background in short-term dynamic psychotherapy provided weekly supervision to each therapist and monitored adherence using audiotapes and rating scales. There were no differences between therapists on adherence or competence ratings or in the way treatments were delivered across this study.

### **3.2.2. Measures**

#### **3.2.2.1. The Therapeutic Cycles Model.**

A microanalysis of a session transcript using the TCM (Mergenthaler, 1996) calculates the absolute and relative frequencies of each linguistic variable for therapist, patient and their combined language within blocks of 150 words throughout the session. As previously indicated, measured linguistic variables include emotional tone, the positive and negative valence of emotional tone, abstraction, and narrative style (Mergenthaler, 2008). From this data the emotion-abstraction pattern of each word block (reflecting, relaxing, experiencing or connecting), as well as the presence of connecting cycles and emotional tone shift events, are determined.

#### **3.2.3. Procedure**



### **3.2.3.1. Data analysis.**

Sessions were transcribed from audio recordings according to the detailed rules and recommendations for transcribing psychotherapy samples of Mergenthaler and Stinson (1992). The Cycles Model software (Mergenthaler, 1996) was then used at the University of Ulm to perform a microanalysis of the 20 transcripts, reporting quantitative scores of the linguistic variables in each 150-word block for statistical assessment.

### **3.2.3.2. Statistical analysis.**

Although samples were equivalent in severity at intake and session 3, as seen in Table 1, to be cautious we ran initial ANCOVA analyses controlling for intake BDI. This revealed that BDI at intake was not significantly related to the language variables measured in session 3. As there was no relationship between initial severity and our findings, and given that the assumptions of normality were not met, for the results reported here we have chosen to only report nonparametric statistics.

To test group differences on the TCM variables sequentially across the session, each 60 minute session was split into 3 segments of time: 0-20 minutes, 21-40 minutes, and 41-60 minutes. TCM data indicating emotion-abstraction patterns, connecting cycles and emotional tone shift events in each 150-word block were converted to proportions of total word blocks within a session segment to control for length of transcript (Mergenthaler, 1996). This TCM data was then analysed with the non-parametric Mann-Whitney U test at the three time points, and from three perspectives: therapist language scores, patient language scores, and combined therapist-patient language scores (therapist-patient dyads). Exact significance will be reported due to small sample size. In order to examine the in-session processes of both most and least improved patients individually, comparisons within outcome groups of TCM data between session

segments were examined using the Friedman two-way ANOVA and the Conover nonparametric method of multiple comparisons (Conover, 1980).

To test group differences in TCM variables in the entirety of the session, TCM data indicating emotion-abstraction patterns and connecting cycles in each 150-word block were converted to proportions of total word blocks to control for transcript length. Levels of emotional tone, abstraction and narrative style were analysed as relative frequencies of words spoken per 150-word block. Comparisons between outcome groups on TCM data were done using Mann-Whitney U tests from two perspectives: therapist language scores and patient language scores. Exact significance will be reported due to small sample size. Cohen's  $d$  was used to measure all effect sizes. It should be noted that where proportions of session time were analysed, effect sizes are expected to be larger due to small sample size ( $N=20$ ).

### **3.3. RESULTS**

#### **3.3.1. Group Differences in the Temporal Sequence of TCM Variables**

##### **3.3.1.1. 0-20 minutes of session.**

As illustrated in Figure 1, combined therapist-patient data showed that the most improved group at 12-month follow-up spent a significantly greater proportion of time during 0-20 minutes of session 3 in connecting cycles ( $M=43.10\%$ ,  $SD=24.07\%$ ,  $n=10$ ) than did the least improved group ( $M=18.70\%$ ,  $SD=7.36\%$ ,  $n=10$ ),  $U=17.50$ ,  $p=.011$ ,  $d=1.48$ . No other differences between outcome groups on emotion-abstraction patterns or shift events reached significance.

##### **3.3.1.2. 21-40 minutes of session.**

Most improved patients spent a significantly greater proportion of time in connecting word blocks during 21-40 minutes of session 3 ( $M=16.67\%$ ,  $SD=7.16\%$ ,  $n=10$ ) than did

least improved patients ( $M=9.15\%$ ,  $SD=7.42\%$ ,  $n=10$ ),  $U=23.50$ ,  $p=.043$ ,  $d=1.03$ . Further, as seen in Figure 1, combined therapist-patient data showed that the most improved group spent a significantly greater proportion of time during 21-40 minutes of session 3 in connecting cycles ( $M=48.08\%$ ,  $SD=26.01\%$ ,  $n=10$ ) than did the least improved group ( $M=22.39\%$ ,  $SD=20.76\%$ ,  $n=10$ ),  $U=22.00$ ,  $p=.035$ ,  $d=1.09$ . No other differences between outcome groups on emotion-abstraction patterns or shift events reached significance.

### **3.3.1.3. 41-60 minutes of session.**

Combined therapist-patient data showed that the most improved group spent a significantly greater proportion of time in relaxing word blocks during 41-60 minutes of session 3 ( $M=32.80\%$ ,  $SD=6.75\%$ ,  $n=10$ ) than did the least improved group ( $M=17.26\%$ ,  $SD=10.30\%$ ,  $n=10$ ),  $U=15.00$ ,  $p=.007$ ,  $d=1.78$ . Further, combined therapist-patient data showed that the most improved group spent a significantly lesser proportion of time during 41-60 minutes of session 3 in connecting cycles ( $M=20.80\%$ ,  $SD=11.18\%$ ,  $n=10$ ) than did the least improved group ( $M=55.34\%$ ,  $SD=26.32\%$ ,  $n=10$ ),  $U=9.00$ ,  $p=.001$ ,  $d=1.71$ . No other differences between outcome groups on emotion-abstraction patterns or shift events reached significance.

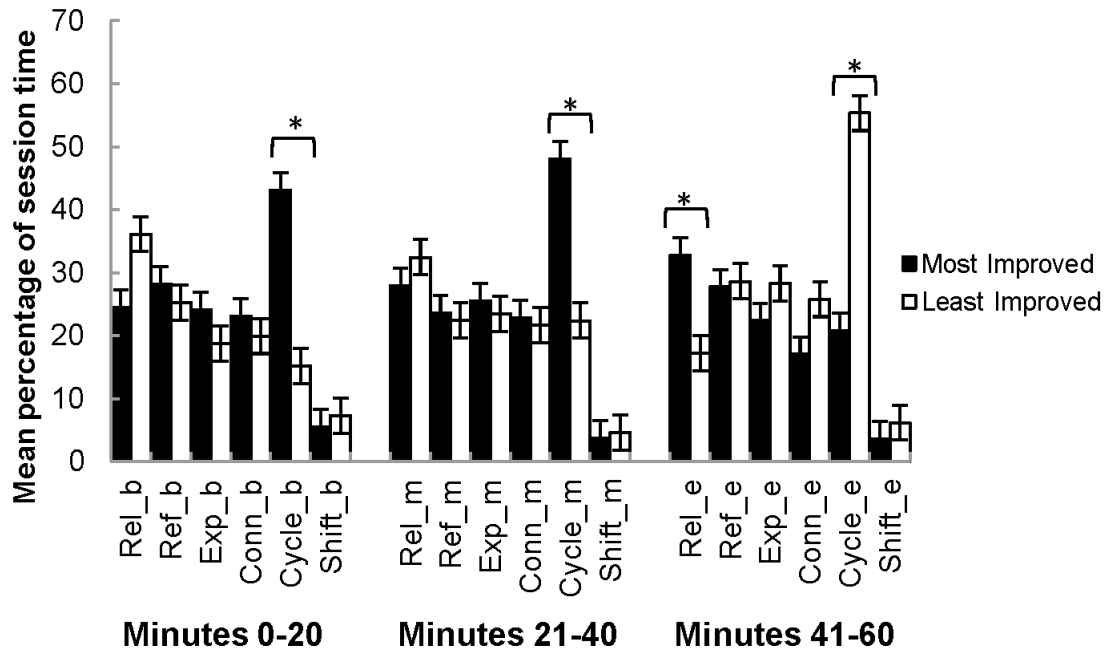


Figure 1. Between group differences in time spent in TCM patterns during three segments of session 3 (Combined therapist-patient data;  $N=20$ ).

