MARITAL TOPOGRAPHY: THE NATURALISTIC OBSERVATION OF MARITAL INTERACTION

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ABSTRACT

This paper presents topographical analysis of marital interaction as an alternative research strategy to those more traditional techniques of interviews and questionnaire measurement. The paper sketches the basic assumptions, problems and advantages to this form of naturalistic observation. The current coding schemes for analyzing verbal and non-verbal behavior are reviewed. A step by step approach is presented for doing this type of research. As well, the data analysis and interpretation of data in this form is discussed.

In the last decade, naturalistic observation of marital and family interaction has become increasingly popular as a research approach among family scholars. Filsinger (1981) attributes this increase in popularity to " . . . a movement towards measuring behavior rather than attitudes, the need for better diagnostic and assessment techniques in marital therapy, and the increasing belief that marital distress arises from dysfunctional patterns of interaction between the spouses." (1981:1) To these reasons for the attractiveness of the naturalistic approach should be added the advantages of remaining close to a description of family reality. The development of detailed quantitative coding schemes for verbal and non-verbal behavior has facilitated the close recording of actual interactional behavior. Furthermore, the use of video tapes in conjuction with these coding schemes has allowed for a relatively unobtrusive technique for date acquisition which makes possible the multiple observation of the same behavioral sequence. Thus, not only are these observational techniques closer to the reality of the interaction but they also aid the researcher in the assessment of the validity and reliability of the data. Clearly, the naturalistic observational approach offers distinct advantages for both family scientists and practitioners.

Naturalistic research, in general, may be defined as " . . . studying behavior as it would have occurred in the ordinary way and in the circumstances that would have spontaneously given rise to it." (Kidder, 1981: 264) Of course, this definition ignores the insurmountable problem that to observe behavior means to change it. There is an analogous problem in micro-physics where either the mass or energy of the observer affects the observation of micro particles. In the realm of marital interation it is quite the same. Undoubtedly a married couple interact somewhat differently whether being directly observed by a researcher or video-taped. If we accept that naturalistic research is to capture the "ordinary way" of doing things, then, any research will only approximate this ideal and it would never be fully attained.

Tunnell (1977) offers a different and, perhaps, more realistic portrait of naturalistic research. Tunnell divides research into three dimensions of naturalness. First, there is **natural behavior** which is behavior ". . . that is not established or maintained for the sole or primary purpose of conducting research; the behavior is part of the person's existing response repertoire". (1977:426) Natural behavior functions as a dependent variable or as descriptive information. The second dimension is the **natural setting.** The natural setting refers to the ". . . context outside the lab to which the person is naturally exposed." (Tunnell, 1977:427) It is the background and situation which is most often gathered as survey type information. Lastly, Tunnell lists natural treatment as the third dimension of naturalistic research. Tunnell defines **natural treatment** as ". . . a natural, discrete event, temporally bounded, that would have occurred without the researcher's presence." (1977:427) This naturally occurring event is most often treated as the independent variable in naturalistic field experiments.

Although Tunnell's discussion of these three dimensions of naturalistic research are worthy of further discussion and elaboration, the major concern in this paper is to examine research into the dimension of natural behavior. In terms of marital interaction, emphasizing the natural behavioral dimension would yield a map of the marital interaction over time; in other words, a marital topography.

Marital topography is a term used previously by Gottman, Markham and Notarius (1977); Gottman (1979); and White (1980). To understand the relevance of the term 'map' of marital interaction, it may be helpful to imagine a two dimenional space with time on one axis and some measure of marital interaction such as degree of positive affect on the other axis. If measurement is continuous over time then the result would be a map of the affective relationship between spouses over the time frame of the study. In actuality, family researchers usually measure several factors in the marital relationship so that the space is multi-dimensional rather than two dimensional as in the present example. However, the idea is the same, and, that is to gain a detailed description of the marital interaction over time. This notion of marital topography can be expanded to families, however, to date most of the research effort has concentrated on marital interaction.

