analysis employed in this study, Recursive Frame Analysis (RFA), and arguing the relevance of RFA as method of choice in this study. Chapter 2 concludes with a discussion of how this project specifically addresses the study of the heart murmur discovery/referral process.

Chapter 3 demonstrates the methodology employed in this study. Included in this chapter is a discussion on the selection of families interviewed for the project, on the procedures followed in recording and transcribing the interviews, and on the analysis employed in the examination of the family members' discourse concerning their experiences during the discovery/referral sequence.

Chapter 4 presents the detailed analysis of the excerpts drawn from the families' interviews. Recursive Frame Analysis (Keeney, 1990a, 1990b) is utilized to draw basic distinctions to understand how families organized their experiences surrounding the referral to a pediatric cardiologist, and how the family members contextualized the meaning of the heart murmur.

Chapter 5 takes the descriptions, detailed in Chapter 4, and uses these to suggest ways in which participants in the heart murmur discovery/referral process can organize and manage information and contexts. The prescriptions are suggested so as to help doctors and family members in their interactions with each other during the difficult, somewhat confusing, sometime worrisome, referral sequence. The chapter concludes with a discussion on ways to disseminate the findings of this study, and also on how this project informs subsequent studies.

The examination of families' interpretations of their experiences with their children's heart murmurs is guided by the words of George Miller (as cited in Lakoff & Ross, 1979, p. viii): "In order to understand what another person is saying, you must assume it is true and try to imagine what it could be true of." It is not the purpose of this investigation to question family's realities in light of a true, real world, but rather, to try to understand each family member's own unique logic and vision; and how presenting descriptions of these individualized distinctions can be helpful to other families and physicians who must also deal with this aspect of the human condition.

Chapter 2
The Study of Talk and Recursive Frame Analysis

INTRODUCTION

In Chapter 1 the general area to be investigated was established: The research would focus on how family members were informed of the news that one of the children in the family was diagnosed as having a heart murmur. Background material in the biological nature of murmurs was presented, as well as some of the concerns that doctors and researchers had in regards to the influences that the heart murmur discovery and subsequent referral to a pediatric cardiologist had on family members' perceptions of the child with the murmur.

The survey continued by examining the previous studies in which researchers and physicians attempted to study the family interaction surrounding the heart murmur discovery. The section concluded with a summary that highlighted the important findings and features of these studies.

In Chapter 2, the center of attention is talk and the ways in which discourse can be understood and studied. In the previous chapter the argument was made for studying language in the field of medicine. In this chapter, the discussion picks up at that point and the reader is introduced to a mode of inquiry which allows investigators to focus on such phenomena. Methods used in previous medical and therapy studies are critiqued and other alternative means used to study language and discourse, such as narrative analysis, are introduced so as to improve the fit between the information to be studied and the methods to be used in this study. The utility of frames and frame analysis in the analysis of discourse and narrative will be emphasized in this section and a new method for studying and understanding talk will be introduced: Recursive Frame Analysis (RFA).

Chapter 2 concludes with a focused presentation of the problem to be studied. The important distinctions that organize the methodological choices taken and the scope of the analysis will also be discussed.
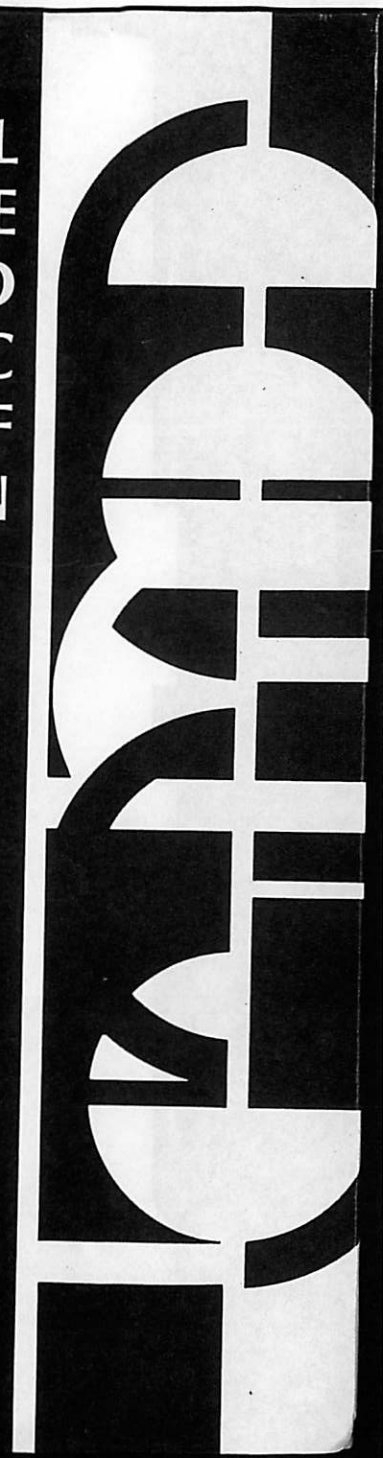
MEDICAL DISCOURSE AND SYSTEMIC FRAMES OF COMPREHENSION

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DISCOURSE ANALYSIS

The literature did supply a general orientation to the study of doctor-patient interaction, which helped to shape the context for this study. Especially important in this orientation process was the role language played in medicine.

> The day-to-day practice of medicine is built upon verbal exchanges, making events susceptible to linguistic analysis, and as Mishler points out, "In this approach, the grounds for interpretation are located in the perspective of patients and the life world contexts of their problems rather than in the biomedical perspective of physician." (Shuy, 1984, p. 422)

Linguists, like Shuy, strongly advocated that physicians, besides analyzing test results, should also become aware of the patients' view of the medical situation. Waitzkin (1985) has also noted that

> Doctors and patients frequently frame their communication on the basis of their unspoken perceptions concerning each other's expectations in the situation. In framing their remarks, doctors may make benign judgments about what patients want to know or should know, but the basis of such judgments may be problematic. (p. 2442)

One empirical way to evaluate patients' perspectives was to carefully analyze the speech of patients. The study of patients' language enabled researchers to show "that patients came prepared with some idea to what is wrong, whilst other patients seem less prepared, but equally in need of information as well as advice and treatment" (Wadsworth, 1976, p. 6).