Most Improved = 10 BDI scores  $\leq 16$  at 12-month follow-up; Least Improved = 10 BDI scores  $> 16$  at 12-month follow-up. Minutes 0-20: b = beginning, Minutes 21-40: m = middle, Minutes 41-60: e = end. Rel = relaxing, Ref = reflecting, Exp = experiencing, Conn = connecting, Cycle = connecting cycle, Shift = emotional tone shift event. Error bars represent standard error of the mean.

\* $p < .05$ .

### 3.3.2. Within Group Temporal Sequence of TCM Variables

#### 3.3.2.1. Sessions of most improved patients.

Most improved patients significantly differed across session 3 in the proportion of time they spent in the relaxing pattern  $\chi^2_F = 9.14$   $df=2$ ,  $n=10$ ,  $p=.01$ . Most improved patients spent a significantly lesser proportion of time in the relaxing pattern during 0-

20 minutes of session 3 ( $M=30.53\%$ ,  $SD=9.41\%$ ,  $n=10$ ) than they did during 41-60 minutes of session 3 ( $M=41.31\%$ ,  $SD=7.24$ ,  $n=10$ ), Mean Rank Difference=1.30 > Critical Rank Difference=.70,  $d=1.28$ . No other significant differences were found across the session for any other TCM variable.

### **3.3.2.2. Sessions of least improved patients.**

Therapists' dialogue with least improved patients significantly differed across session 3 in their proportion of shift events  $\chi^2_F= 6.34$   $df=2$ ,  $n=10$ ,  $p=.042$ . Therapists' dialogue with least improved patients had a significantly lesser proportion of shift events during 0-20 minutes of session 3 ( $M=1.85\%$ ,  $SD=4.56\%$ ,  $n=10$ ) than it did during 41-60 minutes ( $M=6.90\%$ ,  $SD=5.67\%$ ,  $n=10$ ), Mean Rank Difference=1.05 > Critical Rank Difference=.77,  $d=.98$ .

Combined therapist-patient data showed that the least improved group significantly differed across session 3 in the proportion of time spent in connecting cycles  $\chi^2_F= 9.90$   $df=2$ ,  $n=10$ ,  $p=.007$ . Combined therapist-patient data further showed that the least improved group spent a significantly lesser proportion of time in connecting cycles during 0-20 minutes of session 3 ( $M= 15.19\%$ ,  $SD=11.52\%$ ,  $n=10$ ) than during 41-60 minutes ( $M=55.34\%$ ,  $SD=26.32\%$ ,  $n=10$ ), Mean Rank Difference=1.15 > Critical Rank Difference=.69,  $d=1.98$ , and during 21-40 minutes of session 3 ( $M=22.39\%$ ,  $SD=20.76\%$ ,  $n=10$ ) than they did during 41-60 minutes, Mean Rank Difference=1.25 > Critical Rank Difference=.69,  $d=1.39$ . No other significant differences were found across the session for any other TCM variable.

### **3.3.3. Group Differences on TCM Variables**

As seen in Table 2, when testing group differences on the TCM variables in the entirety of session 3, it was found that therapists' dialogue with most improved patients had a significantly higher proportion of positive emotional tone words and a

significantly lower proportion of negative emotional tone words than their dialogue with least improved patients. Therapists' dialogue with most improved patients also had a significantly higher proportion of narrative marker words than did their dialogue with least improved patients (see Table 2). No other significant differences were found between therapists speaking with most and least improved patients in terms of emotion-abstraction patterns, abstraction or narrative style.

It was found that most improved patients completed significantly more connecting cycles than least improved patients. Most improved patients also spoke a significantly higher proportion of positive emotional tone words than least improved patients (see Table 2). No other differences between outcome groups on emotion-abstraction patterns, abstraction levels or narrative style reached significance.

Table 2. *Comparison between Most Improved Patients and Least Improved Patients at 12-Month Follow-up on TCM variables in Session 3 (N=20).*

Linguistic Variable	Speaker	Most Improved		Least Improved		<i>U</i>	<i>p</i>	<i>d</i>
		<i>n</i>	<i>M</i>	<i>N</i>	<i>M</i>			
Connecting cycle	T	10	0.43%	10	0.86%	35.00	.280	.45
Emotional tone	T	592	4.96%	603	4.72%	170263.00	.160	.04
Positive emotional tone	T	592	3.30%	603	2.74%	160374.00	.001*	.09
Negative emotional tone	T	592	1.66%	603	1.97%	166410.00	.024*	.09
Abstraction	T	592	6.12%	603	6.41%	175914.00	.662	.04
Narrative style	T	592	51.63%	603	47.25%	158329.00	.001*	.18
Connecting cycle	P	10	5.85%	10	4.16%	23.50	.043*	.94
Emotional tone	P	592	4.87%	603	4.41%	155410.00	<.001*	.16
Positive emotional tone	P	592	2.85%	603	2.22%	141354.00	<.001*	.27
Negative emotional tone	P	592	2.02%	603	2.19%	170760.00	.194	.10
Abstraction	P	592	5.15%	603	5.01%	171745.50	.258	.05
Narrative style	P	592	65.59%	603	64.96%	177460.50	.863	.07

*Note.* Most Improved= 10 BDI  $\leq$ 16 scores at 12-month follow-up; Least Improved= 10 BDI scores  $>$ 16 at

12-month follow-up. P= Patient, T= Therapist, *M*= Mean proportion of session time spent in TCM variable, *U*= Mann-Whitney U test statistic.

\* $p < .05$ .

### 3.4. DISCUSSION

Outcomes at 12-month follow-up for patients obtaining psychotherapy for depression and personality disorder were associated with therapist-patient emotional and cognitive dialogue throughout the third session. During 0-20 minutes and 21-40 minutes of session 3 therapist-patient dyads most improved at 12-month follow-up spent more time

in connecting cycles, that is, connecting emotion and cognition in a problem solving process. The strength of these findings are underscored by large effect sizes,  $d=1.48$  and  $d=1.09$  respectively, which reinforces that such differences in the dialogue were obvious and prominent, and of clinical as well as statistical significance. Therapist-patient dyads that were least improved spent more time in these connecting cycles during 41-60 minutes of session, whilst those most improved moved into a relaxing phase. Therapist dialogue with most improved patients was significantly higher in positive emotional tone and narrative words, and significantly lower in negative emotional tone words. The findings suggest that the timing of therapist-patient dialogue throughout session, and patient engagement with therapist interventions may be important.

Analysis of TCM variables at time segments throughout the session revealed some of the therapist and patient contributions during the hour based on patient outcome.

#### **3.4.1. 0-20 Minutes of Session**

Therapists and most improved patients spent a greater proportion of time in connecting cycles than did those least improved at the beginning of session 3. Connecting cycles indicate where emotional tone is connected with abstraction within the session, that is, where problems can be worked through both emotionally and cognitively. Positive emotion has been consistently linked to the cognitive problem solving process (Isen, et al., 1987; Links, et al., 2003). The TCM literature indicates that negative emotion occurs first within a session in order for problems to be elicited (deepen-and-provide), and is followed by an increase in positive emotion for problem solving processes to begin (broaden-and-build) (Mergenthaler, 2008). The present study indicates that most improved patients were able to move into a problem solving phase more quickly than least improved, marked by their higher number of connecting cycles early in session. This is consistent with our finding that therapists and most improved



patients had higher levels of positive emotional tone throughout the entire session, and that patients did not differ between groups in their levels of negative emotional tone. This indicates that both groups were initiating problems to be discussed, but that most improved patients were engaging in more ongoing positive problem solving processes. The finding that most improved patients moved more quickly into this problem-solving process may also be due to these patients finding it easier to engage with their therapist, or being more comfortable within the therapy process, which serves to emphasise the importance of the therapist techniques, and may impact on the way the patient and therapist converse (Ackerman & Hilsenroth, 2003; Orlinsky, et al., 1994).