The advantages to using naturalistic observation in the production of marital topography are several. First, and most obviously, naturalistic observation keeps the description as close as possible to the ordinary interaction patterns of the couple. Secondly, due to the unobstrusive aspect of naturalistic observations and preservation of ordinary interaction there is greater generalizability of the research findings to real life marital interaction. And, thirdly, the detailed information gained may aid in the discovery of important empirical relationships. In fact, one of the major uses of marital topography thus far has been in the identification of patterns of interaction (Gottman, Markman and Notarius, 197; Gottman, 199; White, 1980; Gottman and Porterfield, 1981). Much of this work owes a debt to the seminal work by Watzlawick, Beavin and Jackson (1967), however, the recent developments in coding schemes, especially in the area of nonverbal behavior, have resulted in much more sensitve and systematic marital topographies in the more recent works.

Problems of Reliability, Validity and Ethics

Regardless of the sophistication in evidence in recent marital topographies, the problems of reliability, validity and ethics still confront the researcher in this area. This is not to say that these problems have been ignored but rather that the area of naturalistic research calls for some special treatment of these issues. And, it is this special treatment of these issues which is briefly

discussed below.

Reliability

Classical measurement theory assumes that a reliable measure is one that does not fluctuate from moment to moment. Kerlinger (1964) points out that reliability has two components: the stability of the measure and the accuracy of the measure. Hollenbeck (1978) approaches these dimensions of stability and accuracy in terms of the observer's influence on reliability and the influence of the scoring system.

Hollenbeck (1978) identifies three types of observer bias in observational research. An observer may contribute to measurement error by failing to record a behavior (omission), by recording a behavior that did not occur (commission) and by the observer communicating expectations to the subjects in such a way as to produce behavior in the subjects. Errors resulting from omission and commission can be assessed by successive recodings of behavioral sequences by independent observers'. This assessment is usually reported as intercoder agreement and is facilitated by the use of video-tapes rather than **in vivo** observation. The errors resulting from the communication of observer expectations to the subjects are more difficult to identify. This experimenter bias is likely to be systematic, that is, to produce effects in one direction rather than random effects. The scoring system influences on reliability are mainly due to the complexity and detail in the coding system. The more detailed or complex the scoring system then the more decisions an observer must make. The researcher must make some difficult decisions as to the coding scheme that will give sufficiently detailed information to address the research question while at the same time being as simple as possible. The current technique used to deal with this problem as well as some others is to extensively train coders until intercoder agreement is very high. However, even this approach is not free of difficulties.

Hollenbeck (1978) cites seven different indicators of intercoder agreement. The type of agreement statistic used depends on the level of measurement and the properties of the scoring system. Gottman (1979) has correctly pointed out that the most commonly used agreement statistic which is simply the agreements divided by the agreements-plus-disagreements ignores the percentage of agreements one would get by chance. Hollenbeck (1978) proposes using Cohen's Kappa statistic to remove this chance agreement from the proportion of inter-coder agreement.

It is beyond the scope of the present paper to analyze all the various statistics used in the assessment of inter-coder reliability. And, in general, it would seem that researchers must to a large extent develop reliability coefficients based on their research methods, the particular coding scheme used and whether or not they choose a recording technique such as video-tapes which allow repeated observations by independent coders rather than **in vivo** techniques.

