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# How to Find FRAMES

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## Introduction

A psychotherapeutic "talking cure" relies essentially on a patient's story-telling. Thus, the principle of free association as the "basic rule" of psycho-analysis is to sample stories that are characteristic or typical of a person's emotional experiences. FRAMES as defined and described by Dahl and Teller (1994) are **F**undamental **R**epetitive **A**nd **M**aladaptive **E**motion **S**tructures that capture the plots of these stories. These plots reoccur again and again with different people in different situations under different circumstances. And it is the repetition of these plots in and out of the therapeutic situation that makes possible inferences about what clinicians call a patient's basic psychodynamics. Their maladaptive character lies mainly in their invariance. Their tendency to recur over and over makes for a typically inflexible, neurotic patient.

During the last two decades a growing number of psychotherapy researchers have been trying to come up with more or less systematic methods to capture the structure of patients' stories. The goal has been to represent patients' basic conflicts in life, their repetition in the transference, and their change, if any, as the result of treatment (Luborsky, 1977; Horowitz, 1979; Teller & Dahl, 1981, 1986; Gill & Hoffmann, 1982; Slap & Slaykin, 1983; Schacht, Binder & Strupp, 1984).

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FRAMES differ from structures other researchers have defined by being "composed of categories of events that are explicitly represented in the discrete narratives told by a patient" (Dahl, 1988, p. 60). Expressed in cognitive science terminology, the identification of FRAMES is accomplished in a strictly "bottom-up" fashion, i.e., manifest patient utterances are used to represent what Teller and Dahl called "frame events." Some of them reflect predominantly behavioral cate-gories, others focus mainly on feelings or fantasies. FRAMES vary substantially in their nature and complexity since the number of events and the sequence of their occurrence in a final FRAME is a direct result of empirical investigation and not of apriori definition. In contrast to FRAMES, other structures such as the Core Conflictual Relationship Themes (CCRT, Luborsky & Crits-Christoph, 1988) or the Cyclical Maladaptive Patterns (CMP) of Strupp and his colleagues (Schacht et al., 1984) are defined in a "top-down" manner. Their characteristics are limited and partly imposed beforehand by the fixed number and the order of the categories. Thus, a CCRT always consists of the fixed sequence: (1) a wish, (2) a response of other, and (3) a response of self; a CMP always consists of (1) acts of self, (2) expec-tations of others, (3) observed reactions of others, and (4) introjective acts.

Dahl and Teller (1994) published an overview of the basic properties of FRAMES and a review of research to date. However, previous methods for identifying FRAMES (Teller & Dahl, 1981, 1986; Leeds, 1988; Davies, 1989) each posed their own problems. Recognizing the need for objective and systematic methods, Hölzer proposed components and procedures which now permit the systematic identification of FRAME structures (Hölzer, Zimmermann & Pokorny, 1993). Here we describe 5 major systematic, rule-governed steps for finding FRAMES.

**The 5 Steps to FRAMES**

Although promising in many respects, the FRAME methodology as originally proposed by Teller and Dahl in 1981 suffered from a central limitation: selection processes and classificatory decisions used to identify events in patient utterances were based on sophisticated common sense and clinical intuition. What was missing was a an explicit description of a straight forward procedure in which the implicit logic of their decisions was explicitly stated. Re-analysis of the FRAMES identified by Teller and Dahl revealed two interesting features. First, each of the events were represented by an expression of an emotion or an equivalent. Thus, FRAMES seemed to represent essentially the manifest *emotional* logic and plot of a story. Secondly, not all emotions actually expressed by a patient in her/his stories were represented in the final FRAME structure. In one FRAME, for example, an emotion crucial for understanding the narrative plot, was left out for reasons that are not clear (for detailed descriptions of these earlier methods see Dahl, 1988 and Dahl & Teller, 1994). As cognitive science approaches convincingly demonstrate, emotions are indeed a fundamental basis of an "in depth understanding" of stories (Dyer, 1983). Therefore, systematic registration and categorization of the emotions occurring in a patient's story seem crucial for an empirical investigation of the underlying emotional logic of a plot and its representation as an event sequence structure. The five steps to FRAMES, shown in figure 1, provide such a systematic method. The emotion classifications (step 2) turned out to be of fundamental importance and lie at the very core of the FRAMES method presented here.

