A comparison of frames with core conflictual relationship themes and computerized referential activity

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ABSTRACT

FRAMES and Core Conflictual Relationship Themes (CCRTs) are reliable measures of the themes of a patient's discourse as manifested in psychotherapy transcripts. While CCRTs have been employed in a range of psychotherapy process and outcome studies, FRAMES is a potentially more useful instrument given its variable plot structures (in contrast with CCRT's fixed structure) and because its structural elements are emotion expressions that are explicitly derived from an application of Dahl's emotion theory. Computerized Referential Activity (CRA) is an independent index of stylistic aspects of speech which may be useful in identifying the location of central themes in therapy sessions as well as their relationship to other important aspects of the therapeutic process. In this paper, we investigate the relationships between FRAMES and these other measures by examining whether they identify similar segments of text. Early, middle and late phase sessions from the case of Mrs. C and cases A2 and V4 selected by researchers from the Collaborative Analytic Multisite Project (CAMP). FRAMES and Core Conflictual Relationship Themes (CCRTs) are reliable measures of the central themes of a patient's discourse as manifested in psychotherapy transcripts. Which Multisite Project were analyzed using each measure. Segments were identified from which FRAMES or Relationship Episodes (4) had been derived, and a binomial test for independence was used to determine the extent to which these segments coincide. The thematic contents of FRAMES and CCRTs were heuristically compared. Mean ratings of CRA were computed for those segments of text in which FRAMES have been identified and compared to the means for the remaining portions of the transcript using a Wilcoxon test. Substantial overlap between the location and content of FRAMES and CCRTs provides important cross-validation of the FRAMES measure. A significant relationship between the location of FRAMES and the mean level of CRA provides further cross-validation for these two measures and underlines the potential importance of their joint application in process research.

INTRODUCTION

The central questions of psychotherapy process research involve an investigation of the nature of therapeutic change. To understand the process of therapeutic change, it is necessary to have an idea of what it is, about a patient, that changes in the course of psychotherapy, as well as what kinds of events bring about any changes that may occur. The idea of change necessarily entails a concept of stability: to speak of change implies that something that is relatively invariant has somehow been altered. 'Relative invariants' are commonly referred to, in a range of disciplines, as 'structures'. Structures can be schematized. Thus, one can represent them by describing their constituent parts, and the manner in which those parts are organized. Structural change can be meaningfully described either by indicating the alteration of parts of a structure, or differences in the way in which such parts are ordered.

Thematic content analysis, a principal avenue of psychotherapy process research that makes use of structural concepts, involves the detailed examination of therapy transcripts in a manner analogous to studies in literature and linguistics (5), wherein texts are analyzed according to various criteria in order to abstract the central themes of a portion, or portions, of text. At present, the most widely employed measure of thematic content is the Core Conflictual Relationship Theme (Luborsky, 1990). The basic structure of the CCRT consists of three elements, a wish, the response of the self, and the response of the other arranged in that sequence. Change processes can be investigated using the CCRT by examining whether any alterations of these elements has occurred, yet, the ordering of the elements remains invariant.

The FRAMES measure (Dahl, 1988; Dahl & Teller, 1994) shares some of the features of the CCRT in that it also consists of a sequence of discrete elements. However, there are important structural differences between CCRTs and FRAMES. In the CCRT, the individual sequence of events as they occur may be violated, while in FRAMES, the order of the elements is not pre-determined. Rather it is derived from the text through inferring the logical sequence of events from the manifest content of a patient's discourse. The number of elements that make up a FRAMES sequence is not restricted, while the CCRT is limited to three. FRAMES has certain potential advantages over the CCRT with respect to studying the process of change in psychotherapy. In the FRAMES measure, changes can be represented not only as alterations in the number and content of structural elements, but also the way in which they are put together in a sequence.

