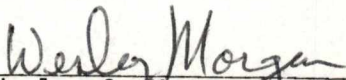
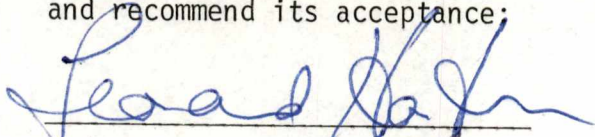
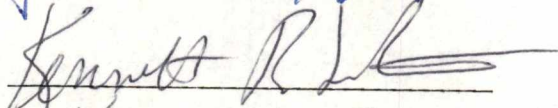


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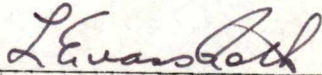
I am submitting herewith a dissertation written by Larry Herbert Brown entitled "Faulty Reasoning Processes within Verbalizations of Non-Psychotic Psychotherapy Patients." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.


Wesley G. Morgan, Major Professor

We have read this dissertation
and recommend its acceptance:



Kathleen A. Emmett

Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

FAULTY REASONING PROCESSES WITHIN VERBALIZATIONS
OF NON-PSYCHOTIC PSYCHOTHERAPY PATIENTS

A Dissertation
Presented for the
Doctor of Philosophy
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ABSTRACT

This research describes an attempt to develop and demonstrate a practical system for categorizing types of reasoning errors, taking advantage of the philosophical literature concerning reasoning fallacies. This literature has previously been neglected in the cognitive-behavioral literature despite expressed interest in irrationality as an aspect of psychological dysfunction. The proposed categorization system can be clinically applied toward better understanding cognitive processes in a wide range of types and degrees of psychological dysfunction, and consists of fifteen types of reasoning errors (arranged into eight groupings) which indicate faulty reasoning processes rather than specific cognitive content. The practicality of the categorization system as a clinically relevant rating scale is evaluated through methodology involving the rating of reasoning errors verbalized by patients during psychotherapy interviews. Results of this research support the conclusion that the following goals have been fulfilled: (1) Expansion of the number of types of errors in reasoning within the psychological literature; (2) Demonstration of the overt presence of errors in reasoning within a non-psychotic sample; (3) Demonstration that such errors occur within the context of a "normal" psychotherapeutic interview in which the elicitation of errors in reasoning is neither a special nor a primary concern of the interviewer; (4) Illustration of the potential clinical relevance of such errors in reasoning with regard to the assessment of psychological disturbance. The other goal of this research, that of demonstration of conceptual clarity of

the proposed typology of faulty reasoning via interrater agreement was partially suggested, but not substantially fulfilled.

TABLE OF CONTENTS

CHAPTER	PAGE
I. REVIEW OF THE LITERATURE	1
II. DEVELOPING A TYPOLOGY OF FAULTY REASONING PROCESSES. . . .	20
III. RESEARCH DESIGN.	58
IV. RESULTS.	66
V. DISCUSSION	97
LIST OF REFERENCES	120
APPENDIX	124
VITA	126

CHAPTER I

REVIEW OF THE LITERATURE

A cognitive approach to human psychological functioning and dysfunctioning has long been of interest to psychologists of various theoretical emphases and orientations. Traditionally, however, behavioristic literature has avoided discussing intrapsychic events, i.e., "mediating variables." This restriction of focus seems to be changing. Over the last several years, increasing interest has been devoted to legitimizing and employing cognitions and cognitive variables as viable data within an expressly behavioristic approach to human psychological functioning. This interest is evidenced in research and theoretical discussions concerning a variety of subjects, including self-instruction, covert reinforcement, imagery, problem solving, faulty thinking, etc. Five books have been published since 1974 specifically concerned with cognitive behavior modification (Beck, 1976; Foreyt and Rathjen, 1978; Mahoney, 1974; Meichenbaum, 1974, 1977) and a journal on the subject began publishing in 1977 (Cognitive Therapy and Research). In addition to the above texts, Albert Ellis' work on irrational beliefs and rational-emotive therapy is considered to be an important contribution to this emerging cognitive-behavioral orientation.

The interest in cognition cited above may be considered a focusing upon one of three broad areas of human functioning typically differentiated by psychotherapists and psychodiagnosticians. These interrelated areas are affect (feelings), behavior (acting), and cognition (thinking). Thinking involves the performance of various

cognitive activities, including judging, abstracting, conceiving, imagining, remembering, anticipating, etc. Reasoning is also one of these activities and involves processes of inference, or arriving at conclusions. One definition of reasoning found spoke of an ability "to deduce inferences from facts or from propositions." Another described reasoning as a "process whereby, on the basis of one or more judgments a person reaches another judgment regarded as proved or established by the former." Reasoning involves processes of arriving at a belief on the basis of evidence or of justifying one's beliefs by reference to other evidence.

Psychodiagnostically, disturbances in reasoning are also viewed as one example of a variety of disturbances in thinking. The following are all considered to be thought disturbances: peculiar or bizarre ideas, vague stream of thought, concrete thinking, loose associations, illogical thinking, incoherence, neologisms, delusions, hallucinations, circumstantial thinking, tangential thinking, etc. Disturbances in reasoning may be generally defined as disturbances in a person's ability to attend to, organize, or consider evidence in arriving at conclusions about his world. As Beck (1976) describes disturbances in reasoning, "(a person's) system of making inferences or drawing conclusions from his observations is at fault."