The formal study of patients' talk would fall under the general rubric of discourse analysis. This type of analysis focuses on "that level of linguistic analysis which considers any linguistic unit larger than the sentence, whether it is a unit of interactional structure, . . . , or a unit of linguistic structure, the discourse unit" (Linde, 1986, p. 184). The study of discourse was emphasized in the study of doctor-patient talk because "discourse is the linguistic level at which social action and exchange takes place. That is, we do not exchange sentences or words or such" (Linde, 1986, p. 184). Although some critics (see Frawley, 1987a) argued that formal grammar was capable of studying units larger than a sentence, a majority of discourse analysts have decided that, rather than analyze talk from a grammar perspective of sentence and paragraph, instead, they have chosen to use discourse units such as "the narrative, small group planning, explanation, description, argu-

ment, command and control discourse in commercial aviation, etc." (Linde, 1986, p. 184) as distinctions to be studied in talk.

In addition, Linde (1986, p. 184) also stressed that the discourse unit be studied "as part of the wider context in which it is embedded." From this perspective, the researcher, as well as the doctor and patient, needed to pay special attention to context. Agar (1985, p. 148) called this view of discourse analysis "context type," wherein the investigator attempted to "represent an intermediate level between the human contact that led to the discourse and the broader characteristics of the society in which it is embedded." From Agar's perspective, a map constructed by investigators to study doctor-patient interaction should chart the verbal exchanges and at the same time, acknowledge the social context in which the talk was being spoken.

"The physician learns that he or she is always working within a complex interlacing of contexts" (Stein & Pontious, 1985, p. 189): The talk between the physician and the patient is embedded within a larger body of discourse which is the social context of the talk, and within the doctor–patient interaction itself, the words of the participants become embedded within other words and this is also understood as context. "And 'context' is linked to another undefined notion called 'meaning.' Without context, words and actions have no meaning at all. This is true not only of human communication in words but also of all communication whatsoever, of all mental process, of all mind" (Bateson, 1979, p. 16). Surprisingly, many researchers ignore the interactional qualities of interaction. Street (1986) wrote "researchers generally do not consider such as the participants' response contingencies, how interactants coordinate mutual or competing goals and expectancies, how behavioral patterns evolve during the course of interaction, and what cognitive affective factors influence these processes" (p. 227).

One way to assess these cognitive affective factors or *schemas* (Tannen & Wallat, 1986, p. 299) which influence interaction would be to examine closely surface evidence for these underlying expectancies. The study of the relationship between these psychological schemas and observable interactions was first outlined by Bateson (1979) in his study of *frames* (see Coyne, 1985; Goffman, 1974; Keeney, 1990b; Tannen, 1979).

FRAMES

Bateson introduced the notion of frame during his discussions on play (Bateson, 1956, 1972). He was interested in discerning how animals and people were able to differentiate between what was play and what

was not play. When was a bite all in play, and when did the nip become the first step towards a fight? Bateson believed that participants had the ability to metacommunicate about their communication so that, during interaction, they would be able to give each other messages, such as *This is play*, so that each would understand how the behavior or communication should be understood. Bateson said that messages like *This is play* helped to establish a frame or context for the biting communication (Bateson, 1972, pp. 178–184).

Bateson (1972, p. 186) considered frame and context to be psychological concepts and he used the analogies of a picture frame and mathematical set theory to discuss these ideas. He said that a picture frame gave an indication that the contents of that frame should be considered differently than other objects on the wall, such as the wallpaper. A mathematical set theory formed rules which "set membership and nonmembership" for that set. Bateson (1972) defined a psychological frame by stating that "it is (or delimits) a class or set of messages (or meaningful actions)" (p. 186).

Bateson (1972, pp. 187–188) outlined seven functions and uses of psychological frames. Among these functions were the notions of exclusivity and inclusivity, the metacommunicative nature of frames, and the embeddedness of frames. As was the case of a mathematical set theory, exclusivity of a frame meant frames dictated what would not belong within that context, and inclusivity of a frame meant that frames also dictated what would belong within that context. Frames were metacommunicative because they were attempts to define the meaning of messages, and, conversely, every metacommunicative message also was or defined a frame. Finally, frames were understood as being embedded because frames were also understood within contexts: The frame of a frame gave the receiver messages about the meaning of the included frame.

Bateson (1972, p. 187) believed that an onlooker could observe outward signs of these psychological frames. These signs were to be found in participants' language and behaviors. "We assume that the psychological frame has some degree of real existence. In many instances, the frame is consciously recognized and even represented in vocabulary ("play," "movie," "interview," "job," "language," etc.). In other cases, there may be no explicit verbal reference to the frame, and the subject may have no consciousness of it" (Bateson, 1972, pp. 186–187).

The influence of psychological frames on verbalizations were not taken to be unidirectional nor was the relationship seen to be rigid in nature:

The fluidity and lability of frames, however, derived from the reflexive nature of messages which simultaneously constituted and labeled them. Consider: when was a shove too hard or a remark too hurtful to maintain a perception of the interaction as play? What behavioral "cues" certified our perceptions? (Rawlins, 1987, p. 58)

This mutual shaping process between the frame and that which was framed was expressed in the title of Bateson's (1956) talk at one of the Macy Conferences: "The message 'This is play' " (p. 145).

The frame itself thus became part of the premise system. Either, as in the case of the play frame, the frame was involved in the evaluation of the message which it contained, or the frame merely assisted the mind in understanding the contained messages by reminding the thinker that these messages were mutually relevant and the message outside the frame was ignored. (Bateson, 1979, p. 188)

The understanding or framing of what play was was constructed by comparing behavior that was contextualized as being play with the play frame itself. There was always a degree of flexibility within a frame.

A child realized that behavior can, in a sense, be set to a logical type or to a style. It was not the learning of the particular style that you were playing at, but the fact of stylistic flexibility and the fact that the choice of style or role was related to the frame and context of the behavior. And play itself was a category of behavior, classified by context in some way. (Bateson, 1956, pp. 148–149)

Alton Becker (1984a) was also interested in how context and language interacted: "In what ways context constrains particular language—real text (i.e., remembered or preserved language). There are many ways to answer that question, depending on how one defines context. One way to see context is as sources of constraints on text" (p. 136).

Becker stated that such constraints consisted of the relation between prior and current talk (i.e., how previous talk about the child's heart murmur constrained current talk about the child); the relation between the talk and the participants creating said talk (i.e., how talk between a parent and a doctor over a child's heart murmur might differ from talk between two parents about their child's heart murmur); and the relation between the talk and the medium in which that talk was delivered (i.e., how parents' talk about their child's heart murmur during a visit

with a nurse might differ from parents' talk about the murmur with a pediatric cardiologist). The interaction of all of these restraints helped to shape the talk, and, at the same time, the talk helped to reshape its own context.