Figure 1 (5 Steps to FRAMES) about here

**STEP 1 - Select Sessions**

The method for selecting sessions to find FRAMES logically depends on the questions to be asked, on the goals of the study. We will briefly comment on several typical goals and useful corresponding selection criteria. First, if the goal is to characterize a particular population (patient or groups of patients), then ran-dom sampling is called for. Second, if the goal is to assess therapeutic change, then sampling distinct phases of the treatment would be appropriate, for example, early, middle and late sessions, as in Dahl (1991). Or a number of blocks scat-tered throughout the treatment might be used, as in Jones and Windholz (1990) and Spence, Dahl and Jones (1993).

Third, sessions might be selected using measures that allow one to classify them into particular kinds, as in Dahl's (1972, 1974) computer content analysis of a single recorded psychoanalytic case. His computer measures classified 25 of the patient's sessions into 10 that were highest in psychoanalytic "work", 10 highest in "resistance", and 5 in the "middle." Bucci's (1988, Bucci & Miller, 1993) computerized measures can be used to select sessions varying in "referential activity," a measure designed to assess the extent of connections between verbal and non-verbal mental representations. Similarly, Spence's (Spence, Mayes, & Dahl, 1994) pronoun co-occurrence computerized measures (COTrans and SEPTrans), which purport to assess important aspects of the patient/analyst relationship, could be used to select sessions varying on these measures.

Finally, Hölzer's (Hölzer, Scheytt & Kächele, 1992) computer measure of emotions, the "Affective Dictionary Ulm" (ADU) yields a quantitative analysis of the affective label vocabulary in therapy (or other) session transcripts. The emotion categories in this easily and rapidly applied measure are those of Dahl (1978; Dahl & Stengel, 1978). Studies (e.g. Hölzer et al, 1994) have demonstrated this computerized measure's ability to document the variation in emotional expression both within and across sessions and patients. There is also evidence of changes in

emotion vocabularies from the beginning to the end of treatment (Hölzer et al., 1989). Since FRAMES are defined as emotion structures, ADU could be an economical way to optimally select sessions in which to find them, if that is the goal of the study.

**Step 2 - Classify Expressed Emotions**

This step is to identify and classify linguistic expressions of emotions in patient utterances in the sessions chosen in step 1. A comprehensive manual (Dahl, Hölzer & Berry, 1992) provides detailed, explicit directions on how to classify verbally expressed emotions in transcripts of psychotherapy sessions. Since this task requires that a person have a thorough, working understanding of Dahl's theory of emotions,[1] only a brief summary of the underlying classification scheme is presented here. Prospective classifiers would do well to review the whole range of varied expressions of the theory.

Figures 2 (Decision tree) and 3 (Table of Categories) about here

Dahl's (1978) original classification schema of emotions[2] is based on a decision tree of three independent[3], intersecting dimensions, yielding a total of eight ($2^3$) different emotion categories. Dahl et al. (1992) defined the first dimension, *Orientation*, as the subject's *focus of attention*, that is, whether the subject's attention is focused on an object (person, place or a thing) or on the subject's own

[1]See Dahl (1978); Dahl & Stengel (1978); Dahl (1979a); Dahl (1991); Dahl, et al. (1992); and Dahl (1995).

[2]A modification of de Rivera (1962).

[3]The independence is not only conceptual. Dahl & Stengel (1978) provided strong empirical evidence for the independence of the dimensions.

internal state. This dimension provides a profoundly important classification into two major categories of emotions with markedly different functions: **IT** emo-tions, which function as *appetitive wishes about objects*; and **ME** emotions, which function as *beliefs about the status of fulfillment of wishes*." (p. 6). IT emotions can be expressed in three distinct ways: (1) as a wish about an object, (2) as an emotion label (word or equivalent expression) of a feeling state, and (3) as a con-summatory act suitable for fulfilling the relevant wish. In contrast, ME emotions function as expressions of belief about the status of fulfillment of the wishes implicit in IT emotions.

The second dimension, *Valence*, is a positive-negative dimension which, for IT emotions refers to an *attraction to* or a *repulsion from* an object and for ME emotions refers to a *positive* or *negative* expectation about the fulfillment of ap-petitive and other wishes. The third dimension, *Activity*, is defined for IT emo-tions as the subject's *focus of control*, which is *active* if the subject attributes con-trol to the subject or *passive* if the subject attributes control to the object. For ME emotions the belief in satisfaction or nonsatisfaction of particular wishes is *passive* and belief in the *probable* satisfaction or nonsatisfaction is *active*. The eight major categories resulting from the intersection of these three independent categories are shown in figure 3. Each category is shown with its arbitrary cate-gory number (1-8), its abstract classification, three prototypical emotion labels[1], and a *generic consummatory act* (IT emotions) or a *generic belief in the status of wish fulfillment* (ME emotions).