One aspect of the developing clinical interest in cognition has been an interest in the relationship between faulty reasoning and abnormality. Albert Ellis and Aaron Beck have been most influential in the literature, with specific contributions also being made by Arnold Lazarus. The work of these three authors in this area provide

an overview of the attention given to faulty reasoning within the context of cognitive therapies.

Albert Ellis (1962, 1971, 1973) has developed a widely recognized and utilized form of psychotherapy based upon his contention that a patient's "emotional or psychological disturbances are largely a result of his thinking illogically or irrationally" (Ellis, 1962). He cites ten specific beliefs which he considers to be irrational ideas that are causes of abnormality. Ellis (1975) lists these ten Irrational Ideas as:

1. the idea that one must have love or approval from all the people one finds significant;
2. the idea that one must be thoroughly competent, adequate, and achieving, or that one must at least have competence or talent in some important area;
3. the idea that when a person acts obnoxiously and unfairly, one should blame and damn them, and view them as bad, wicked or rotten individuals;
4. the idea that one has to view things as awful, terrible, horrible, and catastrophic when you get seriously frustrated, treated unfairly, or rejected;
5. the idea that emotional misery comes from external pressures and that one has little ability to control or change one's feelings;
6. the idea that if something seems dangerous or fearsome, one must preoccupy oneself with and become anxious about it;
7. the idea that one can more easily avoid facing many life difficulties and self-responsibilities than undertake more rewarding forms of self-discipline;
8. the idea that one's past remains all-important and that because something once strongly influenced one's life, it has to keep determining one's feelings and behavior today;
9. the idea that people and things should turn out better than they do and that one must view it as awful and horrible if one does not find good solutions to life's grim realities;
10. the idea that one can achieve maximum human happiness by inertia and inaction or by passively and uncommittedly "enjoying oneself."

Ellis considers the above beliefs to be irrational due to their definitional nature, being a priori rather than subject to evidence and experience. All-or-none thinking is also predominant, especially in

Irrational Ideas numbers 1, 2, 3, 4, and 9, in which rigid conditions of regard for self, other, or world are accepted. This is a process which Ellis describes as "catastrophizing," believing that if an ideal is not met by the reality, then the reality is awful. Perhaps most important is the emphasis placed upon the maladaptive aspects of the beliefs cited as irrational. Ellis seems most impressed by the self-defeating effects of an idea rather than the faulty reasoning exhibited by it. He does present each of the ideas, though, as both poorly reasoned and grossly maladaptive.

Aaron Beck (1963, 1967, 1970, 1976), as a result of his work with non-psychotic depressed patients, has concluded that disordered reasoning is present in any psychological disturbance, and that the nature and content of that faulty reasoning is a critical aspect of the patient's abnormality. Like Ellis, he presents the task of the cognitive therapist as helping the patient to identify and modify his irrational ideas. "Once the patient is able to 'objectify' his thoughts, he is ready for the later stages of reality testing: applying rules of evidence and logic and considering alternative explanations" (Beck, 1970). Unlike Ellis, Beck explicitly concerns himself with the processes of faulty reasoning in addition to the content of an irrational belief. Beck (1976) proposes that individuals, in responding to their world, apply idiosyncratic rules of inference which are consistent over time and between situations. This personal logic mediates between events and a person's response to events, and determines the character of the response. These rules, however, are often unavailable to conscious awareness, and one's emotions, conclusions, actions, and perceptions thus acquire an "automatic"

quality. Maladaptive personality patterns arise from illogical rules of inference.

Beck (1963) describes the following types of faulty reasoning as relevant to understanding abnormality.

1. Arbitrary Inference: "forming an interpretation of a situation, event, or experience when there is no factual evidence to support the conclusion or when the conclusion is contrary to evidence."

2. Selective Abstraction: "focusing on a detail taken out of context, ignoring other more salient features of the situation, and conceptualizing the whole experience on the basis of this element."

3. Overgeneralization: "drawing a general conclusion on the basis of a single incident."

4. Magnification: "exaggeration of the intensity or significance of a traumatic event."

5. Inexact Labeling: "affective reaction is proportional to the distorted descriptive labeling of the event rather than to the actual intensity of a traumatic situation."

Beck (1970) later also introduced the category of

6. Cognitive Deficiency: "disregard for an important aspect of a life situation. Patients with this defect ignore, fail to integrate, or do not utilize information derived from experience."

Note that Beck's categories are presented as describing faulty reasoning processes, whereas Ellis' categories are presented as describing faultily reasoned cognitive content.

Arnold Lazarus (1971) also considers faulty reasoning an important aspect of abnormality, and he has suggested several other categories of faulty reasoning in addition to those proposed by Ellis and

Beck. Dichotomous Reasoning involves thinking in black and white terms, not recognizing gray areas. A position is right or wrong, an action is good or evil, etc. Excessive Reliance on Other People's Judgment involves dependence upon or over concern with the opinions of others. Enculturation and Oversocialization involves considering cultural values as absolutes rather than relative. Lazarus offers these as supplementing the categories of Ellis and Beck rather than being comprehensive in themselves. As with Beck, Lazarus' categories are process rather than content categories.

