

NARRATIVE-EMOTION PROCESS MARKERS IN COGNITIVE BEHAVIORAL THERAPY  
FOR GENERALIZED ANXIETY DISORDER: A PROCESS-OUTCOME STUDY

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## Abstract

According to a narrative-emotion informed approach to psychotherapy, individuals enter psychotherapy when their narratives lack flexibility, emotional coherence and fail to integrate important lived experiences. Effective psychotherapy provides clients with an opportunity to integrate emotionally salient life experiences, as a told story or self narrative that enables new meaning-making and a more adaptive view of self. The Narrative-Emotion Process Coding System Version 2.0 (NEPCS; Angus Narrative-emotion Marker Lab, 2015) is a standardized measure that consists of a set of 10 clinically-derived markers that capture a client's capacity to disclose, emotionally re-experience, and reflect on salient personal stories in videotaped psychotherapy sessions. These 10 markers are classified into three subgroups: Problem (Same Old, Empty, Unstoried Emotion, and Superficial Storytelling), Transition (Reflective, Inchoate, Experiential, and Competing Plotlines Storytelling), and Change Markers (Unexpected Outcome, and Discovery Storytelling). The present study applied the NEPCS Version 2.0 to a sample of clients ( $N = 6$ ; 36 therapy sessions) engaging in cognitive behavioural therapy (CBT) for generalized anxiety disorder (GAD). The NEPCS Version 2.0 was applied to two early, two middle, and two late-stage videotaped therapy sessions for each of the six clients (three recovered, and three unchanged outcome status), who were drawn from a randomized controlled trial comparing the efficacy of CBT and motivational interviewing integrated with CBT for GAD (Westra, Constantino, & Antony, 2016). Multilevel modeling analyses demonstrated significantly higher proportions of Reflective Storytelling ( $p < .001$ ), Unexpected Outcome Storytelling ( $p = .023$ ), as well as the Transition ( $p = .003$ ), and Change ( $p = .021$ ) markers subgroups, for recovered versus unchanged CBT clients. Additionally, there was a significant stage effect for individual markers, Competing Plotlines Storytelling ( $p = .006$ ), Unexpected

Outcome Storytelling ( $p < .001$ ;  $p = .031$ ;  $p = .036$ ), No Client Marker ( $p = .014$ ), and for overall Transition ( $p = .001$ ;  $p = .034$ ) and Change ( $p = .001$ ) markers subgroups. Findings will be discussed in the context of current CBT research literature on GAD as well as research examining NEPCS marker patterns in other diagnostic populations, and treatment modalities.

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## Introduction

The act of storytelling is a universally-shared human experience that facilitates self-understanding and allows us to construct a self-identity narrative. For Bruner (2004), "selfhood" or self-making is fundamentally a narrative art that is a product of our personal storytelling. Autobiographical memory narrative disclosures, or personal stories, are also essential for the development of interpersonal bonds as well as foundational to the development of empathic therapeutic relationships, case conceptualization (Angus & Paivio, in press), and the identification of tasks and goals in productive psychotherapy sessions (Angus & Kagan, 2013). In fact, psychotherapy research indicates that clients disclose 4-6 personal stories, on average, in Psychodynamic, Client-centred, and Emotion-focussed therapy sessions (Angus, 2012).

The stories we tell about ourselves are shaped by our past autobiographical memory narratives, our hopes and desires for the future, and the changing demands of the world around us. In his life story model of identity, McAdams (2001) proposes that it is in late adolescence and young adulthood that we begin to weave together autobiographical memory narratives of past and present lived experiences, and imagined future events, through an ever-evolving self-identity narrative. More than simply rooted in static biographical facts, we become authors of our own self-narrative by selectively editing, reinterpreting, retelling and integrating our autobiographical memories, as personal stories, to create a sense of self-coherence over time. When articulating and internalizing our personal stories, we naturally seek to infuse them with a sense of personal meaning, and answer the following key questions: What happened?, What did I do?, What did I feel?, What does this say about me now?, How did I come to be?, Am I different now?, and Where is my life going? This is significant because it captures the malleability of narrative expression and points to the agency of the narrator in shaping their personal stories and self-

identity narratives. In fact, the dynamic process of revising and re-constructing our self-narratives, such that they make sense to us, is thought to be central to psychological well-being (Pennebaker & Seagal, 1999), and a core component of effective psychotherapy (Angus & Kagan, 2013; Holmes, 2001; White, 2004).

### **Narrative expression in psychotherapy**

The concept of narrative expression in psychotherapy literature refers to both the individual personal stories disclosed in therapy sessions (Angus, 2012) and to the big picture of one's life, in which personally significant events are placed in a sequential, meaningful order to incorporate and represent valued intrapersonal and interpersonal themes (Angus & McLeod, 2004; Bruner, 1990; McAdams, 1991; White & Epston, 1990). White and Epston (1990) propose that individuals come to psychotherapy when their personal stories are shaped, and distorted by maladaptive narrative plotlines that limit individual potential, and preserve a certain version of reality that no longer makes coherent sense, in the light of current life events. The dominant story plotline of one's life can become incoherent, inflexible and maladaptive, suppressing personal life stories that have the creative potential to be more inclusive of important lived experiences and adaptive views of self. Psychotherapy can then be a safe, relational space for clients to disclose and reflect on emotionally-salient autobiographical memory narratives for enhanced emotional engagement, self-regulation and narrative integration. It can also be a space that encourages the articulation of a more flexible, coherent, and inclusive self-identity narrative, that captures new, more agentic ways of being in the world. Indeed, it is the new, unexpected outcome stories that provide strong evidence of personal change happening in a client's life that necessitate the construction of a revised self-identity narrative that integrates, and instantiate a

client's positive experiences with self and others, and as an agent of change, in their own lives (Angus, 2012).

### **Narrative and Emotion Processing in Psychotherapy**

While narrative expression in psychotherapy is significant on its own, the expression of salient emotional experiences within the context of a coherent narrative has been discussed as being crucial to story repair within psychotherapy (Greenberg & Angus, 2004). In fact, Angus and Greenberg (2011) argue that meaning making without emotional grounding is unproductive, and emotion without narrative context remains undifferentiated and poorly understood. Drawing on a narrative-informed dialectical-constructivist model (Greenberg & Pascual-Leone, 1995, 2001), Greenberg and Angus (2004) suggest that the narrative framing of emotional experiences allows for the organization of felt emotions within the context of an unfolding action sequence. It is through the narrative synthesis of 'what happened' and 'what was felt', that the client comes to address the critical question of 'what does it mean?' This allows for the construction of new meaning-making and self-understanding that eventually produces flexible self-narratives with the integration of emotionally salient experiences for recovery within psychotherapy.

Considerable research has examined the individual roles of narrative (e.g., Angus & McLeod, 2004; Gonçalves, Matos, & Santos, 2009), and emotion processes (e.g., Paivio & Pascual Leone, 2010; Pos, Greenberg, & Warwar, 2009) in psychotherapy. However, fewer studies have addressed the importance of the integration between narrative and emotion processes for therapeutic recovery (e.g., Angus, 2012; Boritz, Angus, Monette, & Hollis-Walker, 2008; Boritz, Angus, Monette, Hollis-Walker, & Warwar, 2011; Greenberg & Angus, 2004) in actual therapy sessions. Based on a narrative-informed dialectical-constructivist model of Emotion-Focussed Therapy (Angus & Greenberg, 2011), the Narrative Emotion Process Coding

System Version 2.0 (NEPCS; Angus Narrative-emotion Marker Lab, 2015) is a standardized tool developed to systematically identify 10 specific narrative-emotion process markers, and their contributions to treatment outcomes, across a range of psychotherapeutic approaches. The development and evolution of the Narrative-Emotion Process Coding System Version 2.0, which was applied in the present study, was recently summarized in Angus, Boritz, Bryntwick, Carpenter, Macaulay, & Khattra (in press), along with a detailed summary of the NEPCS empirical research emerging from a series of video-based psychotherapy research studies.

**The Development of Narrative-Emotion Process Coding System (NEPCS; Angus Narrative-emotion Marker Lab, 2015; Angus, Boritz, Bryntwick, Carpenter, Macaulay, & Khattra, in press)**

The NEPCS is a standardized video-based observer-rated coding system that is used to code minute-by-minute linguistic and paralinguistic behaviours in videotaped psychotherapy sessions. It consists of a set of 10 clinically-derived markers that capture indicators of clients' mode of storytelling, emotional processing, and reflective meaning making, in therapy sessions. The individual markers are differentiated by the degree of integration among narrative content (i.e., what is being discussed in the one-minute time measurement unit), narrative structure (i.e., plot, specificity, coherence, organization), emotion process (i.e., emotional experiencing and/or expression, emotional arousal), and depth of reflective engagement (i.e. superficial vs. reflective meaning making). The 10 narrative-emotion process markers are further clustered into three subgroups: Problem, Transition, and Change markers. Each marker is defined and briefly discussed below with brief transcript exemplars. For more detailed descriptions of linguistic and paralinguistic indicators associated with each marker, see the NEPCS Version 2.0 manual in Appendix A.

**Narrative-emotion Process Coding System Version 2.0 (NEPCS; Angus Narrative-emotion Marker Lab, 2015)**

<b>Marker</b>	<b>Process Indicators</b>	<b>Examples</b>
<b>Same Old Storytelling</b>	Expressing dominant, maladaptive, over-general views of self and relationships marked by lack of agency, stuckness.	<i>She was never concerned about me, she was only concerned with herself. Behave, be good, don't cause me any trouble.</i>
<b>Empty Storytelling</b>	Describing an event with a focus on external details and behavior, and a lack of internal referents or emotional arousal.	<i>I was crying on the floor. The lady next door, her daughter was our babysitter, she was 16. She made me some eggs with cheese on top.</i>
<b>Unstoried Emotion Storytelling</b>	Experiencing undifferentiated, under- or over-regulated emotional arousal, without coherent narration of the experience.	T: <i>Sad, so sad.</i> [25 sec pause, client stares at ceiling] <i>Are you holding back right now?</i> C: <i>Yes. 'Cause I have to take a bus later. I can't be on the bus with tear-stained eyes.</i>
<b>Superficial Storytelling</b>	Talking about events, hypotheticals, self, others, or unclear referents in a vague, abstract manner with limited internal focus.	<i>The way that she talked to me and treated me in front of friends, and family. Even like my sister and father, just things that she says and does.</i>
<b>Competing Plotlines Storytelling</b>	An alternative to a dominant view, belief, feeling, or action emerges, creating tension, confusion, curiosity, doubt, protest	<i>I have 3 healthy children, a house, we're not wealthy but we're okay, and I sort of go...why am I not...happier? I don't know.</i>
<b>Inchoate Storytelling</b>	Focusing inward, contacting emergent experience, searching for symbolization in words or images.	<i>...things seemed ok on the outside. But inside, there's... [closes eyes, frowns] a, like a [silence] black hole or a void, or...</i>
<b>Experiential Storytelling</b>	Narrating an event or engaging in a task as if re-experiencing an autobiographical memory or interpersonal scheme.	<i>I walked and walked and walked like I was in a fog. It was raining and dark, and I got wound up, and I just had to walk it off. I was soaking wet but didn't care.</i>
<b>Reflective Storytelling</b>	Explaining a general pattern or specific event in terms of own or others' internal states (thoughts, feelings, beliefs, intentions).	<i>There was nobody who cared, and so eventually I stopped showing them how I felt. Somewhere between there and here I stopped feeling it.</i>
<b>Unexpected Outcome Storytelling</b>	Describing a new, adaptive behavior (action, thought, feeling, response) and expressing surprise, pride, relief, contentment.	<i>I was so anxious, but instead of wallowing in it like usual I thought 'what can I do?' So I [did] the muscle relaxation stuff...it felt so good. After, I felt like a different person.</i>
<b>Discovery Storytelling</b>	Reconceptualizing, or articulating a novel understanding of the self,	<i>I've been thinking about the theme of being uninvited in the world. I think, I never did it consciously, but I realize</i>

others, key events, behavior  
patterns, or change processes.

*that I've seen myself as an intrusion for  
a very long time, and...*

**NEPCS Problem Markers.** The NEPCS Problem markers subgroup indicates under-or over-regulated emotion and/or a lack of integration between narrative-emotion processes. This subgroup includes Same Old Storytelling which includes repetitive, maladaptive, over-general views of self and world, and interpersonal patterns that are marked by stuckness and low agency; Empty Storytelling which includes clients recounting details of personal events, lacking in internal focus, and emotional components with the unfolding narrative; Superficial Storytelling which is exclusively focused on talking about events, hypothetical situations, self, and others in an abstract, vague manner with limited internal focus, and experiencing levels; and Unstoried Emotion Storytelling, which includes clients experiencing undifferentiated, under-or over-regulated emotional arousal, without coherent contextualization of these emotions within the accompanying narrative sequence. A more detailed description of each Problem marker is provided below.

***Same Old Storytelling.*** Same Old Storytelling refers to client storytelling in which clients present an over-general description of interpersonal, behavioural, thought, or emotional states, accompanied by an experiential sense of stuckness. Implicit in the client's storytelling is a sense of low agency, indicated by feelings of hopelessness and helplessness, with an external locus of control.

***Empty Storytelling.*** Empty Storytelling focuses exclusively on descriptions and elaboration of details about external events or information, primarily answering the question of 'what happened', accompanied by low or absent expressed emotional arousal. The narrative is

recounted from a detached perspective, and minimal experiential engagement with the event, without acknowledging the 'how it felt' component.

***Superficial Storytelling.*** Superficial Storytelling refers to client storytelling in which client's emotional and narrative expression are presented in a superficial, generalized, vague, and/or incoherent manner. The verbal content may focus on descriptions or explanations of one's or others' thoughts, feelings, or behaviours, with a lack of clarity and/or depth in examining these thoughts, feelings, or behaviours. Alternatively, the client may talk about his/her feelings or self-relevant ideas in a coherent manner, with little or no evidence for exploration or discovery.

***Unstoried Emotion Storytelling.*** Unstoried Emotion Storytelling refers to client storytelling in which the client expresses undifferentiated emotional states that are unacknowledged or unintegrated within an accompanying narrative scene. Emotional content can either be dysregulated (i.e., extremely intense emotional arousal indicated by changes in vocal tone and/or body movements and posture), overflowing (i.e., powerful emotion and disconnected from narrative), or dissociative (i.e., disengaging and avoiding and/or withdrawing from emotion through silence or pausing).

**NEPCS Transition Markers.** The NEPCS Transition markers subgroup includes Competing Plotlines Storytelling, Reflective Storytelling, Inchoate Storytelling, and Experiential Storytelling. The Transition markers subgroup indicates increasing narrative-emotion integration through higher Reflective engagement, and present-centered exploration, in which clients begin to Reflectively examine their thoughts, emotions, and behaviours, in reference to their internal state, and challenge the status quo in a more coherent, flexible narrative. The Transition markers highlight therapist opportunities to identify and enhance client's movement towards change by highlighting client's storying of alternative narratives to her/his dominant view, beliefs, feelings,

and actions (Competing Plotlines Storytelling); storying that includes contacting emergent experience and searching for symbolization in words or metaphors (Inchoate Storytelling); instances in which clients narrate an event as if they are re-experiencing an autobiographical memory, intra-or inter-personal scheme (Experiential Storytelling); or Reflectively examining, and explaining a general pattern or specific event in terms of their own internal states (Reflective Storytelling). A detailed description of each Transition marker is provided below.

***Competing Plotlines Storytelling.*** Competing Plotlines Storytelling refers to client storytelling in which client explicitly expresses or implies competing lines of thinking, emotional or behavioural responses, in relation to a specific event or narrative context, accompanied by tension, incongruence, protest, puzzlement, questioning, self-doubt, and frustration the core of these two opposing sides.

***Inchoate Storytelling.*** Inchoate Storytelling refers to when client appears to get into contact with an emergent experience but struggles to piece it together or make sense of this experience. This is evident in client's search for appropriate words to describe the emergent experience, using a metaphor to symbolize an experience, and/or presenting a disjointed narrative.

***Reflective Storytelling.*** Reflective Storytelling refers to when a client provides an ABM or explains a behavioural, cognitive, emotional, or interpersonal pattern in reference to his/her own mental state (thoughts, feelings, beliefs, assumptions, goals etc.). The narrative is told from a personal perspective, and includes a coherent analysis or reflection on 'why' or 'how' patterns emerged, and/or their significance.