Although there is a degree of flexibility and reflexivity between the interaction of constraints on text, problems can arise when a degree of rigidity is introduced within the system. When referring to a schizophrenic patient with whom he had been playing golf, Bateson (1956) said, "I am concerned how to illustrate how play sets a frame for behavior. There was a frame set for a certain style of action, and within this frame he could function. But when the frame was modified by competition and when he started to fail it became a little harder" (p. 149). In this instance Bateson could have been talking about "competition" as a frame which contextualized another frame "play," or competition could have referred to an observable interaction which helped to reshape the frame of play. In turn, the behavior became to be understood within a new and different context (competition). This behavior/frame interaction was what Bateson (1956) referred to when he stated, "I am speaking especially of those messages which define context; the message, 'This is play,' which I have taken as text, is a message defining context in a way, or defining a frame" (p. 163).

Goffman (1974) also expressed his concern about frame reification when he wrote

Activities . . . tend to foreclose other frame possibilities and require sustaining a definition of the situation in the face of diversions. Once initiated, these activities must find a place in the ongoing world, and the ongoing world must find a palpable place for them. (p. 499)

In the case of parents with a child who has been diagnosed as having a heart murmur, the message, *This is heart murmur,* can help the family come to understand that their child is an unhealthy child. If the frame of unhealthy child becomes rigid in its application, there will be a lack of flexibility in the treatment of that child. This was seen in the Bergman and Stamm (1967) study: The style of parent-child interaction for some of the families had become stuck in a vulnerable/unhealthy child framework. Just as the schizophrenic man described by Bateson above had trouble accepting that golf as play can also be golf as competition, some families, who understood that their child had a heart murmur, had trouble understanding that their child was also healthy. The understanding of the diagnosis of an innocent heart murmur as meaning unhealthy child, and the behavior associated with that logic, was the focus of this study.

NARRATIVE ANALYSIS

This project was part of a larger research project which had as its goal the investigation of the communication process which began with a hearing of the frames introduced to the parents in the referring physician's office, which continued with an examination of the frames negotiated in the pediatric cardiologist's office, and which concluded with a testing of the resiliency of frames in a follow-up visit with the family. The data for the project came from interviews with parents who had been referred to see a pediatric cardiologist because of their child's heart condition. Just prior to their seeing the pediatric cardiologist at the hospital, parents were given an opportunity to present what Webb and Stimson (1976, p. 108) called "lay accounts." The interview would be a way to take a sample from a process which started with

the person's consultation with a general practitioner as part of an extended process involving the patient-to-be [and parents] in a whole series of prior anticipations, expectations, and preparations for the encounter, and, after the consultation was over, involving the person in evaluation and appraisal. It would be during this time and reappraisal and evaluation when there would be verbal accounts of "what really happened." (Webb & Stimson, 1976, p. 108)

The interview would be a way to find out "what really happened," or rather, how the family members made sense of the past events (i.e., the discovery, diagnosis, and referral events). The story presented by the parents would not be used for a comparative study to measure what was recalled by the parents with what was reported by the physician (see Kosa, Albert, & Haggerty, 1967). Following Webb and Stimson (1967), the purpose of this analysis was

not to make any claims about the correspondence between what was depicted in the stories and what "independent observers" might have agreed to what had happened at the incident in question. The interest was in the way the stories were told and not in questions of the validity of the accounts. (p. 110)

Webb and Stimson (1967, p. 122) "chose to use the term 'account' to describe the process of describing these events, rather than a term such as 'recall' which capitalized on notions of validity." This position was similar to the one espoused by Goffman (1974): "A replaying, in brief, recounts a personal experience, not merely reports on an event" (p. 504).

Analysis of these stories or accounts would fall under a specialization of discourse analysis referred to as *narrative analysis* (Gulich & Quasthoff, 1986a, 1986b; Linde, 1986; Wiedemann, 1986; Wodak, 1986). A narrative would be considered "a type of discourse unit" (Linde, 1986, p. 184) in which the talk or text "must recapitulate events from the past" (Gulich & Quasthoff, 1986b, p. 219). In nontechnical terms, a narrative can be an oral or written story in which past happenings are retold to a listening or reading audience. According to Gulich and Quasthoff (1986b), an analysis of a narrative could include *sequential analysis* and/or *semantic analysis* (p. 232) of the story-telling.

> Besides the precise nature of the narrative account, the investigator would also be very much concerned with the problem of what data needed to be made explicit for an analysis to be made: such matters as the situation in which the narration took place, the conversational context, the relationship between the narrator and his [sic] audience, etc. (Gulich & Quasthoff, 1986b, p. 220)

Gulich's, Quasthoff's, and the other narrative analysts' recommendations for the study of narratives were reminiscent of Becker's constraints that were discussed above: To understand the meaning of a story, the contexts within and without must be examined. This was similar to Bateson's (1979) notion of story, "I have suggested that it [story] had something to do with context, a crucial concept, partly undefined and therefore to be examined" (p. 16).

The parents' story was also seen as being a context. The story of the child's heart murmur helped to shape the family members' understanding of the child's condition (i.e., healthy or unhealthy). By hearing the parents' accounts of their interaction with the medical system during the discovery and referral for their child's heart murmur, an investigator or physician could begin to have an idea of what the heart murmur meant to the family and how this meaning was framing the parents' views of the child.

Another factor to consider in the study of the family members' stories was how should the structural and/or semantic analysis of the narrative be conducted? Declaring that this study was a narrative analysis only constrained the unit of analysis, and did not necessarily dictate the means for analyzing the meaning and structure of the accounts. Conversational analysis, ethnomethodology, and pragmatics were just a few of a variety of approaches used in previous studies of narratives (see Gulich & Quasthoff, 1986a), but for this study another method was chosen to provide a way to describe the organization of the discourse (sequential analysis), as well as to illustrate the embedded contexts of the talk (semantic analysis). The method of analysis chosen for this study was Recursive Frame Analysis (RFA), a method developed by Bradford Keeney (1990a, 1990b) and built upon the notions of frame: as a way of indicating the name of a context and as a way of visualizing the organization of conversations (1990a, p. 40).