Mention was made earlier of the different possible emphases upon either cognitive content or process. In discussions of faulty reasoning, however, relatively little differentiation has been made between thought process and thought content. Consider the following hypothetical example of a patient's verbalization: "My father was cruel. My husband was cruel. All men are cruel." An interest in content would lead one to focus upon the conclusive statement that "all men are cruel" as irrational. An interest in process would lead one to focus upon the faulty method of arriving at the conclusion, X_1 is Y, X_2 is Y, therefore all $X_1 \dots X_i$ are Y. Albert Ellis' discussions of faulty reasoning primarily concern cognitive content, ideas and beliefs. Aaron Beck's discussions of faulty reasoning primarily concern cognitive processes, types of logical fallacies. Ellis might consider the above example to be irrational in that the conclusion is definitional, self-defeating, and unlikely to be confirmed by one's continued experience. Beck might consider the above example to be irrational in that the process of arriving at a conclusion from the stated premises involves an overgeneralization.

While much research has been undertaken regarding irrational content (or, at least, Ellis' Irrational Ideas), very little research has concerned irrational process. Beck's conclusions are largely based upon his observations and handwritten notes of therapy sessions with various patients over several years time (Beck, 1963). Lazarus' additional comments are similarly based solely upon clinical experiences. The data from which their conclusions were drawn were private and thus unavailable for review. There is thus a need for basic research which will publicly demonstrate the unelicited occurrence of faulty reasoning processes in persons exhibiting psychological disturbance.

Concentrating on faulty reasoning process rather than on content promises to be especially fruitful in that it allows for a broad range of data being accounted for without either an equally broad range of conceptual categories or an artificial reduction of such categories that would require a force-fit approach to the data. This is implicit in Beck's statement that

although each nosological group showed particular types of thought content specific for that group, the formal characteristics and processes of distortion involved in the idiosyncratic ideation were similar for each of these nosological categories (Beck, 1963).

Specifically, a large number of irrational ideas (content) could be accurately and efficiently categorized as involving one faulty reasoning process, e.g., overgeneralization. A patient's explicit verbalizations could be analyzed as to the soundness of the reasoning exhibited with any deviation from rationality identified by specific type, and without any omission or distortion of the exact idiosyncratic content.

An approach to faulty reasoning which focuses primarily on content, rather than process, requires proposing general categories of beliefs which are demonstrably irrational. Specific beliefs are then deemed irrational in so far as they include or imply or provide an instance of the general categories. Such a content categorization system would have to be very elaborate in order to be exhaustive of the extensive range of irrational content possible. Such a system could be limited by listing only the most diagnostically relevant or salient irrational beliefs expected, but would then lose flexibility and richness in attempting idiographic assessment.

It is this tactic of limiting content categories which Albert Ellis has followed in positing ten fundamental irrational ideas as a sufficiently broad conceptual system of irrational content. These ten irrational ideas are not even posed as categories, but as discrete ideas which may be present at different levels of awareness. That is, Ellis proposes that these irrational ideas underlie psychological disturbance, but that the person endorsing one of these ideas may be unaware of that endorsement. Explicit verbalizations suggest the presence of irrational beliefs. It is for this reason that Ellis typically employs an inference process in uncovering a patient's irrational thoughts (Ellis, 1971). He invokes the concept of internalized sentences in explaining the covert presence of irrational ideas rather than being satisfied with an "as if" approach (i.e., this person talks-behaves as if he believes X irrational idea). In Ellis' psychotherapeutic technique, the uncovering process typically involves the therapist's teaching the patient which irrational ideas are subconsciously at work, followed by the patient becoming aware of such

internalized sentences. The effect of suggestion, or providing a verbal structure for previously non-verbal processes, is a likely possibility in this tactic. It is thus difficult in analyzing Ellis' work to differentiate between the eliciting of extant irrational content and the shaping of a patient's verbalizations to conform to one's theoretical expectation.

Of the authors cited as providing categorization schemes of irrational ideas or faulty reasoning, only Ellis has offered explicit definitions of the concepts of rational (sound reasoning) and irrational (faculty reasoning). Before discussing Ellis' definitions at length, it will prove helpful to briefly provide a strict definition taken from philosophical literature. Kahane (1976) presents the criteria for sound reasoning as being

1. The premises offered in support of a conclusion provide, if true, sufficient grounds for accepting the conclusion;
2. These premises are themselves well supported by evidence;
- and
3. All the known relevant evidence is accounted for.

Faulty reasoning violates one or more of these criteria. Faulty reasoning might then be considered as involving proposing or endorsing statements based on (1) no evidence, (2) insufficient evidence, or (3) dubious evidence.

Albert Ellis uses the adjectives rational and irrational in a somewhat different way than that suggested by the literal definitions of the terms. He proposes that a

Belief is rational because (1) it is designed to increase the individual's happiness and minimize his pain, and (2) it is

related to observable, empirically validated events (Ellis, 1973).

and that, in contrast to the above.