To help put the present status of reliability discussions in perspective, Hollenbeck reports that

> Susman, Peters, and Heward (1976) examined 15 journals in child development, clinical, and educational areas of research for reports of naturalistic or observation child studies in the last 16 years. They found that 32% of all authors failed to report any estimate of reliability.

and,

> Susman et al, also found no increase in the use of more stringent or more sophisticated reliability assessments in the 16 years studied. This failure to apply reliability concepts on a practical level reflects the theoretical confusion about the concept of reliability in observation research.
>
> (1978:81)

Validity

The classical definition of the validity of a measure is that a valid measure is one that taps the construct that is intended to be measured. The topic of validity has been broken into many sub-types of validity by various scholars. However, a joint committee composed of the American Psychological Association, the American Educational Research Association and the National Council on Measurement Used in Education has identified three types of validity: content validity, criterion validity and construct validity. Most researchers believe that construct validity is of the greatest importance of these three (Kerlinger, 1964). Construct validity most directly confronts the relation between the measure and the construct it is intended to measure. Kerlinger (1964) develops two criterion for assessing construct validity. The first is that there must be a convergence of evidence from diverse groups that would support the claim that a measure is measuring the same construct. And, secondly, the measure must be capable of discriminating between the construct it intends to measure and other alternative constructs.

In naturalistic observation using coding schemes it is often possible to pursue construct validity in several ways. For example, if a sequence of marital interaction codes non-verbal behavior as very affectually positive then we might expect that there would be few instances of negative verbal behavior during this sequence. In terms of convergence, Ekman's Facial Affect Scoring Technique (FAST) was investigated by showing respondents in different cultures drawings and pictures of faces and examining the convergence in the encoding of these pictures by respondents.

A recent development in both the areas of validity and reliability assessment has been the conception that both are simply forms of generalizability. Generalizability theory (Cronback, et al., 1972), as it is called, is viewed as a unifying conception of these two areas. Gottman (1979) asserts that "... validity is simply a slightly differ-

ent kind of generalization." (1979:85) Although Cronback et al. (1972) present this case using analysis of variance models, it, perhaps, is most clearly demonstrated in the Multitrait-multimethod technique of Cambell and Fiske (1959) which yields correlations for convergent validity and discriminant validity. Regardless of these advances, it still seems that asking the old question "Does a measure actually tap the construct it is supposed to measure?" helps to sensitize researchers to the theoretical rationales for using a measure to tap a theoretical construct. And, it must be kept in mind that the scientific audience must be convinced by the researcher of the plausibility and reasonableness of the connection between a theoretical construct and the measure of that construct.

Ethics

The ethical problems which confront the researcher doing naturalistic observation are somewhat different from those problems confronting the researcher doing survey research by means of questionnaires or interviews. The major difference is in the goal of naturalistic observation. Since naturalistic observation seeks to observe natural behaviors with a minimum of observer effect, these unobstrusive techniques may mean that the people being observed might not be aware of the observation. Even if they are aware of being observed, they may not be aware of how detailed the observations could be or the implications of those observations.

In general, though, researchers are guided by the principles of informed consent and the right of subjects to withdraw from the study at any time without penalty. The second principle raises some interesting and, often, unresolved problems with videotapes. For example, how long should videotapes of marital interaction be stored? Should respondents be informed as to when tapes will be destroyed? An interesting development in this regard is the trend for some funding agencies (S.S.H.R.C.) to regard data collected as in the public domain

after two years from the commencement of research. This places the naturalistic researcher with detailed data or video-tapes in a bind in that the data may be so detailed as to allow for the ready identification of subjects, and, hence, violating anonymity. Many of the ethical questions in regard to naturalistic observation are just beginning to be formulated and we can expect to see a different set of ethical guidelines developed for this type of research from those developed for questionnaire surveys and laboratory research.

Doing Marital Topography

The naturalistic observation of marital interaction involves several steps in the planning, collection and analysis of data. Sackett, Gluck and Ruppenthal (1978) and Kidder (1981) have outlined the various steps in doing naturalistic observation. The discussion that follows shares some concerns with these previous authors though the steps in doing marital topography diverge from these other authors in several ways. Most notably the steps in marital topography presented here emphasize the role and assumptions used in the use of verbal and non-verbal coding schemes. As well, certain elements of research design in marital topography can be more clearly elaborated than in the more general approach to naturalistic observation.