***Experiential Storytelling.*** Experiential Storytelling refers to when a client experientially re-enters into a generic or specific ABM with reference to the accompanying internal

experiences. The client provides a narrative account that facilitates re-entry into the landscape of action (i.e., what happened), and emotion (i.e., how it felt), by painting a vivid picture via what they saw, heard, smelled etc. (i.e., sensory exploration), and their thoughts, sensations, emotional responses in the context of an ABM.

**NEPCS Change Markers.** The Change markers subgroup refers to client storytelling that includes evidence of narrative-emotion integration, with reports of new, adaptive thoughts, feelings, actions, with the expression of surprise, pride, and/or contentment (Unexpected Outcome Storytelling), or the emergence of a reconceptualized, and novel understanding of the self, others, and key events in the client's life (Discovery Storytelling). A detailed description of each Change marker is provided below.

***Unexpected Outcome Storytelling.*** Unexpected Outcome Storytelling refers to client storytelling in which the client expresses new, adaptive shifts in his/her behaviour, emotional responses, and thought patterns, usually in the context of a previously problematic event or scenario. The reporting of such concrete, and positive shifts is accompanied by expressions of surprise, excitement, contentment, pride, protest, and/or relief. In demonstrating these adaptive shifts, client identifies his/her active role in the change process.

***Discovery Storytelling.*** Discovery Storytelling is a reflection or analysis of a specific event, subjective experience, and/or cognitive or behavioural pattern, which is accompanied by re-conceptualization or new understanding of self, others, interpersonal relationships, significant life events, or change processes. Whereas the Unexpected Outcome Storytelling pertains to novel, adaptive responses to a concrete event, the discovery story entails self-narrative reconstruction (Angus & Kagan, 2014), and re-conceptualization (Innovative Moments Coding

System; Gonçalves, Matos, & Santos, 2009; Gonçalves, Ribeiro, Mendes, Matos, & Santos, 2011) pertaining to old beliefs about the self and/or the world.

### **NEPCS Application and Empirical Findings**

Two of the three studies discussed below (Boritz, Bryntwick, Angus, Greenberg, & Constantino, 2014; Carpenter, Angus, Paivio, & Bryntwick, 2016) were conducted using an earlier version of the NEPCS Version 1.0 (Angus Narrative-emotion Marker Lab, 2015) that included fewer markers than those described in the previous section. In the earlier version of NEPCS 1.0, the Superficial and Reflective Storytelling markers were subsumed under an undifferentiated ‘Abstract Storytelling’ marker. The Experiential Storytelling marker had yet to be identified. Lastly, NEPCS 1.0 conceptualized two subgroups instead of three: Problem, and Change markers. The Problem markers subgroup included the Same Old Storytelling, Unstoried Emotion Storytelling, Empty Storytelling, and Abstract Storytelling markers. The Change markers included Inchoate Storytelling, Competing Plotlines Storytelling, Unexpected Outcome Storytelling, and Discovery Storytelling markers.

**Brief therapy treatments of depression.** To examine the contributions of NEPCS markers and NEPCS subgroups (Problem, Transition, and Change markers) to therapeutic outcome, the NEPCS was first applied to a total sample of 12 clients engaging in Emotion-Focused Therapy (EFT), Client-Centered Therapy (CCT), or Cognitive Therapy (CT) for depression ( $N = 12$  total;  $N = 4$  in each treatment type; Boritz et al., 2014). Specifically, the NEPCS was applied to one early, one middle, and one late therapy session for each of the 12 clients in the sample (36 therapy sessions). EFT and CCT dyads were drawn from the York I Depression Study (Greenberg & Watson, 1998). CT dyads were drawn from the University of Massachusetts Amherst Cognitive Therapy for Depression Study (Constantino, Klein, Smith-

Hansen, & Greenberg, 2009). Treatment consisted of 16–20 one-hour weekly sessions of EFT, CCT, or CT.

Client-Centered Therapy (CCT) treatment emphasizes the employment of three necessary conditions employed by the therapist: empathy, unconditional positive regard, and congruence (Rogers, 1957; 1961), according to a treatment manual designed for this trial (Greenberg, Rice, & Watson, 1994). Emotion-Focused Therapy (EFT) treatment (Greenberg, Rice, & Elliott, 1993) emphasizes the three necessary CCT conditions in addition to integrating the use of experiential interventions, such as gestalt interventions (e.g., empty or two-chair dialogues, focusing techniques, and systematic evocative unfolding), employed in accordance with the presence of specific client markers. The main objective of EFT is the evocation and restructuring of maladaptive emotional schemes, through the implementation of chair task interventions, experiential awareness, and reflective meaning making. (Greenberg et al., 1993). Finally, Cognitive Therapy (CT) involves exploring how clients' thought patterns contribute to their mood disturbances, and helping clients develop more adaptive perspectives and thought patterns, increasing clients' behavioural activation, and teaching self-help coping skills.

In Boritz et al. study (2014), client therapeutic outcome status was determined by using Reliable Change Index (RCI; Jacobson & Truax, 1991) criteria and cut-off scores based on the primary outcome measure used in these trials, Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Clients were classified as recovered (i.e., passed both cut-off and RCI criteria), improved (i.e., passed RCI criteria but not the cut-off), or unchanged (i.e., passed neither criteria). Two recovered and two unchanged dyads were selected from each of the three treatment groups (EFT, CCT, and CT). Specifically, the two dyads with the highest RCI scores (i.e., largest degree of change) and the two dyads with the lowest RCI scores (i.e., smallest

degree of change) were selected to represent the overall sample of recovered ( $N = 6$ ) and unchanged ( $N = 6$ ) dyads.

Hierarchical linear modelling analyses determined that across the three treatment conditions, there were significantly higher proportions of Change markers subgroup for recovered vs. unchanged clients over the course of treatment ( $p = .03$ ). The proportion of Problem markers subgroup was significantly higher across the treatment ( $p = .007$ ), and at the middle stage of therapy for unchanged clients vs. recovered clients ( $p = .003$ ). There was a significant outcome effect for Inchoate Storytelling ( $p = .037$ ), and Discovery Storytelling ( $p = .002$ ) such that their proportions were each significantly higher among recovered vs. unchanged clients, at all stages of therapy across all treatment types. The presence of Inchoate and Discovery storytelling conveys that recovered clients engaged in a higher degree of reflective examination of internal experiences to allow for the emergence of new narratives - which is a facilitative factor in the treatment of depression.

Bortitz et al. (2014) findings also demonstrated a significant stage x outcome effect, wherein higher proportions of Abstract Storytelling were observed for unchanged vs. recovered clients at middle stage of therapy ( $p = .013$ ). Bortitz et al. (2014) highlights that an overreliance of unchanged clients on Abstract Storytelling in the middle phase may reflect an avoidant storytelling that limits access to underlying negative beliefs, painful emotions, and stunts opportunity for deeper emotional processing, required to achieve effective treatment outcomes in depression.

There was also a stage x outcome x treatment interaction effect, for the proportion of Competing Plotlines Storytelling ( $p = .001$ ). Recovered vs. unchanged clients had significantly higher proportions of Competing Plotlines Storytelling at early, ( $p < .001$ ), and middle stages

within CCT ( $p = .0067$ ), and at middle stage within EFT ( $p = .031$ ). There were no significant differences in the proportion of Competing Plotlines Storytelling marker for recovered vs. unchanged CT clients, at any stage of therapy. Boritz et al. (2014) explains these findings as consistent with both the CCT and EFT model that highlight the integration of ideal and real self as well as addressing problematic reaction points in therapy for enhanced client self-coherence, respectively. The absence of Competing Plotlines Storytelling within the CT group is explained by its theoretical model that focuses on rational exploration and didactic components rather than an experiential, exploratory focus characteristic of CCT and EFT.

**Pilot sample for treatment of complex trauma.** Carpenter, Angus, Paivio, & Bryntwick (2016) applied the NEPCS Version 1.0 to a sample of clients engaging in EFT for complex trauma ( $N = 4$ ), drawn from University of Windsor Emotion-Focused Therapy for Complex Child Abuse Trauma Study (Paivio & Pascual-Leone, 2010). The NEPCS Version 1.0 (Angus Narrative-emotion Marker Lab, 2015) was applied to two early, two middle, and two late-stage videotaped therapy sessions, for each of the four clients ( $N = 24$  sessions). Participants received 16-20 sessions of EFT for Trauma (EFTT; Paivio & Pascual-Leone, 2010), which is a short-term, semi-structured, manualized trauma-focused therapy that adopts the basic principles of an EFT practice model and treatment interventions. Specifically, EFTT is designed to address symptoms of emotional distress, and unresolved interpersonal problems resulting from experiencing childhood abuse and neglect. For the present study, clients were selected based on pre-and post scores on two primary outcome measures in the study: Resolution Scale (Singh, 1994) assessing trauma resolution; and Impact of Events Scale (Horowitz, 1986), which assesses trauma symptoms. Client outcome categorization was determined by using RCI (Jacobson &

Truax, 1991) analyses, on both outcome measures, to select two recovered and two unchanged clients.

Using an independent samples t-test and effect size analysis using eta-squared, findings indicated that recovered clients had significantly lower proportions of Problem markers than unchanged clients across all stages of therapy, ( $p < 0.05$ ). There were also significantly higher proportions of Unstoried Emotion Storytelling in unchanged vs. recovered clients ( $p < 0.05$ ). The Unstoried Emotion Storytelling marker also occurred more frequently in this trauma sample compared to the depression sample (Boritz et al., 2014) described above. This is consistent with research indicating that emotion dysregulation is common in individuals with complex trauma (e.g., Paivio & McCulloch, 2004).

In addition, using a chi-squared difference test analyses, Carpenter et al. (2016) demonstrated significant outcome x stage interaction effects for Competing Plotlines Storytelling ( $p < 0.01$ ). Recovered vs. unchanged clients had significantly higher proportions of Competing Plotline Storytelling at middle stage whereas unchanged vs. recovered clients had higher proportions of Competing Plotlines Storytelling at the late stage of therapy. Similar to Boritz et al. (2014), the higher proportions of Competing Plotline Storytelling markers in the middle stage of therapy for recovered clients was interpreted as contributing to recovery at treatment termination. More specifically, the significantly higher proportions of Competing Plotline Storytelling suggested that recovered clients engaged in expressing and negotiating conflicting emotions and attitudes, necessary for the destabilization of maladaptive narrative to construct new narratives, more frequently than unchanged clients. In terms of the two Change markers, findings indicated a significant outcome x stage interaction effect such that there were higher

proportions of Unexpected Outcome Storytelling ( $p = 0.02$ ), and Discovery Storytelling in the recovered vs. unchanged group at the late stage of therapy ( $p = 0.04$ ).

**Extended sample for treatment of complex trauma.** Bryntwick (2016) extended Carpenter's (2016) pilot study by applying the NEPCS 2.0 (Angus Narrative-emotion Marker Lab, 2015) to a larger sample of EFTT for complex trauma. The NEPCS was applied to six recovered and six unchanged EFTT clients in the context of early, middle and late stage of therapy sessions.

Negative binomial regression analysis demonstrated that unchanged clients evinced significantly more Superficial Storytelling markers when compared to recovered clients in general (55.1% vs. 35.3%, respectively), and in particular, at both the middle (56.8% vs. 35%, respectively) and late (54.5% vs. 33.8%, respectively) stages of therapy. In addition, Problem marker proportions significantly differed between recovered and unchanged clients at early (51.8% vs. 78.6%, respectively), middle (47.0% vs. 79.4%, respectively), and late stages of therapy (42.4% vs. 71.5%, respectively). In terms of Transition markers, Inchoate Storytelling was coded more frequently overall in the recovered group when compared to their unchanged counterparts (5.2% vs. 0.96%, respectively), specifically at the middle stage of therapy, when compared to unchanged clients (6.3% vs. 0.7%, respectively). In terms of the differences in the proportions of Transition markers as a group, recovered and unchanged clients differed in the early (30.7% vs. 13.2%, respectively), and middle (30.5% vs. 13.8%, respectively) stages of therapy. These findings suggest that clients who were classified as recovered, at therapy termination, began to engage in productive narrative-emotion processing soon after the initiation of treatment - in early phase EFTT sessions. In terms of individual Change markers, recovered clients articulated significantly more Discovery Storytelling marker than unchanged clients

overall (3.21% vs. 0.68%, respectively), and in particular, at the middle stage of therapy (3.6% vs. 0%, respectively). As a subgroup, Change markers were also significantly higher for recovered vs. unchanged clients at both middle (5.9% vs. 1.4%, respectively) and late stages of therapy (11.4% vs. 3.2%, respectively).

**Summary.** To date, NEPCS marker subgroups (Problem, Transition, and Change) and individual NEPCS marker patterns have been found to be consistently related to outcome in treatments of depression (Boritz et al., 2014), and complex trauma (Carpenter et al., 2016; Bryntwick, 2016). No study to date, however, has examined the contributions of narrative-emotion Problem, Transition, and Change markers, to treatment outcomes, in Cognitive Behavioural treatments (CBT) for Generalized Anxiety Disorder (GAD). GAD is associated with significant distress and impairment, particularly in role functioning and social life, such that 27% of all GAD-sufferers reported moderate or severe social disability and this proportion rose to 59% when GAD was co-morbid with major depression (Wittchen, 2002). While Cognitive Behavioural Therapy is considered the gold standard psychotherapeutic treatment for anxiety disorders, including GAD (Otte, 2011), research findings indicate only an approximately 50% recovery rate at post-treatment (e.g., Borkovec & Whisman, 1996; Hunot, Churchill, Teixeira, & Silva de Lima, 2007; Olatunji, Cisler, & Deacon, 2010; Westen and Morrison, 2001). This indicates that there is a need to improve response rates by identifying key processes of change - such as client narrative and emotion process markers - linked to recovery from GAD, at treatment termination. As such, the current study will apply the NEPCS to a sample of clients engaging in CBT for GAD.

## **Generalized Anxiety Disorder**

Generalized Anxiety Disorder (GAD) is an anxiety disorder that is characterized by excessive and uncontrollable worry which is diffuse in nature. Worries center on a number of topics, such as everyday life circumstances, health and well-being of oneself and others, work/school responsibilities, finances, relationships, the future, world affairs, and other minor issues. Individuals with GAD report being unable to control their worry and anxiety despite recognizing it as irrational and disproportional to the actual likelihood of an anticipated event. The worry in GAD is accompanied by at least three of the following additional symptoms: restlessness or feeling keyed up, being easily fatigued, difficulty concentrating, irritability, muscle tension, and disturbed sleep (APA DSM-5, 2013).

The lifetime and 1-year prevalence rates of GAD in the United States are estimated to be 5.7% and 3.1% respectively (Kessler, Chiu, Demler, & Walters, 2005). The average age of onset is 31 years old (Kessler, Berglund, Demler, Jin, & Walters, 2005), with GAD typically beginning in the decade between the late teens and late 20s. The natural course of GAD is characterized as chronic, with symptoms that wax and wane across one's lifespan. Individuals with GAD have high proportions of comorbidity, particularly with depression (Noyes, 2001). In terms of health care utilization, individuals with pure GAD reported a two-fold higher than average number of visits to primary care doctors compared with depressed patients in the previous 12 months, even when controlling for the presence of physical illnesses (Wittchen, 2002).

**Worry.** The word "worry" was first documented prior to the 12th century as a verb. One of the first verb definitions of worry in the Merriam-Webster Dictionary are "to harass by tearing, biting, or snapping especially at the throat" and "to touch or disturb something repeatedly" (Merriam-Webster, 1999). Hallowell (1999) explains that just how a dog worries a

bone by gnawing on it on continually, people who worry gnaw on a problem uncontrollably. The psychological usage of the word "worry" emerged in the 19th century. Worry first received empirical attention in literature examining the relationship between performance and test anxiety (Morris & Liebert, 1970). Later, while examining psychological aspects of insomnia, Borkovec, Robinson, Pruzinsky, and DePree (1983) noted that insomniacs had difficulty sleeping because they were engaged in a negatively laden, and uncontrollable cognitive activity that closely resembled worry. Borkovec et al. (1983) developed the following tentative definition of worry:

"Worry is a chain of thoughts and images, negatively affect-laden and relatively uncontrollable; it represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes; consequently, worry relates closely to the fear process" (p. 10)

Later formulations have extended this definition of worry by stating that worry involves "a predominance of negatively valenced verbal thought activity" with minimal levels of imagery (Borkovec, Ray, & Stober, 1998, p. 562) and an anxious apprehension for negative events in the future. Despite it being a universal experience, several features distinguish everyday worry from the worry that is the cardinal diagnostic feature of GAD. While being similar in nature, it is the intensity, duration, and frequency of the worry that differentiates everyday worry from worry in GAD (APA DSM-5, 2013).