Beliefs are irrational because (1) they are almost certain to decrease the individual's happiness, maximize his pain, and prevent him from fulfilling his desires in the future, and (2) they are related to magical empirically unvalidatable hypotheses for which there is not, nor probably ever can be, any factual evidence (Ellis, 1973).

Ellis thus offers two distinct criteria by which a belief is judged to be rational or irrational. The first of these criteria concerns the actual effect of a belief on the person's living. The second concerns the reasoning process involved in the acceptance of a belief. These criteria are apparently offered in order of significance in Ellis' conceptualization of rational/irrational.

The first criterion suggests that a belief be considered rational or irrational on the basis of whether or not it contributes to the successful fulfillment of a long range hedonistic philosophy of life. This first criterion is at best tangential to the specific issue of accurately describing a belief as rational or irrational, being more a statement of Ellis' values. The violation of this criterion may suggest the possible or probable presence of a faulty reasoning process, but is certainly not definitive.

The second criterion suggests that a belief be considered rational or irrational on the basis of whether or not it is based upon or "related to" empirical evidence. A belief is thus considered rational if it is based upon or has reference to experience, and irrational if it is a priori and definitional in nature. This criterion does address the salient issue of the quality of reasoning processes as determining whether a belief is rational or irrational. The

particular error in reasoning being proposed by Ellis with this criterion for rational/irrational is that of Question Begging, stating as a given fact what should validly be stated only as a conclusion based upon adequate evidence. Ellis is specifically speaking of only one variety of Question Begging in which "adequate evidence" is inaccessible due to the definitional nature of the statement. An example might be the statement "One must be loved in order to be worthwhile," which is offered as a given fact or assumption rather than based upon evidence, and which is also "immune" to evidence as it defines the very requirement for "worth," thus being tautologically self-perpetuating. (An example of Question Begging which would not also be definitional might be "One must be male in order to play tennis well," an assumption which can be empirically tested.)

So Ellis' second, and secondary, criterion for what he means by rational or irrational is relevant to that issue. He proposes that rational thought is "related to" empirical evidence and can thus be validated. He curiously does not require that, to be termed rational, beliefs be ultimately supported by or follow from such evidence, seeming content merely that such a possibility exists. This is probably due to the limited type of irrational thought (definitional Question Begging) that he concerns himself with. While in his second criterion accurately describing a specific type of disturbance in reasoning, he is only describing one variation of one general type of error in reasoning. Even with his second criterion he has contented himself to "define" irrational thought by referring to one possible type or subtype of irrational thought.

It might also be noted that Ellis' two criteria may conflict in specific cases. Specifically, an empirically-based belief (meeting criterion number two) may detract from one's long range happiness (violating criterion number one). For example, a person suffering significant psychological or physical abuse may empirically conclude that people are generally cruel, a belief which may reduce the likelihood of achieving gratifying interpersonal relationships. Alternatively, an a priori belief (violating criterion number two) may promote long range happiness (meeting criterion number one). For example, a sincere faith in the benign and active "will of God" may aid a person in accepting the inevitable occurrence of tragedies such as the death of loved ones.

The proposed alternative is to both restrict and broaden the criteria for employing the concepts of sound and faulty thought processes by more consistently endorsing their literal definitions. This more terminologically conscientious approach to discussing sound and faulty reasoning processes offers several advantages to that proposed by Ellis. The first of these is that of facilitating accurate communication; there is less likelihood that a reader or conversant would be misled as to the realm of cognitive phenomena one was attending to. For example, when the term "irrational" was applied to a belief, one could assume that the meaning of the description was the apparent meaning, rather than reminding oneself as to the special meaning employed, that "irrational" equals "self-defeating."

Secondly, a broader range of phenomena would be accessible to analysis with regard to faulty reasoning processes as an aspect of psychological disturbance. While Ellis lists ten "irrational beliefs,"

in which the content meets with his criteria for being described as irrational, his criteria only avail themselves of one type of irrational thought process (i.e., definitional Question Begging). Beck and Lazarus, while not offering definitions of faulty reasoning, evidence cognizance of several types of faulty reasoning in the categories they offer. While Ellis limits himself to "no evidence," these other authors also include examples of "insufficient evidence" (e.g., Overgeneralizations) and "dubious evidence" (e.g., Excessive Reliance on Other People's Judgment).

Next, a familiarity with various types of faulty reasoning processes offers a first step towards better understanding of human reasoning processes, and disturbances thereof, through an accurate characterization of how people verbally communicate their "arriving at conclusions." Accurate usage of the terms rational and irrational will aid in developing the data base for such work.

Finally, as a result of the above advantages, employing literal definitions of the terms "rational" and "irrational" rather than those criteria offered by Ellis makes a more flexible and rich idiographic approach to irrational thought processes possible. Attending to errors in reasoning as involving various kinds of faulty reasoning processes enables one to better focus upon a greater range of possible disturbances in reasoning within a particular person's thinking, and also to more accurately characterize the idiosyncratic complexities of the disturbances in reasoning exhibited. A greater range of both faulty reasoning processes and irrational thought contents would be available for attention and conceptualization.