A second aspect of FRAMES that recommends it over the CCRT is the nature of its constituent elements. While the elements of the CCRT are conceptualized in terms of patterns of interpersonal interactions ('wish', 'response from other', 'response of self') which have been abstracted from portions of a transcript identified as 'relationship episodes', there is some conceptual vagueness concerning what exactly constitutes a wish or a response. In contrast, the elements of FRAMES are unambiguously defined as emotion expressions, and expressly linked to a categorization scheme that has been empirically validated (Dahl & Stengel, 1978), and reliably applied to therapy sessions (Silberschatz, 1978; Seidman, 1988; Sharir, 1991). Furthermore, the rationale for the categorization scheme is an explicit (psychoanalytic) theory of emotions as a fundamental information processing system (Dahl, 1978). In Dahl's theory, emotions are understood as functioning essentially like appetitive wishes (IT emotions) or beliefs about their fulfillment (ME emotions). The elements of FRAMES and CCRTs are therefore similar in certain respects, since both may take the form of wishes, and in many instances the 'responses' of the self and other in the CCRT contain emotion expressions (6), which facilitates comparisons of the two measures.

Although the present study is essentially exploratory, the aforementioned observations regarding the different methods for deriving CCRTs and FRAMES led to some expectations about the results of a comparison of the two measures. Since the FRAMES measure has no 'completeness' criterion which might lead to certain text segments being excluded, its application should result in a larger proportion of text being identified. Thus, we predicted that, when comparing the relative proportion of text identified by each measure, FRAMES should exceed REs. As the elements of the CCRT are nearly always expressions of emotion, although not explicitly identified as such, the FRAMES measure should also identify these elements. Therefore, we predicted that there should be significant overlap between the two measures, both in terms of location and content.

While measures of thematic content provide an essential research tool in that they may represent 'what' it is that changes in psychotherapy, in and of themselves they are insufficient to fully characterize the process of therapeutic change. For although such measures may allow us to understand the nature of the changes that may have occurred, and roughly when in the course of treatment such changes are evidenced, they provide limited information concerning how change is effected. FRAMES allows for a relatively precise specification of the elements of emotion schemes and their interrelations, that is, it can answer the question, "What has changed?," but leaves unanswered the equally important question "How did the change come about?"

In order to study how change comes about a theory of the process of sychoanalytic treatment is needed, a theory that is expressed in terms compatible with empirical investigations, and ideally, a theory that regards emotions schemes as centrally important. Bucci's (1997b)

'Multiple Code Theory' fulfills all of these criteria, and has the added virtue of being linked to a reliable and widely validated measure, Computerized Referential Activity (Mergenthaler and Bucci, 1993). The Referential Cycle Model is an explicit application of multiple code theory to the psychoanalytic situation which conceptualizes therapeutic change as the result of linkages between subsymbolic and symbolic non-verbal information processing systems with the verbal system through a process of 'referential activity'. Referential activity is a dimension of psychological functioning that involves the integration of affect, imagery (in a full range of sensory modalities), and verbal expression. Measures of referential activity index not only the presence of links between non-verbal and verbal systems, but the extent of their integration as well. The central idea is that therapeutic benefits arise not only from a patient being able to give verbal expression to affective

experience, but by doing so in an immediate and evocative manner.

The Referential Cycle Model offers a description of the process of referential linking as a sequence of phases unfolding in an analytic session. The cycle begins with a phase of subsymbolic activation of emotional schema. While such activations are an on-going concomitant of psychic life, psychoanalytic treatment facilitates the emergence of these schemas into symbolic expression through the requirement of free association and the developing relationship with "a new symbolic object, "the analyst. In the second "symbolizing phase," the emerging schema stimulates the "production of prototypic images" which, through a process of associative links generates a series of thoughts that may be related to "an event, a memory, a dream that may seem trivial or irrelevant," (p.231) and eventuates in a narrative. The patient's narrative opens up possibilities for the alteration of the emotional schemas in a variety of ways, and becomes a focus for the analyst's interventions (Bucci, 1995).Typically, analysts remain silent during the recounting of a patient'snarrative, but upon its completion will, equally typically, offer interpretations (Dove & Bucci, 1997), which inaugurate the next phase of the referential cycle. This final phase is a period of "reflection and verification" in which the patient and the analyst make use of the organizing properties of the verbal system in order to allow "reconstruction of the schemas to occur" (Bucci, 1997b, p. 233).