Step One — The Research Question

The research question should be carefully and completely delineated. This step in doing marital topography may involve the testing of a theory, filling in gaps in the empirical literature, assessing the present status of a marital relationship for diagnostic purposes or measuring changes in a marital relationship which might be due to counselling or therapy. Whatever the research focus, it is at this point that a body of concepts or theoretical perspective must be identified. For example, if the researcher wishes to focus on the communication in a marriage then the concepts which will make

the study interpretable should be identified. Perhaps concepts from information theory such as redundancy, communication efficiency and the notion of sender-receiver would be identified as concepts for such a study. These concepts must be carefully defined so that at later stages they can be operationalized and the validity of these operational measures for these concepts can be argued.

In general, the focus of the research question will determine what behaviors are to be included as part of the study and which behaviors will be excluded. For example, if the researcher identified the construct of interpersonal attraction it is doubtful that he or she would be interested in measuring galvanic skin response. Every study focuses on some constructs and some behaviors to the exclusion of others.

Step Two — Research Design

The research design is largely determined by the particular research question. However, there are some elements of marital topography that are in general common to most studies of this type.

The most basic element in formulating a research design is to operationalize theoretical constructs so that they have corresponding and valid measures. A construct such as dominance may be operationalized as the spouse who interupts, talks the most, and receives deferential non-verbal behavior from the other. A construct such as channels of communication may be defined as verbal behavior, facial expressions, body movements, and voice qualities. Then, of course, an argument must be made to justify these operations as valid measures of the construct.

A second component of the research design common to most marital topography is eliciting the interaction between spouses. The most commonly used approach is to give both spouses questionnaires containing questions salient to the research focus. The spouses complete the questionnaires separately and without collusion. The researcher then examines the items for differences in

response. The response differences are then revealed to the couple and they are asked to discuss their difference until they reach either a resolution or impasse. This technique has been used by Gottman, Markman and Notarius (1977) and White (1980). There are other, more task oriented approaches (Gottman and Porterfield, 1981), however, the revealed differences approach allows a maximum of natural interaction while still not leaving the married couple with the total lack of structure that would result in frustration.

The research design that would seem appropriate to most marital topography is a factorial design composed of the measures of behavior such as positive affect, dominance, etc. and time. It is also usually the case that treatments of some sort would be a factor in the design. For example, the treatment could be composed of clinical and non-clinical marriages, or, disturbed and non-disturbed marriages. In marital counselling, the counsellor may be interested in comparing measures before and after treatment, counselling or a communication course in order to assess actual changes in marital interaction. This type of design may be visualized as a three dimensional figure where the measures, treatments and time are each considered as factors.

In reality there are more factors since the measures themselves can be various behavioral dimensions such as verbal and non-verbal.

Step Three — Selection of Recording Device and Encoding Scheme

An encoding scheme is composed of the categories into which certain behaviors will be slotted and counted. For example, a smile may be encoded as positive affect and a frown as negative affect. The selection of an encoding scheme depends on the research question and the constructs under investigation. In general, then, the encoding scheme selection would be considered as part of the operationalization of concepts. However, in marital topography the encoding scheme plays such a vital role that it demands consideration by itself.

But, before discussing encoding schemes the researcher must decide on the type of observation to be used. The observation may take either of two forms, **in vivo** observation or video tape. Recent technological advances in hand-held recording devices such as Datamyte have increased the speed, accuracy and reliability of **in vivo** observations. The major advantage to **in vivo** techniques is that they allow observation in a natural setting. The major disadvantages to **in vivo** techniques are that they place the observer with his recording device in the interactional setting as a constant reminder of the observation and, that unlike video tapes, the same behavioral sequences cannot be recorded by independent observers for reliability without detracting from the naturalness of the behaviors.