The research approach to faulty reasoning that appears most appealing given previous discussion is one that will involve unelicited, explicit verbalizations in which faulty reasoning, (strictly defined) is exhibited and one that will generally focus upon reasoning processes rather than cognitive content. As mentioned earlier, basic research demonstrating the occurrence of reasoning errors in psychologically disturbed persons has yet to be carried out. As an example of a disturbance in thinking, disturbances in reasoning might be assumed to occur primarily in psychotic conditions where a general thought disorder is expected. Apparently, however, this is not the case. A demonstration that disturbances in reasoning occur in non-psychotic conditions (where a general thought disorder is not expected) might also be approached in such research. Beck (1976) states that from his experience, "The patient's appraisal of reality may not be distorted, but his system of making inferences or drawing conclusions from his observations is at fault." He states that such logical errors are "less gross and more circumscribed" than those of psychotic patients.

Examples of disturbances in thinking described by the American Psychiatric Association's Diagnostic and Statistical Manual, Mental Disorders (DSM III) as symptoms of mental disorders not involving a "thought disorder" or psychosis include:

"pessimistic attitude . . . overoptimism or exaggeration of past achievements" [Cyclothymic Disorder], "recurrent, persistent ideas, thoughts" [Obsessive Compulsive Disorder], "intrusive recollections" [Posttraumatic Stress Disorder], "unrealistic interpretation of physical signs . . . leading to preoccupation" [Hypochondriasis], "searching for confirmation of bias . . . expectation of trickery . . . overconcern with hidden motives . . . exaggeration of difficulties" [Paranoid Personality Disorder], "magical

thinking . . . ideas of reference" [Schizotypal Personality Disorder], "exaggeration of achievements . . . with fantasies . . . , expectation of special favors" [Narcissistic Personality Disorder].

Even these few examples demonstrate that disturbances of thinking are symptomatic of a wide range of mental disorders, and thus suggest as a legitimate expectation that disturbances in reasoning may similarly contribute to the symptomatology of a wide variety of mental disorders. Disturbances in reasoning, however, are rarely specifically cited by the DSM III as symptomatic of mental disorders, possible exceptions being the above references to "unrealistic interpretation" and "exaggeration." This is more likely due to selective attention, limited conceptual framework, or a desire to present the most salient and obvious symptoms of any particular mental disorder, rather than that disturbances in reasoning are neither present nor symptomatic.

Beck (1963) hypothesizes that (1) faulty reasoning is present in a wide range of mental disorders, (2) the content rather than the mere presence of faulty reasoning is symptomatic of the specific mental disorder present, and (3) the types of faulty reasoning exhibited are similar between diagnostic types. An initial demonstration of the unelicited presence of faulty reasoning in a non-psychotic psychologically disturbed sample would provide an empirical starting point for further research in this area.

In developing research in this area it is also important to consider the temporal or situational context in which faulty reasoning might be most salient, or under what natural conditions one might expect the "richest" data source. Proceeding from the hypothesis that faulty reasoning is in some way causally related to psychological

dysfunctions, it would follow that a person would be most prone to exhibiting faulty reasoning when their verbalizations concerned aspects of their life or way of living that are currently problematic for them. Problematic aspects of one's life are most likely those in which the person's responses (thoughts, feelings, actions) are most automatic and unresponsive to the realities of the situation. Non-problematic aspects of one's life are less threatening and probably approached in a more flexible, realistic (reality bound) manner. Faulty reasoning is most likely to be obvious in discussions concerning the problematic, the unresolved, or the poorly resolved.

Beck (1963) states that, with depressed patients,

even in mild phases of depression, systematic deviations from realistic and logical thinking occur. A crucial feature of these cognitive distortions is that they consistently appeared only in the ideational material that had a typically depressive content; for example, themes of being deficient in some way. The other ideational material reported by the depressed patients did not show any systematic errors.

As a working assumption then, it is likely that when a person has a great deal of difficulty in some relatively circumscribed area of his life, and less difficulty with other aspects of his life, faulty reasoning would be most prevalent in verbalizations concerning the problematic area. A setting that typically fulfills both criteria of (1) a person suffering psychological disturbance and (2) problematic aspects of life being topics of conversation is the psychotherapeutic interview. Psychotherapy sessions would constitute an ideal data base for unobtrusively analyzing faulty reasoning processes within the context of psychological disturbance.

In researching faulty reasoning processes, a basic requirement not yet extant in the field would be a reliable rating scale or

typology of faulty reasoning. Mahoney (1974) offers a succinct and representative summary of types of faulty reasoning taken from Beck (1970) and Lazarus (1971). These include Arbitrary Inference, Overgeneralization, Magnification, Dichotomous Reasoning, and Oversocialization. Ellis (1962) additionally speaks of definitional or dogmatic statements that are not subject to evidence or experience but are accepted as a priori facts. Most of the irrational ideas he discusses share this quality. Beck (1967) offers a general category of Inexact Labeling similar to what Ellis (1962) calls "catastrophizing," which typically involves applying a severe or extreme adjective to an event of lesser significance. One task of developing a ratable typology would be to combine or break down categories such as the above into categories which are as discrete and non-overlapping as possible. Otherwise, it would be difficult to demonstrate the conceptual clarity of the types of faulty reasoning through procedures such as interrater agreement. The above categories, as currently formulated, do not meet this criterion of discreteness. For example, Arbitrary Inference includes both statements that beg the question and statements that are hastily concluded but based upon some evidence. The category of Inexact Labeling would overlap considerably with that of Dichotomous Reasoning, which involves a similar labeling process.