**Etiological models for Generalized Anxiety Disorder.** Over the last two decades, diverse theoretical models have been proposed to understand the etiology and maintenance of GAD, including the role that worry plays in GAD (see Behar, DiMarco, Hekler, Mohlman, & Staples, 2009 for review). The following section will review two contemporary models of GAD which are most relevant to highlighting the role of narrative-emotion processes in GAD in the

current study: The Avoidance Model of Worry and GAD (Borkovec, 1994; Borkovec, Alcaine, & Behar, 2004), and Emotion Dysregulation Model (Mennin, Heimberg, Turk, & Fresco, 2002).

***The Avoidance Model of Worry and GAD.*** The Avoidance Model of Worry and GAD (Borkovec, 1994; Borkovec et al., 2004) is based on Mowrer's (1947) two-stage theory of fear, and Foa and Kozak's emotional processing model (Foa & Kozak, 1986; Foa, Huppert, & Cahill, 2006). According to this model, worry functions as a cognitive avoidance response to perceived future danger. Specifically, worry is a functionally avoidant in two domains. Firstly, worry is a cognitive attempt to problem-solve by generating ways to prevent negative events from happening in the future and preparing oneself for these events. Secondly, worry is phenomenologically experienced primarily as a negative verbal-linguistic, thought-based activity that inhibits vivid mental imagery (Behar, Zullig, & Borkovec, 2005; Borkovec & Inz, 1990) and access to specific autobiographical memory recall (Bortiz et al., 2008). This serves to dampen the aversive somatic responses (such as lower cardiovascular response), and emotional activation that would naturally occur if one were to confront fear-related stimuli, imaginably or otherwise. In other words, catastrophic mental images are replaced with less distressing, less somatically activating verbal-linguistic activity. According to Foa and Kozak (1986), the absence of reactivity upon exposure to a feared stimulus reflects a failure to engage in emotional processing, which is proposed to be needed for successful extinction of the worry response. In other words, worry precludes the deeper emotional processing of fear-related stimuli that would otherwise allow for extinction.

In addition, positive beliefs about worry are reinforced when anticipated negative events do not occur or are managed effectively. Some of the common themes in relation to the positive beliefs about worry in GAD are as follows: motivating performance, avoiding future negative

events, preparing for the worst, problem-solving, superstitiously lessening the likelihood of bad events, and distracting oneself from more emotional topics (Borkovec & Roemer, 1995). The claim that worry is a tool to avoid exposure to emotionally-laden topics, has been taken up and expanded upon by researchers who suggest that in addition to preventing deep emotional processing, worrying may also be associated with avoidance of and discomfort with emotional experience or emotional arousal (Mennin et al., 2002).

***The Emotion Dysregulation Model.*** The Emotion Dysregulation Model hypothesizes that emotional dysregulation plays an integral role in the psychopathology of GAD and consists of four components (Mennin et al., 2002). Firstly, individuals with GAD have a lower threshold for emotions and therefore, experience emotions much more easily, quickly, and intensely than others. Secondly, individuals with GAD have a poor understanding of their emotions in that they have difficulty identifying primary emotions such as anger, sadness, fear, joy, and disgust. Instead, they experience their emotions as undifferentiated and confusing. In addition, they have trouble accessing and applying adaptive information conveyed by their emotions (Mennin, Heimberg, Turk, & Fresco, 2005). The combination of these two components is hypothesized to lead to the third component that individuals with GAD perceive their emotions as threatening and therefore, become overwhelmed and anxious when strong emotions occur, which feeds into the first two components. Lastly, since individuals with GAD have difficulty understanding and managing their emotions, they engage in maladaptive strategies to regulate their emotions. They either over-engage their control mechanisms in an attempt to decrease emotional experience through avoidance and emotional suppression. Alternatively, they express their emotions inappropriately through emotional outbursts. Worry can then be viewed as a cognitive control strategy to cope with distressful emotions.

## **Cognitive Behaviour Therapy for Generalized Anxiety Disorder**

Cognitive Behavioural Therapy (CBT) has been considered the gold standard psychotherapeutic treatment of anxiety disorders, including GAD (Otte, 2011). CBT for GAD is rooted in evidence suggesting that individuals with GAD engage in numerous cognitive and behavioural strategies that serve to maintain the self-perpetuating cycle of worry. Most manualized CBT treatments utilize a multimodal intervention approach for GAD, which include a combination of the following listed components (Borkovec, Newman, & Castonguay, 2003): Psycho-education on the causative factors of worry, anxiety, and associated symptoms; self-monitoring; relaxation training; cognitive restructuring; behavioural experiments; imaginal and situational exposure to worry cues; and relapse prevention.

Several meta-analytic reviews have examined the efficacy of CBT for GAD and concluded that CBT is moderately effective in reducing symptoms of GAD (e.g., Covin, Ouimet, Seeds, & Dozois, 2008; Gould, Otto, Pollack, & Yap, 1997; Gould, Safren, Washington, & Otto, 2004; Hanrahan, Field, Jones, & Davey, 2013; Mitte, 2005; Siev & Chambless, 2007; Stewart & Chambless, 2009; Hofmann & Smits, 2008; Norton & Price, 2007; Westen & Morrison, 2001). For example, in their meta-analysis of CBT for anxiety and mood disorders, Westen and Morrison (2001) concluded that 48% of CBT completers and 56% of the intent-to-treat in the GAD sample were not considered improved at follow-up. A comprehensive examination of the GAD treatment outcome literature by Hunot, Churchill, Teixeira, and Silva de Lima (2007), concluded that CBT was more effective than wait-list control groups, and that 46% of clients assigned to the CBT condition demonstrated clinically significant change at post-treatment, compared to 14% in the wait-list group.

Although CBT has demonstrated efficacy in reducing worry and related symptoms of GAD, researchers (Brown, Barlow, & Liebowitz, 1994; Olatunji, Cisler, & Deacon, 2010; Borkovec, Newman, Pincus, & Lytle, 2002) have argued that with an approximately 50% recovery rate at post-treatment, more attention needs to be called to improve response rates in the treatment of GAD. In addition, mechanisms of effective CBT treatment for GAD are not yet fully understood (Borkovec, Newman, & Castonguay, 2003), which indicates a need to identify in-session processes of clients who demonstrate recovery from GAD in CBT at post-treatment for comparison with the in-session processes of those clients who do not demonstrate such recovery.

### **Rationale for applying NEPCS Version 2.0 to a GAD sample**

As discussed in the etiological models of GAD, worry serves as a cognitive tool to avoid getting in touch with emotional experiences which eventually, precludes deeper emotional processing of worry-related topics (Borkovec et al., 2004; Mennin et al., 2002). Since worry reflects a failure to engage in emotional processing and maintains threatening meanings in the long run, recovery from GAD involves increased exposure to and processing of emotionally-laden topics (Foa & Kozak, 1986). From a narrative-emotion perspective, worry may represent a lack of integration between an individual's narrative content and emotion processes (e.g., emotional experiencing and/or expression, emotional arousal). Successful treatment of worry and GAD may involve the client verbalizing their worry in a coherent manner, while integrating their emotional experience and expression with the narrative content.

As such, it may be the case that the 10 NEPCS markers not only operationalize client in-session behaviours and processes that maintain GAD, but also track movement toward recovery in effective CBT treatments. For instance, GAD clients may express their worry symptoms in an

over-generalized and/or incoherent manner, with limited examination and/or reference to their internal perspective or feelings, as captured by the Superficial Storytelling NEPCS marker.

Alternatively, a client's worry may focus exclusively on details about external events, narrated from a detached perspective, with minimal experiential engagement, which is represented by a NEPCS Empty Storytelling marker. Both Superficial and Empty Storytelling operationalize emotional avoidance and over-regulation of emotions through abstract worry.

Furthermore, individuals with GAD hold several positive beliefs about their worry, which reinforce their worry (Borkovec & Roemer, 1995). These positive beliefs are long-held ideas about the benefits of worry, which are often linked to the individual's interpersonal and intrapersonal identity. For example, a mother may believe that constant worrying is a legitimate way of showing concern for her children and demonstrates to herself and others that she a caring, competent mother. A student may cite worrying as a motivating factor to do well in school and view it as an essential part of a being a conscientious, successful student. Such positive beliefs about worry and GAD are captured by another NEPCS Problem marker, the Same Old Storytelling marker, in which a client presents an over-general description of interpersonal and/or intrapersonal patterns, marked by a sense of stuckness and low agency. Based on previous NEPCS analyses, it is likely that Problem markers will be evidenced in early sessions for all CBT clients. However, those clients who recover from GAD by treatment termination, it is expected that a significant increase in proportion of NEPCS transition markers (e.g. reflective storytelling, competing plotline storytelling) will be identified in middle, and late stage CBT sessions. In particular, based on the Avoidance model of worry and GAD (Borkovec et al 2002), a movement towards recovery from GAD would be expected to entail access to symbolizing and reflecting on emotions, in the context of narrative storytelling, as operationalized by the NEPCS

Transition markers - Reflective Storytelling, Experiential Storytelling, Inchoate Storytelling, and Competing Plotlines Storytelling. In particular, Reflective, Experiential, and Inchoate Storytelling highlight higher reflective engagement, accessing specific autobiographical memories, and present-centered exploration of the client's internal state including emotions, intentions, interpersonal needs, and beliefs. Finally, it is expected that recovered GAD clients will evidence a significant increase in proportion of NEPCS Change markers (e.g. Unexpected Outcome Storytelling; Discovery Storytelling), in late stage CBT sessions.

Of the Transition markers subgroup, Competing Plotlines Storytelling is of particular interest in the treatment of GAD. The NEPCS Competing Plotlines Storytelling marker refers to client storytelling that explicitly expresses or implies competing lines of thinking, emotional, and/or behavioural responses, in relation to a specific narrative context, accompanied by tension, puzzlement, and/or frustration. Individuals with GAD often hold ambivalence about relinquishing their worry (Westra, 2012). Ambivalence about worry may be experienced as a "tug of war" between opposing sides: On one hand, worry is overwhelming and the client wants to get rid of it. On the other hand, it has some instrumental value and is tied to fundamental parts of an client's self-identity. The expression of client ambivalence for change in therapy CBT therapy sessions has been reliably identified by the NEPCS transition marker, Competing Plotlines Storytelling (Macaulay, 2014), in the context of a recent randomized controlled trial comparing CBT and Motivational Interviewing plus CBT for GAD Westra, Antony, and Constantino (2016).

## **Motivational Interviewing (MI) plus CBT Treatment of GAD: Narrative-emotion process markers**

In order to further investigate the contributions of narrative-emotion process markers when addressing client ambivalence in psychotherapy for GAD, Macaulay (2014) applied the NEPCS Version 2.0 (Angus Narrative-emotion Marker Lab, 2015) to a sample of clients engaging in motivational interviewing (MI) integrated with CBT for GAD. MI-CBT dyads were drawn from a recently-completed randomized controlled trial comparing the efficacy of CBT-alone (15 sessions) to four sessions of MI following by 11 sessions of CBT integrated with MI as needed (Westra, Constantino, & Antony, 2016).

The MI treatment consisted of Miller and Rollnick's (2002) principles and methods, modified so as to specifically target ambivalence about worry and changing one's worry-related behaviors. The MI treatment emphasized maintaining a client-centered relational stance, also known as the "MI spirit", which is defined by collaboration, respect for client autonomy, and providing evocative empathy to work with the client's resistance and enhance intrinsic motivation. Working from the MI spirit, interventions to deal with interpersonal and intrapersonal ambivalence in sessions included: expressing empathy; developing discrepancy between client's current state and their goals and values; rolling with resistance; and supporting client-efficacy. The CBT phase of treatment involved the same components of the CBT-only condition in the larger trial, which focuses on collaboratively exploring and identifying specific patterns of thinking and behaviours that underpin the client's anxiety and other symptoms. Treatment involves monitoring and challenging specific thinking patterns, modifying beliefs, and implementing behaviour change in-and between-sessions.

In this study, the NEPCS was applied to two early, two middle, and two late-therapy sessions, of three recovered and three unchanged MI-CBT clients ( $N = 36$  sessions total). Client outcome categorization was determined based on RCI (Jacobson & Truax, 1991) analyses of the primary outcome measure, the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, Borkovec, 1990). Using a multilevel modeling analyses, findings indicated that recovered vs. unchanged clients had significantly higher proportions of Transition markers ( $p < .001$ ) and lower proportions of Problem markers ( $p = 0.010$ ) across all stages of therapy. In terms of individual markers, recovered vs. unchanged clients had a significantly higher proportion of Reflective Storytelling ( $p < .001$ ), Competing Plotlines Storytelling ( $p = 0.049$ ), and Unexpected Outcome Storytelling ( $p < .001$ ), across all stages of therapy. The Competing Plotlines Storytelling marker was of special interest in this sample because it captures the ambivalence of relinquishing worry, common in GAD clients. Despite finding their worry overwhelming and distressful, individuals with GAD also hold positive beliefs about their worry (Borkovec & Roemer, 1995). In addition, the treatment modality of MI explicitly focuses on addressing, exploring, and resolving this ambivalence about relinquishing worry (Westra, 2012). In this sample, Macaulay (2014) explains that recovered clients may have been better able to express and explore the discrepancy between their worry behaviors and closely-held values to eventually, resolve their ambivalence. There was a significant outcome x stage interaction such that recovered vs. unchanged clients had higher proportions of Discovery Storytelling marker ( $p = .005$ ), and Change markers subgroup ( $p < .001$ ) at the late stage of therapy.

### **The Present Study**

The primary goal of the present study was to expand the application of the NEPCS to CBT treatment for GAD. Given a roughly 50% recovery rate at post-treatment, a growing chorus

of GAD researchers are highlighting the need to improve response rates in CBT treatment of GAD (Brown, Barlow, & Liebowitz, 1994; Borkovec, Newman, Pincus, & Lytle, 2002; Olatunji, Cisler, & Deacon, 2010). In particular, there is a need to identify and compare in-session emotion and narrative integration processes of GAD clients who achieve recovery in CBT treatments versus GAD clients who remain unchanged at CBT therapy termination. In particular, the Narrative-Emotion Process Coding System Version 2 (NEPCS; Angus Narrative-emotion Marker Lab, 2015) is an ideal measure to identify key Problem, Transition, and Change Storytelling markers that capture client in-session behaviours and processes common in GAD psychopathology and importantly, track movement toward recovery in successful therapy treatments.

Recently, Macaulay (2014) applied the NEPCS Version 2.0 to two early, two middle, and two late-stage therapy sessions of clients engaging in MI+CBT for GAD to demonstrate that as expected, recovered vs. unchanged clients had significantly higher proportions of NEPCS Transition markers and lower proportions of NEPCS Problem markers across all stages of therapy, and higher proportions of Change markers at late stage of therapy. In terms of individual NEPCS markers, recovered vs. unchanged clients had significantly higher proportions of Reflective Storytelling, Competing Plotlines Storytelling, and Unexpected Outcome Storytelling, across all stages of therapy. While the NEPCS Transition and Change marker findings for recovered GAD clients appear to suggest that Motivation Interviewing interventions help to ameliorate GAD clients' ambivalence for change, in CBT sessions, it remains unclear how these findings differ from CBT treatments that do not include Motivation Interviewing interventions, as part of the treatment protocol.

Accordingly, the primary goal of the present study was to address this gap in the research literature by identifying narrative-emotion Problem, Transition, and Changer marker patterns in CBT for GAD therapy sessions that have been evaluated for overall treatment outcomes. Accordingly, six CBT-only client-therapist dyads ( $N = 6$ ; 36 therapy sessions) were selected from a randomized controlled trial comparing the effectiveness of MI-CBT and CBT-only treatments for GAD (Westra, Constantino, & Antony, 2016), for the study sample. Based on Reliable Change Index (RCI; Jacobson & Truax, 1999) analyses of pre-post change evidenced on the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990), three CBT clients who met RCI criteria for ‘recovery outcome status’ were compared to three CBT clients who met criteria for ‘unchanged outcome status’ at treatment termination.