The argument for the **in vivo** technique that it is performed in the natural setting supposes that a foreign place equipped with video tape recorders will have a significant impact on the naturalness of behaviors and, thus, the generalizability of the research. Almost no research has been done to answer this question. However, Gottman (1979) compared a small sample of couples for interactional differences at home and in a laboratory setting. He reports that couples tend to be more positive to one another in the laboratory setting. So if there are biases they would appear to be on the positive side in the laboratory and the negative side in the home setting. (Gottman 1979:237-248)

The choice of an encoding scheme is influenced by whether observations are to be **in vivo** or video taped. The **in vivo** approach required fewer and more molar categories since the observer cannot stop the interaction as with video recordings. As well, there are fewer encoding schemes devised for use with hand-held recording devices than are available for encoding video records.

It is an impossible task in such a general review of this methodological orientation, marital topography, to present an in depth

comparison and review of the extant encoding schemes. Filsinger (1981) and Filsinger and Lewis (1981) provide a more in depth discussion of this area. For the present purpose, a more general overview of the area should serve to acquaint the reader with the possible options available.

Filsinger (1981) identifies five coding schemes designed particularly for the encoding of marital interaction. Although several other coding schemes exist, the five reviewed by Filsinger target marital interaction as the focus behavior rather than a more general focus.

The Marital Interaction Coding System (M.I.C.S.) was designed by Hops, Mills, Patterson and Weiss (1972). This coding scheme focuses specifically on marital distress from a behavioristic tradition. Its coding categories contain such labels as agreement, compliance, approval, criticism, put down, and compromise. This coding scheme has been used extensively by researchers and validity and reliability assessments have been carried out. According to Filsinger (1981) one of the major criticisms of this scheme is that it confuses verbal and non-verbal channels of communication.

A second coding scheme cited by Filsinger (1981) is the Couple's Interaction Scoring System (C.I.S.S.) designed by Gottman, et al. (1977). Whereas, the Hops, et al. scheme is rooted in a behavioristic approach, the C.I.S.S. is founded on principles from communication theory. In order to separate verbal from non-verbal channels of communication Gottman and his associates rely on the type of assumptions made by Watzlawick, Beavin and Jackson (1967) in the *Pragmatics of Human Communication*. The coding categories are similar to the M.I.C.S. but more extensive. As well, the additional coding categories contain meta-communication codes, summarizing self and other, and relationship talk. The non-verbal section of the C.I.S.S. is one of the most thorough and detailed. One of the major drawbacks with this scheme is that Gottman, Markman and Notarius (1977) report

that twenty-eight hours are needed to code one hour of video recording. However, if empirical richness and detail are desired, this scheme offers both at the expense of coding time.

Filsinger (1980) has designed the Dyadic Interaction Scoring Code (D.I.S.C.). This coding scheme is relatively new and may be expanded with time. It is not as extensive as the C.I.S.S., however, it does contain some previously unused coding categories such as goal orientation and references to drugs. Of the five coding schemes reviewed by Filsinger (1981) and overviewed here, D.I.S.C. is the only one to be compatible with Datamytes and, hence, the most adaptable to **in vivo** observations.

The fourth coding system is the Marital and Family Interaction Coding System (M.F.I.C.S.) designed by Olson and Ryder (1978). As Filsinger (1981) correctly note, this coding scheme is restricted in that it is designed for use in rather structured task oriented situations. Unlike the previous systems it is designed for use with only audio recordings of interaction. As a result, the researcher using this scheme would not be tapping the visual aspects of non-verbal behavior that many other researchers consider to be so valuable in marital topography.

The last coding scheme to be discussed is the Coding Scheme for Interpersonal Conflict (C.S.I.C.) designed by Raush, Barry, Hertel and Swain (1974). This coding system predates the other systems. The coding categories of the C.S.I.C. are not founded on ethological and ethnographic research as the C.I.S.S. but, rather, tend to employ more intuitive and psychoanlytic categories such as denial and recognition. Since the coding categories are more intuitive, this sytem relies on the training of coders for its reliability. It tends to focus mainly on marital conflicts.