[1]These examples of emotion words are taken from Dahl & Stengel's (1978) empirical study in which 58 judges used each of the three dimensions separately to classify 370 English words. Dahl & Stengel provide a table of the exact distribution of the judges' decisions on each dimension for each word.

Figure 4 (Emotions as wishes and beliefs) about here

Figure 4 is a diagrammatic representation of Dahl's information feedback theory of emotions. It illustrates the functional relationships between *wishes* (especially those implicit in IT emotions and the somatic appetites of sex, thirst and hunger) and *beliefs* about the possibility of the wish being fulfilled (which are implicit in ME emotions and are experienced as pleasure or unpleasure). Po-sitive ME emotions tend to facilitate present and future consummatory behavior to fulfill the relevant wish. Negative ME emotions tend to inhibit or provoke de-fenses against either the wish, the consummatory behavior, and/or the negative emotion itself.

Before one can classify emotions one must decide on some unit in the text. Among other things, this choice will depend on the quality and standards used in transcribing the recorded sessions[1]. One might simply choose, as we have in our example, a sentence. Or, slightly more complicated, one might use a predefined and delineated proposition consisting of a predicate and two arguments[2] . Regardless of the unit chosen as the place to look, the first important decision is whether the unit in question contains an emo-tional expression. This expression may appear as: (1) as a labeled feeling, (2) a consummatory act appropriate to the wish implicit in an IT emotion or (3) a metaphoric or idiomatic expression of emotion. If such an expression is judged to be present, then the text containing the emotional expression is highlighted and the category number of the emotion is

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[1] Dahl (1979b), in a preface, included a set of specific rules for transcribing tape-recorded psychoanalytic sessions, including conventions for coding proper names etc. An updated version of these rules is available from the second author.

[2] A clear definition of the rating unit is most crucial with respect to reliability issues. From our point of view a rating based on propositions has distinct advantages, since in one sentence a variety of emotional expressions might occur. For deviding the text into propositions see Hölzer et al. (in press) and Gutwinski-Jeggle et al. (1985).

inserted. In case of doubt about the correct classification category, the single steps of the decision tree (see figure 2) might be taken separately. That is, the judge might make the three classificatory dimension decisions in sequence and assign the resulting category to the expression. In our experience this is only occasionally necessary. People have a vast common-sense knowledge of emotions and their shared language provides a large number of similarly shared labels. ¶48, below, is an example of how a passage of text looks like after the coding of emotions.

> **¶48**[1] And this makes me think of uhm, (stomach rumble) **friendships I've had with other people [1]** and, **something that I don't like to admit [7]**, because **I don't approve of it [1SN→5AS]** (nervous chuckle), so **I can't imagine anybody else would [1SN→7]**, but **I seem to have to find fault with just about everybody [5A]** that **I'm friendly with to some degree [1] whether it's just a small degree or a larger degree [1].** And, **even though in a way I might feel inferior to them [7]**, and **I imagine I feel inferior to a lot of people [7], I still have to find fault with them [5A]** and **maybe criticize them to David [5A],** I don't know. **I always have to openly criticize them [5A],** but in any case **I have to kind've done that [5A]** and then I can go on to a re-, a, **some kind of friendly relationship with them [1].** And **until I've done that [5A]** I **can't really accept them as somebody that I want to be at all close to in any way at all [1N].** And, and if I can't, **if I find I can't be critical of them in some aspect [5AN],** then **I just can't seem to be around them at all [1AN].** I, I, I don't know, it's more than sort of being, well, **it's not being in awe of them [2N]. It's just feeling very uncomfortable, I guess, with them [7/8].**

In our example the coded expressions are printed bold. In addition to the numerical codes for emotion categories, 3 additional codes (N = negation, A = consummatory act, S = an IT emotion directed towards the speaker) are used to specify particular properties of an expression. The negation code (N) is especially

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[1] The code number after each highlighted expression corresponds to the category number shown in the upper left corner of each of the eight main boxes in figure 3.

important since it reverses the meaning of an expression. Thus, "I don t approve of it (what I did)" literally expresses a negated category 1 emotion (active attrac-tion to it) and expresses a self-criticism. In this expression the subject is at the same time the object of the IT emotion, since the patient does not approve of her own attitudes. This is indicated by the S , thus the code for a term like this be-comes "[1NS→5AS]." Such double codings, as indicated by the arrow, are used to convert the literal meaning of a verbal expression when it implies a different emotion. An A is coded whenever an emotion is expressed by a term describing a behavior rather than a feeling, perception, or wish, e.g., I always have to openly criticize them," which was rated [5A].