Dialogue within a connecting cycle can be seen in an example from a transcript of a most improved patient: P: "...so hearing as we talk I sound very positive but I think I've got to put my thoughts into actions." T: "And so what's different between what you're telling me and how you really feel inside?" P: "It's like there are two voices- I want to go to tech and learn anything else exciting, but I'm telling myself that 'you're not going.' Because I've got such low confidence in myself I tell myself I can't do something that I know I've started and I know I do ... I can." Here we can see that the patient has insight into their own processes- their thoughts and actions within and outside of the session, and shows that they can connect their ambivalence with their self-understanding that they have the competence to complete difficult things. The therapist attempts to highlight the difference between where the patient is, and where they would like to be, by asking about emotion ('feel inside'). The patient responds with further insight into the connection between their thoughts and feelings. This passage demonstrates key features of the connecting cycle- patient and therapist insight into cognition and emotion in order to work through, or take action to problem solve, or "broaden and build" in some way. Therapist encouragement of positive emotional tone

within session can be seen in an example from the transcript of one of the most improved patients: P: "...it's obvious. Which is really sad because as I said, she hasn't done anything...I'm often trying not to think about it..." T: "...it's not pleasant to think about it obviously..." Here, the patient's word 'sad' is transformed by the therapist into 'pleasant', in an empathic yet positive connection to the difficult emotion. Further, the therapist uses a negation ('it's *not* pleasant') along with the positive term ('pleasant,') to uphold semantic meaning of what the patient has said. This subtle process suggests that the therapist may be encouraging the patient to shift into a positive problem solving process (Mergenthaler, 2008). Consistent with the findings of this study, therapist facilitation of the emotional expression of the patient has been found to be associated with improvement in psychodynamic psychotherapy (Diener, Hilsenroth, & Weinberger, 2007). Further, Town et al. (2012) found that at the level of psychotherapy processes, therapist intervention had significant impacts on immediate emotional arousal in the patient. Specifically, Carryer and Greenberg (2010) found that it is a moderate amount of expressed emotional arousal that is most helpful in therapy for depression, rather than a high or low amount of emotion. Particularly consistent with the results of the present study were findings by Missirlian, Toukmanian, Warwar and Greenberg (2005) that integration is what is important - emotional arousal in conjunction with information and perceptual processing was more predictive of positive outcome than either of these variables alone.

#### **3.4.2. 21-40 Minutes of Session**

Most improved patients spent a greater proportion of time in the connecting pattern than did least improved in the middle of session 3. Therapists and most improved patients spent more time in connecting cycles than did those least improved. This indicates that most improved patients continued, up to the 40<sup>th</sup> minute of therapy, to

activate and solve problems with their therapist by frequently connecting emotion and cognition. The finding that therapists of patients in this group had high levels of narrative words throughout the session suggests that therapists may have supported the continual activation of problems to be worked on in session, thus focussing on behavioural regulation.

### **3.4.3. 41-60 Minutes of Session**

Towards the end of the session, therapists and most improved patients spent less time in connecting cycles, and a greater amount of time relaxing than did those least improved. Therapists and most improved patients also spent more time relaxing during 41-60 minutes of session than they themselves did during 0-20 minutes. Relaxing is a period of descriptive language, where both emotional tone and abstraction is low. Conversation is typically not directly related to central issues, allowing regeneration (Mergenthaler, 2008). These findings indicate that critical work has not been done by the most improved patients in this late stage of the session, rather a period of recouping has occurred.

Therapists and least improved patients spent more time during the end 41-60 minutes of session in connecting cycles than did those most improved. Therapists and least improved patients also spent more time in connecting cycles at the end of session than they themselves did during 0-20 minutes or 21-40 minutes of session. This suggests that it took least improved patients 40 minutes before increasing problem solving via connecting emotion and cognition. In this last 41-60 minutes of session, therapist dialogue with least improved patients also had more emotional tone shift events than in the first 0-20 minutes. Shift events are a change to positive emotional tone to encourage connecting. This indicates that therapists may have worked hard with the least improved patients at the end of session to encourage positive emotion and problem solving,

consistent with the literature highlighting the importance of emotional processing and the therapist's role in facilitating this (Town, et al., 2012). This late activity for least improved patients and therapists may be due to therapists finding it more difficult to engage these patients in therapeutic work, or may be due to other patient and therapist variables, which may also impact on language variables (Ackerman & Hilsenroth, 2003; Orlinsky, et al., 1994).

#### **3.4.4. Overall in Session 3**

Most improved patients were found to pass significantly more connecting cycles over the entire session than did the least improved patients, consistent with previous research. As indicated, this is where emotion and cognition is connected in a positive way for problem solving to occur, and a “good therapy” will be marked by an increasing number of successfully completed connecting cycles (Mergenthaler, 2008). No significant differences were found in the number of shift events between the groups. This is interesting, as shift events to positive emotional tone have been associated with connecting and improvement in therapy. We may speculate that considering the finding that most improved patients and therapists had higher levels of positive emotional tone in their sessions, that after a shift event they were able to maintain positive emotion, whilst least improved may not have been. Alternatively, perhaps it is the quality of shift events, in terms of material covered that relates to mastery of deeper dynamic conflicts (Grenyer & Luborsky, 1996), rather than the number of shift events, that is important. This warrants further research. Further, abstraction levels did not significantly differ between outcome groups. It could be hypothesized that to promote change in this sample, it was necessary for therapists to regulate the valence of emotional tone rather than increase reflecting and intellectualisation. This may be due to the diagnostic characteristics of the sample, or of the style of the therapists or therapy used in the

study. Further research into patterns of cognitive-emotional processing in samples with specific diagnostic categories is needed. The finding of no group differences in the experiencing pattern (where emotion is high and abstraction low) should be noted, considering that emotional language itself was found to be important. Rather, times where high emotion coincided with cognitive language (connecting cycles) were found to be relevant to outcome. These findings are not only consistent with the TCM literature, but with literature on emotional processing in psychotherapy. Greenberg and Pascual-Leone (2006) suggest that neither emotional arousal alone nor reflection alone is sufficient for emotional processing, with studies suggesting that both are required for therapeutic change (Stalikas & Fitzpatrick, 1995; Watson, 1996).

There were several strengths and limitations within this study. As expected, analysing the patient and therapist data separately was valuable in drawing conclusions about the role of both speakers in therapy, and builds on previous research. A previous study investigating TCM variables between early and late sessions within a therapy, found no significant differences in combined patient-therapist language during early therapy sessions, but higher emotion and abstraction for successful patients during sessions late in therapy (Mergenthaler, 1996). It was concluded that a learning process was occurring across the therapy. However, the current study seems to build on these findings, through separating patient and therapist speech. This present study was able to show not only some therapist contributions towards improvement within a single session, but also that some of the processes towards improvement in therapy began at an early stage. Further, this study is the first to investigate the sequence of language use across an early session, in relation to long-term outcome. Limitations include the small and select sample utilised in this study. This may have limited the power of some analyses and increased the likelihood of spurious results. Replication would allow

further understanding with regards to the stability of these findings across different samples and conditions. However, this sample size is consistent with research in this field (Lepper & Mergenthaler, 2005, 2007, 2008), and is due to the time consuming nature of this kind of research given the magnitude of data to be managed and the larger pool required to be collected in order to allow a careful demographic matching procedure supporting the otherwise equivalence between samples. It should be noted that the conclusions drawn from this study are limited by the diagnostic criteria used to select the sample. Further, therapists in this sample spoke far less words within session than did patients. This made our aim of investigating therapist language alongside patient more difficult. As this data includes sequential in-session treatment events, possible interdependency between observations should be considered when interpreting the results. A number of analyses were completed in this study to test both a priori and exploratory hypotheses. Hence, there may be some risk of Type 1 error. The results of this study are further limited to analyses of a single therapeutic hour per patient. Although this fulfilled our aim to investigate processes within an early session, it is noted that a different pattern of results may be found in other sessions. Although the BDI scores at session 3 were not statistically different, it is possible that changes occurring both prior to this session, and throughout the entire course of the therapy, are also likely to impact on long-term outcome and further studies are needed to search further into these intriguing findings.