These five coding schemes leave the researcher of marital interaction with a broad range of options. The researcher may choose a coding scheme that is suitable for video taped records of behavior or **in vivo**

observation. As well, there is the choice of analyzing just audio portions of interaction or audio and visual. The researcher may choose a coding scheme that has been previously assessed for reliability and validity like the M.I.C.S. or C.I.S.S. or one that has not. These are all major decisions in the research process and the present overview is not extensive enough to guide each researcher with his or her particular interests in the selection of the appropriate coding scheme. A more detailed review of these coding schemes is Filsinger (1981) "Implications in the Choice of Marital Observation Coding Systems: A User's Guide" and it is recommended that researchers consult this more in depth review to aid them in their selection decisions.

Step Four — Sampling Units

There are two aspects to sampling involved in marital topography. First, there is the issue of whether the research design dictates comparisons within or between couples. Secondly, there is the issue of which time units to sample from the stream of interactional behaviors.

The research design of any particular study should inform the researcher of marital interaction as to the sample size or how many couples are to be included in the research. Marital topography emphasizes the description of detailed interaction between two spouses, thus, most researchers would emphasize the richness of this description for a small number of couples rather than a large sample. Gottman (1973) has typified this research as "N of one" and "N of two" research. The researcher is interested more in sampling a large number of time points in the interaction than he or she is interested in generaizing to all married couples. "N of two" research allows for the comparison of interactional sequences between two couples where one might be classified as clinical and the other non-clinical. However, the major aim of this type of sampling is to maximize data within the couple's interaction. This descriptive richness is assumed to

pay off in terms of the identification of patterns of interaction.

In the long run, however, the patterns of interaction in marriage must be compared between couples and where the sample size is more representative of a general population. But this type of research may wait until the small scale analysis has resulted in the identification of seemingly ubiquitous effects in marital interaction and well defined theoretical propositions. Gottman and his associates (1977, 1979, 1981) have already moved their research to more representative samples in order to assess the effects of various patterns of interaction. But, for the purposes of assessing the effects of treatment on a specific married couple, the N of one design remains most applicable.

The second sampling issue is the sampling of time units in the interaction. Kidder (1981) identifies three different types of time sampling: time-point sampling, time-interval sampling and continuous real time sampling (1981:270). Time-point sampling is where measurements are taken on the variable at particular time points separated by a given interval. For example, measurements might be taken on the 10th second of each ten second interal. In this type of sampling the measurement could be performed on a frozen frame of a video tape. Time-interval sampling is where measurements are recorded on a particular time interval. If a behavior occurs during this interval it is measured only once.

Sackett (1978) has proposed what is called "continuous real time measurement." With this approach, measurement is continuous over an observational sequence and the frequency and duration of specific behaviors are measured. Perhaps the major advantage to this technique is that it allows the computation of frequency and duration of behavior as dependent on the other person's frequency and duration of behavior. For example, if a husband behaves affectionately with his wife we can ascertain when this behavior is reciprocated and at what rate. Presently, frequency and dura-

tion are the most useful measures of behavior but at some point the intensity of behavior may prove to be measurable as well.

Step Five — Training Coders

In all observational research the personnel who will use the coding scheme to encode the behaviors recorded on video tape or observed in vivo must be trained. Some coding schemes include manuals for training coders such as the C.I.S.S. The training of coders typically entails several lecture sessions on the application of the coding scheme and many hours of practice on dummy video tapes. During the practice coding sessions, inter-coder, intra-coder and coder criterion reliability are assessed until at least levels of 85% to 90% agreement are attained. It is crucial that the encoding be compared with the criterion encoding to assure that validity is maintained.

Once coders begin the process of encoding actual data tapes there should be checks on coder reliability so that the effects of coder fatigue and decay can be minimized. Coder tasks can be switched about so that fatigue is somewhat delayed. A coder coding audio portions can be switched to video encoding as a change of pace as long as reliability is monitored.