The final code for an emotional expression consists of a category number and if necessary 1-3 characters plus an arrow and a final revised category num-ber. Our experience with this classification procedure is that emotional expres-sion is nearly omnipresent in transcripts of psychotherapy and psychoanalytic sessions. This redundancy of emotional expressions in verbatim material allows coders to be conservative in judging whether a particular expression is considered "emotional" or not. It also permits omitting ambiguous expressions if desired. After a good deal of training (especially in understanding the underlying theory), the reliability of these judgments in both English and German transcripts are reasonable by psychotherapy research standards. Table 1 shows these reliabilities in studies by Silberschatz (1978), Seidman (1988), and Sharir (1992); Zimmer-mann (1994) has reported comparable reliabilities in German transcripts. Haas (1994), in her doctoral dissertation, used the four emotion categories based on the It-Me/Positive-Negative dimensions and reported a mean Kappa of .61±.02 for 3 judges on 10,368 emotion expressions.

Table 1 - (Reliability coefficients) about here

Hölzer (1993) reported a somewhat different and much more time-consuming method of classifying emotions in a German psychoanalytic specimen hour (#290). First, independent judges divided the text into 679 coding units called propositions, which consisted of a subject - predicate - object structure. Then two judges decided that 143 of these propositions had emotional expres-sions. Finally, two judges classified each emotion separately on each of Dahl's three dimensions (see figure 2) in sequence much as Dahl & Stengel's (1978) judges did. The overall Kappa for this decision tree was .63.

The choice of an appropriate reliability coefficient depends partly on what measurement is considered most important. If the question of whether k judges can agree on whether a unit (sentence, clause or proposition) contains any emo-tional expression or not is given precedence, then an alpha coefficient for k judges across n sentences on the yes or no judgment would be appropriate. If the question is whether k judges can agree on which of the 8 nominal emotion cate-gories is present in a set of n sentences, Cohen's generalized Kappa (Fleiss, 1981) will reasonably assess the agreement. If judges are instructed to take a conser-vative approach and skip any ambiguous emotion expression, it is clear that less importance is attached to omitting a classification code. In this case the appro-priate n might be the number of emotion codes by the judge with the largest number of codes; agreement would reflect whether, when any judge classifies an expression, the other judges code the expression as the same or different or no category. Here an alpha coefficient would be appropriate if one is interested in agreement on coding any particular category. Otherwise Kappa would assess, on this n, the degree of agreement of k judges in selecting categories.

**Step 3 - Select Segments**

The basic task here is to select meaningful segments that can be reliably identified. Others have proposed a number of different methods for doing this job. Teller and Dahl (1981, 1986) in their original descriptions of FRAMES de-pended essentially on the intuitive selection of stories that the patient told about events in her life. Perhaps the best known of other methods is Luborsky's (1984) procedure for selecting “relationship episodes.“ He asks judges to read a tran-script and mark the beginnings and ends of segments in which the patient tells of an encounter with a significant object. Luborsky et al. (1994) claim that judges can typically agree within 4.8 lines at the beginning and within 7.9 lines at the end of such episodes and the procedure seems to be appropriate to the purpose, which is to find the most frequently expressed wish, response of the other person, and the response of oneself. Here, the inclusion or exclusion of a portion of the episode may well be not significant. Bucci (1988, Bucci & Miller, 1993) has described her methods of finding "themes" or "idea units" by using segments which contain elements that several judges agree upon.

Problem solving, as Simon (1981) put it, is mainly a question of represen-tation. The way in which a problem is mentally and otherwise represented has manifold implications for its solution. As the reader will see, step 3 of the FRAMES method solves the problem of selecting segments by re-representing the verbal data of the patient in a special way. Since our goal is to identify prototypes and their repetitions (instantiations) in the stories that a patient tells about various objects, it is important that choosing the stories is directly linked to the objects. Furthermore, for our purpose it might well be important whether a particular plot includes or does not include a particular emotional event, since as we have described above, the events of a FRAME structure are determined by the emotion categories that are identified in the story. Thus, whether an emotion is included in a

particular plot might be decisively important because the presence or absence of a particular event changes the plot and results in different FRAME structures.

After some trial and error we adapted Teller and Dahl's (1981) original "linguistic map" (later "category map") method for selecting segments. The category map was invented as a way to represent the entire content of a 612 word segment of transcript while retaining the original sequence of the text. The categories were based on intuitive classifications of the particular content, i.e., an attempt to "cut at the joints." For example, when the patient talked about an episode that ended in her getting angry with her husband, it was assigned to a single column of the map titled "talking to husband" and the cell contained the para-graph and sentence numbers in which the story was told. Each new content cate-gory was assigned to a new column and the sequence was retained by adding a new row. Although the nine content categories that Teller and Dahl reported were convincing, a problem remains with the possible biases built into this method of choosing content categories.