RECURSIVE FRAME ANALYSIS

The notion of frames, as applied through the utilization of frame analysis, had been used to study a variety of topics: family dysfunction (Ariel, 1987); doctor-patient discourse (Evans, Block, Steinberg, & Penrose, 1986); general human interaction ranging from con games to professional wrestling and from literature to television (Goffman, 1974); family violence (Keeney & Bobele, 1989); and expectations about events and objects (Tannen, 1979). All of the studies varied in the way in which the idea of frames was applied to the subject matter. One variation that was commonly seen was the way in which the researchers conceptualized the rigidity in the relationship between the frame and that which was framed. In other words, some studies portrayed the frame/content relationship as being static: A frame framed the content in a narrow sense—there was not a sense of reciprocity between the content and its frame (Ariel, 1987). Other studies (i.e., Goffman, 1974) suggested that the researcher take an *as if* stance on the relationship between the frame and the content of that frame: Analyze the interaction as if the relationship between the frame and the framed was unidirectional and then see what picture is produced from the analysis of the speakers' interaction.

However tortured the connection can become between last person's talk and current speaker's utterances, that connection must be explored under the auspices of determinism, as though all the degrees of freedom available to whosoever is about to talk can somehow be mapped out, conceptualized, and ordered, somehow neatly grasped and held, somehow made to submit to the patterning-out effected by the analysis. If contents can be grouped into categories according to the ways in which they render the standard force of an utterance inapplicable and principles thus developed for determining when this meaning will be set aside, then such must be attempted. Similarly, sequencing must be anticipated and described (Goffman, 1981, p. 72).

In his analysis of human interaction, Goffman (1974) focused on the relationship between "inner thoughts" and "outer speech" (p. 503) as he studied the "the analysis of the strips of activity," with special

emphasis on "the analysis of the act of saying things" (p. 496). Outer speech or utterances were understood as being "anchored in the surrounding, ongoing world" (p. 500). His view of frame analysis attempted to examine "the shape and character of these vehicles [utterances] which carry our burden": the ordeal of expressing inner thoughts through words (p. 503).

Tannen (1979) approached the subject from a perspective that was less deterministic than Goffman's, but she was also interested in examining the relationship of frames, or as she referred to them—expectancies, to subsequent events.

> The only way we can make sense of the world is to see the connection between things, and between present things and things we have experienced before or heard about. . . . As soon as we measure a new perception against what we know of the world from prior experiences, we are dealing with expectations. (p. 137)

In her version of frame analysis, Tannen (1979) wanted "to illustrate a way of showing the effects of those "structures of expectations" or verbalizations in the telling of oral narratives" (p. 138). Yet, the emphasis in her analysis seemed to focus on a one-way relationship between the frame and what it framed.

Keeney (1983, 1987a, 1987b, 1990a, 1990b), in contrast to Goffman and Tannen, presented a variation on the notion of frames and frame analysis. He stressed that frames were always understood as being embedded within other frames and each frame contextualized and, in turn, was contextualized by another frame (Keeney, 1987b). This in itself was not unique as far as frames had been presented before.

Goffman (1974) had written about embeddedness when he described the notion of *lamination* (p. 82). For Goffman, the initial framing of an utterance was termed the *primary framework*: the first context in which the talk was understood (p. 82). As time and interaction continued, additional frames, or *keyings* as he called them, contextualized the original frame/content relationship, and the meaning was transformed (p. 82). Goffman wrote, "It became convenient to think of each transformation as adding a layer of lamination to the activity" (p. 82). Also, the "keyings themselves were subject to rekeying" and the process of meaning became "a transformation of transformations" (p. 156), until what the observer observed or, rather, constructed were "multiple laminations of experience" (p. 182).

What did make Keeney's (1990a, 1990b) view and application of frames different from previous attempts such as Tannen's and Goffman's was Keeney's notion of form (Keeney, 1983; Spencer-Brown,

1972) and recursion (Keeney, 1983; von Foerster, 1984a, 1984b). The incorporation of these two concepts into his understanding made Keeney's presentation of frames different from previous utilizations.

Keeney's frame analysis was influenced by the work of G. Spencer-Brown (1972) on the mathematics of form (see Keeney, 1987b). The naming of a frame, or as Spencer-Brown (1972) called the process—the drawing of a distinction (p. 1), meant that an observer drew a distinction such that "a universe would come into being when a space was severed or taken apart" (p. xxix). This universe was made up of that which was named (the frame), and that which was not named (i.e., "that and that from which it was defined," p. 4). "Once a distinction was drawn, the spaces, states, or contents on each side of the boundary, being distinct, could be indicated" (p. 1). A frame was understood only in relation to what it framed.

Keeney's idea of frame contrasted with those theorists who presented a deterministic picture of frames (i.e., a frame determined the context of an utterance.) Bateson (1972, p. 155) discussed that at one time, he also made the error of thinking that context had unilateral control over content, but later, he clearly outlined how he came to understand context.

> I speak of an action or utterance as occurring "in" a context, and this conventional way of talking suggests that the particular action is a "dependent" variable, which the context is the "independent" or determining variable. But this view of how an action is related to its context is likely to distract the reader—as it has distracted me—from perceiving the ecology of the ideas which constitute the small subsystem which I call "context."

> It is important to see the particular utterance or action as *part* [emphasis from the original source] of the ecological subsystem called context and not as the product or effect of what remains of the context after the piece which we want to explain has been cut out from it. (Bateson, 1972, p. 338)

Keeney's understanding of frame, as influenced by Bateson, (i.e., the frame itself, that which was framed, and the relationship between the two sides of the distinction) evoked a pattern similar to what Spencer-Brown (1972) referred to as form: "Call the space cloven by any distinction, together with the entire context of the space, the form of the distinction" (p. 4). The act of framing was a choice of an observer as to how a sequence may be punctuated or understood. The understanding was not that a frame determined the meaning of what was framed, but rather, both the frame and what was framed were understood by the relationship drawn by the observer.

As was the case with Goffman's (1974) transformations of transformations, the forming of forms was an ongoing process. Keeney (1983) characterized this process as being recursive in nature.