CRA, a computerized language measure that models referential activity (Mergenthaler & Bucci, submitted for publication) provides a graphic representation of the phases of the referential cycle as it manifests in actual therapy sessions (Bucci, 1997a). In principle, it should be possible to use CRA to identify the location within a transcript of those portions of a text containing expressions of emotion schemas. Ina study of the relationship between CRA and CCRTs, Doyle (doctoral dissertation, submitted; Bucci, in press) found a significant association between the mean level of CRA and REs, with the CRA level in text segments identified as REs generally higher than the remaining portions of the text. Given our expectations concerning the overlap between FRAMES andCCRT, we were curious to investigate whether Doyle's findings would hold for the FRAMES measure as well, and indeed, this was the result we anticipated. In her study, Doyle found a few examples wherein the predicted relationship between RE and CRA failed to manifest. Upon detailed examination she noted that REs not associated with CRA peaks were frequently instances in which the object of the relationship was the analyst. In such cases, rather than the RE taking the form of a narrative, as is most usual, instead the episode represented an enactment. Since FRAMES are always associated with an object, it is a simple matter to identify FRAMES associated with the analyst, and therefore we examine the data on the relationship between CRA and FRAMES while taking the object into account. It is our expectation that, in accordance with Doyle's findings, the CRA mean for FRAMES instantiated with the analyst will be lower than the mean for other instantiations of FRAMES.

The present study was initially designed as a component of a larger study conceived under the auspices of the Collaborative Analytic Multi-Site Project (CAMP, 1996), an organized program of research spanning nearly two decades. In the course of their investigations, various CAMP researchers (including Drs. Bucci, Dahl, and Luborsky) have developed a range of measures that can be applied to psychotherapy transcripts .During the past few years, coordinated efforts to assess the interrelationships between various of these measures have been conducted. To facilitate this work CAMP researchers identified a number of therapy sessions which could provide a common corpus of data to allow for comparisons of different measures. The sessions which form the focus of the present study were selected from this CAMP data set.

METHOD

Three previously transcribed sessions, one each from an early, a middle, and a late phase of treatment, were selected from each of three fully recorded analyses; the case of Mrs. C, and cases A2 and V4. These sessions were: in the case of Mrs. C, hours 5, 766 and 943; for A2, hours 4, 162, and 312; for V4, hours 4, 312, and 654.

FRAMES were derived independently by two raters, using a 5 step procedure outlined by H-lzer and Dahl (1995). For the details of this procedure, along with the corresponding reliabilities for various steps, the reader is referred to Siegel and Sammons (1997) which forms a companion piece to the present study.

Relationship Episodes and the corresponding CCRTs were identified by two raters in a previous study on the relationship between CCRTs and CRA (Doyle, submitted). For details of this procedure the reader is referred to Ms. Doyle's dissertation. FRAMES raters were blind to the CCRT data prior to the completion of the FRAMES derivation.

A statistical comparison of FRAMES and CCRT was conducted on the basis of the location of the text segments in which each of these measures had been identified. In the case of the FRAMES measure, an object map, which is constructed as part of the procedure, identifies the beginning and ending paragraph and sentence numbers in which to search for FRAMES. These segments provided the basis for comparison. Similarly, CCRTs were derived on the basis of a combination of data from a number of REs, each of which is highlighted in the transcript, and can be similarly identified on the basis of beginning and ending sentence numbers.

The percentage of text containing FRAMES was computed by counting the total number of sentences in those sections of text from which FRAMES had been derived and dividing by the total number of sentences. A similar procedure was applied in the case of REs. A third percentage, the observed coincidence of FRAMES and CCRTs, was calculated by counting the sentences which were used in deriving both measures and dividing by the total number of sentences. The observed coincidence was compared to the expected coincidence of FRAMES and CCRTs based on chance. For each session it was noted whether the observed coincidence exceeded or failed to exceed the expected occurrence, and the pattern of findings thus obtained was subjected to statistical analysis using a binomial test for independence.