Therapists were able to use more positive emotional tone throughout sessions with most improved patients. This may have enabled a problem solving process and thus more linguistic markers, particularly in the first 40 minutes of session. We may hypothesize that therapists found it more difficult to engage least improved patients in therapeutic work. Least improved patients appeared to struggle to move from problem

activation (deepen-and-provide) to the problem solving process (broaden-and-build), and their therapists seemed to work hard to initiate this process at the end of session. It seems that work done during the first 40 minutes of session is most valuable. These results provide a first step towards characterising the interior nature and sequence of psychotherapy sessions via the emotional-cognitive language used. Future research into therapeutic processes across the session would be valuable. Should further research replicate these findings of the importance of specific patterns of therapist-patient dialogue, this could have profound implications for how clinical psychotherapy treatments are manualised, and provide specific guidance for desirable therapist and patient behaviours through the therapy hour.

## **CHAPTER FOUR**

### **STUDY 3: SIGNIFICANT CHANGE EVENTS IN PSYCHOTHERAPY: IS COGNITION OR EMOTION MORE IMPORTANT?**

This chapter is currently under second round of review as a manuscript for the journal *Psychotherapy*.

McCarthy, K. L., Caputi, P., & Grenyer, B. F. S. (in review). Significant change events in psychotherapy: Is cognition or emotion more important? *Psychotherapy*.



#### **4.1. INTRODUCTION**

Investigation of therapeutic processes of change for the patient and therapist is critical to the continual improvement of outcomes from psychotherapy (Elliott, 2010). Identifying significant events, moments considered to have a helpful impact in therapy, provides rich data on therapeutic change processes, and has been a long-standing approach beginning with experiential therapies (Elliott, 1985). Continued research has found that helpful, client-identified moments in experiential therapies involve improvement of the therapeutic relationship or personal change (Elliott, et al., 2013). Research into significant events has expanded to a number of therapies, with employment of varied methods of event identification.

In cognitive-behavioural therapies, significant events have been identified as containing problem solution processes, with insight involving the reattribution of triggers rather than emotional content (Elliott, et al., 1994). Significant events in psychodynamic therapies have been linked to moments of awareness and contact with the therapist, as well as insight into themes from previous sessions and awareness of painful emotions (Elliott, et al., 1994). Recent work in narrative therapy had independent researchers identify types of significant events linked to therapy outcome called innovative moments - action, reflection, protest, reconceptualisation, and performing change moments (Gonçalves, et al., 2011).

Methods have also been employed to examine significant moments across therapeutic orientations. Krause, et al. (2007) adopted a hierarchy of 19 generic change indicators used by independent researchers to qualitatively identify change moments in therapy. These indicators included acceptance, expression, questioning, and discovery of problems, emotions, and relationship to self and others. These were recognisable from early sessions and found to be related to outcomes. Valdés, et al. (2010) reported that in

generic change moments there was a higher percentage of unpleasant emotions than pleasant emotions. Castonguay, et al. (2010) investigated helpful events across a range of therapeutic orientations using the Helpful Aspects of Therapy (HAT) form, where patients and therapists reported, described and rated events they considered to be particularly helpful or unhelpful in a session. These events were then rated by independent researchers using the Helpful Aspects of Experiential Therapy Content Analysis System (HAETCAS), which consists of categories such as awareness, insight, metaperception, alliance, problem clarification and solution, finding that self-awareness was considered especially helpful in therapy (Castonguay, et al., 2010).

Various therapeutic orientations have found significant events to be related to symptomatic outcome, with some common themes emerging regarding the characteristics of such events (Castonguay, et al., 2010; Gonçalves, et al., 2011; Krause, et al., 2007). It seems that processes involving awareness of feelings and thoughts in the context of the therapeutic relationship are important (Castonguay, et al., 2010; Elliott, et al., 1994; Elliott, et al., 2013). However, the relative importance of emotions compared to cognitions in significant change events has not been investigated. Some work has suggested that integration of emotional and cognitive processing in therapy is related to outcome, rather than either variable alone (Missirlian, et al., 2005) but this remains an intriguing finding requiring more research.

Contemporary linguistic processing technologies provide tools to further explore some aspects of the emotion and cognition relevant to significant change events in various styles of psychotherapy. Mergenthaler (1996) developed the Therapeutic Cycles Model (TCM), a theory-driven, computer-assisted text analysis program for verbatim transcripts of therapy sessions, to reliably identify significant change moments within any orientation of therapy. The TCM identifies significant change events as ‘therapeutic

cycles' describing particular aspects of the interaction between client and therapist that have greater linguistic complexity and depth (Benelli, et al., 2012). Research using the TCM attests to its validity, in that it shows that therapies with good outcomes are characterised by an increasing number of significant change events with high emotional tone and cognition (McCarthy, Mergenthaler, & Grenyer, 2014; McCarthy, et al., 2011; Mergenthaler, 1996, 2008). McCarthy, et al. (2014) used the TCM to investigate significant change events in an early session that followed after the initial relationship establishment and goal setting that typically occurs in the first two sessions (Comninos & Grenyer, 2007). Identified change events, classified by high levels of emotional and cognitive language, were found to be related to outcome, and further, the prevalence of these change events differed across the course of the session. To date only one study has investigated the nature of the significant change event measured by the TCM, finding greater frequency and length of topics within significant moments (Lepper & Mergenthaler, 2008). TCM literature posits that negative or unpleasant emotion occurs first within a session for problems to be elicited (known as 'deepen-and-provide'), followed by an increase in positive emotion for key moments of problem-solving to begin (known as 'broaden-and-build'; Mergenthaler, 2008). Similarly, Pennebaker and Francis (1996) found that students who used more positive emotion words and words indicating insight and causal thinking when writing about thoughts and feelings had better health outcomes. This is in contrast to the findings of Valdés et al. (2010), where raters found more negative emotion present in change moments. The qualities of emotion and cognition, that is, the valence of emotion and the type of cognitive processes in the key moments identified by the TCM, have not been studied.

Based on previous research finding links between early-session significant events and therapeutic outcome (Krause, et al., 2007; McCarthy, et al., 2014), this study aimed

to investigate the characteristics of early-session key moments within a therapeutic session using both human-based qualitative manually coded methods (HAT) and computerised linguistic methods (TCM). As both measures are established methods of identifying significant events in therapy, we expect there to be a strong concordance in selection of events between the two methods although this has not been studied previously. We expect that these qualitative codings will identify how the awareness of thoughts, feelings and behaviours appear in significant change moments (Castonguay, et al., 2010; Elliott, et al., 1994). We aim to study these different human and computer-based linguistic methods and measures to investigate the relative contributions and features of emotions and cognitions in significant events. Further, we aim to clarify the previous contradictory findings regarding the relative contribution of positive and negative emotions in these significant therapeutic events, compared to non-event therapy passages.

## **4.2. METHOD**

### **4.2.1. Data Sample**

The 20 participants from study 2, who met DSM-IV diagnoses (American Psychiatric Association, 1994) of depression and a personality disorder (Cluster A: 2, Cluster B: 6, Cluster C: 12, Not otherwise specified: 8), were also the focus of the present study. Patients were independently assessed with a SCID structured clinical interview by an experienced clinician with training and excellent reliability on the measures (SCID-I and SCID-II; First, et al., 1997; First, et al., 1996). Those studied were selected from the consecutive patients seen at a university clinic who met the criteria for both diagnoses and who had undergone a complete course of treatment with

varied outcomes. All participants gave informed consent to participate in the research following Institutional Review Board approval.