Using Observer XT Software, three trained coders applied the NEPCS Version 2.0 (Angus Narrative-emotion Marker Lab, 2015) to two early (sessions 1 and 4), two middle (sessions 6 and 8), and two late-stage (sessions 11 and 13) videotaped CBT-only therapy sessions for GAD. In this longitudinal, multi-level data set, proportions of NEPCS subgroups and individual NEPCS markers were the dependent variables. The therapy stage (early vs. middle vs. late), outcome status (recovered vs. unchanged), and stage x outcome interaction, were the predictor variables. The proportions of NEPCS subgroups and individual markers were collated and exported to Microsoft Excel, and statistically analyzed utilizing a multi-level modeling regression approach in R statistical software (nlme package).

### **Research Questions**

The primary purpose of the present study was to examine the relationship between individual NEPCS markers, and NEPCS marker subgroups between treatment outcome (recovered vs. unchanged at therapy termination), and stage of therapy (early vs. middle vs. late)

in a sample of six GAD clients ( $N = 6$ ; three recovered vs. three unchanged; 36 therapy sessions) receiving 15 sessions of Cognitive Behavioral Therapy. The present study was guided by the following research questions and hypotheses based on a review of previous research findings, including Macaulay (2014):

**Research Question 1.** Is there a significant difference in the proportions of NEPCS markers (individual markers and subgroups - Problem, Transition, and Change markers) for recovered vs. unchanged clients?

**Hypothesis.** Recovered clients will evidence significantly lower proportions of NEPCS Problem markers (as a subgroup, and specific Problem markers, Superficial, and Empty Storytelling markers) and significantly higher proportions of Transition (as a subgroup, and specific Transition marker, Reflective Storytelling marker) and Change markers (as a subgroup, and specific Change marker, Unexpected Outcome Storytelling marker) overall, compared to unchanged clients.

**Research Question 2a.** Is there a significant outcome (recovered vs. unchanged) x stage (early vs. middle vs. late) interaction effect on the proportions of NEPCS markers (individual markers and subgroups - Problem, Transition, and Change Markers)?

**Hypothesis.** Recovered clients will evidence a significantly lower proportions of Problem markers (as a subgroup, and specific Problem markers, Superficial, Empty, and Same Old Storytelling markers), and higher proportions of Transition markers (as a subgroup, and specific Transition markers, Reflective, and Competing Plotlines Storytelling markers) in early and middle stage therapy, when compared to unchanged clients. Recovered clients will evidence

significantly higher proportions of Change markers as a subgroup, and Unexpected Outcome Storytelling marker, at late stage of therapy.

**Research Question 2b.** In the absence of a significant outcome x stage interaction effect on the proportions of NEPCS individual markers and subgroups, is there a significant difference in the proportions of NEPCS markers (individual markers and subgroups - Problem, Transition, and Change markers) at different therapy stages (early vs. middle vs. late) for all clients?

**Hypothesis.** There will be significantly higher proportions of Problem markers at early stage of therapy for all clients. There will be higher proportions of Transitions markers at the middle stage for all clients. A higher proportion of Change markers will be evidenced at the late therapy stage for all clients.

## Method

### Sample

Client-therapist dyads were drawn from a recently completed randomized controlled trial conducted by Westra, Constantino, and Antony (2016). In this trial, 85 individuals with severe GAD were randomly assigned to receive either 15 sessions of CBT alone or 4 sessions of MI followed by 11 sessions of MI integrated with CBT. For the current study, six client-therapist dyads were drawn from 43 participants in the CBT-only condition, on the basis of Reliable change index (Jacobson & Truax, 1999) analyses of the primary outcome measure in the larger trial, the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990).

**Clients.** Clients for the trial were recruited through community advertisements in the Greater Toronto Area. Participants had to meet eligibility criteria from both the DSM-IV and DSM-5 for a principle diagnosis of GAD, as determined through a modified Structured Clinical Interview for Diagnosis-I for DSM-IV, patient edition (SCID-IP; First, Spitzer, Gibbon, &

Williams, 2002). They also had to score above the cut-off for high worry-severity GAD on the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990), i.e., 58 out of a maximum score of 80. Co-morbid diagnoses of depression and/or other anxiety disorders, and concurrent use of antidepressant medication, were permitted for inclusion in the trial.

**Therapists.** There were 23 therapists (100% female) in the larger trial, who were nested within either treatment group (MI-CBT or CBT), which they self-selected, in order to control for allegiance effects. Therapists in the CBT condition included 13 doctoral candidates in clinical psychology. Demographic information for the therapists is provided in Table 1 (Appendix B).

**Treatment.** The six clients chosen for the present study engaged in 15 sessions of CBT-only treatment, which was adapted from several evidence-based protocols (Coté & Barlow, 1992; Craske & Barlow, 2006; Zinbarg, Craske, & Barlow, 2006). The CBT treatment included the following components: psychoeducation about worry and anxiety; self-monitoring, progressive muscle relaxation training; discrimination training; cognitive restructuring with an emphasis on probability estimation and catastrophic thinking; behavioral experiments to test feared outcomes; imagined and *in vivo* exposure to worry cues; prevention of worry-related behaviors; discussing sleep strategies; and relapse-prevention planning. Treatment protocol also included explicit strategies for managing homework noncompliance.

## Measures

**Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, Borkovec, 1990).** The PSWQ was used as the primary self-report outcome measure in the larger clinical trial and is a widely used measure in assessing trait worry in clinical and non-clinical samples. The 16 items on the PSWQ are rated on a 5-point Likert scale, ranging from 1 (= *not at all typical*) to 5 (= *very*

*typical*), with higher scores indicating higher levels of worry. The maximum possible score on the PSWQ is 80. This measure has been found to have high internal consistency, temporal stability (Meyer et al., 1990; Dear et al., 2011) as well as good convergent and discriminant validity (Brown, Antony, & Barlow, 1992).

**Narrative Emotion Process Coding System 2.0 (Angus Narrative-emotion Marker Lab, 2015).** The NEPCS Version 2.0 (Angus Narrative-emotion Marker Lab, 2015) is a systematic and reliable method of identifying client narrative-emotion process markers in videotaped psychotherapy sessions. The NEPCS Version 2.0 contains 10 mutually exclusive client markers which describe verbal and non-verbal behaviours that indicate underlying narrative-emotion processes. Each videotaped therapy session is segmented into 1-minute time bins through the application of Observer XT software and is coded with one salient NEPCS marker. If multiple markers occur in a one-minute time bin, the most salient marker is coded. Previous studies have demonstrated good levels of inter-rater reliability, with a Cohen's kappa = .84 (Boritz et al., 2014).

## **Procedure**

**Sample Selection.** Reliable change index (Jacobson & Truax, 1999) analyses of the primary outcome measure in the larger trial, the Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990) were conducted to identify recovered and unchanged clients at post-treatment in the CBT-only treatment group. The RCI analyses involved three steps: 1) A cut-off PSWQ score was first established to determine whether a client's post-treatment PSWQ score is closer to that of the pre-treatment GAD clinical population or that of the functional general population. The cut-off PSWQ score established in the larger trial was a score of 58, out of the possible 80, 2) A RCI criterion was established to determine if the difference between a client's pre-and post-

PSWQ scores is significant. In the current trial, the difference in the pre-and post-PSWQ scores had to be at least 8.5 points for the change to be considered reliable. 3) Clients who passed both the cutoff and RCI change criteria, as well met criteria for recovery on the blind diagnostic interview, were classified as "recovered". Those who passed the RCI change criteria but still had a post-treatment PSWQ score above the cutoff of 68, were considered "improved". Those clients who did not pass the RCI change criterion, the cutoff, or the criteria for recovery on the blind diagnostic interview were considered "unchanged" at post-treatment.

Using this RCI analyses, three recovered and three unchanged clients from the CBT-only condition were selected for sample in the present study. For each client, six videotaped therapy sessions (2 early, sessions 1 and 4; 2 middle, sessions 6 and 8; and 2 late, sessions 11 and 13) were selected for coding. In the current study, 36 (6 sessions per client x 6 clients) total sessions were selected and NEPCS coded. For client C, session 3 was picked to represent session 4, as video for session 3 was not available. Demographic information for each client is listed in Table 2 (Appendix B).

**NEPCS Coders.** One master's student and two doctoral students, enrolled in the clinical psychology program, applied the NEPCS Version 2.0 to the selected sample of videotaped CBT therapy sessions for GAD. The master's student had approximately 70 hours, while the doctoral students had 200 hours of experience of applying the NEPCS.

**Coding Procedure.** The coding team were blind to the outcome status. The videotaped therapy sessions were segmented into one-minute bins using the Noldus Observer XT video software, designed specifically for behavioural coding. The video coding began as soon as the client-therapist dyad start talking in the session. After playing each one-minute time bin, the Observer software stopped playing the video session, at which point the coders independently

assigned a NEPCS code to the one-minute clip. Even though the NEPCS markers are mutually exclusive, there were instances when multiple NEPCS occurred in a 1-minute time bin. In such instances, the marker lasting for the greatest length of time in seconds was coded. However, if multiple NEPCS markers occurred for approximately the same length of time, then the code with the most salient narrative-emotion process marker was coded.

The NEPCS code of "No client marker" was given to a one-minute segment in which the therapist talked for more than 30 seconds. When the therapist airtime is between 30-40 seconds, a consensual judgement was made between the coders on whether there was a clear client NEPCS code or a "No Client Marker" with predominantly therapist airtime. In instances when coders were not able to reach a consensus on a particular NEPCS code, the one-minute time bins were marked as "consult" and left uncoded in that coding session. The clip was then shown to another trained coder, who was a professor of clinical psychology, in monthly coding meetings. This coder independently coded the one-minute clips in question, which was then discussed within the team to reach a consensus on a particular NEPCS code.

**Inter-rater Agreement.** Open consensual validation was used for 3/4th of the sample (i.e., 27 sessions), in which the two primary coders viewed the 1-minute time segments of videotaped sessions together and privately code the minute. Before moving to the next 1-minute bin, codes were compared and discussed until a consensus was reached. The remaining 1/4th of the sample (i.e., nine sessions, randomly selected from the entire sample) was coded to establish inter-coder reliability. The following nine sessions were randomly selected to establish reliability: sessions 11, and 13 (recovered client A); sessions 6, 8, 11, and 13 (recovered client B), and sessions 6, 8, and 11 (unchanged client F). In coding these sessions, the two coders independently watched the therapy session and later compared their codes to reach an inter-rater

agreement. Cohen's Kappa, which is a measure of inter-rater reliability was demonstrated at 0.790.

**Statistical analysis.** The data is longitudinal with a multilevel structure and three nested levels of random effects: Dyads, sessions within dyads, and minutes within sessions. The analysis was conducted through a multi-level modeling regression using the nlme package in R statistical software. Proportions of NEPCS subgroup markers and individual NEPCS markers within sessions were the dependent variable. The predictors were the therapy stage (early vs. middle vs. late), outcome (recovered vs. unchanged), and stage x outcome interaction, with random intercepts for dyads.

## Results

The present study examined whether outcome status (recovered vs. unchanged) and stage of therapy (early vs. middle vs. late) predicted proportions of individual NEPCS markers and marker subgroups (Problem, Transition, and Change markers) in two early, two middle, and two late stage therapy sessions for a sample of six clients who received 15 weekly sessions of CBT for GAD.

### Descriptive Research Findings

Across all therapy dyads ( $N = 6$ ) and all sessions of psychotherapy ( $N = 36$ ), a total of 2054 NEPCS markers were coded. These included 683 markers (33.3%) in the early, 691 markers (33.6%) in middle, and 680 markers (33.1%) in late stage of therapy. Of the 2054 NEPCS markers coded, 1053 (51.3%) were coded in the recovered group, and 1001 (48.7%) in the unchanged group. Descriptive statistics including raw frequencies, mean proportions, and mean percentages of NEPCS individual markers and subgroups, by outcome group, and stage of therapy are presented in tables 3-5. Patterns observed for each NEPCS marker and marker

subgroup are presented below. It should be noted that descriptive comparisons between outcome groups below do not indicate statistically significant differences.

**Problem Markers.** There were a total of 600 Problem markers recorded (29.2% of all markers coded). Unchanged clients articulated a higher frequency of Problem markers compared to recovered clients over the course of therapy (recovered:  $n = 271$ , 25.7%; unchanged:  $n = 329$ , 32.9%), and at early (recovered:  $n = 97$ , 27.1%; unchanged:  $n = 118$ , 36.3%), middle (recovered:  $n = 89$ , 25.1%; unchanged:  $n = 116$ , 34.4%), and late (recovered:  $n = 85$ , 24.9%; unchanged:  $n = 95$ , 28.0%) stages of therapy.

**Same Old Storytelling.** Same Old Storytelling marker was the fifth-most frequently occurring marker and coded a total of 94 times overall (4.58% of all markers coded). This marker occurred in almost twice the frequency in unchanged clients ( $n = 59$ , 5.89%), when compared to recovered clients ( $n = 35$ , 3.32%), over the course of therapy. While recovered and unchanged clients evinced the Same Old Story marker at the same frequency in the early stage of therapy (unchanged:  $n = 19$ , 5.85%; recovered:  $n = 19$ , 5.31%), Same Old Story occurred more frequently among unchanged clients compared to recovered clients at the middle (unchanged:  $n = 28$ , 8.31%; recovered:  $n = 11$ , 3.11%), and late (unchanged:  $n = 12$ , 3.54%; recovered:  $n = 5$ , 1.47%) stages of therapy.

**Empty Storytelling.** There were a total of 37 Empty Storytelling markers recorded (1.80% of all markers coded). Unchanged clients evinced Empty Story markers in roughly twice the frequency ( $n = 24$ , 2.40%) compared to recovered clients ( $n = 13$ , 1.23%), over the course of therapy. While recovered and unchanged clients spent roughly an equal amount of time in the Empty Storytelling marker at the early stage of therapy (unchanged:  $n = 8$ , 2.46%; recovered:  $n = 7$ , 1.96%), Empty Storytelling occurred slightly more frequently among unchanged clients

compared to recovered clients at the middle (unchanged:  $n = 11$ , 3.26%; recovered:  $n = 4$ , 1.13%), and late (unchanged:  $n = 5$ , 1.47%; recovered:  $n = 2$ , 0.59%) stages of therapy.

***Unstoried Emotion Storytelling.*** Frequencies of the Unstoried Emotion Storytelling marker were quite low overall ( $N = 8$ , 0.39%), with little variation in frequency between recovered and unchanged clients, over the course of therapy (unchanged:  $n = 5$ , 0.50%; recovered:  $n = 3$ , 0.28%), and at early (unchanged:  $n = 1$ , 0.31%; recovered:  $n = 0$ , 0%), middle (unchanged:  $n = 1$ , 0.30%; recovered:  $n = 2$ , 0.56%), and late (unchanged:  $n = 3$ , 0.88%; recovered:  $n = 1$ , 0.29%) stages of therapy.

***Superficial Storytelling.*** The second-most frequently occurring NEPCS client marker overall was Superficial Storytelling marker ( $N = 461$ , 22.4% of all markers coded). It occurred slightly more frequently in unchanged clients ( $n = 241$ , 24.1% of all markers coded) compared to recovered clients ( $n = 220$ , 20.9% of all markers coded) across all stages of therapy. This difference was most notable at early-stage therapy (unchanged:  $n = 90$ , 27.7%; recovered:  $n = 71$ , 19.8%), with roughly a similar frequency of Superficial Story Storytelling occurring at middle (unchanged:  $n = 76$ , 22.6%; recovered:  $n = 72$ , 20.3%), and late (unchanged:  $n = 75$ , 22.1%; recovered:  $n = 77$ , 22.6%) therapy stages.

***Transition Markers.*** There were a total of 419 Transition markers coded overall (20.4% of all markers coded), with recovered clients ( $n = 257$ , 24.4%) accounting for a higher frequency compared to unchanged clients ( $n = 162$ , 16.2%) over the course of therapy. This pattern was consistently observed at the early (recovered:  $n = 73$ , 20.4%; unchanged:  $n = 32$ , 9.85%), middle (recovered:  $n = 86$ , 24.3%; unchanged:  $n = 48$ , 14.2%), and late (recovered:  $n = 98$ , 28.7%; unchanged:  $n = 82$ , 24.2%) stages of therapy.

**Reflective Storytelling.** Reflective Storytelling marker was the third-most frequently occurring marker, with a total of 209 Reflective Storytelling markers recorded overall (10.2% of all markers coded). The Reflective Storytelling occurred roughly three times more frequently among recovered clients ( $n = 155$ , 14.7% of all markers coded) compared to unchanged clients ( $n = 54$ , 5.39% of all markers coded). This pattern was consistently observed at the early (recovered:  $n = 48$ , 13.4%; unchanged:  $n = 14$ , 4.3%), middle (recovered:  $n = 47$ , 13.3%; unchanged:  $n = 14$ , 4.31%), and late (recovered:  $n = 155$ , 14.7%; unchanged:  $n = 54$ , 5.39%) stages of therapy.