CRA was calculated using computerized procedures as outlined in Mergenthaler and Bucci (1993), using the Text Analysis System (TAS) software package. The texts were initially segmented automatically into 150 word units. TAS analyzes each wordblock, essentially by comparing the words in the text to customized dictionaries, and the results of this analysis permit the derivation of a mean rating of CRA for each wordblock.

Analysis of the relationship between FRAMES and CRA involved calculating a mean value of CRA for wordblocks in which FRAMES had been identified and comparing this to the mean CRA for the remaining wordblocks for each session. A binomial test for independence was used to assess the statistical significance of the relationship between the sets of means which were organized into three groups: wordblocks without FRAMES ("No FRAMES"), wordblocks with FRAMES in which the object is the analyst ("Analyst FRAMES"), and the remaining wordblocks with FRAMES ("Non-Analyst FRAMES").

RESULTS

Insert TABLE 1 about here

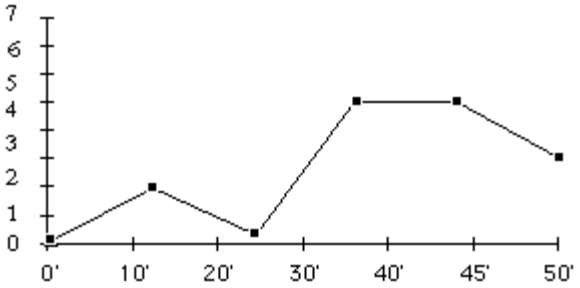
Table 1 presents the results of the comparison between the location of text segments identified as containing FRAMES and those containing REs.Note first that the FRAMES % ranges from a low 21.1% to a high of 98.9% (mean of 60.2%, standard deviation of 23.3%), whereas the RE% ranges from 25.8% to 85.8% (mean=36.5%, standard deviation=18.9%). The FRAMES measure appears to have a higher mean and be more variable than the CCRT with respect to the proportion of text represented. While our prediction, that the FRAMES measure would result in a higher proportion of text being identified than the CCRT method, appears to be generally confirmed by the data (7 out of 9 cases), statistical analysis fails to confirm this as more than a trend (binomial test, $r=0.5$, $p< 0.1$, one-tailed). However, observed FRAMESxRE % exceeds expectation in 8 cases which indicates a statistically significant coincidence in the location of the text segments identified by the two measures (binomial test, $r=0.5$, $p< 0.02$, one-tailed), a confirmation of our main hypothesis.

The large number of instances in which FRAMES and REs coincide in this data set (over 30 examples) prohibits a comprehensive heuristic comparison in this presentation. Instead a few examples of 'good' and 'bad' matches (as judged by the authors) are presented for consideration.

Figure 1 presents examples from two of the three cases which were considered to be "good"

matches. The elements of the FRAMES consist of emotion code category labels, e.g. '1A', or '2,4N', a precise specification of their significance can be found in Dahl, Hölzer, and Berry (1992). While this way of representing FRAMES has a number of advantages, for the purposes of heuristic comparisons an examination of the summary predicates which appear alongside the emotion codes is sufficient. Thus the reader who is unfamiliar with this method of representing emotion expressions can simply ignore the codes, and attend to the predicates.