The patients undertook 16 once-weekly sessions of manualised, time-limited, dynamic psychotherapy for depression and personality disorder. The therapy was conducted in English using a supportive-expressive approach, by doctoral-level clinical psychologists trained in the use of psychodynamic psychotherapy with a well-established evidence base (Leichsenring & Leibing, 2007; Luborsky, et al., 1995; Shedler, 2010). Therapists were supervised by a PhD level clinician with extensive experience in the therapy, who monitored adherence and competence.

#### **4.2.2. Measures**

The Helpful Aspects of Therapy (HAT) was developed by Llewelyn (1988), where patients and therapists identify helpful and non-helpful events in a therapy session, describe them, and then rate them on a scale. We used a method adapted from Castonguay et al. (2010) as follows. The level of helpfulness is indicated on a 9 point scale (1= slightly hindering – 4=extremely hindering; 5=neutral; 6=slightly helpful – 9=extremely helpful). The HAT has been found to be a reliable measure between patient and therapist raters (Llewelyn, 1988). The current study used the HAT in a novel way for independent researchers to apply the measure to session transcripts. A transcript was split into blocks of words for units of analysis (to be comparable to those usually generated by the therapists and patients using the HAT) and rated by independent raters on the helpfulness scale (see Table 1). The Helpful Aspects of Experiential Therapy Content Analysis System (HAETCAS) was developed by Robert Elliott and modified by Castonguay et al. (2010) to describe helpful events identified by the HAT using categories as described in Table 1. The HAETCAS has been used in different ways in various studies, for example, categories coded as being present or

absent in an event, or coded on a scale from clearly absent - clearly present, and has shown acceptable reliability (over  $\kappa=.60$ ) (Castonguay, et al., 2010). This current study used the HAETCAS in a novel way to assist independent researchers to apply the HAT to session transcripts. Word blocks were scanned for statements falling into any of the HAETCAS categories, and each statement assigned a category as appropriate. To identify word blocks that were particularly important, rules were developed using the HAT scale and HAETCAS, described in Table 1. A word block was classified as a significant event if the number of HAETCAS statements it contained was above the mean number of statements per word block for that transcript. This method ensured we identified blocks with significant concentrations of HAETCAS categories, and ensured we could adequately calculate the reliability of event selection by independent raters.

Table 1. *Description of HAETCAS Categories and Rules for HAT Ratings*

<b>HAETCAS Category</b>	<b>Description</b>
Insight	Client understands self or others (feelings, behaviours) better by seeing reasons, causes, connections, or parallels.
Awareness	Client more in touch with or clearer about presence or nature of feelings, behaviours, physical states or perceptions of self or others.
Positive views	Client comes to feel or think more positively and/or less negatively about self or others.
Metaperception	Client sees self or other from another person's perspective.
Problem clarification	Client identifies or becomes clearer about what his/her problems are or what s/he wants or wants to change.
Problem solution	Client figures out (realizes, comes closer to knowing) how to resolve a specific problem or achieve a specific goal or task.
Alliance strengthening	Client feels 1) understood, 2) supported, encouraged or reassured, 3) more involved or invested in therapy or its tasks (feels more able or freer to enter into therapeutic relationship), 4) closer to or better about therapist.
Relief	Client feels less negative: relieved, unburdened, relaxed, less depressed or hurt; or more positive: relaxed, safe, or confident or hopeful.
<b>HAT Score</b>	<b>Number of required HAETCAS coded statements per word block</b>
5- Neutral	$\leq 1$ coded statements
6- Slightly Helpful	2 coded statements
7- Moderately Helpful	3 coded statements
8- Greatly Helpful	4 coded statements
9- Extremely Helpful	$\geq 5$ coded statements

Note. HAETCAS descriptions adapted from Castonguay, et al. (2010).

The Therapeutic Cycles Model (TCM) computer software (Mergenthaler, 1996) is a text-analysis program developed to investigate the linguistic properties of psychotherapy sessions. Significant events are identified as ‘therapeutic cycles,’ defined by Mergenthaler (2008) as “any sequence of emotion-abstraction patterns that includes at least one connecting block and is delimited by a relaxing block before and after” (p. 116). The connecting pattern is identified where emotion and abstraction words are both above the mean of emotion and abstraction words for a session, whereas the relaxing pattern is identified where emotion and abstraction are both below the mean. Hence, the

TCM is a therapy specific measure that creates its own norms for language use in a given session, to which passages are compared in order to identify the significant moments (Mergenthaler, 2008). The TCM has been found to reliably identify events that then sensibly are related to treatment outcome, supporting the validity of the approach (Mergenthaler, 2008). The emotion tone dictionary includes words that fall into one of the following dimensions: pleasure-displeasure, approval-disapproval, attachment-disattachment and surprise. However, these variables are subsumed in data output under the emotional tone variable. The abstraction dictionary uses a suffix analysis to identify abstract word forms, for example, -ity, -ness, -ment, and thus does not identify specific categories of such words.

The Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, et al., 2007) is a computer-assisted method for studying emotional, cognitive and structural aspects of verbal and written speech. The LIWC compares transcripts to its dictionary, providing counts of words, as proportions of the total words analysed within the transcript, that tap into 66 various domains or word categories. The LIWC has been validated across a number of studies as detailed by Pennebaker, Chung, Ireland, Gonzales and Booth (2007) with the psychological language categories related to health outcomes. In line with the aims of this study, we used LIWC word categories tapping into affective and cognitive processes. Affective processes were words matching the dictionary for positive emotion (e.g. love, nice), and negative emotions of anxiety (e.g. worried, fearful), anger (e.g. hate, kill) or sadness (e.g. crying, grief). Cognitive processes were words matching the dictionary for insight (e.g. think, know), causation (e.g. because, effect), discrepancy (e.g. should, would), tentative (e.g. maybe, perhaps), certainty (e.g. always, never), inhibition (e.g. stop, block), inclusive (e.g. and, with), and exclusive (e.g. but, without).



### **4.2.3. Procedure**

#### **4.2.3.1. Data and statistical analysis.**

Each of the 20 transcripts of an early session (usually session 3) were split into blocks of 150 words according to the method of Mergenthaler (1996) in order to describe the flow of observed variables across the session. This created 1195 separate word blocks as units for analysis. Two independent researchers were trained to an inter-rater reliability of  $r=.80$  using the helpful scale of the HAT form to rate the helpfulness of each of the word blocks. As described above, these raters were external to the therapy process, and hence the HAETCAS categories were used to guide their ratings on the scale. Word blocks identified as significant events were then isolated and descriptive statistics, averaged between the two raters, were used to report the occurrence of HAETCAS category selections. Nonparametric Spearman's rho was used to investigate reliability of the two raters within significant word blocks on selection of HAETCAS categories. The TCM was also used to identify significant events (see McCarthy, et al., 2014). Inter-rater reliability of selection of events and non-events by the two HAETCAS raters and the TCM was determined using Krippendorff's alpha due to the multiple ratings and raters (Hayes & Krippendorff, 2007).

After determination of TCM significant events, files were prepared and analysed using the LIWC software according to Pennebaker, Booth, et al. (2007). LIWC data for significant event word blocks were statistically compared to LIWC data for non-event word blocks using the repeated measures Wilcoxon Signed Rank test. Nonparametric tests were used as data was not assumed to follow a normal distribution. Multiple comparisons were done using the step-down Sidak adjustment (Sidak, 1967). Cohen's  $d$  was used to calculate effect sizes as it is the most widely used statistic, however, it should be noted when interpreting results that it assumes normality.

### 4.3. RESULTS

The mean number of words in a session transcript was  $M=7960.90$ , and the mean number of word blocks per session was  $M=59.75$ . Transcripts ranged in the number of words per session from 5390 to 10494, and in the number of word blocks per session from 39 to 81. Event selection by the two independent raters using the HAT was found to have an adequate agreement with events selected by the TCM,  $\alpha=.73$ . Averaged across the two raters, 526 significant event word blocks and 669 non-event word blocks were found using the HAT and HAETCAS method. There were 477 significant event word blocks and 718 non-event word blocks found by the TCM. Across HAT significant events, the two independent raters were found to have strong agreement of HAETCAS category selection for the categories insight ( $r_s=.74$ ,  $p=.000$ ), awareness (.75), problem clarification (.72) and alliance (.82). Moderate agreement was found for the categories metaperception (.55) and problem solution (.40), although these categories were rarely used. The categories positive views and relief were used so infrequently that reliability could not be calculated.