Step Six — Data Analysis

Though the particular form of data analysis depends on the research question, there are at least two issues which will confront any researcher doing marital topography. One issue is that of analyzing data from various communication channels. The other issue is the analysis of interactional patterns.

Marital topography typically yields data from many channels of communication. How these channels are conceptualized depends largely on the theoretical assumptions of the researcher in regard to interaction and communication and the coding scheme employed in the study. One general scheme that might be useful to researchers is represented in the diagram below.

In this diagram, which closely follows both the work by Mehrabian (1972) and Gottman (1979) there are four channels of communication; verbal content, voice, facial expression, and body movements. Although all of these may be recorded on the video tape, for purposes of encoding by coders they should be transformed into three separate forms; a videotape without sound for the face and body movement, an audiotape used for inflection and intonation, and a verbatim typed transcript used to en-
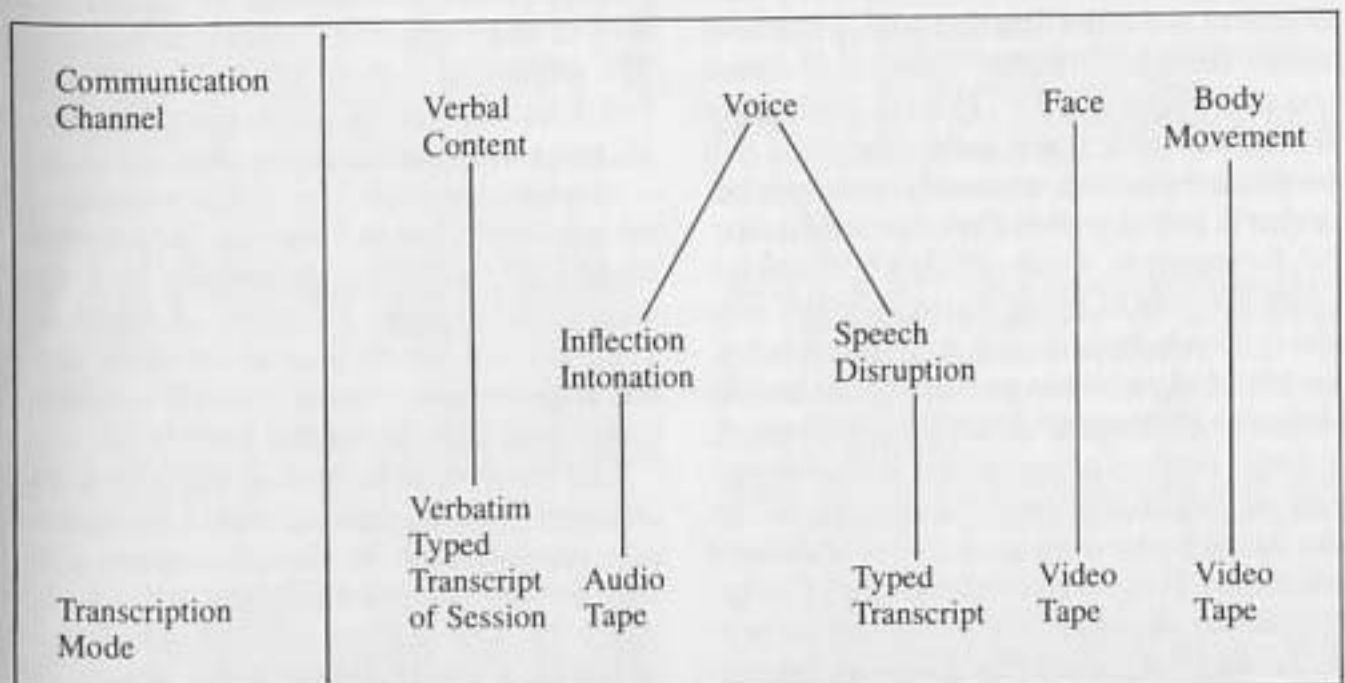

Diagram #1: Communication Channel and Transcription Mode

code the semantic content and speech disruptions.