We have dealt with this by substituting objects whom the patient talks about for the content of the talk. We call this an "object map." In most cases an object is anything that can be considered to possess intentionality (Dennett,1981). Typically this will be a person or a living thing such as a pet. But in rare cases it includes inanimate objects, e.g., a violin (Bookstein & Dahl, 1995), or some non-living dream objects to which intentionality is attributed. Hölzer (1993) and (Bookstein & Dahl, 1995) have reported detailed procedures for constructing object maps. The shift from category maps to object maps offers the great practical advantage of segmenting the text into passages that turn out to be short stories about parti-cular objects, which can be separately in-vestigated. The decisions necessary for constructing an object map depend largely on common sense and are based on our widely shared native language ability to under-stand the manifest meaning of the

statements. It is the plot structure of such stories which then lets us identify re-currences of the plots enacted with different objects in different situations. In this way we capture the enduring FRAME structures of each particular patient.

Figure 5 (Object Map of hour 5) about here

Figure 5 shows an object map of hour 5 of a completely tape-recorded psychoanalysis (Anonymous, in Dahl et al., 1988). We constructed the map by starting at the beginning of the transcribed patient's text and labeling the first column with the name of the first object that the patient refers to. Thus, the first row in the first column contains the paragraph and sentence numbers of the be-ginning and end of this talk about the first object (in this case the patient's assis-tant at work). Then, as the patient introduces other objects, new columns are added and new rows identify the location of the text by para-graph and sentence. In this procedure the original sequence of the text is retained. For the purpose of finding FRAMES, only the patient's text is mapped, but for other purposes the therapist's text may either be included or mapped separately.

Object maps like this one have important characteristics. First, one can see immediately who and how many objects are talked about and in what sequence they are mentioned. Second, at a glance one can see from the entries in any column when, how often, and how many times each object is referred to. Par-ticularly if one is interested in assessing work on transference, references to the category “therapist“are immediately apparent. Third, one can judge from the cell entries which segments might be likely candidates for finding prototype plots in a particular story about an object, since some minimum length of text is needed for

identifying a prototype[1] . In the object map of hour 5 such likely segments are highlighted (white text in a blackened cell).

**Step 4 - Identify the Narrative Structure**

What constitutes a story depends on the explicit or implicit representation of four basic narrative elements and the number and variety of their corresponding emotions. In her studies of people's summaries of test narratives, Lehnert (1982) showed that "a rough qualitative ranking of the summaries" was based on the number of plot units subjects remembered. She concluded that "the summary containing the least plot units is arguably the worst summary," suggesting that completeness of plot elements (emotional events in our case) is the most significant criterion for summarizing a well-defined story.

The four plot elements that, according to Lehnert (1982) "are common to all stories," are summarized in essentially similar terms by Rumelhart (1977), Stein (1982), and Dyer (1983). These are:

> [1] A specific protagonist capable of intentional behavior, i.e., wishing and believing (see also Dennett, 1981);
>
> [2] the wishes and beliefs of the protagonist;
>
> [3] actions carried out by the protagonist in the service of the wishes; and
>
> [4] information concerning the fulfillment or non-fulfillment of the wishes.

In our psychoanalytic data the patient is clearly the main protagonist whose wishes, consummatory acts in the service of wishes, and beliefs about the fulfill-

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[1] Not only lenght but also the occurrence of emotion codes as well might serve as indicators of where to find prototypes in a map. For that purpose the emotions coded in the different segments can additionally be integrated in an object map. Thus, the equivalence of objects in terms of their emotion codes can be roughly estimated at one glance.

ment or non-fulfillment of the wishes are all identified by their corresponding emotional expressions. This is illustrated in the following brief example, where the emotion codings are followed by $E_1$ to $E_4$ indicating the sequence of each emotion expression, not in the surface structure, but in the underlying logical structure of the plot:

> At first **I was upset [8]{$E_2$}** because **I was angry [5]{$E_1$}** at him for what he said, but then **I felt good [3]{$E_4$}** after **I told him off [5]{$E_3$}**.