In short, significant events during session 3 (see Table 2) were most commonly characterised by awareness of the thoughts, feelings and behaviours of self and others, followed by insight into the causal links of the thoughts, feelings and behaviours of self and others, and alliance strengthening of the patient-therapist relationship.

Table 2. *Occurrence of HAETCAS Categories in Significant Events*

HAETCAS Category	<i>M</i>	<i>SD</i>	%
Insight (self and other)	5.38	10.35	8.85%
Awareness (self and other)	48.78	14.78	80.80%
Positive views (on self and others)	0.00	0.00	0.00%
Metaperception (self and others)	0.43	1.35	0.70%
Problem clarification	0.35	0.63	0.58%
Problem solution	0.38	0.98	0.62%
Alliance strengthening	5.03	4.42	8.32%
Relief	0.08	0.24	0.13%

Note. *M*= mean number of statements coded as the specific HAETCAS category per participant (*N*=20) for all significant event word blocks, averaged for two raters. *SD*= standard deviation. %= percentage of total statements (mean *n*=1208) coded across significant event word blocks that were coded as the specific HAETCAS category, averaged for two raters.

LIWC analyses revealed that significant event blocks contained a greater proportion of words indicating affective processes, specifically, more positive emotion, negative emotion, anger and sadness, than did non-events blocks. In addition we found on the cognitive processes dimension, that significant events contained a greater proportion of words indicating insight than did non-events. No other differences in cognitive language were found. Table 3 presents these results.

Table 3. *Emotional and Cognitive Language used in Significant Events Compared to Non-events*

LIWC Variable	Significant Events		Non-Events		Z	Adjusted <i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
<b>Psychological Processes</b>							
<b>Affective Processes</b>	5.13	.92	3.74	.72	-3.88	.002*	1.67
Positive emotion	2.99	.80	2.42	.50	-2.88	.043*	.85
Negative emotion	2.07	.63	1.28	.37	-3.66	.004*	1.51
Anxiety	.52	.39	.34	.24	-2.46	.107	.57
Anger	.59	.43	.33	.20	-2.95	.038*	.79
Sadness	.40	.18	.23	.13	-2.82	.047*	1.05
<b>Cognitive Processes</b>	20.57	2.13	19.65	1.51	-2.67	.066	.49
Insight	3.88	.90	3.41	.77	-3.02	.032*	.56
Causation	1.64	.37	1.55	.26	-1.78	.425	.30
Discrepancy	1.77	.53	1.63	.36	-1.70	.425	.31
Tentative	4.45	1.58	4.12	1.27	-1.76	.425	.23
Certainty	1.20	.43	1.09	.28	-1.05	.753	.29
Inhibition	.34	.14	.30	.15	-.93	.753	.28
Inclusive	4.97	.80	5.02	1.03	-.47	.871	.06
Exclusive	4.24	.78	4.22	.79	-.04	.970	.02

Note. LIWC variables are calculated as percentages of total words spoken. *N*=20. *p* is adjusted using the step-down Sidak (1967) method of multiple comparisons.

#### 4.4. DISCUSSION

This study examined the characteristics of significant change moments in early sessions of psychotherapy to understand the roles of cognition and emotion. Key moments were identified by human raters using the Helpful Aspects of Therapy form. Findings using the computerised Therapeutic Cycles Model, showed strong concordance with human HAT ratings. This is the first study to utilise this combination

of observer and computerised methods to investigate significant events. The HAT was used to identify significant events based on the concentrations of Helpful Aspects of Experiential Therapy Content Analysis System codings made by two independent raters. This analysis revealed that significant events were characterised mostly by high levels of awareness into thoughts and feelings, followed by insight into causal links to thoughts and feelings, and moments of alliance strengthening. The TCM identifies significant change moments as ‘therapeutic cycles’, describing particular aspects of the interaction between client and therapist that had greater emotional-cognitive complexity. The Linguistic Inquiry and Word Count (LIWC) was used to further investigate the nature of the high emotional and cognitive language used in these significant change moments compared to non-event passages. This analysis found that significant change moments had significantly more positive emotion, more negative emotion, more sadness and anger, and more cognitive insight language. Consistent with sudden gains research, we found that moments of significant connection and emotional and cognitive change could be identified in these early sessions (Comninou & Grenyer, 2007).

As expected, the significant events identified by the HAT and the TCM methods had a high level of concordance. This is an important finding, indicating that the linguistic method used is indeed identifying therapeutic moments of clinical relevance in high agreement with human raters. Clinical observer ratings of increased awareness and insight into emotions and cognitions in the context of the therapeutic alliance coincided with high levels of emotional and cognitive language use characterised by linguistic markers of cognitive insight into positive and negative emotions. Whilst the findings from the HAETCAS ratings are consistent with those found by Castonguay, et al. (2010), it may be interesting for future research to consider whether these

characteristics differ in later sessions of therapy. Because the therapy was psychodynamic, it is intriguing to consider if the processes seen here match the specific focus on affect and insight that characterise this treatment, a finding which could also be explored in future research.

It may be hypothesised that, in this sample, cognitive insight into emotional material, both positive and negative, was important to the clinical process. These results support Missirlian, Toukmanian, Warwar and Greenberg (2005) who found that emotional arousal in conjunction with information and perceptual processing was more predictive of positive outcome than either of these variables alone. Both emotional arousal and cognitive reflection were found to be necessary for optimum emotional processing, and the integration of these processes is consistently related to therapeutic outcomes (Pos, Greenberg, Goldman, & Korman, 2003). These findings are also consistent with some cognitive-behavioural thinking, where change can be seen to be the integration of cognitive mechanisms alongside the management and containment of emotional arousal and behaviour (J. S. Beck, 2011). Further, Flückiger, Grosse Holtforth, Del Re and Lutz (2013) suggest that early change in cognitive-behaviour therapies be explored in therapy, both cognitively and emotionally.

The finding that both positive and negative emotions, particularly anger and sadness, characterised significant change events in this study provides new perspective to some previous research into change episodes which reported more language indicating unpleasant rather than pleasant emotions (Valdés, et al., 2010). The theory underpinning the TCM suggests that negative emotional language facilitates the presentation of problematic material (through deepen-and-provide problem activation), whereas positive emotional tone initiates the problem-solving process of the significant event (through broaden-and-build problem solving). Our findings are consistent with

this TCM model, and suggest that all emotion, positive and negative, is important to be worked through. Anger and sadness were found to be particularly relevant emotions within the significant events in the current study. A study exploring 'unfinished business' in therapy found that significant emotional transformations were preceded by arousal and expression of anger and sadness (Greenberg & Malcolm, 2002). Further, studies have found that the arousal and expression of anger in therapy was related to therapeutic change (Van Velsor & Cox, 2001).

The present study also has some limitations, such as a small sample size and focus on early sessions (although yielding a large number of data points). Further research is warranted in larger samples to replicate the results across different samples and conditions, as well as samples from a larger number of sessions. It should also be noted that the computerised linguistic methods used in this study rely on a dictionary approach. It would be interesting to investigate contextual meaning captured by methods such as n-gram models (statistical prediction of natural language sequences taking groups of words into consideration) or topic models (statistical modelling of the themes present in text based on the combinations of words present) in future research.

This paper poses the question - is emotion or cognition most important in these significant helpful moments of therapy? We found it was both - the integration of emotion and cognitive insight are important to improvement in psychotherapy. Importantly, these occurred in the context of heightened therapeutic alliance. This is consistent with functional neuroimaging studies finding that limbic and cortical communication pathways are stimulated by psychotherapy (Messina, et al., 2013). The convergence of the 'deepen-and-provide' problem activation and the 'broaden-and-build' problem solving processes appear to be specifically helpful to therapy. A strong alliance

may be the basis upon which the patient can work through both negative and positive emotions towards cognitive insight.