**Experiential Storytelling.** Frequencies of the Experiential Storytelling marker were quite low overall ( $N = 14$ , 0.68%), with recovered clients engaging in approximately double the frequency of Experiential Storytelling marker compared to unchanged clients (recovered:  $n = 10$ , 0.95%; unchanged:  $n = 4$ , 0.40%)

**Inchoate Storytelling.** The Inchoate Storytelling was the least-frequently-occurring marker ( $N = 7$ , 0.34%), with recovered clients accounting for slightly more Inchoate Storytelling ( $n = 2$ , 0.19%) than unchanged clients ( $n = 5$ , 0.50%), overall the course of therapy.

**Competing Plotlines Storytelling.** The fourth-most frequently occurring marker was Competing Plotlines Storytelling marker ( $N = 189$ , 9.20% of all markers coded). Overall, recovered and unchanged clients evinced the Competing Plotlines Storytelling marker in roughly the same frequency (unchanged:  $n = 99$ , 9.89%; recovered:  $n = 90$ , 8.55%), over the course of therapy. For both recovered and unchanged clients, Competing Plotlines Storytelling marker was recorded to occur at a consistently higher frequency as therapy progressed (early:  $n = 39$ , 5.71%; middle:  $n = 67$ , 9.70%; late:  $n = 83$ , 12.2%)

**Change Markers.** There were a total of 103 Change markers coded overall, with the Change markers occurring approximately more than twice as frequently among recovered clients ( $n = 74$ , 7.03% of all markers coded) compared to unchanged clients ( $n = 29$ , 2.90% of all markers coded), over the course of therapy. The pattern of Change markers accounting for a higher frequency among recovered clients than unchanged clients, was consistently observed at the early (recovered:  $n = 7$ , 1.96%; unchanged:  $n = 1$ , 0.31%), middle (recovered:  $n = 29$ , 8.19%; unchanged:  $n = 7$ , 2.08%), and late (recovered:  $n = 38$ , 11.14%; unchanged:  $n = 21$ , 6.19%) stages of therapy.

**Unexpected Outcome Storytelling.** As the sixth-most frequently occurring marker, there were a total of 77 Unexpected Outcome Storytelling markers recorded overall (3.75% of all markers coded). Unexpected Outcome Storytelling occurred roughly twice as frequently among recovered clients ( $n = 53$ , 5.03% of all markers coded) compared to unchanged clients ( $n = 24$ , 2.40% of all markers coded), over the course of therapy. The pattern of Unexpected Outcome Storytelling occurring more frequently in recovered clients' group compared to unchanged clients was true at the early (recovered:  $n = 4$ , 1.12%; unchanged:  $n = 1$ , 0.31%), middle (recovered:  $n = 20$ , 5.65%; unchanged:  $n = 6$ , 1.78%), and late (recovered:  $n = 29$ , 8.50%; unchanged:  $n = 17$ , 5.01%) stages of therapy.

**Discovery Storytelling.** There were a total of 26 Discovery Storytelling markers coded overall (1.27% of all markers coded), with recovered clients ( $n = 21$ , 1.99% of all markers coded) accounting for a higher frequency compared to unchanged clients ( $n = 5$ , 0.50% of all markers coded) over the course of therapy. The pattern of Discovery Storytelling occurring more frequently in recovered clients' group compared to unchanged clients was true at the early

(recovered:  $n = 3$ , 0.84%; unchanged:  $n = 0$ , 0%), middle (recovered:  $n = 9$ , 2.54%; unchanged:  $n = 1$ , 0.30%), and late (recovered:  $n = 9$ , 2.64%; unchanged:  $n = 4$ , 1.18%) stages of therapy.

**No Client Marker.** The most frequently occurring marker was No Client Marker overall ( $N = 932$ , 45.4% of all markers recorded). A higher frequency of No Client Markers were identified among unchanged clients ( $n = 481$ , 48.1% of all markers coded) compared to recovered clients ( $n = 451$ , 42.8% of all markers coded) over the course of therapy. The pattern was consistent at early (unchanged:  $n = 174$ , 53.5%; recovered:  $n = 181$ , 50.6%), middle (unchanged:  $n = 166$ , 49.3%; recovered:  $n = 150$ , 42.4%), and late (unchanged:  $n = 141$ , 41.6%; recovered:  $n = 120$ , 35.2%) stages of therapy.

### Statistical Analyses

Only statistically significant findings ( $p \leq 0.5$ ) and marginally significant findings ( $.05 < p < .10$ ) are presented below, to address each research question.

#### **Research Question 1. Relationship between proportions of NEPCS markers and therapeutic outcome (main effect of outcome).**

**NEPCS Problem Markers.** There were no significant differences in the proportions of Same Old Storytelling, Empty Storytelling, Unstoried Emotion Storytelling, Superficial Storytelling markers, or Problem markers subgroup as a whole (i.e., combining Same Old Storytelling, Empty Storytelling, Unstoried Emotion Storytelling, and Superficial Storytelling markers) between recovered and unchanged clients at all stages of therapy. The hypothesis that recovered clients would have significantly higher proportions of Superficial Storytelling, Empty Storytelling markers, and Problem markers subgroup, was not supported by these findings.

**NEPCS Transition Markers.** In terms of the Transition Markers subgroup as a whole (i.e., combining Inchoate Storytelling, Experiential Storytelling, Reflective Storytelling, and

Competing Plotlines Storytelling), there was a significant main effect of outcome on the proportions of Transition markers. Specifically, recovered clients evinced significantly higher proportions of Transition markers compared to unchanged clients at all stages of therapy,  $t(32) = -0.09, p = .0028$  (mean difference = 8.23%), which supported the initial hypothesis.

Within the Transition markers subgroup, there was evidence for a significant main effect of outcome on the proportions of Reflective Storytelling, such that recovered clients had significantly higher proportions of Reflective Storytelling marker compared to unchanged clients at all stages of therapy,  $t(32) = -5.91, p < .001$  (mean difference = 9.33%) that supported research question 1 hypothesis.

**NEPCS Change Markers.** In terms of the Change markers subgroup as a whole (i.e., combining Unexpected Outcome Storytelling, and Discovery Storytelling), there was a significant main effect of outcome such that recovered clients evinced significantly higher proportions of Change markers compared to unchanged clients at all stages of therapy,  $t(32) = -0.04, p = .0206$  (mean difference = 5.22%). Within the Change markers subgroup, recovered clients had significantly higher proportions of Unexpected Outcome Storytelling marker compared to unchanged clients at all stages of therapy,  $t(32) = -0.03, p = .0232$  (mean difference = 2.63%). These findings lend support to the initial hypotheses stating that the proportions of Change markers, and Unexpected Outcome Storytelling marker will be significantly higher in recovered clients than unchanged clients. There was no significant main outcome effect evidenced for Discovery Storytelling marker.

**No Client Marker.** There were no significant differences in the proportions of No Client Marker for recovered vs. unchanged clients at any stage of therapy.

**Research Question 2a. Stage (early vs. middle vs. late) x outcome (recovered vs. unchanged) interaction effect**

There was no evidence for a significant outcome x stage interaction effect on the proportions of any individual NEPCS markers or on marker subgroups (Problem, Transition, and Change markers), which means that significant differences in the proportions of a particular marker between outcome groups were not found to be mediated by the stage of therapy or vice versa. Hypotheses related to stage x outcome interaction effects for Problem, Transition, and Change markers as a subgroup, and individual NEPCS markers, were not supported by these findings.

**Research Question 2b. Relationship between NEPCS markers and stage of therapy for all clients (main effect of stage).**

*NEPCS Problem Markers.* Within the Problem markers subgroup, there was a marginally significant effect of stage on the proportions of Same Old Story, such that there was a trend towards higher proportions of Same Old Storytelling marker at middle vs. late stage of therapy, for all clients, regardless of outcome,  $t(32) = 0.03$ ,  $p = .0817$  (mean difference = 3.14%). There was no evidence of a significant main effect of stage on the proportions of Empty Storytelling, Unstoried Emotion Storytelling, and Superficial Storytelling markers, or on the Problem markers subgroup as a whole. The hypothesis that all clients would have significantly higher proportions of Problem markers subgroup at the early stage of therapy was not supported by these findings.

*NEPCS Transition Markers.* In terms of Transition markers subgroup as a whole, there was a significant main effect of stage such that proportions of Transition markers were significantly higher at late vs. early,  $t(32) = -0.12$ ,  $p = .0011$  (mean difference = 11.1%), and late

vs. middle stage of therapy,  $t(32) = -0.07, p = .0336$  (mean difference = 7.08%), for all clients. These findings do not provide support for the hypothesis related to the stage effects of Transition markers as a subgroup. Proportions of Transition markers were hypothesized to occur at significantly higher proportions at the middle stage of therapy vs. early and late stages of therapy, for all clients. There were no significant main stage effects evidenced for following individual NEPCS markers included in the Transition Markers subgroups: Inchoate Storytelling, or Experiential Storytelling markers.

There was a significant main effect of stage on the proportions of Competing Plotlines Storytelling marker, and a marginally significant effect of stage on the proportions of Reflective Storytelling marker. Specifically, there were higher proportions of Competing Plotlines Storytelling at late vs. early stage therapy for all clients,  $t(32) = -0.07, p = .0059$  (mean difference = 6.50%). For Reflective Storytelling, there was a marginally significant trend towards higher proportions of Reflective Storytelling at late vs. early,  $t(32) = -0.04, p = .0673$  (mean difference = 3.71%), and late vs. middle stage of therapy,  $t(32) = -0.04, p = .0518$  (mean difference = 4.11%), for all clients.

***NEPCS Change Markers.*** In terms of the Change markers subgroup, there was a significant main effect of stage such that there were significantly higher proportions of Change markers at late vs. early stages of therapy,  $t(32) = -0.08, p = .0011$  (mean difference = 7.51%), for all clients. These findings lend support to the hypothesis related to stage effects of Change markers that a higher proportion of Change markers will be evidenced at the late therapy stage for all clients.

Within the Change markers subgroup, there was a significant main effect of stage on the proportions of Unexpected Outcome Storytelling marker. Specifically, there were higher

proportions of Unexpected Outcome Storytelling at late vs. early,  $t(32) = -0.06$ ,  $p < .001$  (mean difference = 6.03%), late vs. middle,  $t(32) = -0.03$ ,  $p = .0314$  (mean difference = 3.00%), and middle vs. early stage of therapy  $t(32) = -0.03$ ,  $p = .0359$  (mean difference = 3.03%), for all clients. There were no significant differences in the proportions of Discovery Storytelling marker at early, middle, and late therapy stages for all clients.

**No Client Marker.** There were higher proportions of No Client Marker at early vs. late stage of therapy,  $t(32) = 0.14$ ,  $p = .0142$  (mean difference = 13.6%), for all clients, regardless of outcome.

### Discussion

The primary purpose of the present study was to investigate whether outcome status (recovered vs. unchanged) and stage of therapy (early vs. middle vs. late) predicted proportions of individual NEPCS markers and combined marker subgroups (Problem, Transition, and Change markers) in two early, two middle, and two late stage therapy sessions for a sample of six clients who received 15 weekly sessions of CBT for GAD. Main effects of outcome, stage, and stage x outcome interaction effects on the proportions of individual NEPCS markers and combined marker subgroups (Problem, Transition, and Change markers) were conducted using a multilevel modeling analyses in R statistical software. The present study identified a number of significant findings which will be reviewed and discussed in the following sections divided by NEPCS Problem, Transition, and Change markers subgroups, in the context of current research literature on GAD, and research examining NEPCS marker patterns in other diagnostic populations, and treatment modalities. Finally, limitations and future research directions will also be discussed.

## NEPCS Problem Markers

There were no significant differences in the proportions of Problem markers for recovered vs. unchanged clients overall, and at any stage of therapy. These findings are incongruent with findings from previous NEPCS studies (Boritz et al., 2014; Bryntwick, 2016; Macaulay, 2014). Although not significant, unchanged clients did spend a greater percentage of session time in Problem markers overall (recovered: 25.7%; unchanged: 32.9%; mean difference: 7.13%) than recovered CBT clients. It may have been the case that the relatively small study sample size did not have sufficient power to detect significant differences between the two outcome groups, and it will be important for future research studies, and larger sample sizes, to evaluate that question further.

In addition, Superficial Storytelling marker, which is one of the four individual NEPCS markers included in the Problem markers subgroup, did not emerge as a marker that differentiated recovered from unchanged CBT clients to represent the over general, verbal-linguistic quality of worry talk in sessions, as initially hypothesized in the current study, and demonstrated by Macaulay (2014) in her NEPCS analyses of MI+CBT recovered vs. unchanged clients. Superficial Story marker was the second-most frequently occurring marker overall (22.4% of all markers coded) and the most-frequently occurring marker in the Problem markers subgroup in the current study. It is possible that due to CBT's focus on logic and rational exploration of patterns and emotional experiences, Superficial Storytelling marker became the 'default' narrative-emotion processing for all clients in sessions, and therefore, was not sensitive enough to pick up differences between recovered and unchanged clients.

**Same Old Storytelling.** In terms of stage effects, there was a marginally significant trend towards higher proportions of Same Old Storytelling marker at middle vs. late stage of therapy,

for all clients. A similar trend for the Same Old Storytelling occurring at higher proportions in the middle and early stages for all clients, regardless of their outcome status, was demonstrated by Bryntwick (2016), and Macaulay (2014). The Same Old Storytelling marker indicates over-general descriptions of interpersonal, behavioural, or thought patterns or emotional states, accompanied by a sense of stuckness and low personal agency. This finding demonstrates that both recovered and unchanged CBT clients grapple with being stuck in their old patterns related to anxiety and worry, in the middle stage of therapy. However, they spend less time in the Same Old Storytelling marker and move out of this marker, towards the late stage of therapy as they replace their rigid, maladaptive narratives with more flexible narratives, composed to more adaptive action tendencies and views of self, others, and the world.

### **NEPCS Transition Markers**

In terms of the Transition markers subgroup as a whole (i.e., combining Reflective Storytelling, Experiential Storytelling, Competing Plotlines Storytelling, and Inchoate Storytelling markers), as hypothesized, significantly higher proportions of NEPCS Transitions markers were evidenced in recovered vs. unchanged CBT clients overall (recovered: 24.4%; unchanged: 16.2%; mean difference: 9.33%). These findings are consistent with findings by Macaulay (2014) who demonstrated that recovered vs. unchanged clients MI+CBT clients had significantly higher proportions of Transition markers overall (recovered: 28.5%; unchanged: 12.4%; mean difference: 16.1%). This indicates that recovered clients engage in more productive narrative-emotion processing throughout the course of therapy compared to unchanged clients, by indicating a greater integration through heightened reflectivity, the expression of differentiated emotional responses, and narrating more specific, exploratory personal stories.

In terms of stage effects, there were significantly higher proportions of Transition markers observed at late compared to early (late: 26.47%: early: 15.37%; mean difference = 11.10%), and middle stages of therapy (late: 26.47%: middle: 19.39%; mean difference = 7.08%), for all clients. This significant pattern of Transition markers will be discussed and interpreted below, in the context of similar stage effect findings related to the Reflective Storytelling marker.

**Reflective Storytelling marker.** Within the Transition Markers subgroup, recovered clients spent a significantly greater proportion of time evincing the Reflective Storytelling compared to unchanged clients over the course of therapy (recovered: 14.7%; unchanged: 5.39% of all markers coded; mean difference = 9.33%). Reflective Storytelling marker is coded when a client engages in self-focused, reflective analysis of a behavioural, cognitive, emotional, or interpersonal pattern. In addition to describing the pattern, this marker includes an explanation of ‘why’ and/or ‘how’ such a pattern emerged.

This finding is consistent with previous research by Macaulay (2014), reviewed earlier in this study, which found that recovered clients spent a significantly greater percentage of time evincing Reflective Storytelling compared to unchanged clients in a MI+CBT for GAD sample (recovered: 11.9%; unchanged: 3.7% of all markers coded; mean difference = 8.20%). The finding that higher proportions of Reflective Storytelling differentiated recovered from unchanged GAD clients in the current CBT sample, and MI+CBT sample (Macaulay, 2014) suggests that there may be something facilitative about this marker. The presence of Reflective Storytelling marker (in significantly higher proportions) in recovered clients’ narrative suggests that recovered clients are more willing and/or able to engage in deeper emotional processing and analysis of their worry, worry-related intra-and interpersonal patterns, and other anxiety-related

patterns. In contrast, unchanged clients may have a tendency to stay at a more surface level of Reflective processing, which prevents opportunities for deeper emotional processing of potentially more threatening, uncomfortable, and emotionally-laden topics.