Here the logical structure begins with $E_1$, the protagonist's implicit wish associated with being *angry*, i.e., to retaliate in some way "for what he said." The next event, $E_2$ is the belief associated with being *upset*, an expression of anxiety, which carries the information that the wish might not be fulfilled. Then in $E_3$ the protagonist "told him off," i.e., carried out the consummatory act to fulfill the initial wish. Finally, the last event, $E_4$, expresses the outcome, i.e., the fulfillment of the wish, which is expressed in feeling *good*. It is important to distinguish the logical story structure from the sequence in which the story is told. Thus the logical structural sequence, $E_1 \rightarrow E_2 \rightarrow E_3 \rightarrow E_4$ , is quite different from the sequence of the story as told, i.e. the narrative or surface structure $E_2 \rightarrow E_1 \rightarrow E_4 \rightarrow E_3$.

The ability to recognize the distinction between the narrated or surface sequence and the logical plot sequence is probably developed somewhere between the ages of 4 and 6. As Stein and Trabasso (1982) have described, 4-year-olds immediately recognize that a story they already know, if told in a different sequen-ce, is different from their memory of the story and they believe that it is there-fore a different story, i.e., implicitly equating narrated and logical structure. 6-year-olds, on the other hand, if told a story they already know, but with the events told in a different chronological sequence, nonetheless recognize the sto-ries as the same.

Thus they appear to have some implicit commonsense knowledge that plots can remain constant while the surface story structure may vary. It is precisely this commonsense knowledge that underlies our ability to make the above distinction between the story sequence as told, and the logical structure of the plot. Nonetheless, if the story is altered, not simply by changing the order in which it is told, but by omitting events, then, the problem of recognition may be nontrivial. This suggests that the operation of common sense may well depend largely on the completeness of the story elements or plot units, as Lehnert named them or, in our case, the emotional events. Suppose, for instance, we change the above example as follows:

> At first **I was upset [8] {$E_2$}** because **I was angry [5] {$E_1$}**
> at him for what he said, but then **I felt good [3] {$E_4$}**

Here the omission of "I told him off" forces the reader (or listener) to try to infer the reason for feeling good. For example, a clinician is likely to infer the successful operation of some defense. Or, someone familiar with Dahl's emotion theory one might well infer that the angry wish was consummated, thus causing the positive me emotion ( feeling good ), i.e., $E_3 \rightarrow E_4$. A layman might simply remain puzzled. In the first two instances a theory is used to infer the missing event; and such theories are a common source of a variety of biases that influence our story understanding. Nonetheless we must not forget that, as Bertrand Russell (1948) put it: "The feeling one has in a novel or a play as to whether the behavior of the characters is ´right is based upon unformulated knowledge of mental cau-sality, and so is shrewdness in handling people. In such cases, the knowledge in-volved is pre-scientific, but it could not exist unless there were scientific laws which could be ascertained by sufficient study." (p. 50)

The issue of the completeness of the events in the story, i.e., to what degree

the elements listed above are implicitly or explicitly represented, is as Lehnert suggested, of central importance. Teller and Dahl (1981, 1986) intuitively selec-ted events to construct prototype FRAMES. As we will see below in one of the most persuasive prototype FRAME structures, the Critical-Friendly FRAME, they missed a key event which, after being identified by step 2 of this procedure, led to a significantly new prototype of the FRAMES. Therefore, step 2 turns out to protect against such omissions because each emotion represents some wish, be-lief or consummatory act expressed in the text. The theory of emotions (succinct-ly represented in figure 4) is helpful in understanding the causal relationships among events and therefore a guide for identifying the narrative structure.

Defining the logical structure of the plot for the short example cited above is simple since the single examples of the four different emotion categories com-pletely determine the four events. Given a more typical surface structure of a story with repetitions and distortions it may be more difficult to determine the lo-gical plot structure. A systematic procedure for determining the plot begins with a simple listing of all the emotion codes in the passage in the order in which they appear.

Table 2 (Listing of Emotions by category) about here

The following procedure will prepare the way for identifying a FRAME prototype in Step 5. (1) From the sequential list of emotions occurring in the text, make another list of each *different* emotion category (called *primary emotions*). (2) As shown in table 2, list each example of each emotional expression in the appropriate category. (3) In column 1 order these groups in the sequence that best represents the plot structure of the story. (4) In a second column to the right of each code record the segment of text which received each emotion classifi-cation (called *primary predicates*). Table 2 is, in effect a representation of two alternative plots,

labeled A and B.