## **CHAPTER FIVE**

### **OVERALL SUMMARY AND FUTURE DIRECTIONS**

#### **5.1. INTEGRATION OF RESULTS**

The series of studies in this thesis has made discoveries about the emotional-cognitive processes of change in therapist-patient psychotherapeutic interactions for patients with complex diagnoses. In concordance with the aims of the thesis, these studies have:

1. Established a correspondence between the emotional-cognitive therapeutic dialogue of patient and therapist, and the structural dynamic change of the patient across treatment (Study 1).
2. Revealed detailed linguistic interactions between patient and therapist language across a single and complete case of psychotherapy via the development of a new variant of the Therapeutic Cycles Model method (Study 1).
3. Discovered a relationship between the early session emotional-cognitive language of therapists and patients, particularly linguistic significant change events, and long-term therapy outcome (Study 2).
4. Characterised the interior of early therapy sessions, showing that the linguistic processes over the course of the session differ dependent on long-term treatment outcome (Study 2).
5. Delineated the qualities of qualitative and linguistic significant change events that make them significantly different to other moments in therapy (Study 3).

This thesis developed a series of investigations that continually built and elaborated on findings. Study 1 used a novel variant of the TCM method to separate therapist-patient language and focus on the level of an in-depth complete single therapy case.

This revealed an interesting finding- that the therapist was connecting high emotion and cognition for two sessions before the patient began to connect in the same way, which resulted in a significant change event, or connecting cycle. Study 2, also by separating therapist-patient language, revealed that both therapists of most improved patients (at 12-month follow-up), and most improved patients themselves, had significantly more positive emotional tone in the session. However, it was the therapists only whose language use with most improved patients (as compared to therapists with least improved patients) was significantly higher in narrative words, and significantly lower in negative emotional tone words. These results from Study 1 and 2 have important clinical implications, suggesting that therapist language promotes patient improvement. Further, the language that was most helpful was dialogue high in emotional and cognitive words, particularly positive emotion and narrative words. TCM research would suggest that increased positive emotion and narrative use by the therapist may have enabled elicitation of problematic stories and a problem solving process linked to improvement (Mergenthaler, 2008).

Study 1 reported correspondence between the emotional-cognitive dialogue of the patient and therapist, and the dynamic structural change of the patient. When the dialogue of the patient and therapist was part of a significant change event, a connecting cycle with high levels of emotional and cognitive language, significantly more dynamic change occurred for the patient. A non-linear pattern of dynamic change was evident across the therapy, with shifts in therapeutic foci evident from session to session. Study 1 provides a new perspective on the accumulative nature of progress within psychotherapy.

Whereas Study 1 focussed the lens of research on a single case studied over 4 months of treatment, Study 2 and 3 focussed on 20 cases at one moment of their therapy journey- session 3. Study 2 found that the most improved patients had significantly more connecting cycles, or significant change events, over the course of session 3 than did the least improved patients. This finding was consistent with previous research (Mergenthaler, 2008). In order to progress these findings further, Study 3 focused on the qualities of the significant change event, investigating the nuances of language in connecting cycles as compared to other moments in session 3. Firstly, Study 3 importantly found that selection of significant events by independent raters had a high level of agreement with the TCM selection, providing further evidence for the clinical relevance of the TCM connecting cycle. Study 3 found that qualitative significant change events contained high levels of awareness and insight into thoughts and feelings, along with a high incidence of alliance strengthening moments. This corresponded with linguistic events containing significantly more affective process language than non-events, particularly containing more positive emotion, negative emotion, sadness and anger than non-events. On the cognitive processes dimension, significant events were found to have more insight language than non-events. The results have further implications for clinical practice, that is, encouraging dialogue with the patient to work through both negative and positive emotions whilst maintaining cognitive insight in an integrative way, is linked to positive therapeutic outcomes.

Study 2 characterised the linguistic interior nature of session 3 based on 12-month follow-up outcome of the patients. Sessions were divided into beginning, middle and end segments. It was found that during the first 40 minutes of session 3, therapist-patient dyads most improved spent more time in significant change events of high emotion and cognition, or connecting cycles. Therapist-patient dyads that were least

improved spent more time in these connecting cycles during the last 20 minutes of session, whilst those most improved moved into a relaxing phase. The findings interestingly suggest that the timing of therapist-patient dialogue throughout session is important, as it seems that work done during the first 40 minutes of session is the most valuable.

The results reported in this thesis have some important theoretical and clinical implications. Relationships were found between aspects of patient-therapist verbal communication and therapeutic outcome, providing some evidence for Mergenthaler's (2008) Resonating Minds Theory (RMT). The RMT proposes that affective experiencing, cognitive mastery and behaviour are brought about in therapy via the interactive communication between the minds of patient and therapist, and can be examined in their verbal exchange. The finding in study 2 that therapist-patient language variables were positively related to outcome early in session and negatively related to outcome late in session was a novel finding. The way in which patient-therapist interactive communication occurs in sessions, and when this occurs in sessions, appears to be related to outcome- adding a new dimension to the RMT. Hence, the findings of the thesis suggest important clinical implications for the training of therapists (as detailed specifically above), as the way therapists use language with the patient in session, was related to outcome. However, these findings would be strengthened by replication, and by investigation of causal links in future work. Perhaps use of more powerful statistical techniques such as structural equation modelling (with larger sample sizes) will help test theoretical models and reveal the strength of relationships between therapeutic process variables and therapy outcomes.

## **5.2. LIMITATIONS AND STRENGTHS**

Limitations of each of the studies have been noted in the discussion section of each chapter. However, some general limitations of this thesis will be commented on here. Firstly, the studies in this thesis rely on small sample sizes. Therefore, the power of some analyses may have been limited, and the results require replication. There are a number of reasons for the samples used in this thesis. Most importantly, the primary aims of this thesis were to examine therapeutic processes at an in-depth level, for which an intense level of scrutiny to a smaller amount of data was necessary in order to illustrate the nuances of such processes. For some aspects of the studies here, the small sample in fact yielded a large number of data points to be managed with a time-consuming method of analysis, and thus smaller samples are consistent with research in this field (Lepper & Mergenthaler, 2005, 2007, 2008). Regarding the power of the analyses in this type of research, it is important to consider that whilst the sample size itself is small, a single measure is not taken from each participant. Rather, thousands of measurements are commonly taken from each patient over a period of time. Taking extensive internally repeated measures increases the power of the analyses, the estimated validity and minimises the estimated error, and therefore findings are commonly robust. Hence, within this literature it is considered that even a single participant case study, with measurements taken from multiple sessions across time, provides adequate statistical power with robust results.

The diagnoses of patients involved in the thesis vary slightly across the studies, and are broad. This limits the specificity of conclusions to be drawn regarding patient diagnosis and the language variables studied. The data used in this thesis is sequential in-session treatment events, and further, it is noted that whilst these studies involved the separate investigation of therapist and patient language, this language is examined in context, with each speaker's words influenced by the other in the interpersonal

exchange. Whilst such unfolding interactions are an assumption and requirement of therapeutic processes, possible statistical interdependency between observations should be considered when interpreting the results. This is often an intentional design feature of psychotherapy studies and indeed helped us to understand the interaction between the therapist and patient dialogue (e.g. in Study 2).

There were also a number of strengths to this thesis. Primarily, new methods of research were developed, which allowed for the examination of the individual linguistic contributions of therapist and patient to the therapeutic process. The approach here was a new contribution to the literature. Similarly, this thesis contributed to the literature by analysing the interior characteristics of a session across its time course, again with useful implications for increasing the likelihood of beneficial therapeutic outcomes. This is the first time all sessions ( $N=16$ ) have been analysed by these methods. The combination of qualitative and quantitative methods used maximised the richness of conclusions that could be drawn. In each study, the patients were carefully diagnosed, the treatments were manualised, and the therapists were closely monitored for adherence and competence. The combination of sample characteristics across this thesis, that is, the sample of singular sessions alongside the single case of complete therapy, further adds to the scope of knowledge and implications gained. Finally, this thesis includes the only studies to have investigated such early session processes and language use and found consistent links to long-term outcomes for patients.