These findings are complimented by the two etiological models of GAD, the Avoidance Model (Borkovec, 1994; Borkovec et al., 2004), and the Emotion Dysregulation Model of Worry and GAD (Mennin et al., 2002). These models posit that individuals diagnosed with GAD engage in emotionally-avoidant strategies such as worry to suppress deeper emotional processing, and that a successful treatment for GAD involves a deeper Reflective processing of worry and anxiety-related patterns. This suggests that by spending a significantly greater percentage of time in the Reflective Storytelling marker, recovered CBT clients in the current study may have heightened their opportunities for deeper analysis and processing of anxiety-related patterns, allowing for their successful extinction (Foa and Kozak, 1986). On the other hand, unchanged CBT clients continue to over-rely on a more surface-level processing in their narratives. This may serve as an avoidance strategy, which precludes deeper emotional processing of underlying negative beliefs, and making connections between the ‘what, ‘how’ and ‘why’ of their anxiety-related patterns, which are central to achieving effective treatment outcomes in GAD.

In terms of stage effects, there was a marginally significant trend towards higher proportions of Reflective Storytelling at late vs. early, (late: 12.79%; early: 9.08%; mean difference = 3.71%), and late vs. middle stages of therapy, (late: 12.79%; middle: 8.68%; mean difference = 4.11%), for all clients. A few possibilities may account for why clients spend a greater percentage of time in Reflective Storytelling at late stage compared to early and middle stages of therapy. This trend may be representative of the action-oriented nature of CBT, in

which clients jump into engaging in tasks such as behavioural experiments, and thoughts records, soon after the initiation of treatment. It is possible that in CBT, action is what may invite and spark greater client reflection. That is, concrete and corrective evidence/feedback derived through various therapeutic tasks provides clients with an opportunity to Reflectively examine their anxiety-related patterns and deepen this understanding, which reaches its peak towards the late stage of therapy.

Another complimentary possibility is that the act of engaging in treatment itself equips clients with and/or enhances clients' ability to engage in productive narrative-emotion processing as therapy progresses. Engaging in therapy may train clients to better explore and analyze their patterns, specifically within the context of a relational therapeutic bond, which may be experienced as safer, more familiar, and comfortable towards the later stages of therapy. This explanation may also help contextualize findings related to stage effects of Transition markers as a subgroup (i.e., significantly higher proportions of Transition markers noted at late stage compared to early, and middle stages of therapy for all CBT clients).

The stage effects on the proportions of Reflective Story marker and Transition markers in the current study are inconsistent and opposite to the findings presented in Macaulay (2014). While all CBT clients in the current study evinced greater proportions of Reflective Storytelling and Transition markers at late stage compared to early and middle stages of therapy, Macaulay (2014) demonstrated the opposite, i.e., MI+CBT clients evinced a significantly greater proportion of Reflective Storytelling and Transition markers at early stage compared to middle, and late stages of therapy. This difference between the two studies may indicate a difference in the therapeutic modalities of CBT and MI+CBT. In Macaulay (2014), the four session of pure MI delivered prior to 11 sessions of MI integrated with CBT, may have provided clients with a

space dedicated exclusively to reflect on their patterns and ambivalent attitudes towards change, in a therapeutic space underlined with client-centered principles, without the expectation of jumping into therapeutic tasks right away. In contrast, in the present study, CBT treatment protocol was designed to be action-oriented right from the initiation of treatment.

**Competing Plotlines Storytelling.** Competing Plotlines Story marker is coded when the client expresses divergent or opposing emotional responses, lines of thinking or behaviour tendencies (one dominant and another emergent, and newer) in relation to a specific event or narrative context. There were no significant differences in the proportions of Competing Plotlines Storytelling between recovered and unchanged clients. These findings are congruent with findings demonstrated in Boritz et al. (2014), which demonstrated no significant differences in the proportions of Competing Plotlines Storytelling between recovered and unchanged CT clients engaging in CT treatment for depression.

While there were no significant differences in the proportions of Competing Plotlines Storytelling between recovered and unchanged CBT clients, there was a significant stage effect. That is, there were significantly higher proportions of Competing Plotlines Storytelling at late vs. early stage therapy for all CBT clients (late: 12.2%; early: 5.71%; mean difference = 6.50%). This may indicate that CBT clients were more equipped to simultaneously hold and work with opposing cognitive, emotional, and/or behavioural tendencies in relation to their positive beliefs about worry and anxiety, and feedback derived from therapeutic tasks, at a significantly higher proportion at the late therapy stage. This significant trend may also be part of a more general, productive narrative-emotional processing skill that gets enhanced over the course of therapy, reaching its peak at the late therapy stage (as discussed above).

Contrary to findings of the present study, Competing Plotlines Storytelling has been shown to occur in higher proportions for recovered EFT clients at the middle stage of therapy, and recovered CCT clients at early and middle stages of therapy, in Boritz et al. (2014), and at higher proportions in the early, and middle stages for all MI+CBT clients in Macaulay (2014). For example, Boritz et al. (2014) demonstrated that recovered EFT clients evinced significantly higher proportions of Competing Plotlines Storytelling at the middle stage of therapy compared to unchanged EFT clients. Recovered CCT clients evidenced significantly higher proportions of Competing Plotlines Storytelling at the early and middle stages of therapy, within the same depression sample. Boritz et al. (2014) explains that for some clients, higher proportions of Competing Plotlines Storytelling at the early and middle stages reflect accessing and expressing conflicting responses which may be important to destabilize their dominant and rigid narrative-emotion processing to allow for the emergence of newer, more flexible narratives. Furthermore, contrary to the current study findings that Competing Plotlines Storytelling occurred at significantly higher proportions at the late stage of therapy for all CBT clients, Boritz et al. (2014) demonstrated that within the CT group for depression, CT clients evinced roughly the same proportions of Competing Plotlines Storytelling at all stages of therapy.

In Macaulay (2014), Competing Plotlines Storytelling was shown to occur at higher proportions in early and middle stages compared to late stage of therapy for all MI+CBT clients. Since Competing Plotlines Storytelling is thought to be a measure of client ambivalence, this finding in Macaulay (2014) is consistent with the phasing of therapy in this sample; the early stage consisted of MI, which focuses on processing ambivalence, followed by CBT in the middle and late stages.

A few possibilities might account for why the proportion of Competing Plotlines Storytelling occurs at significantly higher proportions at the late vs. early stages of therapy in the current study, contrary to previous NEPCS studies reviewed above. It is possible that contrary to findings in Macaulay (2014), and Boritz et al. (2014), the destabilization of rigid narratives, in the early and middle stages of therapy, is not a pre-requisite for the creation of more flexible narratives and adaptive action tendencies in the current CBT for GAD sample. These results could be indicative of differences in the treatment modalities examined. CBT clients in the current study sample engage in more adaptive action tendencies, right from the start of the treatment due to the directive and action-oriented nature of CBT.

To illustrate that CBT clients in the current sample, engage in action right from the beginning of treatment, it may be interesting to examine the percentage of time CBT clients in the current sample spent articulating reports of concrete shifts (measured by Unexpected Outcome Storytelling marker), versus clients in other samples, such as Bryntwick's (2016) EFT sample for trauma and Boritz's (2014) combined CCT+CT+EFT sample for depression. Within Bryntwick's (2016) EFT sample for trauma, frequencies of the Unexpected Outcome Storytelling marker were quite low overall, (0.00% at early, 0.02% at middle, and 0.05% at late stage of therapy). Similarly, frequencies of Unexpected Outcome Storytelling marker were lower at every stage in Boritz's (2014) combined CCT+CT+EFT sample for depression sample (early: 0.60%; middle: 2.00%; late: 1.90%), when compared to the current study sample of CBT clients who began reporting their experiences of change right from the beginning of treatment (early:  $n = 5$ ; 0.73%; middle:  $n = 26$ ; 3.76%; late:  $n = 46$ ; 6.76%). It is possible that engaging in new behaviors, and collecting evidence that directly challenges their maladaptive beliefs about the benefits of worry, begins to disrupt the underlying assumptions of their Same Old Storytelling

and gives rise to an increasing engagement in Competing Plotline Storytelling at late therapy stage.

Significantly higher proportions of Competing Plotlines Storytelling at late stage compared to early stage of therapy in the current study also points to an interesting future research direction. It may be that the way in which clients come to reconcile the tension and conflict between their competing lines of thinking, emotions, and behaviour tendencies differs between recovered and unchanged CBT clients, especially at the late therapy stage. Within a one-minute clip that is coded as Competing Plotlines Storytelling marker for both a recovered and an unchanged CBT client, the descriptive content may completely vary between the two clients. It is important to note that this difference in the descriptive content, may point to productive versus unproductive narrative-emotion processing for recovered and unchanged CBT clients, respectively. This difference in the quality of narrative-emotion processing may contribute to recovered CBT clients resolving ambivalence about change and achieving recovery from GAD while unchanged CBT clients experiencing such tension, but remaining stuck in their anxiety-related patterns at post-treatment. It is also interesting to note that all clients in the current study sample continue to retain their respective outcome status at 12-months follow-up as well, which indicates that the way in which this tension is worked with, and resolved, may have consequences for clients' outcome status at post-treatment as well as follow-up. The example below will illustrate the difference in productive vs. unproductive narrative-emotion processing discussed above:

Recovered client: "I know it is difficult to let go of my Imodium use (*to manage anxiety symptoms*). I have been using it as a safety net for so long. It feels comfortable and easy, so it scares me to go without it. But I also know how harmful it is for my body. I don't want to live

like this forever. So I just have to do this, this Monday, I am going to give it a really good try (*to curb Imodium use in behavioural experiment*)”.

Unchanged client: “I tried to not to take as much responsibility at home this week, so I didn’t help my boyfriend with his assignment, didn’t do all the dishes. He did fine without me. It’s sad to know that he doesn’t need me as much. But I don’t know, I am still struggling with this. It’s hard for me to let it all go-I also don’t want to be a burden on him...”

Here, the tension between the dominant tendency, and emergent voice would be coded as Competing Plotlines Storytelling in both segments. The difference between the two segments lies in where the clients ‘land’ at the end of the segment. The unchanged client here dismisses the emergent voice that seems to threaten the client’s self-concept and identity and returns to the status-quo, problematic narrative. Ribeiro et al. (2014) refer to this phenomenon as “Return to Problem” marker. According to Ribeiro et al. (2014), the oscillation between an emergent voice that challenges the status quo, and then returning to a dominant narrative, is common in early and middle stage therapy, and continues to persist through late-stage therapy for unchanged clients. In contrast, in the example above, the recovered client ‘lands’ on the side of the change and wants to reconcile the tension by attempting to integrate the emergent voice instead of dismissing it. A future direction would be to further refine the Competing Plotlines Storytelling marker or qualitatively code segments categorized as Competing Plotlines Storytelling marker to indicate whether there is a difference between recovered and unchanged clients in whether they side with status quo or change, especially towards the late stage therapy in the current CBT for GAD sample.

## NEPCS Change Markers

In terms of the Change markers subgroup as a whole (i.e., combining Unexpected Outcome Storytelling and Discovery Storytelling markers), significantly higher proportions of Change markers were evidenced in recovered vs. unchanged clients at all stages of therapy (recovered: 7.03%; unchanged: 2.90%; mean difference = 4.13%). This indicates that over the course of therapy, recovered clients' narratives represented a greater evidence of narrative-emotion integration and change, which included generation of new views of self, others, and the world, as well as these experiences of change translated into action. Similarly, recovered clients spent a significantly greater percentage of time in Unexpected Storytelling compared to unchanged clients at all stages of therapy, (recovered: 5.03%; unchanged: 2.40%; mean difference = 2.63%). This indicates that recovered clients spent a significantly greater percentage of time in sessions, sharing their reports of new, more adaptive behaviours, emotional responses, and/or thought patterns. These findings are in line with findings reported in Macaulay (2014) such that MI+CBT recovered clients shared more Unexpected Outcome Stories compared to unchanged MI+CBT clients across all stages of therapy.

This could suggest two complimentary possibilities. Significantly higher proportions of Change and Unexpected Storytelling markers coded in the recovered clients' narrative represents a greater degree of change accomplished compared to unchanged clients. Also, it is possible that therapists of recovered clients are more attuned to hearing clients' reports of shifts, and helping them reflect on, elaborate, and consolidate these experiences of change, so that recovered clients spend a greater percentage of time in these markers. It was also interesting to note that Bryntwick et al. (2016) found that Unexpected Outcome Storytelling was extremely rare for trauma clients receiving EFT, until the late stage of therapy when there was a sharp increase for

recovered clients only. This may reflect a difference in therapeutic modalities between the present study and Bryntwick (2016). CBT Clients in the present study sample reported experiencing concrete changes throughout therapy, due to CBT's explicit focus on helping clients change their maladaptive cognitive and behavioural patterns and helping them build coping skills while EFT tends to focus on the evocation and restructuring of maladaptive emotional schemes (Greenberg et al., 1993).

There was also evidence for significantly higher proportions of Change markers at the late compared to early stage of therapy, for all clients (late: 8.68%; early: 1.17%; mean differences: 7.51%). The presence of Change markers at significantly higher proportions at the late vs. early stage of therapy makes sense given that regardless of outcome, all clients experience an increase in the changes experienced as therapy progressed, compared to when they first entered treatment. Despite the fact that recovered clients do share significantly higher proportions of Change markers overall, the reporting of Change markers does increase over the course of therapy for all clients, especially towards the end of therapy. This could also help contextualize findings related to stage effects of Unexpected Outcome Storytelling. There was evidence for higher proportions of Unexpected Outcome Storytelling at late stage compared to early (late: 6.76%; early: 0.73%; mean difference: 6.03%), and middle stages of therapy (late: 6.76%; middle: 3.76%; mean difference: 3.03%), for all clients.

### **No Client Marker**

No Client Marker was the most frequently coded marker and accounted for 45.4% of all the markers coded in the present study. No Client Marker is coded when a therapist talks for more than 50% of the one-minute segment (i.e., more than 30 seconds). This includes therapist reflections and interventions (such as teaching a CBT skill, practicing progressive muscle

relaxation etc.), therapist-client conversations about subjects unrelated to therapy (e.g., at the beginning and end of session), or session scheduling. These findings most closely match the percentage of time spent by CT clients in Boritz's (2014) depression sample, in which the No Client Marker was the second-most frequently marker and accounted for 38.5% of total coded session time. Compared to previous NEPCS studies, clients in the present study spent the greatest amount of time in No Client Marker (e.g., 25.9% in Macaulay, 2014-MI+CBT for GAD sample; 24.3% in Boritz et al., 2014-combined CCT, CT, and EFT for depression sample; 13.0% in Bryntwick, 2016-EFT for trauma sample). This means that compared to previous NEPCS studies, CBT clients in the present study, spent less time talking in their sessions, which can be accounted for by the didactic and directive nature of the CBT approach utilized in the current study.

Although there was no significant difference in the proportions of No Client Marker for recovered vs. unchanged clients (recovered: 42.8%; unchanged: 48.1%), there was a significant stage effect such that there were significantly higher proportions of No Client Marker at early compared to late stage of therapy, for all clients (early: 52.0%; late: 38.4%; mean difference: 13.6%). This finding may reveal little about the type of narrative-emotion processing happening for clients in these segments. However, it does point to the possibility that after the early sessions, which may be dominated by therapist talk explaining the treatment rationale, and introducing clients to various aspects of therapeutic tasks, clients tend to become more active and engaged as therapy progresses.

### **Limitations and Future Directions**

The present study had a number of important limitations. In particular, the sample size ( $N = 6$ ; 36 therapy sessions) was relatively small compared to the number of CBT-alone participants

( $N = 43$ ) included in the larger trial (Westra, Constantino, & Antony, 2016) from which the current study sample was drawn. In addition, only two sessions per stage were chosen to represent the early (session 1 and 4), middle (sessions 6 and 8), and late (sessions 11 and 13) stages of therapy. Due to this, it is possible that the chosen sessions were not representative of the respective stage of therapy. This also meant that only six sessions were coded out of the 15 total sessions for each of the six clients, which may not reflect the overall therapy course of CBT treatment for GAD.