**Step 5 - Construct the Prototype and look for Instantiations**

FRAME construction begins with the plot structure derived from step 4. Now, we reexamine the contents of each primary predicate within each emotion category and construct a *summary predicate* which succinctly summarizes the contents of all the statements representing each category. Next, in column 1 we list all of the individual emotion codes in the order of their occurrence in the text. Then, in column 2 we list the summary emotions in the order they appear in the table, i.e., their order in the plot. Finally, in column 3 we list the summary predicate corresponding to each summary emotion.

Figure 6 - The Critical Friendly Frame - about here

The left half of figure 6 represents the three essential components of steps 4 and 5: *primary emotions, summary emotions* and *summary predicates*. As we have already mentioned, the CRITICAL-FRIENDLY prototype, as described in Teller and Dahl (1986) and Dahl (1988), and consisting of three events ("thinks of friendships," "has to be critical," and "can be friendly"), was incomplete. Höl-zer found a fourth event, "feels inferior" [7], by applying the systematic proce-dures outlined above. Moreover, this more careful systematic scrutiny made it clear that there were two alternative outcomes in the patient's story in ¶48. One consisted of her being critical of someone and then being able to be friendly; but the other ended with her not being able to be critical, and thus not able to be friendly and ending up feeling "very uncomfortable." Hence the right side of figure 6 represents this alternative outcome.

This leaves the question mark in the Summary Predicate column of figure 6 to

be explained[1] . Recall that, as shown in figure 4, Dahl's emotion theory predicts that negative ME emotions such as "feeling inferior" lead to defenses, including defenses against the negative ME emotion itself, i.e., here, "feeling inferior." Although the theory does not predict what kind of defense will be invoked, both clinical judgment and common sense here point to the act of criticizing as a likely candidate. Thus, the clinical reasoning would go, the patient's original wish to be friendly, prevented by her feeling inferior, can be fulfilled, if, and only if she is able to get over the inferior feeling. Her own story strongly suggests that criticizing someone accomplishes that task, removing (even if temporarily) the negative ME feeling and allowing her to satisfy her friendly wishes. This also highlights an unexpected advantage to be derived from FRAMES, namely, the focusing and sharpening of clinical thinking and reasoning.

A second major advantage of this new systematic method of FRAMES construction is that it introduces a basic new way to represent FRAME structures. Previously the events in FRAME structures were the *summary predicates*, with their supporting text to permit the reader to judge their precision. Now, the FRAME structure is represented by the *summary emotions*. With emotions the judgment of similarity of the events is constrained by the limited number of emotion categories[1] rather than by the much larger number permitted by the lan-guage of *summary predicates*. Thus the search for instantiations is reduced to a search for similar emotion categories rather than for ambiguous linguistic representations.

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[1] Instead of using a branching structure with a question mark and two different outcomes, two different frames A and B could be used to represent the emotional sequences as well. Here, the branching structure is used to indicate that - in analogy to the emotion feedback diagram of Figure 3 - depending on the consumation of the wish "to not feel inferior" Frame A or Frame B will occur.

[1]But note that combinations of eight categories permit a very large number of different FRAME structures 3-6 events in length, which is the range we have seen so far.

Finally, since only prototypes that are instantiated at least once should be considered to be FRAMES, we will show such an instantiation of the Critical-Friendly FRAME in the transference, i.e., a repetition with the analyst. The first two emotion categories are based on her references to friendships with "people" [1] and her feeling inferior to "people" [7]. We may take for granted that she in-cludes the analyst among "people." The data for this instantiation of events 3 and 4 were derived from ¶'s 52 and 61 in the same hour[1].

Figure 7 (Critical Friendly Instantiation with the Analyst) about here

**¶49** / So your thoughts turned from thinking about whether I would approve or disapprove of things you say to what you've just been talking about. /

**¶50** Mm.

**¶51** / There any connection? Does it follow perhaps that uh you (stomach rumble) have some criticisms of me that have occurred to you? /

**¶52** (Pause) I think if I had, **I would have (nervous chuckle) suppressed them too much to admit them [6A].** (Clears throat, sniff, pause) Uh, perhaps one I'm **starting with one that's less (nervous chuckle) personal [5A], one that I'm sure still is occurring to me at times [5],** although I don't think it functions as much in my thinking now as it might have is uhm, sometimes **wondering if all this really does get anywhere [5A],** and (sniff), you know, **if it isn't some sort of a hoax [5A].** But that's partly because I was brought up to **think of it as being something that really didn't do any good for anybody [5A]** and **just costs a lot of money [5A]**. I don't think that occurs to me as much now.

...