> Cybernetics, circularity, repetition, recurrence, redundancy, pattern—all refer to recursion. These terms suggest that the ideas, experience, and social events do more than stretch out in lineal time. When a process infolds upon itself, we speak of recursion. The image of a circle is probably not the best way to think of recursion since we are not really referring to a return to an original beginning point in time. Each recursive loop does imply a different beginning, although in terms of the pattern of organization, it is simply recycled. (Keeney, 1983, pp. 582–59)

Although observers may punctuate in terms of hierarchy "we should not forget that this hierarchy is recursively structured" (Keeney, 1983, p. 31). For frames and frame analysis, this meant that the form of the frame folded back upon itself each time the form was evoked by an observer. This did not necessarily mean that each new cycle determined a new meaning for the frame, but rather that each recursive cycle created the possibility of a new combination or pattern to emerge, and each new pattern would be based upon the same rules of form under which the first distinction drawing was understood. This was similar to the point von Foerster (1984b) made when he wrote, "the recursive operation is a principle of self-organization . . . allowed certain structures to emerge—to crystalize—from early, arbitrary stages" (p. 19).

For some (see Wynne, 1988; Greenberg, 1989), the idea of recursion suggested a unidirectional flow of causality, and thus was just another way to continue with a linear/lineal view of cause and effect. This was the same error Bateson (as cited in Keeney, 1983) was referring to when he wrote

> [My colleagues in the behavioral sciences] have tried to build a bridge to the wrong half of the ancient dichotomy between form and substance. The conservative laws for energy and matter concern substance rather than form. But mental process, ideas, communication, organization, differentiation, pattern, and so on, are matters of form and substance. (p. 80)

From this discussion, it can be seen that recursion was used to name a pattern of context that had emerged over time, and not as a way to describe a circular version of unidirectional control.

Seymour Papert (1980), one of the founders of the computer language *Logo*, supplied a recursion riddle which helped to explain the difference between recursion as a directional concept and recursion as a meaning concept. Papert wrote: "If you have two wishes, what is the

second? (Two more wishes)" (p. 74). The phrase, "two more wishes," was an answer in the context of the question "If you have two wishes, what is the second?" The question did not cause the answer, rather the phrase took on the meaning of an answer within the context of a question/answer relationship or form.

The unfolding of the process upon itself (i.e., the opportunity to receive two more wishes and to ask for two more wishes) was not caused by the wish of two wishes nor by the asking of the question regarding the nature of a second wish. The humor, the childlike quality, of the riddle and the recursiveness of the process suggested by the words come from the form of the riddle (i.e., the question, the answer, and the relationship between the two sides of the distinction), and not from any uni-, bi-, or multidirectionality of the phrases. The notions of context and directionality suggested two different epistemologies: one of pattern (context) and one of cause and effect (directionality).

William Gephart's (1981) description of watercolor painting served as another metaphor to understand recursion as a process of meaning or framing:

> For example, when a brush loaded with water and pigment is applied to a sheet of watercolor it will leave on the paper a brilliant area of the color deposited by that pigment. Ten to fifteen minutes later the water deposited with that pigment will have evaporated, and the color will be less intense—it will look lighter or fainter. All water color pigments do this, but they do not all to it to the same degree. "Okay," you say, "so you may have to go over a section until you get the intensity you want." Wrong! Part of the inherent beauty of a watercolor painting is the transparency of the medium. Unlike oil or acrylic paintings, light passes through watercolor and reflects from the paper on which the pigment is adhered by gum arabic. By contrast, light reflects off oil and acrylic paint. Going back over a segment of your painting until you get the intensity that you want risks coating the watercolor paper with so much pigment that it becomes opaque at that spot. Thus, at that spot you have caused a different type of light transmission that helps make the eye process that spot differently— a spot that visually is out of place with the rest of the picture. (pp. 249–250)

Just as the meaning of the painting became opaque or impenetrable with repeated strokes of the pen (i.e., the light could no longer penetrate the layers of pigment), the same could be said for families encountering the medical system during the heart murmur discovery and referral. The meaning of the heart murmur as symptom or sign was opaque or ambiguous to the family members. Frawley (1987b), in discussing the semiotics of writing symbols, described this process as he

contrasted iconic and opaque representations in various writing systems:

> [Referring to an iconic figure] There is no distinction in the representation between the form of the representation and the meaning represented. In iconic systems, the transparency of the signs allows for no difference between saying and meaning: the saying is the meaning here. In texts, however, there is a distinction between the intention and the form which that intention takes. Opaque signs embody this distinction by definition: the relation between the intention and the expression must be figured out. In less technical terms, transparent representations are self-evident. Texts are not self-evident, but can only become evident. (p. 9)

Recursive Frame Analysis was used to examine interviews with parents so as to illustrate the process by which parents and doctors attempted to make the opaque relationship between the sign of heart murmurs and the meaning of heart murmurs become iconic or transparent. As the framing and the framing of framing unfolded in this interaction, the recursive frame analyst's task, like an epistemologist, "was to mark the orders of recursion invoked in any given description/ explanation" (Keeney, 1983, p. 32). "Tracing this recursive operation of drawing distinctions, distinctions upon distinctions, and so on, enabled us to uncover the way we constructed and bound together an ecology of ideas—the construction of a reality" (Keeney, 1983, p. 46).

By using the pronouns "us" and "we," Keeney underlined the observing systems nature of Recursive Frame Analysis. Following von Foerster's notion (as cited in Keeney, 1983, pp. 77–78), Keeney pointed out that the act of observing "placed the observer in that which was observed" (p. 77). The same pattern held for this investigation: In the process of carrying out the aesthetical imperative: "If you desire to see, learn how to act" (von Foerster, 1984a, p. 61), this work was constructed.

Therefore, this study was the result of a desire "to see" how parents interpreted the news that one of their children had been diagnosed as having a heart murmur. Learning "how to act" involved an exploration of discourse, narrative, and frame analyses, which helped me to defamiliarize my previous views, so that I could learn "to see" again.

RFA as Method

With the theoretical base now described, the next step is to elaborate on how RFA operates as a research method. One way to help orient readers to the approach RFA investigators take is to examine how RFA relates to another, better-known research method, which shares many of the assumptions inherent in RFA. The other method, the Natural History of an Interview (NHI) (McQuown, 1971c), was arguably the first and most elaborate research method ever applied to the study of human interaction, and it shares many similarities with RFA.