Furthermore, alpha levels were not corrected for the multiple comparisons made due to a small sample size, which could have increased the possibility of Type I error. The small sample size could have also restricted the detection of a statistically significant relation. For example, contrary to the original hypothesis, there was no evidence for a stage x outcome interaction effect on the proportions of any NEPCS marker, which could have been a function of reduced power due to a small sample size. However, in spite of the reduced power, the present study did identify a number of significant findings, which speaks to the robustness of the NEPCS Version 2.0 (Angus Narrative-emotion Marker Lab, 2015) in identifying narrative-emotion processes and patterns in the current study sample. This also points to an important future direction, which would be to replicate the current study design with a larger sample, and more statistical power. This would help further elucidate the relation between NEPCS markers, outcome, and stage, and possibly inform us on any significant stage x outcome interactions, which is a gap left to be understood in the current study.

Another future direction would be to extend the current study by formally testing how NEPCS marker patterns, compare between the current study sample (CBT for GAD), and Macaulay's (2014) sample (MI+CBT for GAD), which respectively drew their study sample

from the two arms of the larger trial comparing the efficacy of CBT vs. MI+CBT for GAD (Westra, Constantino, & Antony, 2016). This would involve combining the current study sample, and Macaulay's (2014) sample, to formally test for main effects of outcome, stage, treatment, and stage  $\times$  outcome, treatment  $\times$  outcome, and stage  $\times$  treatment  $\times$  outcome interactions. In terms of findings from the larger trial, no differences in outcome were found to occur between pre- to posttreatment. However, over the 12-months follow-up period, the MI+CBT clients demonstrated a steeper rate of worry decline, and general distress reduction than CBT-alone clients. In addition, the odds of CBT-alone clients meeting the GAD diagnostic criteria were 5 times higher at 12-months than clients who received MI+CBT. There were also twice as many dropouts in the CBT alone condition than the MI+CBT condition. The future initiative to combine the CBT and MI+CBT samples would help elucidate how in-session narrative-emotion processes and patterns differ between the two conditions, and clarify the nature of narrative-emotion mechanisms through which MI is more effective for GAD in the long run, allowing MI+CBT clients to achieve better treatment outcomes over the follow-up period.

In terms of specific findings demonstrated by the present study, significantly higher proportions of Competing Plotlines Storytelling marker at late compared to early stage of therapy points to an interesting future research direction. It is possible that both groups (recovered and unchanged) display tension and conflict that accompanies competing lines of thinking, emotions, and behaviour tendencies in the segments coded as Competing Plotlines Storytelling marker. However, the way the clients work with this ambivalence and tension, and whether they side with the status quo or change, may vary depending on their outcome group. A future direction would be to further refine the Competing Plotlines Story marker or qualitatively code segments categorized as Competing Plotlines Story marker to examine whether such a difference exists.

Lastly, The No Client Marker accounted for approximately half of the coded session time (45.4% of all markers coded). An interesting direction would be to statistically remove the proportion of time spent in No Client Marker from the total therapy time, to isolate the client talk time, to examine how proportions of NEPCS markers and significant relations change when examining just the client talk time. Lastly, given that therapist talk characterized half of the total session time, a future direction would be to qualitatively examine therapist interventions in these segments, and examine how these interventions relate to clients' subsequent narrative-emotion process.

### **Conclusion**

The current study made a preliminary contribution towards addressing a gap in literature by identifying and comparing in-session narrative-emotion processes and patterns associated with recovery from GAD in CBT treatment. The Reflective Storytelling as well as Transition markers appear to be more common among recovered clients. This supports theoretical conceptualization that deeper processing and reflection of intra- and interpersonal patterns related to worry and anxiety is necessary for the successful extinction of these patterns, and central to achieving effective treatment outcomes in GAD. Recovered clients also appear to spend more time in Change markers subgroup and Unexpected Outcome Storytelling, to indicate that recovered clients' narratives include a greater evidence of narrative-emotion integration, and experiences of change translated into action. This may represent a greater degree of concrete change accomplished in therapy as well as a heightened therapist attunement to hearing these markers and helping the clients elaborate on them further.

This study provided additional evidence that the NEPCS is a psychotherapy research measure that can be applied pan-theoretically, and trans-diagnostically. That is, NEPCS is

sensitive to picking up narrative-emotion processes that are specific to particular treatment modalities, and disorders, as well as those processes that may function as common factors, contributing to overall therapeutic change. The findings related to narrative-emotion patterns could point to how change pathways in CBT differ from other therapeutic modalities. Transition markers as well as Reflective, and Competing Plotlines Storytelling markers appear to peak at late stage of therapy which is contrary to previous NEPCS research findings. This change pathway could be unique to the CBT treatment protocol, which emphasizes that clients engage in action right after the initiation of treatment. This action is what may invite greater reflection and move clients to work with competing tendencies, reaching its peak at late stage of therapy. In addition, contrary to findings in Macaulay (2014), the Competing Plotlines Storytelling did not differentiate recovered and unchanged clients in the current CBT sample. This provides evidence that recovered CBT clients spending a greater amount of time in Competing Plotlines Story may be unique to the MI+CBT sample (Macaulay, 2013), which explicitly focuses on exploring and resolving ambivalence about change, as a mechanism of change. The findings of the present study also drew a distinction between narrative-emotion process patterns between the current study sample (CBT for GAD), and Bryntwick's sample (2016; EFT for trauma). Due to CBT's action-oriented nature and focus on concrete change, CBT clients in the present study reported experiencing and sharing Unexpected Outcome stories right from the beginning of treatment. However, Unexpected Outcome stories were extremely rare for trauma clients receiving EFT until late stage of therapy.

Despite its limitations, the present study points to a number of important findings and future directions, that are worthy of future investigation. While additional research is needed to address the limitations of the present study, and to further enhance the generalizability of

findings, the present study fills a gap in research literature by presenting new information about the interplay of narrative-emotion processes and pathways through which successful CBT psychotherapy treatment for GAD occurs.

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Appendix A

**Narrative and Emotion Process Coding System**

**(NEPCS)**

**Version 2.0**

**Department of Psychology**

**York University**

**Toronto, Ontario, Canada**

Marker Description	Indicators	Examples
<b>Same Old Story</b>		
Client's story involves over-general descriptions of interpersonal, behavioural, or thought patterns or emotional states, accompanied by a sense of stuckness.	<p>Linguistic indicators: always, never, no matter what, here we go again.</p> <p>Low personal agency</p> <ul style="list-style-type: none"> <li>• Client may express helplessness, powerlessness, hopelessness, or resignation.</li> <li>• Client may view problematic patterns as maintained by forces outside of the self.</li> </ul> <p>Generic ABM, or combination specific/generic ABM</p> <ul style="list-style-type: none"> <li>• Generic ABM – Personal recollections that represent a blend of many similar events repeated over a long period of time. This includes memory descriptions of non-specific events that lack discrete connection to a particular moment in time (in contrast with a single-event memory that is specific and focused on a particular incident). Generic ABMs blend unique events into an amalgam or schematic representation that is meant to capture key commonalities that link the events together.</li> <li>• Combined Specific/Generic ABM – Represents a narrative sequence in which a specific incident or life event is contextualized within an overall life theme or pattern of life events. In this category, the specific event is used as a best exemplar of an important life theme; the meanings attached to the single event are generalized to other contexts and time periods in the person's life.</li> </ul> <p>Emotion is global, non-specific (secondary emotion)</p> <ul style="list-style-type: none"> <li>• An emotional response to another emotion (e.g. one emotion interrupts another emotion)</li> <li>• Does not fit the person's appraisal of the situation</li> </ul>	<p>C: ...<i>getting all the negative message like never getting any encouragement...it's almost like [my husband's]...point of view is the only right one...and everybody has to follow it, like there's nothing outside of that...it's just like whichever way I turn, you know no matter what...it's never the right thing and he just doesn't want to be around me.</i></p> <p style="text-align: center;">***</p> <p>C: <i>Well all I can really say is that I remember the statement that she made at the time, but I guess at the time I didn't really, you know, didn't really click in, or pay much attention to it, other than that she made the statement that I guess she was number one, and everything else took second place.</i></p> <p>T: <i>And, somewhere along the way there I guess you've come to realize, that's who she is.</i></p> <p>C: <i>Yeah. She was never concerned about me. She was concerned about herself.</i></p> <p>T: <i>Like there's no two-way in this relationship, it feels like it's all about her.</i></p> <p>C: <i>It's all the one way, yup. Behave, be good, don't give me any trouble or cause me any misery, or cause me any discomfort.</i></p> <p>T: <i>She's still like that</i></p> <p>C: <i>Oh, yeah. Mhmmm. Yup.</i></p>
<b>Empty Story</b>		
Client's narrative entails the description and elaboration of external events or	<p>A focus on event details.</p> <ul style="list-style-type: none"> <li>• Attention is focused almost exclusively on external events (e.g., "what happened").</li> </ul>	<p>C: ...[my kids] <i>don't particularly want to go anywhere with me...the only way I can get them to spend any time is if I offer to take them out for a very expensive dinner.</i></p>

information, accompanied by a lack of reflexivity and absent or low expressed emotional arousal (i.e., client either does not express emotions, or acknowledges emotions but there is little arousal in voice or body).

- This may include factual autobiographical memories about the self (i.e., an account based on factual information).
- Lack of self focus in the recounting of the narrative event
- The client tells a story, describes other people or events in which s/he is not involved, or presents a generalized or detached account of ideas.
  - Refers in passing to him/herself but his/her references do not establish his/her involvement. First person pronouns only define the client as object, spectator, or incidental participant. The client treats himself/herself as an object or instrument or in so remote a way that the story could be about someone else.

The significance (meaning) of story is unclear to the listener

- Significance of the disclosure of story at that moment in therapy unclear, and/or meaning of story to client is unclear. The content is such that the speaker is identified with it in some way but the association is not made clear.

External voice

- The external voice has a pre-monitored quality (e.g., “talking at” quality) involving may indicate a more rehearsed conceptual style of processing and a lack of spontaneity and may suggest that content is not freshly experienced.
- The client’s manner of expression is remote, matter of fact, or offhand as in superficial social chit-chat, or has a mechanical quality.

T: *So this must be very painful, you’re still wanting that kind of connection with them. You haven’t given up on that, it keeps hurting.*

C: *We haven’t taken a holiday in three years...they’re involved with their friends to an extreme...*

T: *...I have a sense that there’s a lot of pain underneath what you are telling me.*

C: *Oh yeah...well, of course – that goes without saying.*

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C: *And I wasn’t upset or anything, I just packed up my stuff, she told me to pack up my stuff it was nothing really personal she still gave me a recommendation. It was just the fact that, in their view, I had “acted too quickly” on a potential client. I already had sent a credit check, which is my function, but the client was not yet confirmed. In my view it was confirmed and so I went ahead. And that’s what attributed to them letting me go. Plus the work, I was done by 10 and had nothing to do for the rest of the day. So that’s why they let me go. And I wasn’t really heartbroken about it but I had actually just purchased a TV, that’s when it happened. And I’d bought it like 3 or 4 days before. I asked the guy when I bought it, “if something happens, can I return it?” He basically told me it was final sale. Unless it’s a warranty issue. And, um, I actually. I don’t think I even took it out of the box. I went home, I took it back, and the guy who sold it to me was like, ‘I thought I said no returns.’ So I said, “I lost my job.” And then he took it back.*

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**Unstoried Emotion**

Client verbally or non-verbally expresses undifferentiated emotional states that are unacknowledged, disconnected or not integrated within the narrative (i.e., emotional

Dysregulated emotion (i.e., extremely intense emotional arousal apparent in both the voice and the body of the client).

- Usual speech patterns are extremely disrupted by emotional overflow, as indicated by changes in accentuation patterns, unevenness of pace, changes in pitch, and volume or force of voice.

T: *So it’s hard to keep the lid completely shut and it keeps peeking out.*

C: *yeah I find it’s...affected my...stomach...you know how you get that tightness and you always feel like...sort of slightly nauseous all the time...like everything you eat kind of sits there...*

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response is not referred to or elaborated in the plot).

- Emotional expression is completely spontaneous and unrestricted.
- Emotional arousal appears to be an uncontrollable and disruptive negative experience in which the client feels like s/he are falling apart.

Emotional Overflow – not dysregulated, but powerful and relatively unexplored or disconnected from narrative.

Dissociative emotion.

- Silence and pausing; clients appear to face obstructions in their process of self-exploration, by attempting to disengage by avoiding and/or withdrawing from emotion.
- Therapy discourse markers may include discussion of difficult emotion, pauses followed by a response that indicates that client had stopped processing to the same depth as before the pause, pauses followed by jokes, or summarizing, dismissing, or distracting responses.

No discernable cause of affect

- Inability to identify a specific cause or starting point that explains the onset of the emotional response
- Client demonstrates little or no understanding of what the emotional state means to him/her
- No relational or situational context identified

Somatic complaints

- Client identifies points of tension in the body
- Client describes pain or other bodily discomfort

Physical Indicators

- Change in body posture (e.g. rigid), eye contact (e.g. diminished), vocal tone (e.g. quivering or raised voice), gestures (e.g. placing hand on chest), bodily movements (e.g. hand wringing, restless legs)

T: *What's bad about that? It's like he's judging me, or...?*

C: *Um, I think he sees, um, I don't know. It feels like all the times that I did well, it's...[tears up]. Sorry [smiles], sorry, [reaches for Kleenex]. Um...[smiles, crying, covers her face].*

T: *What's happening right now?*

C: [silent, crying]. *It's like, now he sees the real me.*

T: *I see. Now he sees the real me.*

C: [client looks down at thought record, writing].

T: *And those tears are tears of? I mean I think they're important, they're telling you something...*

C: [continues staring down at clipboard, fidgeting with pen, silent :10 seconds].

T: *I feel...sad? Or mad? Or...*

C: [crying again]. *Sorry, I'm really sorry.*

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C: *...and I just feel like my mind is going a million miles an hour, with...same old kind of stuff.*

T: *Ok, well, so...in particular, what sort of stuff?*

C: [starts to cry, shaking her head. :20 silence]. *Um, uh, it's all kind of one big ball.*

T: *Ok.*

C: *I just, um, I don't know. [more silence, crying]. It's just, I'm just, it's just a never ending...I don't know, it's just kind of a big ball.*

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### Superficial Story

Client's emotional state and narrative expression are

Narrative incoherence.

C: *And then, the moment...sometimes with certain things I just can't help myself. Without having to think of myself, it's*

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presented in a generalized, vague or incoherent manner. The client may talk about his or her own feelings or self-relevant ideas in a coherent manner, but with little or no evidence of exploration or discovery.

- Story holds together loosely or is scattered. The client may talk his or her own feelings or self-relevant ideas, but in a skipping or jumping manner.
- The client presents multiple trains of thought, stories or talking points within rapid succession that remain incomplete.
- Connection between ideas may be unclear to therapist.

Emotion is depersonalized .

- The client may exhibit high or low emotional arousal; however, if the client is emotionally aroused, it is evident from his/her manner, not from his/her words.
- If the client mentions his/her feelings, he/she treats them abstractly, impersonally, as objects.
- The client uses third person pronouns (e.g., “one feels...”)
- Client appears to be removed and distant from emotional impact of narrative.

Lack of self-focus.

- May include biographical information about others, or descriptions or explanations.
- (imagination/fantasy/projection) of others’ thoughts, feelings, or behaviours
- If focused on other, little discussion of self-related thoughts, feelings and behaviours

Hypothetical scenarios, conjecture.

Unclear referents (e.g., “it” “that” “this”).

*always great when this happens, it’s always down to the point. I can’t think of any examples. But when it happens, all of a sudden they are just like, wow. Because of all of a sudden they just get it back.*

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### Reflective Story

Client’s narrative includes a coherent analysis of or reflection on an ABM, or on a behavioural, cognitive, emotional, or interpersonal pattern. Often explanatory in nature, the client may provide a “why” or “how” for the

May be an introduction and setting the scene for further analysis or exploration.

Can range from no/low emotional arousal to moderate –high arousal.

Focus on self.

*C: It’s just, it’s shaped who I am.*

*T: How so? Can you say more about that?*

*C: I guess like the whole people pleasing thing. ‘Cause I guess, I had to really watch my back with her, all the time. And like, this was my home. It was supposed to be where I felt safe.*

*T: Right. You sort of learned, “ok I can’t really trust people.”*

*C: And she was my parent. Or a parent figure. And I just feel*

---

emergence of significant events or patterns, or may discuss why something matters. The client appears engaged in this process, but with limited evidence of present-centered exploration, searching, or discovery.