GRAPH 1



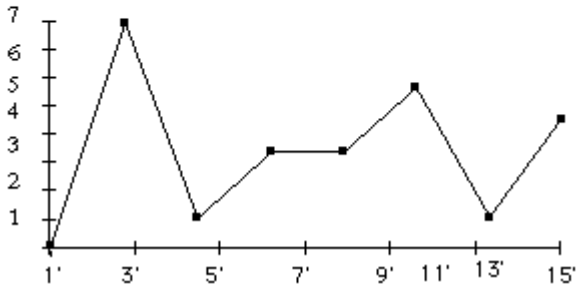
The similarity in content between the two measures is immediately apparent from an examination of Figure 1. In each case, the FRAME contains emotion events which directly correspond to the elements of theRE, for instance, the first event in each FRAME finds its parallel in the 'wish' of the corresponding RE. In the RE from case A2, the 'response from other' ("to be rejecting, disapproving") corresponds to the third event in the FRAME ("he rebukes me"); whereas in V4, the 'response from other' ("to be dull, disappointing") can reasonably be connected to the second FRAME event ("but my excitement fades"). Note that, for V4, in the actual transcript the patient confines himself to a description of his reactions, that is, the "response from other" doesn't appear explicitly in the text but must be inferred, and this accounts for the difference between the two representations.

The 'response of self' in V4 ("to lose interest and withdraw") corresponds to the second event ("but my excitement fades"), and to the third event in the FRAME ("I want to escape the relationship"), as well. The CCRT is constrained by its categories and therefore the patient's response, when there is more than one, must be represented by a complex predicate. The FRAMES measure generally differentiates between the various elements of a complex response, particularly, as in this instance, when there are categorical differences in their emotional content. In the case of A2, the 'response of self' ("to feel irritated; angry") corresponds to the final event on one branch of the FRAME ("I feel angry"), the other branch ("I feel bad") is missing from the RE. the FRAMES measure allows alternative outcomes to be represented by a branching structure when they are articulated as such by the patient, as in this case.

Finally, in each example, there is an element that occurs in the FRAME which is not represented in the RE. In the case of A2, the second event, "but I fall short" ("in my attempts to please my father"), is a significant aspect of the patient's story from a clinical point of view, in that it may potentially indicate a passive-aggressive, or masochistic, component to the patient's actions. In V4, the final event of the FRAME ("I look for another exciting relationship") indicates the repetitive, cyclic nature of the particular relational dynamic the patient is articulating.

Figure 2 presents two examples, one each from A2 and V4 of instances where, although much of the same portions of the text were used, the authors considered the relationship between FRAME and RE to be a "bad" match.

GRAPH 2



First, consider the example from A2. The only clear correspondence is the similarity between the second element of the FRAME ("She screams at me") and the 'response from other' ("To be angry"). While it is conceivable that the 'wish' might be inferred from the same aspects of the text that gave rise to the second and third events of the FRAME, nowhere does A2 make explicit her desire to be "seen accurately" or "be understood." As with the 'wish', the 'response of self' appears to require an inferential leap, as nowhere in this portion of text does the word "guilt[y]" appear, nor does A2 talk of "expressing herself;" she does however explicitly say that she tries to "reassure her [mother]."

In the example from V4, the dissimilarity of the two representations is largely due to the way in which the events are sequenced. The 'wish' ("To be cared for") can reasonably be inferred from the third event of the FRAME. Similar close correspondences exist between the first FRAME event and the 'response from other', and between the first and second FRAME events and the 'response of self'. The final FRAME event, a crucial element of V4's emotional schema is missing from the RE.Indeed, reading the relationship episode gives the impression that the patient is describing a harmonious and conflict free interaction with his analyst, while the text indicates explicitly that V4 feels "[un]willing to let . . . [him]self get away with" paying a low fee (the issue under discussion). The FRAME captures this aspect of the patient's dynamics, which arguably plays an important role in understanding this case.

Next, we examine the results of our comparison of the FRAMES measure and CRA. Table 2 summarizes our findings. Binomial tests (r=0.5) were used to compare these three groups of means. Mean CRA for Non-Analyst FRAMES was found to be significantly different from Analyst FRAMES ($p < 0.01$); a trend toward significant difference between mean CRA for Analyst FRAMES and the portions of the text where no FRAMES were identified was observed ($p < 0.1250$); while the difference in mean CRA between Non-Analyst FRAMES and the No FRAMES group was non-significant. When the data are analyzed in terms of two groups, FRAMES and No FRAMES, the difference is also non-significant, which fails to confirm our hypothesis that CRA should be higher for FRAMES in general.