The NHI project was a inter/multidisciplinary investigation which included some of the most brilliant investigators from psychiatry (Frieda Fromm-Reichmann and Henry W. Brosin), linguistics (Charles F. Hockett and Norman A McQuown), anthropology (Gregory Bateson), and kinesics (Ray L. Birdwhistell) (Leeds-Hurwitz, 1987). These researchers were brought together in 1956 by Fromm-Reichmann to produce "a fine-grained analysis, transcription and interpretation of the speech and body motion of participants in a sound-filmed (and tape-recorded) family interview" (McQuown, 1971b, p. 1). Previously, another research group of Fromm-Reichmann had produced a micro-analysis of only the speech of participants (McQuown, 1971b, p. 1), but now the group wanted to examine other communication channels (e.g., paralanguage and kinesics) along with speech.

McQuown (1971b) set forth the purpose of the group's investigation of a film provided by Bateson of an interview he had done with a psychiatric patient by stating that NHI was to serve as

> a general introduction to the theory of microanalysis of interviews with a focus on overt behavior, to the individual systems of analysis of the speech and body-motion of participants in such interviews, to the techniques of manipulating taped and filmed materials in order to facilitate such analysis, and to the theoretical frame suitable for the interpretation of the materials and for the use in psychotherapeutic and other practical applications. (p. 2)

Over the next 15-plus years, the original group and other participants produced a five volume work which painstakenly presented: the theoretical background of their study; detailed transcriptions of speech, paralanguage, and kinesics of the Bateson interview; interpretations of the behavior observed in the interview; suggestions for the application of NHI; and numerous appendices which outlined the procedures used to study the interview (McQuown, 1971c). Leeds-Hurwitz (1987) described NHI's importance to the study of communication by stating that NHI

> provided the basis for a view of communication which suggests that it is patterned (non-random, rule-governed, predictable, and therefore analyzable); learned (not inborn, and therefore different for each culture);

context-bound (behavior has meaning only in a specific context); multi-channel (more than just words, communication is a complex combination of words, movements, use of space, etc.); and continuous (it never stops). (p. 31)

NHI directly influenced many other seminal studies of interaction in psychotherapy including *The First Five Minutes: A Sample of Microscopic Interview Analysis* (Pittenger, Hockett, & Danehy, 1960), *Communicational Structure: Analysis of a Psychotherapy Transaction* (Scheflen, 1973), and *Therapeutic Discourse: Psychotherapy as Conversation* (Labov & Fanshel, 1977; Leeds-Hurwitz, 1987). RFA also fits within the research tradition started by the NHI project, but there are some important differences between the two approaches. The similarities and differences between RFA and NHI can best be seen by examining four areas the two methods have in common: (a) How the relationship between context and meaning is presented, (b) how the relationship between micro and macro levels of analysis are understood, (c) how theory is used in the study of overt behavior, and (d) how the study of face-to-face interaction is accomplished. By presenting these comparisons and contrasts, the method of RFA should become readily discernible to the reader.

RFA was developed to be a precise and concise way of notating the organization of discourse in therapy. Analogous to musical notation, recursive frame analysis enables therapist to immediately visualize the structure, architecture, or anatomy of therapy without engaging in cumbersome theoretical or practical discussions. The method is ideal for both post hoc analyses of whole sessions and as a tool for organizing real-time therapeutic participation in an on-going clinical case. Although recursive frame analysis is principally designed to be a resource for practitioners, it may also contribute to theoretical and research applications. (Keeney, 1990b, pp. 28-29)

From this description, it can be seen that there are two major contexts which have helped to shape RFA. The first influence is that RFA focuses on presenting the organization of discourse in interactions; the second influence is that RFA is designed to be readily accessible to practitioners as well as researchers. Both of these contexts fit well with the NHI approach, but the major contrast between the two approaches centers around the issue of practicality.

NHI stressed practical applications of the method (Leeds-Hurwitz, 1987, p. 18), but the result of the project was a book of dinosaurian proportions. This five volume work was based on analyses of only a few scenes selected from just one film. Similar ratios of talk investi-

gated to length of time involved in the study and size of final presentation of the work (e.g., one session/10 years and over 300 pages of text for Labov and Fanshel's (1977) study), have been the strengths/weaknesses of previous studies. Labov and Fanshel (1977) conceded that a balance had to be found in the study of therapeutic discourse, but that finding harmony between detail and meaning was an arduous task. When speaking of the original NHI project, they wrote

The wealth of detail and accumulated insights in this unpublished manuscript testifies to the richness of the phenomenon being studied; but it also demonstrates the great difficulty in reducing this information to a parsimonious statement that would allow the knowledge gained to be disseminated broadly and confirmed by other researchers. (p. 20)

Labov and Fanshel made many significant contributions in the evolution of microanalysis of interview processes (e.g., the use of speech acts to analyze therapeutic discourse), but the question of practicality still remained: How can the organization of a session be presented in a meaningful way, without overwhelming the reader and underwhelming the data? Keeney's RFA attempts to address this question. With a focus on creating a system for therapists, which could be used in real-time, RFA was developed to fill a gap between complex methodologies such as NHI, which produce analyses longer than the original works themselves, and unstructured case notes, which may ignore the observable behaviors of the session. NHI was conceived as "a starting point: for further research into analytic and interpretive frames and applications" (Leeds-Hurwitz, 1987, p. 19), and the next sections of this paper will present how RFA can be understood as a logical next phase in well-established tradition.

Context and Meaning

NHI and other microscopic approaches attempt to understand and study interviews in terms of elaborate chainings of successively larger and larger units of analysis which contextualize those levels found below. Bateson (1971) wrote that the NHI team studied "microscopic particles of vocalization towards the most macroscopic units of speech, each step on this ladder is surmounted by placing the units of the lower level in this hierarchy" (p. 16).

How a unit on one level of analysis contextualized or framed units on a lower level was how the NHI investigators studied meaning: " 'Meaning,' therefore, is a function of this restriction of possible meanings" (Bateson, 1971, p. 16).

This assumption that the microscopic will reflect the macroscopic is a major justification of most of our test procedures. . . . A major function of the techniques of microanalysis is, therefore, to obtain from the small quantities of data, accurately and completely recorded, insights into human relationship which could otherwise only be obtained either by long-term observation or from the notoriously unreliable data of anamnestic reconstruction. (Bateson, 1971, p. 39)

Working from this perspective, these researchers examined how speech, paralanguage, and kinesics were intertwined in human interactions, and how these patterns related to the abstract concepts that were of interest to psychiatry (e.g., transference in the psychoanalytic relationship).