- Narrative is told from a personal perspective and includes the details of the clients feelings, reactions, motives, goals and assumptions.

Client provides description of feelings as they occur in a range of situations, or relate reactions to self-image.

Abstract terms or jargon are expanded and elaborated with some internal detail.

Reporting internal experience not arising from present centered exploration.

*like, you know, I've always had to watch my back, I was always—and I think, this is what is now this constant, like, trying to work out every eventuality, because she was so manipulative that I had to feel like I was one step ahead of her.*

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*C: With my boyfriend it's like we're equal. Completely equal. And with a few of my friends I feel equal, so I can be myself with them because we're equal.*

*T: Right, so you feel like you can be yourself in relationships where you're not inferior, or something.*

*C: Right, and I feel inferior when I'm with them, then I feel inferior in my work, and then I feel inferior in my life, you know what I mean? So, I think if I start to change the relationship I have with people it will change the relationship I have with my work, the relationship I have with myself.*

*T: It sounds like that's a really important connection to make, because you just said I feel inferior in my life if I don't sort of stand up for myself.*

*C: Yeah, because you're always constantly interacting with people, so...I guess my interaction with my friends has had a lot of impact on how...how I feel about myself, you know what I mean?*

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### Competing Plotlines

Client expresses or implies competing or opposing emotional responses, lines of thinking or behaviour or action tendencies in relation to a specific event or narrative context, accompanied by confusion, curiosity, uncertainty, self-doubt, protest, anger or frustration (i.e., the client expresses feeling conflicted over the competition).

Linguistic indicators (e.g., on the one hand, on the other hand; one part of me).

Moderate expressed emotional arousal.

- Arousal is moderate in voice and body. Ordinary speech patterns may be moderately disrupted by emotional overflow as represented by changes in accentuation patterns, unevenness of pace, changes in pitch. Although there is some freedom from control and restraints, arousal may still be somewhat restricted.

*C: ...it's like, I have three healthy children, a house, we're not wealthy by any means but we're okay, um and I sort of go "oh" ...why am I not...happier? I don't know.*

*T: ...sounds almost like you're saying, "what's the matter with me? What's wrong with me?"*

*C: yes... "what more do I need?" um, "am I grateful?" It's funny because you start to feel that you should be grateful but you, you really can't feel grateful. Isn't that awful? That's horrible. It's an awful feeling...*

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Tension and incongruence are at the core of these two opposing emotional responses, ideas or behaviours.

Breach of client's beliefs and assumptions about the world and/or the self, leading to a shattered sense of identity, purpose, and/or values.

- This may be reflected in questions such as, "How do I make sense of this?" "Why has this happened to me?", "Why am I behaving/why do I feel this way?", "Why do I feel two different ways?"

Both of the competing emotional responses or ideas do not need to be explicitly expressed by the client. One may be implied but recognized as "competing" in the broader context of the client's previously-expressed tendencies, same-old-story, therapy goals, etc. (e.g., client can express wishes, state confusion about actions or feelings without articulating a direct desire for change).

C: *And I think there's also a fear, um, that because I'm an energizer bunny, that if I slow down a little, like...I won't be as, um accomplished, you know, or people are going to notice, like "gosh, [name] is being lazy"*

T: *Yeah, so if I'm not on top of everything and doing everything then I'm going to be a "lazy slob"*

C: *Yeah. [Laughter]. Yes. And I don't want people to think that, obviously.*

### Inchoate Story

Client appears to focus attention inward in order to sort through, piece together, or make sense of an experience and search or struggle for the appropriate symbolization in language.

Narrative lacks clear beginning, middle, and end.

- Client is unable to clearly articulate the story; the telling of the story is disjointed. Both client and therapist may find it difficult to follow the story.
- Situational/relational context is only partially elaborated
- Client expresses confusion or uncertainty about the causes, factors, and/or details of the narrated event.
- Client describes a disjointed, unclear or hard to understand narrative.

Client may use metaphor to symbolize an experience.

Client engages in a present-centered exploration of patterns of feelings, behaviour, actions, reactions, etc., but appears to struggle to articulate something new.

Disjointed description of subjective experience (internal state) of protagonists and antagonists.

- Pausing and/or disrupted speech as client attempts to articulate internal experience.
  - Client struggles to symbolize novel or complex experience felt in that moment.

C: *...and then for the rest of my life having no sense of self, or at least one that was really discombobulated in a way.*

T: *So it feels like he took your sense of self away.*

C: *Yeah, yeah [silence]. And I'm left...[silence]...because we moved, things seemed to be ok on the outside. But inside, there was...[pause, closes eyes, scrunches up face] a, like a [silence] black hole or a void, or a...not a ticking time bomb [makes fist like a bomb], but there was something that wasn't there. [Silence]. Or actually there's something that was there [uses other hand to clasp fist], that loathing, or just because...and then...and then, it just sort of, every time I became more sexually aware, it built up, and built up over the years...*

Client is silent because of an emotional experience or due to the process of moving into contact with an emotion.

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### Experiential Story

A client narrative of what happened and how it felt; an experiential re-entry into an generic or specific autobiographical memory with reference to the associated internal experience and emotional reactions

An emotional differentiation of what happened.

- The therapist may facilitate re-entry into the landscape of action and emotion.
- Moderate to high emotional arousal.
- Client will discuss his/her emotions, but may also report what they saw, heard, smelled, etc. (i.e., sensory exploration).
- Client's gestures, posture, or gaze may indicate review or re-enactment of the actions associated with the event. Similar to Robert Elliott's "memory reprocessing."

C: *...and all I could think of was this poor thing, she's been there all alone, she's going to think I abandoned her...that's all I could think of. It was really really awful.*

T: *I can imagine, she's there all by herself, feeling so lonely.*

C: *In a place she hates to be...*

T: *So that must have been so hurtful and painful for you to almost feel like "I somehow abandoned her."*

C: *That's what it felt like.*

T: *Like, "I didn't want to do that to her."*

C: *This is the same [cat] my father tried to kill*

T: *Oh, so there was a lot of emotional attachment there...*

C: *...I just felt lost. I can remember going, I went and bought a bottle of wine because wine would put me put to sleep, a glass, and I tried that and it just did nothing. I might as well have ate a candy or something, and I was just wound. And I just went out and walked and walked and walked, even where it wasn't safe and where it was dark, and it was like I was in a fog, and it was raining and raining, a thunderstorm and at night, and I got wound up, and I just had to walk it off, and it's like I couldn't. I was getting soaking wet but I didn't care.*

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### Unexpected Outcome

Client narratives involving descriptions of "new" behaviours, emotional responses, and/or thought patterns, accompanied by expressions of surprise, excitement, contentment, pride, protest, and/or relief.

Linguistic indicators: new, different, comparisons between past and present.

Specific ABMs detailing new, adaptive actions, reactions, and/or emotions in the context of previously troubling events/scenarios.

Client identifies his/her own active role in the event

Primary emotion is present within the story (i.e., an individual's very first automatic emotional response to a situation).

- Indications of primary emotion are that emotion has to be (a) experienced in the present, (b) in a mindfully

C: *...it was just really surprising and amazing like to see that you know, and to notice that...I just...took a completely different approach to uh answering the question and representing like what's important to me...I was very pleased with myself.*

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C: *It was like—my stomach was so bad that I was bent over, and I thought 'I'm obviously anxious for some reason,' but, as I was saying, instead of just sitting there wallowing in it I was like 'ok, what can I do?'*

T: *Right, is that a change for you, in terms of—*

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aware manner, meaning that (c) the emotion has to be owned by the client who experiences him/herself as an agent rather than as a victim of the feeling and (d) the emotion is not overwhelming; (e) the emotional process has to be fluid rather than blocked; and (f) the emotion has to be on a therapeutically relevant theme.

C: Yes, 'cause generally that is my comfort go-to place is to just sit and wallow in it, so to be able to sit and do the relaxation and kick [the anxiety] to the curb, it was a big change. I just keep thinking about what you said, you can't be anxious and relaxed at the same time. So I keep trying to relax myself, and do the muscle stuff, and--  
 T: Right, right. So what was that like, then?  
 C: Good, it felt really good. After, I felt like a different person, especially because my muscles were so tight that actually doing it helped relieve a lot of the stress, like unwinding them. I mean my anxiety was probably at like 90%, and then after I relaxed myself it was maybe like 20, 30.

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### Discovery Story

Client narratives in which a new account is constructed as a client describes his or her subjective experience, accompanied by a sense of discovery resulting in a reconceptualization, reorganization or new understanding of the self.

Moderate emotional arousal.

A general overview of an event or a description of a specific incident or event (past, present, or future; actual or imagined).

An experiential description of how one feels or felt during the specified event.

A Reflective or interpretive analysis of current, past, or future events and/or subjective experiences, in which the client:

- Examines own behaviour in situations/relationships.
- Plans future behaviour alternatives.
- Examines own thinking in situations.
- Explores own emotions in situations.
- Discusses new understanding of patterns in own behaviour and/or that of others.
- Is self-questioning.

A reconceptualization of the Same Old Story.

An exploration or description of changed patterns (behavior, thought, emotion, interpersonal) or understandings, including some discovery of *how* the change occurred (i.e., indicating that the client has perspective on own change process).

C: I think that that...humiliation was the currency that my parents dealt in...when they were disciplining myself and my sisters... and I felt - I feel - very sad about that.  
 T: mm-hm...when you talk about it now...  
 C: Yeah because I feel like they criticized and nagged and were negative to the point where I chose no longer to be honest with them...and because we had such a limited discourse they really didn't know who the heck I was.

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C: Just being able to unravel that ball of wool is huge. Because now, if I'm feeling anxious, I start to unravel why. And for me that's huge. Because then I have a reason. Do you know what I mean? Because then it's not like 'oh it's anxiety and I can't control it,' it's like "oh well I'm anxious because I'm going to this appointment and I don't want to see my ex-employers who I just sued." Do you know what I mean? [...] And it's giving it acceptance as well, like "you don't like any of those situations, you're having a bad day, and that's OK. You're not mad, it's anxiety but the situation is stress-provoking because [x, y, z reasons], and then being able to change it as well.

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**No Client Marker**

Segments in which there are no client markers present (e.g., where therapist is talking, “chit-chat”, scheduling).

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**Unclear Marker**

Segments in which a marker is present that does not fit a pre-existing category, but it is clear to coders that some narrative-emotion process is taking place. This is generally a “holding” category, until a new category is formed or until a judge can be brought in to help resolve coding.

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## Appendix B

**Table 1. Therapist Demographics**

Client ID	Therapist age	Therapist gender	Therapist education	Clinical experience (no. of hours)	Primary therapeutic orientation
A	28	Female	PhD student	325	CBT
B	29	Female	Post-doc candidate	2000	CBT
C	29	Female	PhD student	750	Integrative
D	28	Female	PhD student	500	CBT
E	27	Female	PhD student	170	CBT
F	27	Female	PhD student	380	Integrative

*Notes:* CBT = Cognitive Behavioural Therapy

**Table 2. Client Demographics and Sample Selection Criteria**

id	age	gender	ethnicity	Highest education	Employment status	Marital status	Clinically significant: Depressive disorder, Anxiety disorder	Outcome status (post-treatment, 12-months follow-up)	Sessions coded	PSWQ scores		
										pre	post	12-months follow-up
A	36	Female	White/Euro-pean	Postsecondary degree	Employed full-time	Single	No, Yes	Recovered	1, 4, 6, 8, 11, 13	80	20	18
B	22	Female	Asian	Postsecondary degree	Unemployed	Single	No, Yes	Recovered	1, 4, 6, 8, 11, 13	79	17	20
C	24	Female	Hispanic/Latin American	Postsecondary degree	Temporarily Unemployed	Married	No, Yes	Recovered	1, 3, 6, 8, 12, 13	76	32	38
D	25	Female	White/Euro-pean	Postsecondary degree	Employed	Single	Yes, Yes	Unchanged	1, 4, 6, 8, 11, 13	74	69	73
E	20	Female	White/Euro-pean	Postsecondary degree	Temporarily Unemployed	Cohabiting	No, Yes	Unchanged	1, 4, 6, 8, 11, 13	78	76	59
F	31	Female	White/Euro-pean	Postsecondary degree	Temporarily Unemployed	Married	No, Yes	Unchanged	1, 4, 6, 8, 11, 13	80	80	80

Notes: PSWQ = Penn State Worry Questionnaire (Meyer et al., 1990)

**Table 3. NEPCS Problem markers: raw frequencies and mean percentages by stage, outcome, and overall**

	Total Minutes	Same Old Story		Empty Story		Unstoried Emotion		Superficial Story		Problem Markers Total	
		<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
<b>Recovered</b>											
Early	358	19	5.31	7	1.96	0	0	71	19.8	97	27.1
Middle	354	11	3.11	4	1.13	2	0.56	72	20.3	89	25.1
Late	341	5	1.47	2	0.59	1	0.29	77	22.6	85	24.9
Overall	1053	35	3.32	13	1.23	3	0.28	220	20.9	271	25.7
<b>Unchanged</b>											
Early	325	19	5.85	8	2.46	1	0.31	90	27.7	118	36.3
Middle	337	28	8.31	11	3.26	1	0.30	76	22.6	116	34.4
Late	339	12	3.54	5	1.47	3	0.88	75	22.1	95	28.0
Overall	1001	59	5.89	24	2.40	5	0.50	241	24.1	329	32.9
<b>Total Sample</b>											
Early	683	38	5.56	15	2.20	1	0.15	161	23.6	215	31.5
Middle	691	39	5.64	15	2.17	3	0.43	148	21.4	205	29.7
Late	680	17	2.5	7	1.03	4	0.59	152	22.4	180	26.5
Overall	2054	94	4.58	37	1.80	8	0.39	461	22.4	600	29.2

**Table 4. NEPCS Transition markers: raw frequencies and mean percentages by stage, outcome, and overall**

	Total Minutes	Reflective Story		Experiential Story		Inchoate Story		Competing Plotlines		Transition Markers Total		
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
<b>Recovered</b>												
Early	358	48	13.4	2	0.56	0	0	23	6.42	73	20.4	
Middle	354	47	13.3	3	0.85	1	0.28	35	9.89	86	24.3	
Late	341	60	17.6	5	1.47	1	0.29	32	9.38	98	28.7	
Overall	1053	155	14.7	10	0.95	2	0.19	90	8.55	257	24.4	
<b>Unchanged</b>												
Early	325	14	4.31	0	0	2	0.62	16	4.92	32	9.85	
Middle	337	13	3.86	1	0.30	2	0.59	32	9.50	48	14.2	
Late	339	27	7.96	3	0.88	1	0.29	51	15.0	82	24.2	
Overall	1001	54	5.39	4	0.40	5	0.50	99	9.89	162	16.1	
<b>Total Sample</b>												
Early	683	62	9.08	2	0.29	2	0.29	39	5.71	105	15.4	
Middle	691	60	8.68	4	0.58	3	0.43	67	9.70	134	19.4	
Late	680	87	12.8	8	1.18	2	0.29	83	12.2	180	26.5	
Overall	2054	209	10.2	14	0.68	7	0.34	189	9.20	419	20.4	

**Table 5. NEPCS Change markers and No Client Marker: raw frequencies and mean percentages by stage, outcome, and overall**

	Total Minutes	Unexpected Outcome Story		Discovery Story		Change Markers Total		No Client Marker		
		<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
<b>Recovered</b>										
Early	358	4	1.12	3	0.84	7	1.96	181	50.6	
Middle	354	20	5.65	9	2.54	29	8.19	150	42.4	
Late	341	29	8.50	9	2.64	38	11.1	120	35.2	
Overall	1053	53	5.03	21	1.99	74	7.03	451	42.8	
<b>Unchanged</b>										
Early	325	1	0.31	0	0	1	0.31	174	53.5	
Middle	337	6	1.78	1	0.30	7	2.08	166	49.3	
Late	339	17	5.01	4	1.18	21	6.19	141	41.6	
Overall	1001	24	2.40	5	0.50	29	2.90	481	48.1	
<b>Total Sample</b>										
Early	683	5	0.73	3	0.44	8	1.17	355	52.0	
Middle	691	26	3.76	10	1.45	36	5.21	316	45.7	
Late	680	46	6.76	13	1.91	59	8.68	261	38.4	
Overall	2054	77	3.75	26	1.27	103	5.01	932	45.4	