As well as the difficulty of overlapping or overly complex categories, the authors/psychotherapists who have enumerated the types of faulty reasoning listed above have limited their sources to their own clinical experiences. The typology offered has not been supplemented by consideration of possible contributions of literature within the field of philosophy concerning informal logic, rhetoric, and

logical fallacies. Preliminary investigation along these lines suggests that a typology of faulty reasoning relevant to psychological disturbance could be much expanded and enriched by taking advantage of these philosophical sources. For example, the category of Dichotomous Reasoning cited earlier is essentially similar to the logical fallacy of All or Nothing (Fearnside and Holther, 1959), defined as ignoring dimensionality in labeling some event, person, or object as either X or Y. Two similar, though distinct, fallacies might also be grouped with these, those of False Dilemma (Kahane, 1976; Fearnside and Holther, 1959) and The Wicked Alternative (Fearnside and Holther, 1959). False Dilemma is falsely reducing the possible alternative actions in a situation to two, thus proposing a false dilemma. The Wicked Alternative involves supporting one course of action by denouncing another, a process which is only valid if the two actions are the only two possible, which is implied in any such statement. The above, from philosophical as well as psychological sources, might be combined into two discrete categories, or types of faulty reasoning: False Dilemma and Dichotomized Labeling. The similarity of these two could be conceptually preserved by grouping them within a typology of faulty reasoning under a heading such as Reducing Alternatives. This kind of interdisciplinary approach may be expected to yield the most comprehensive, useful, and conceptually clear typology of faulty reasoning currently realizable for the purposes of analyzing faulty reasoning within the broader concept of irrationality and abnormality.

In summary, a review of the literature on faulty reasoning within the developing field of cognitive therapies suggests the following

goals in performing basic research concerning faulty reasoning and psychological dysfunction:

1. The supplementing and refining of the categories of faulty reasoning offered within the field of psychotherapy via an interdisciplinary approach including philosophical sources;

2. The development of a categorization system that focuses primarily on faulty reasoning processes rather than on irrational cognitive content;

3. The development of a categorization system that is reliably applicable to the assessment of the overt, unelicited occurrence of faulty reasoning processes rather than requiring either an inferential or experimental (elicitation) approach;

4. The demonstration of faulty reasoning processes as occurring within non-psychotic (non-thought disorder) psychological disturbances; and

5. The development of a design which will maximize the probability of faulty reasoning being exhibited by maximizing the probability that verbalizations will involve problematic aspects of a person's life or way of living. Such research involves development of such a categorization system, demonstration of its practical utility, and discussion of its relevance to the understanding of psychological disturbance.

CHAPTER II

DEVELOPING A TYPOLOGY OF FAULTY REASONING PROCESSES

Goals in the development of a typology of faulty reasoning processes were previously stated as involving:

1. The supplementing and refining of the categories of faulty reasoning offered within the field of psychotherapy via an interdisciplinary approach including philosophical sources;
2. The development of a categorization system that focuses primarily on faulty reasoning processes rather than on irrational cognitive content; and
3. The development of a categorization system that is reliably applicable to the assessment of the overt, unelicited occurrence of faulty reasoning processes rather than requiring either an inferential or experimental (elicitation) approach.

The method and decision making involved in developing the typology were undertaken with those goals in mind.

An initial typology of reasoning errors was developed employing philosophical sources on fallacies, rhetoric, and informal logic with specific regard for the probable relevance to psychological disturbance given to each error considered. Sources for the typology include Kahane (1976), Fearnside and Holther (1962), and Flew (1977). Contributions from the psychotherapeutic literature, i.e. Beck, Ellis, and Lazarus, were incorporated into the typology. This initial typology

included thirty-four types of reasoning, arranged into ten groupings by this author.

After the initial typology was developed, the author reviewed audio and video recorded psychotherapy sessions, noting faulty reasoning processes exhibited by patients during these sessions. These notes were applied to a revision of the initial typology into a more concise and practical form. A final form of the typology was constructed in collaboration with two research assistants who had no prior involvement or awareness of the project. These assistants were trained to recognize, transcribe, and label reasoning errors within the format of the typology. Ratings of faulty reasoning processes were made by the author and the assistants both in conjunction with and independent of each other. The final revision of the typology was made with the purpose of maximizing interrater agreement in the recognition and labeling of specific reasoning errors.

Criteria employed in the development of the typology from the initial to the final form included (1) conceptual clarity of the types of reasoning errors proposed, (2) discreteness of the same by being, as far as possible, non-overlapping and non-overly complex while still offering comprehensiveness, and (3) relevance and applicability to the assessment of psychological disturbance.

The composition of the initial typology, the revised typology, and the final typology will be discussed at length below. Sources will be abbreviated as follows: Kahane (K), Fearnside and Holther (FH), Flew (F), Beck (B), Lazarus (L), and Ellis (E). A decision rule, applicable when an error could be accurately classified as more than one type, will also be described.