Insert TABLE 2 about here

DISCUSSION
FRAMES and The CCRT

An elusive goal of process research finds expression in a proposition first articulated a decade ago by Strupp, Schacht and Henry(1988) , that process measures increase in terms of their overall scientific utility to the extent to which they can effectively represent a patient's problem, the focus of treatment interventions, and the nature of the therapeutic outcome (PTO, or, problem-treatment-outcome congruence).

Because it makes no sense to talk of "change" without reference to something which is relatively enduring, a necessary ingredient of an adequate empirical articulation of change processes is some kind of structural measure that can represent what it is about a patient that changes in psychotherapy. Indeed, the idea of something rigid, maladaptive, and resistent to change is at the heart of psychoanalytic conceptualizations of psychopathology, so it seems quite logical to represent what is pathological about a patient in structural terms. Maladaptive psychological structures are, at least implicitly, the foci oftherapeutic interventions: psychotherapeutic treatment aims, first, at undoing some of their rigidity, and next, in reducing their maladaptive aspects. Furthermore , in contrast to indirect measures which may track the consequences (secondary gains) of therapy, any direct measure of psychotherapeutic outcome must necessarily be structural as well (Bucci,1997b).

A number of structural measures of thematic content have been developed (for other comparisons, see Luborsky, 1988; Luborsky, Popp &Barber, 1994) which satisfy two aspects of PTO congruence: description of patient pathology and assessment of treatment outcome. Luborsky's CCRT is the most widely adopted of these measures, but FRAMES is arguably a more useful measure for examining the process of structural change for a number of reasons. FRAMES more accurately reproduces the manifest themes of a psychotherapy session, given its "bottom-up" procedure. It produces a differentiated representation of the central themes of psychotherapy session given its variable plot structure, and is readily susceptible to formal comparisons due to its use of emotion code categories as structural elements. It is more sensitive because its format is not limited to a fixed sequence (wish, response from other, response of self), but can readily represent other expressions of patient themes, which results in a greater proportion of text being represented.

Schematizing the structure of a patient's stories as a sequence of emotion expressions, as in the FRAMES measure, suggests that emotion schemas are a salient measure of the central issues in psychoanalytic treatment, whereas the CCRT would appear to be more explicitly linked to an "object relations" perspective. Certainly the two positions are not incompatible, especially when one considers that the elements of the CCRT, or one familiar with Dahl's emotion theory, are readily seen to be emotion expressions for the most part (Dahl, in press). Indeed, contemporary theorists who appreciate the need for empirical study (Stern, 1985, Bucci, 1997b) talk about object relations in terms of schema. It is but a small step to recognize the centrality of affect as the principle invariant element of relational schemas, indeed, it is an established tenet of object relations theory that object relations take the form of self and other representations with a linking affect (Fairbairn, 1954; Kernberg, 1976; Scharff & Scharff, 1987), an idea that preserves the structural elements of drives, while freeing itself from the accompanying energic meta psychology. FRAMES has the virtue of making the affective nature of relational schemas explicit and available for empirical study.
FRAMES and Computerized Referential Activity

What is striking about the findings we reported is the apparent strength of the relationship between CRA and FRAMES instantiated with the analyst. Although the sample size is quite small, a statistically significant result was achieved. Furthermore, in every case the CRA mean for the Analyst FRAMES was notably lower than the mean for the Non-Analyst FRAMES, and this relationship held for all but one session when Analyst FRAMES were compared to No FRAMES segments. Interestingly, this session (V4 Hour 652) appears to be somewhat unusual (as can readily be seen from Table 1), in that a strikingly high proportion of the text was identified as containing both FRAMES and REs (indeed with 85.5% of the text comprising REs, it is the lone outlier in which REs exceed 37.5%) Interestingly, Analyst FRAMES differ from most other FRAMES in that the portions of the text do not correspond to narratives, but to here and now enactments of emotional schemas. This finding is especially important considering the central role the concept of transference plays in psychoanalytic clinical theory. Given the observed relationship between CRA and Analyst FRAMES, there is evident potential for using the computerized measure to efficiently identify portions of the text which contain transference enactments.