The ultimate goal of the procedures outlined in this book is a statement of the mechanism of relationships. No statement of mechanism without larger context can be of interest; no statement of relationship, unsubstantiated by a statement of mechanism, can warrant confidence. (Bateson, 1971, p. 40)

The overall purpose and goal of these proceedings was to produce a empirically supportable view of interaction, but the members of the team also realized that reaching such a goal would probably be unattainable.

Meaning approaches univalence or non-ambiguity only when very large units of the communicational stream are admitted to examination. And even then, the approach to non-ambiguity will be asymptomatic. As larger and larger bodies of data are admitted, the probability of a given interpretation will be increased but proof will never be achieved. The situation is essentially the same as that which obtains in science where no theory is ever proved. (Bateson, 1971, p. 18)

NHI studied units of analysis from the smallest discernable utterances and gestures, to "sentence-like and sentence-sized units" (McQuown, 1971b, p. 4) and recognizable movements such as lighting a cigarette; from strings of sentence-like units and sequences of gestures, to abstract concepts such as "social matrix theories of personality" (McQuown, 1971a, p. 6) and so forth, until the researchers reached an understanding of the meanings of the speech, paralanguage, kinesic, and theoretical structures of the interview.

RFA also focuses on the relationship between smaller units of analysis and larger sequences of behavior, but there are some significant differences in range and width of analysis that occupies the RFA focus. Whereas the NHI investigators were interested in presenting meaning

in terms of multichanneled (i.e., speech, kinesic, and paralanguage) contexts, a researcher, working from an RFA perspective, studies how particular utterances are contextualized or understood in terms of previous and subsequent stretches of talk.

For example, consider the following excerpt from a hypothetical therapy session taken from Keeney and Silverstein's (1986) work:

Therapist: Why have you come to therapy?
   Client: I hallucinate several times a day.
Therapist: What do you mean, exactly, by "hallucination"?
   Client: You know, I hear strange voices that give me secret messages.
Therapist: What do you think these messages mean? (p. 3)

In terms of RFA, the hearing of strange voices is framed or contextualized as being an hallucination, and taken together, these frames contextualize why the client is coming to therapy. These frames would be presented in the following fashion:

Frame (F): Why have you come to therapy?
   Frame (F): I hallucinate several times a day.
      Frame (F): I hear strange voices that give me secret messages.

The indentation is meant to represent how certain frames are understood as being framed by other frames. But it is important to remember that, although the "strange voices" frame is represented as being embedded within the "hallucination" frame, this is not to infer that there is a dependent/independent relationship between the two frames. Following Bateson's (1972) comments as elaborated above, the "strange voices" are understood in terms of being referred to as "hallucinations," as well as being part of the hallucinations.

The therapeutic importance of being able to make that distinction is that it provides the clinician with a number of ways to approach therapy with this client. One approach would entail exploring the client's willingness to accept another framing for the strange voices, other than that of hallucinations. Another avenue to explore would be to examine what other behavior is also framed by the client as being either hallucinations, or worthy of therapeutic intervention. Still another possibility is to investigate times and situations during which hearing strange voices which give the client secret messages is a resource for the client.

All of these potential moves by the clinician are intended to create shifts in the client's talk. These changes in talk may lead to changes in behavior for the client such that previous problematic situations no

longer exist for the client, or if the situations do continue, they are no longer framed as being worrisome or in need of therapeutic intrusion.

For a researcher investigating therapeutic discourse, RFA can be used to chart the shifts or lack of shifts in the talk. For example, if the therapist from the above mentioned example offered a new frame for the client's hearing of strange voices, the researcher would be interested in charting how the introduction of the new frame was used by the client. In addition, the researcher could investigate if the client's use of the therapist's framing helped to shift the talk out of the context of hearing strange voices is a reason to be in therapy.

Therapist: Have you ever considered that the voices you hear are real and not imagined hallucinations?

Client: Yes. My mother used to hear voices too and she said that they were from angels.

If the client acknowledges that the voices are real hallucinations (i.e., They are messages from angelic sources.), then that represents a possible shift in the therapeutic conversation. Rather than talking about medicating the client for hearing imagined voices, the therapist can begin to explore how hearing angels' voices like mother did, makes sense within the context of the client. For example, it may be discovered, that the client believes that hearing voices like mother is a way for the client to remain loyal to that parent. If this is so, then the therapist may help the client come up with a new way to be loyal to mother without having to hear voices. A researcher could follow the therapist-client discourse throughout the course of therapy to see how the talk was framed and reframed, or how meaning was constructed, reconstructed, and deconstructed.

Whereas NHI studied meaning in terms of phonemes, sentences, and other linguistic, parlinguistic, and kinesic units of analysis, RFA focuses on meaning in the talk in terms of how certain utterances can be understood to frame or be framed by other utterances. The differences between how microscopic the analyses NHI and RFA is determined by the question, "How low must one go in the course of microanalysis in order to feel confident that the assumptions made at a higher level are properly substantiated by the units of a lower level?"

For RFA, the answer is that words can be understood in terms of other words. In order to present discourse in a manageable, yet meaningful fashion, the RFA therapist or researcher uses distinctions drawn in the talk of the participants, to describe that same talk. The process of RFA is akin to that of musical notation: Musical notes are understood or heard in terms of other musical notes. A note played in one chord, produces a sound different than the same note played in a different

chord. Keeney (Keeney & Ross, 1985) described this note/chord relationship by sharing an anecdote about the jazz pianist, Oscar Peterson:

> Oscar Peterson . . . was once asked how he feels when he hits an occasional wrong note. He replied that "since every note can be related to a chord," there can be no wrong notes. The trick is to integrate whatever note you happen to hit into one's musical arrangement. (pp. 126–127)

For the RFA researcher, the trick is to demonstrate how each note (or frame) was integrated into the musical arrangement (or discourse) that is being studied. The goal of this process is to score the conversation such that another reader (or listener) could come along at a later time, and not only follow, but also appreciate the note progressions and various chord changes that constituted the piece studied.

Another similarity between NHI and RFA is on the role theory plays in the investigation of discourse. To this concern, Bateson (1971) wrote

> We start from a particular interview on a particular day between two identified persons in the presence of a child, a camera and a cameraman. Our primary data are the multitudinous details of vocal and bodily action recorded on this film. We call our treatment of such data a "natural history" because a minimum of theory guided the collection of data. (p. 6)

The same could be said for RFA: As a method of investigation, RFA is based upon cybernetic notions of recursion, feedback, and calibration (see Keeney, 1983). These assumptions help to guide the therapist or the researcher in searching and researching the talk at hand. When used in the course of conducting systemic family therapy, the charting of frames can be done independent of any particular orientation to therapy. The idea that an utterance can be understood with a context of another set of words is not dependent on a school of therapy, but rather on the notion that communication can be understood in terms of context and embeddedness.