Since the encoding of the transcriptions are independent of one another, any association between the encoding of the three transcription modes should yield a measure of the degree of consistency in the message the person was sending. For example, an efficient communicator would send a message consistent across channels or modes of transcription. In other words, if a husband verbalizes that he loves his wife it would be consistent if the voice, face and body movements carried affectually positive messages. An example of an inconsistent message would be where a person verbalizes to another for them to "stay out of this room" while gesturing them to enter. So, if the researcher keeps the encoding of these channels of communication independent by means of the three modes of transcription, then, the communication efficiency of a message can be assessed in the data analysis. Whether or not this is conceptualized as a "double-bind", communication efficiency or the amount of redundancy in a message is the choice of the researcher and his or her theoretical orientation.

The second issue in the analysis of marital interaction data is the identification of interactional patterns. The most commonly used notion of what an interactional pattern is comes from information theory (see Shannon and Weaver, 1949). In this conceptualization, an interactional pattern between two people is treated as where one person's behavior is contingent on the other's behavior. So, for example, if every time a husband accuses his wife of being inadequate sexually she responds by accusing him of infidelity, we could say that the probability of her response is contingent on his prior statement. It is this method of analysis, i.e. contingencies or conditional probabilities, by which the identification of patterns of behavior proceeds. Thus, if over the length of an interactional sequence a behavior can be predicted more accurately by knowing the other's prior behavior then there is an

interactional pattern.

Although the notion of conditional probabilities in the identification of interactional patterns is relatively straight forward, the actual analysis of real data is more complex. The major reason for the added complexity is that person B may not respond to what person A says or does immediately. Rather, the response to what person A says or does may be delayed or it may be developmental or it may accumulate to a threshold and then the reaction takes place. The procedure for dealing with this situation is for the researcher not to merely examine immediate effects of one behavior on another but to search for lagged effects which may occur at several time points down the interactional stream. It is exactly this type of analysis that Gottman and his associates (1977, 1979) have pursued in their studies of marital interaction.

Implications of Marital Topography

The use of naturalistic observation in the study of marital interaction, i.e. marital topography, is an alternative research strategy to more traditional approaches such as questionnaires and surveys. Some family researchers have expressed concern about the paucity of truly interactional research in the area of marriage and family relationships. The increasing popularity of marital topography and naturalistic observation in general, promises to address this concern.

Marital topography may fill in some of the gaps in theory and research between the studies of individual personality and the more macroscopic interests of surveys. Theoretically it may lead to the identification of patterns in marriage which are associated with dissolution and pathology.

The strength of marital topography is its descriptive detail and richness. However, this very strength is also its weakness in that, to date, marital topographies have not produced well defined and elaborated theory. One inherent danger in the wealth of empirical data such topographies provide, is

that researchers may be too emersed in this empirical richness to articulate high level generalizations of a theoretical nature. However, even if this methodology does not eventuate in the production of theory it, nonetheless, provides a systematic approach for the testing of propositions from existing interactional theories such as exchange theory (Gottman, Markman and Notarius, 1977).

The decade of the '80s will probably witness significant increases in this type of research. The promise of insights and theory resulting from this approach can only be judged after many more researchers and practitioners have joined in the enterprise of the detailed and systematic investigation of marital interaction.

RESUME

L'article présente l'analyse topographique de l'interaction maritale comme une stratégie alternative de recherche par rapport aux techniques plus traditionnelles d'entrevues et de questionnaires. On explique les postulats de base, les problèmes et les avantages de cette forme d'observation naturelle. On revoit les schèmes courants de codage du comportement verbal et non-verbal. On présente une approche étape par étape pour faire ce type de recherche. On discute aussi du problème de l'analyse et de l'interprétation des résultats.

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