**¶61** Because that (nervous chuckle) is, well **even this I find hard to say [7A]**, and **it's, it's silly [5AS]**, but just in thinking about clothes and wearing what you want, uhm, just in, in noticing what you've worn since I've started coming and the, **the variety and the freedom that you seem to have [1A]** and, and I think **I've been sort of envious of that [5→1A].** (Sniff) **I feel very embar-rassed [8]** (nervous chuckle)

[1]Note that the analyst's expressions are not used in the coding, but are clearly relevant.

saying that.

In this passages clearly the critical feelings of the patient towards the analyst-coded as **[5]** - and her critical behaviors - coded as **[5A]** - precede her being friendly with him. She finally acts friendly towards the analyst by paying him compliments as to his clothes (coded as **[1A]**) and confessing her envy as to the freedom he seems to have (coded as **[5→1A]**; for further details of the emotion coding see Dahl, Hölzer and Berry 1992).

## Conclusion

### The Relationship of FRAMES to other Measures

In Luborsky, Popp and Barber´s (1994) report of the results of a systematic detailed compariosn of seven different „transference-related“ measures applied to the same initial patient interview, the three most similar measures were CCRT´s, SASB-CMP´s (Benjamin, 1984; Schacht & Henry, 1994), and FRAMES. All three systems rely on assessing patients´ wishes and beliefs about the outcome of the wishes. The structures of the CCRT and the structural domains of the SASB-CMP are constant across patients, whereas the structures of FRAMES are unique to each patient. In all three the event content is specific to each patient. Of particular interest is the fact that the three basic classificatory dimensions of the SASB and of the emotions in FRAMES are the same (both reflecting Freud´s 1915 three fundamental dimensions of mental life), though expressed in different terms. CCRT´s, SASB-CMP´s and FRAMES are all suitable competitors for research use in the assessment of pathology, treatment and outcome.

### PTO-Concruence and FRAMES

In 1988 Strupp, Schacht and Henry stated a general principle for those trying to explain *how* psychotherapy works. The principle is that the most elegant and

powerful measure or set of measures would be a single set used to assess (1) a patient´s unique **p**athology, (2) to evaluate the psychotherapeutic **t**reatment process, and (3) to evaluate **o**utcome. Our claim is that FRAMES are strong candidates for such a measure. They are relatively simple, yet coherent and cogent statement of the patient´s *pathology*. To evaluate *treatment*, one can study to what degree, how, and with what consequences, the therapist focuses on a patient´s particular FRAMES. And finally, one can directly measure *outcome* by whether the FRAME structures change or disappear after treatment.

To this end, Dahl is completing data collection for a study of 68 sessions (early, middle and late) from 15 tape-recorded psychoanalytic cases in which, for each session, object maps are prepared, emotions are classified, and defenses are identified. The main goal is to construct FRAMES from the maps and emotions, so that we will know more about their consistency within, and their differences among patients. A second goal is, with time-series-analyses, to assess the relationships between emotions and defenses in order to further test a central prediction of the emotion theory, that negative Me emotions are those that provoke defenses.

**The origin of FRAMES**

Only Davies (1989) has done empirical work on the origin of FRAME structures. Thus Stern´s (1985) study of „the interpersonal world of the infant," seems especially relevant. His concept of RIG´s as „lived episodes" which, with repetition become „**r**epresentations of **i**nteractions that have been **g**eneralized" seems especially apt. He thinks of RIG´s as flexible structures that form prototypes which capture the essence of the lessons of the infant´s life episodes. But their crucial difference from FRAMES is that he regards them as essentially *adaptive* structures which help us successfully interact with other objects. FRAMES, on the other hand, appear to be essentially maladaptive, inflexible structures which re-sult in unsuccessful, unfulfilling, failed interactions with other objects. Ultimate-ly, of

course, we would like to know if we can determine and define how the character of „lived episodes“ that lead the infant to RIG´s differ from those that lead to FRAMES.

It is obvious that the FRAMES method as outlined here still needs empirical testing and further investigation particularly as far as reliability aspects of the single steps are concerned. While the emotion rating has proven fairly reliable, putting the sequence of emotions into a FRAMES format has not yet been tested as an independent step and no reliabilty has been calculated among different judges. A further restriction of the method is clearly that it needs not only a well written transcript as a prerequisite and can not be accomplished e.g. on basis of a videotape alone. Furthermore, the training that it takes for a rater to be able to perform the emotion rating is substantial, since not only the handling of the eight categories but also a solid understanding of Dahl´s theory of emotions is necessary. Thus, there might be still some restrictions as to the psychometric foundations of the method today. But, given the progress FRAMES have made up until now, it seems fair to speculate that the method is a good candidate to become a reliable measure of repetitive relationship patterns.

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