When applied to research, the same relationship between the observations made, and the theory used to make those distinctions: The charting of frames can be done independent of any social or psychological theory of face-to-face interaction. Of course, another researcher may read an RFA of an interaction and cite the configuration of frames as a demonstration of a particular theory of interaction (e.g., dramatic scripting) (Goffman, 1974). But, that particular punctuation of behavior reflects a relationship between the observer's conceptualization and the frames presented, and not necessarily anything within the RFA analysis itself.

Procedures and Process

The final comparison to be made between NHI and RFA is the process by which each investigation is carried out. Although the two methods may differ as to the levels and channels of analysis studied, the process of the investigations is similar. Investigations from a NHI perspective involve a three step sequence: soaking (i.e., multiple viewing-listening of the film and/or tape of the interview), scene selection (i.e., after numerous viewings, select sequences of behavior), and intensive analysis (i.e., transcribe and closely examine the overt behavior) (Leeds-Hurwitz, 1987, p. 8).

The process of RFA differs slightly depending on the purpose for which it is being used. For use during a particular therapeutic sessions, there is not time for elaborate soakings and intensive analysis, but if RFA is used to study interviews such as the ones recorded for this study, the process resembles that of NHI. The RFA investigator repeatedly listens/watches the video/audiotape in order to transcribe the session. Following Hopper's (1988, p. 54) suggestion, the reading of the transcript is always associated with the playing of the actual tape of the session. The purpose is that reading the transcript along with listening to the tape allows the researcher ample opportunities to improve the transcription. If the tape is ignored, the transcript of the session can never be improved.

As the transcription is being made and remade, the RFA researcher begins to chart the frames of the interview. Certain sequences of the talk (e.g., words, phrases, etc.) are notated as frames. As was the case with the therapy example given above, words such as *hallucinations* and *strange voices* were distinguished as frames to be considered for further study. The choice of these frames is done in a discovery-oriented fashion.

The next step in the sequence is to begin to group frames so as to represent how frames are being contextualized by other frames. As was done with the previous therapy excerpt, the frame of strange voices was indicated to be understood in terms of an hallucination, and that both of those frames were represented as being understood by the observer as being contextualized by the therapy frame. Different orders of frames (i.e., frames that include other frames) can be called *galleries* (Keeney, in press). For example, the talk in the previous excerpt could be said to have occurred within a gallery of therapy.

Shifts in the discourse are marked. These shifts, called openings (Keeney, in press), are notations that represent that the talk has moved from one context to another. Again, returning to the therapy example given above, the therapist and client interaction centering around the voices being from angels may be an opening out of the frame of hallucinations and into the frame of alternative explanations for the voices. The researcher would have to track the sequence of frames in order to observe that the talk had indeed moved from the context of hallucination. As was the case with Oscar Peterson's "wrong note," the meaning of a frame can not be understood in isolation apart from the other utterances. Each frame is understood as being a part of the rest of the discourse.

This process of transcript improvement, frame identification, and frame relating continues throughout the investigation of the talk. In the case of the study of the talk for this research, the structure of the interviews provided certain pre-discourse galleries to be investigated. For example, the interviewers had certain prearranged galleries or topics that were to be asked to the parents (e.g., How was the heart murmur discovered?). When that gallery was introduced by the interviewer, the researcher could then chart the frames that were elicited by the heart murmur discovery question. Was the discovery framed by the parents as being routine, or was the identification of the child's murmur contextualized as being problematic or worthy of worry?

Galleries such as the discovery of the heart murmur, the parents' expectations of seeing the pediatric cardiologist, and changes in how the child was being treated now that the heart murmur had been discovered could be compared from parent interview to parent interview. This would allow the investigator to see how the talk in those galleries was similar and/or different for each parent interviewed. For example, when parents were asked about their expectations of seeing the heart specialist, the researcher would be interested in noting how parents contextualized the consultation: Was the meeting framed as being the final, positive answer for the parents, or was the face-to-face encounter being treated as another in a long line of potential disappointments?

It would be important to know how parents may possibly contextualize different aspects of the heart murmur discovery-referral process. Given the relationship between utterances and the context in which they may be understood, physicians and parents both may benefit from an investigation such as this one. A physician's talk about a child's heart can be understood in many ways. Having a way to study the process by which meanings are negotiated during interactions would be invaluable to understanding doctor-patient communication

and miscommunication. RFA is meant to be another contribution to the process started by NHI: "Such application will inevitably lead to the refinement both of the descriptive tools and of the interpretive frames with which descriptive results are evaluated" (McQuown, 1971a, p. 10). In the next chapter, this process of RFA investigation is discussed further in terms of the methods and procedures employed in the study of the parents' talk about their children's heart murmurs.

Chapter 3
Method

INTRODUCTION

This chapter presents the details of the research process employed in this project. Special emphasis was placed on elaborating the means by which the organization of the parents' talk was analyzed, and how these procedures helped to shape the investigation and reporting of the parents' accounts of their experiences surrounding the discovery of their child's heart murmur, and the subsequent referral of the child to a pediatric cardiologist.

SUBJECTS AND PROCEDURES

This study was based upon analysis of 32 interviews with families of children referred by a primary care physician to the cardiology unit of a major medical complex. Each interview was conducted during the family's first visit, just prior to the family's consultation with the cardiology specialist. After the family had checked into the clinic and the child had been taken to the radiology unit for x-rays, had been given an EKG, and had been examined by a nurse from the cardiology unit, the family was introduced to an interviewer. Four doctoral students from the marriage and family therapy program at Texas Tech University, who were identified as "counselors," conducted these interviews. The interviews were done over a two and one-half month period. Families were selected based upon the following: (a) this appointment being their first appointment at the cardiology unit, and (b) the availability of the interviewer. The interviewers would check with the intake receptionist at least two times per week to determine when new patients were scheduled. Nevertheless, some patients were seen in the clinic when no interviewer was available.

The timing of these interviews was significant in that the cardiologist's diagnosis had not yet been made at the time of these interviews. Since the diagnosis was unknown but was imminent, the families' worries could be expected to be most intense at that point in the process.