The Initial Typology:

1. Language Perversion
 - a. Idiosyncratic Language (FH)
 - b. Questionable Classification (K)
 - c. Black-is-white (F)
2. Rationalization and Denial
 - a. Finding the "Good" Reason (FH), or But-you-can-understand-why (F)
 - b. Two Wrongs Make a Right (K) (FH)
 - c. Wishful Thinking (FH)
 - d. Questionable Premise (K)
3. Begging the Question
 - a. Begging the Question (K), Many Questions (F)
 - b. A priorism (FH)
 - c. Abandonment of Discussion (FH)
 - d. Forestalling Disagreement (FH)
4. Jumping to Conclusions
 - a. Non Sequitur (FH)
 - b. Hasty Conclusion (K) (FH)
 - c. False Conversion of Propositions (FH),
Overgeneralization (B)
 - d. Suppressed Quantification (FH)
 - e. Questionable Cause (K)
5. Libel
 - a. Straw Man (K)
 - b. Ad hominem (K)

- c. Damning the Origin (FH)
 - d. Creating Misgivings (FH)
- 6. Inconsistency (K)
- 7. Conventionality and Compliance
 - a. Ceremony or Setting (FH)
 - b. Provincialism (K)
 - c. Cultural Bias (FH)
 - d. Appeal to Tradition or Faith (FH)
 - e. Appeal to Authority (FH) (K)
 - f. Impressing by Large Numbers (FH)
- 8. Reducing Alternatives
 - a. False Dilemma (K) (FH)
 - b. The Wicked Alternative (FH)
 - c. All or Nothing (FH)
- 9. Preserving Inertia
 - a. Slippery Slope (K)
 - b. Nothing but Objections (FH)
 - c. Tokenism (K) (FH)
- 10. Irrelevancies (FH)

Review of Initial Typology:

1. Language Perversion. The errors in this grouping share a common aspect of distorting the conventional meaning of terms or phrases, thus disturbing a person's ability to communicate or reason clearly.

a. Idiosyncratic Language refers to the use of parataxic or idiosyncratic definitions of words or use of phrases that obscure or distort one's meaning. One might have had the experience of

discovering that two people have been talking about two different ideas but using the same word, or of a particular word sounding appropriate but peculiar in a given context. In each of these instances, the use of Idiosyncratic Language is likely. Examples taken from psychotherapy sessions include the following: (1) In describing his difficulty in expressing or acting upon his anger, a patient spoke of desiring to "go around the anger," an idiosyncratic phrase indicating his apparent wish to avoid anger as an obstacle to effective functioning.

(2) Another patient with a somewhat studied laissez-faire approach to life used the phrase "I wonder why" to mean "I don't trust that," "I'm suspicious of that," or "I think that's inappropriate," and the phrase "I don't know" to mean "I don't care, that's irrelevant." Many examples of this error occur in which the patient's actual meaning was unclear but apparently idiosyncratic. It might thus be useful in rating this error to feel free to list apparent idiosyncratic language but to note whether the error was made explicit or remains suspected. Cultural idioms and slang should not be categorized as idiosyncratic language.

b. Questionable Classification involves incorrect labeling or overinclusion of attributes of a concept. Only one example of this error was observed: A patient equated the emotion of anger with the behavior of aggression. She stated "I don't believe in anger. (Pause) I don't believe in slamming the door in someone's face." Her concept of anger was overinclusive. Most examples of what might generally be considered as a questionable classification are more accurately characterized as other errors, such as within the groupings of Libel or Reducing Alternatives. This error might best be included in the

typology with the more discrete title of Overinclusion, still within the grouping of Language Perversion.

c. Black-is-white designates the false proposition that if there is a difference of degree between two things (e.g., verbal and physical aggression) then there is no real difference, or in other words, proposing that a difference of degree is insignificant or irrelevant. No examples of this error were observed, and it probably does not warrant inclusion in the typology, as it is strongly suspected that patients are more likely to accentuate rather than minimize differences of degree, to express black-or-white ideas rather than black-is-white ideas. For example, Ellis' concept of "catastrophizing," Lazarus' concept of Dichotomous Reasoning, and Beck's concept of Magnification all suggest thought processes erring in the direction of exaggeration and division, while concepts indicating a reducing of contrasts or differences are not offered by these authors.

2. Rationalization and Denial. The errors in this grouping are examples of traditionally recognized defense mechanisms and would not add to the value of a typology of errors in reasoning as a tool to evaluate patient's verbalizations. Also arguing against inclusion is the likelihood of the frequent necessity of interpreting for the patient or otherwise offering the real reasons for a patient's behavior or the true facts of a matter in substantiating the occurrence of one of those errors, a necessity incompatible with the purposes of this topology as a means of demonstrating the explicit errors in reasoning occurring in patient's verbalizations.