A microanalysis of the interaction between the two measures in a single session, hour 943 of the case of Mrs. C provides some intriguing observations concerning the potential joint application of FRAMES and CRA for studying detailed aspects of the psychoanalytic process. Figure 3 graphs the variations in CRA across the wordblocks that make up this session; wordblocks containing FRAMES are also identified.

In this session, Mrs. C begins by relating a series of short vignettes having to do with her recent experiences at work, involving herco-workers and clients, with the CRA measure above its mean throughout. Although a number of emotion schemas might be identifiable in this portion of the text, in general her stories are fragmentary and none of the potential schemas that

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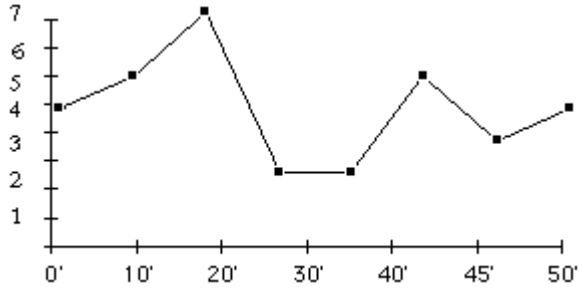
GRAPH 3



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emerge satisfies the requirements for a FRAME (in particular, that it be instantiated elsewhere). She then stops talking for over two minutes, immediately following which she produces a short narrative relating her wishes concerning a baby-sitter in relation to her husband, the first appearance of a FRAME in the transcript, and this narrative occurs in a CRA peak, as predicted. Following is a short series of exchanges with the analyst in which he encourages Mrs. C to reflect upon her feelings and wishes, and ends by making a transference interpretation. The ensuing section is characterized by a relatively long sustained drop in CRA which remains below its mean for the middle third of the hour. In this section she articulates two distinct emotion schemas, each of which is instantiated with the analyst which is followed by a period in which Mrs. C reflects on the significance of what she has just related. She is again silent for over two minutes, but then produces a narrative that begins in a small CRA peak, in which the very FRAME which appeared earlier is reinstantiated with her husband, but with new elements apparently introduced as a result of her interaction with the analyst.

What remains to be demonstrated concerning whether or not the FRAMES measure satisfies the PTO congruence principle is how successfully it can be used to investigate what occurs in treatment. For this a detailed longitudinal examination of the incidence and evolution of FRAMES is necessary. The FRAMES measure provides a precise specification of thematic content that preserves much of what is unique about a patient's discourse. Since FRAMES are derived in a "bottom up" fashion from therapy transcripts, they permit the data to "speak for itself." The FRAMES measure allows for investigations of thematic content in a manner that doesn't sacrifice the depth and complexity of clinical material, while providing a sufficiently abstract representation so as to facilitate formal assessment.

Footnotes

1 FRAMES (Teller and Dahl, 1986) are defined as Fundamental Repetitive And Maladaptive Emotion Structures
2 Paper presented at University of Ulm, Germany, June 20, 1997 and 28th Annual Society for Psychotherapy Research Conference, Geilo, Norway, June 26, 1997
3 The authors gratefully acknowledge the advice and assistance of Dan Pokorny (University of Ulm, Germany) on the statistical analyses.
4 'Relationship Episodes' (REs) denotes the text segments from which CCRTs are derived.
5 Note however, that the analogy holds for biochemistry as well, if, as is commonly done, we extend the idea of a 'text' to include molecules, as in 'reading' the genetic code.
Because these elements must all be present to some degree, judges rating a transcript for REs are

instructed to assess an RE's 'completeness', with REs receiving a low completeness rating generally excluded for the purposes of deriving the CCRT.
6 Indeed, slightly more that half of the words used to characterize the responses of self and other in Luborsky's (1990) CCRT manual appear in Dahl and Stengel's (1978) list of emotion words. Most of the remaining words in the CCRT list are close synonyms of Dahl's emotion words.

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