### **5.3. FUTURE DIRECTIONS**

The findings of this thesis highlight the importance of linguistic processes to change in psychotherapy, and the wealth of clinical information to be gained from the investigation of significant change events. These studies have provided insight into

specific helpful patient and therapist behaviours in treatment. Hence, further research is warranted to replicate and build on the promising discoveries made thus far. Ideally, future studies would involve larger sample sizes, and could investigate the role of diagnoses more specifically. It would also be useful for further studies to investigate processes in different types of psychotherapy. The therapy examined in this thesis was psychodynamic, and it is intriguing to consider if the processes found match the specific focus on affect and insight that characterise this treatment. This thesis focussed on session 3 for particular scrutiny, and it would be fascinating to investigate similarities and differences between processes in other sessions across the time course of therapy, for example, whether the linguistic qualities of significant events differ in any way dependent on session. Thus, further conclusions could be drawn to inform treatment providers of how successful and unsuccessful therapy unfolds over time.

In sum, the results suggest that the therapeutic conversation between patient and therapist is a dynamic vehicle for psychotherapeutic process and change. Conversation that allows and encourages the elicitation of problematic material, the working through of both positive and negative emotions, and an integration of cognitive insight, is the dialogue that promotes long-term therapeutic change.

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## APPENDIX A

Possible foci selections from the 3 axes rated from the OPD-2 (OPD Task Force, 2008):

### **Axis II: Relationship-dynamic formulation**

Please describe:

...how the patient again and again experiences others:

...how he reacts to what he experiences:

...offer of relationship the patient makes to others (unconsciously) with this reaction:

...which answer he induces in others (unconsciously) that way:

...how the patient experiences it if others react as induced:

### **Axis III: Repetitive-dysfunctional conflicts**

1. Individuation versus dependency
2. Submission versus control
3. Need for care versus self-sufficiency
4. Self-worth conflict
5. Guilt conflict
6. Oedipal conflict
7. Identity conflict

### **Axis IV: Structure**

#### **Self-perception**

ST1.1 Self-reflection

ST1.2 Affect differentiation

ST1.3 Identity

#### **Self-regulation**

ST2.1 Impulse control

ST2.2 Affect tolerance

ST2.3 Self-worth regulation

#### **Internal communication**

ST3.1 Experiencing affects

ST3.2 Use of fantasies

ST3.3 Bodily self

#### **Attachment capacity: external objects**

ST4.1 Internalisation

ST4.2 Use of introjects

ST4.3 Variable attachments

#### **Object perception**

ST1.4 Self/object differentiation

ST1.5 Whole object perception

ST1.6 Realistic object perception

#### **Regulation of object-relationship**

ST2.4 Protection of the relationship

ST2.5 Balancing of interests

ST2.6 Anticipation

#### **Communicating with the external world**

ST3.4 Making contact

ST3.5 Communication of affects

ST3.6 Empathy

#### **Attachment capacity: External objects**

ST4.4 Ability to make attachments

ST4.5 Accepting help

ST4.6 Severing attachments

## APPENDIX B

The Heidelberg Structural Change Scale (from Grande et al., 2009).

Stages		Manual excerpt
1. <i>Problem area warded off</i>	exact	The problem is entirely unconscious; associated experiences are evaded; problematic behaviour is ego-syntonic; the patient has "no problem" with the problem area
	1	
	match	
	1+	
2. <i>Unwanted preoccupation with the problem</i>	tendency↓	Unpleasant feelings and thoughts in connection with the problem area can no longer be immediately rejected, but preoccupation with the problem is reluctant; external confrontations with the problem take place, but are rejected as disturbances; the patient does not realise that problems might be associated with his/her own person
	2-	
	exact	
	2	
3. <i>Vague awareness of the problem</i>	match	Patient notices/suspects the existence of a problem that is part of him/herself and cannot simply be rejected; recurrence causes the problem to take on a continuing existence; negative affects originate from the tension between the insistent nature of the problem and the pat.'s defensive/aversive attitude
	2+	
	tendency↓	
	Tendency↑	
4. <i>Acceptance and exploration of the problem</i>	3-	The problem begins to take on a new shape within the pat.'s consciousness; there are incipient indications of an active, "head-on" preoccupation with the problem; the problem can now be formulated as an "assignment" and can hence be made the subject of therapeutic work; destructive, rejective responses may interfere with this attitude but can no longer undermine it altogether
	exact	
	3	
	match	
5. <i>Deconstruction in the problem area</i>	3+	Querying and disintegration of accustomed coping modes; uncertainty concerning evaluations of own person and others; perception of own limitations and deficiencies; resignation and moods of despair alternate with urges toward reparation; old modes are lost and cut off, new ones not yet accessible
	tendency↓	
	tendency↑	
	4-	
6. <i>Reorganization in the problem area</i>	exact	Abandonment and final relinquishing of accustomed coping modes; pat. is increasingly self-reliant in his/her own experience and able to take control of and assume responsibility for his/her own life in the problem area; increasingly conciliatory approach to problem area; solutions materialize spontaneously and unexpectedly; re-integration
	4	
	match	
	4+	
7. <i>Integration of the problem</i>	tendency↓	Dealing with the problem has become something natural; the area has lost its special significance in the eyes of the pat.; the problem is something which belongs to the past, preoccupies pat. as a memory
	Tendency↑	
	6-	
	exact	
	6	
	match	
	6+	
	tendency↓	
	Tendency↑	
	7-	
	exact	
	7	
	match	

## APPENDIX C

Item 3 from the Helpful Aspects of Therapy (HAT) Form (Llewelyn, 1988).

How helpful was this particular event? Rate it on the following scale.

HINDERING <-----				Neutral	-----> HELPFUL			
1	2	3	4	5	6	7	8	9
-----	-----	-----	-----	-----	-----	-----	-----	
E	G	M	S		S	M	G	E
X	R	O	L		L	O	R	X
T	E	D	I		I	D	E	T
R	A	E	G		G	E	A	R
E	T	R	H		H	R	T	E
M	L	A	T		T	A	L	M
E	Y	T	L		L	T	Y	E
L		E	Y		Y	E		L
Y		L				L		Y
		Y				Y		

Helpful Aspects of Experiential Therapy Content Analysis System (HAETCAS;  
Castonguay, et al., 2010).

### Helpful Events

Category	Definition
Self-insight	Client understands self (feelings, behaviours) better by seeing reasons, causes, connections, or parallels involving feelings or behaviour.
Other-insight	Client understands another person better by seeing connections, causes or reasons for their behaviour or experiences.
Self-awareness	Client more in touch with or clearer about presence or nature of personal feelings, own behaviours, physical states or perceptions of self.
Other-awareness	Client becomes more aware of other's feelings or behaviours.
Positive self	Client comes to feel or think more positively and/or less negatively about self.
Positive other	Client comes to feel or think more positively and/or less negatively about specific or general other.
Self metaperception	Client comes to see self from another person's perspective.
Other metaperception	Client comes to see how a specific other views people or things other than client's self.
Problem clarification	Client identifies or becomes clearer about what his/her problems are or what s/he wants or wants to change, including tasks for therapy or in general.
Problem solution	Client figures out (realizes, comes closer to knowing) HOW to resolve a specific problem or achieve a specific goal or task.
Alliance strengthening	Client feels 1) understood, 2) supported, encouraged or reassured, 3) more involved or invested in therapy or its tasks (feels more able or freer to enter into therapeutic relationship), 4) closer to or better about therapist.
Relief	Client feels less negative: relieved, unburdened, relaxed, less depressed or hurt; or more positive: relaxed, safe, or confident or hopeful.
Other specific helpful	Impacts not described above.