3. Begging the Question. The errors in this grouping involve stating as a given fact what should validly be stated only as a

conclusion based upon adequate evidence. Justification for one's statement is not offered, and the statement may be stated so as to imply it does not really require justification. Question begging can occur as a whole statement or as part of a more complex statement or even question.

a. Begging the Question and Many Questions involve statements which fail to address a question which should be at issue, often taking for granted the answer to such a question or issue. Also included here are loaded questions, those which, in being asked, tacitly assume the answer to a separate issue (e.g., "Do you still beat your wife?," asks: "Do you continue to?": the question assumes you have done so in the past). No errors of reasoning of this type were observed which do not more accurately or relevantly fit the other types of error within this grouping. Also, no examples of a patient (rather than a therapist) asking a loaded question were observed. It is suggested that Question Begging be retained as the grouping title but that this type error be eliminated from the grouping due to excessive overlap with other types.

b. A priorism involves asserting as given a statement in advance of the facts or prior to experience. Appropriate to this label are statements which might conceivably be based upon some evidence but for which no evidence or justification is presented, so that what should be in the form of a conclusion is stated in absence of evidence. What Ellis calls definitional and dogmatic statements are a variety of this type. Also, part of Beck's category of Arbitrary Inference fits here; namely statements which are actually contrary to the available evidence. Examples observed in patient's verbalizations

include: (1) In discussing her being abused by a man, a patient states with conviction that "Everybody needs somebody they can shit on." And later comments that "There's no way to get hurt if you're totally selfish." Two of the Laws of Life. (2) In discussing not exactly knowing what her "problem" was, a patient stated that "If I knew what it is, I'd just go out and change it," asserting her ability to do so, whatever the "problem," as a given. The context of the statement is that of pursuing the definition of problem. It is necessary, and not always easy, to differentiate A priorisms from hasty conclusions, in which some relevant evidence is present and asserted. Also, a priori statements with a source assigned to them (e.g., my father says) are more relevantly labeled as some type of error within the grouping of Conventionality and Compliance such as Appeal to Authority.

c. Abandonment of Discussion involves question begging with the apparent intent or effect of stopping a conversation or chain of thought. The "final word" is implicit in any such statement. One variety of this type error discussed by Flew but not observed in patients' verbalizations is the truth-is-always-in-middle position, in which a middle of the road, "moderate" position on an issue is supported merely because it is between the two or more known extremes. The word "just" often is a cue word for an Abandonment of Discussion error. Examples of this type error observed include: (1) A patient states, "I'm such a fool. I really am a fool." The therapist asks, "For what?" The patient replies, "Just for being such a fool. I'm just such a fool." Oh. Of course. (2) Apparently at wits end to demonstrate to the therapist that there are any redeeming qualities to

a man she is involved with, a patient says "You don't understand him like I do." Decisive, final; one could insert the "just" quite readily. And the statement occurred as it became more and more apparent that it was the patient who did not understand the man's character and motivations. (3) Two examples with regard to a patient refusing to either feel or express anger include "I just don't think that being mad would solve any thing," and "I believe in justified anger, (pause) but I know I'd never feel . . . justified." What makes you think that? How do you know? Sometimes, however, a person will abandon a discussion without committing the above error in reasoning, and such a verbalization should not be labeled as this type error. Examples include "now I'm confused" as a means of avoiding pursuing a topic, or "I can't look from her perspective. I don't want to." The second sentence ("I don't want to.") excludes this verbalization as an error in reasoning.

d. Forestalling Disagreement refers to question begging with the apparent intent or effect of preventing the pursuit of a subject or preventing disagreement with a statement. Traditionally, statements of the flavor "of course, it's obvious, and any reasonable person would agree that. . . ." are of this type. This type error implies an Abandonment of Discussion, but can be differentiated from that error fairly clearly; Abandonment of Discussion generally implies "that's just the way it is," while Forestalling Disagreement "it's unreasonable to pursue that." The word "can't" is often a cue word for this error, suggesting inability rather than unwillingness to do something. Examples of this error observed include: (1) A patient, confronted with her own aggressiveness, stating "I know I'm (being

hostile) but I can't help it." Case closed. (2) "I can't do that. I know I can't do that." And that's that. (3) "I'm tired. I just can't deal with it today." Phrased differently, this would have been better labeled as some type of hasty conclusion, but the use of the words "just can't" imply the "given fact" aspect. In addition, statements of "you know what I mean" and "you know how it is" are often examples of this error.

Despite their discriminability, it is suggested for the purposes of this typology that Forestalling Disagreement be included within the error type of Abandonment of Discussion because of their similarity of intent or effect. This grouping titled Question Begging will thus include two types of errors, A priorism, in which dogma is evident, and Abandonment of Discussion, in which "there's nothing more to say" is implied. It might also be helpful to note that when presented with an Abandonment of Discussion statement, conversationally appropriate, and perhaps tempting, replies will be "How do you know?" or, sarcastically "I certainly can't argue with that." A priorisms, on the other hand, will occur more in passing, in the context of another issue, and will probably not interrupt the chain of patient-therapist verbal interactions unless challenged.

4. Jumping to Conclusions. Errors within this grouping involve drawing conclusions on insufficient evidence. The evidence is consistent with the conclusion but is not strong enough to require or warrant making the conclusion.

a. Non sequitur occurs when a conclusion does not necessarily follow from the given premises, but is stated in conclusive form (e.g., X, therefore Y). Non sequiturs are structured with a word

"link" between the premise(s) and conclusion, such as "therefore," "thus," "so," or "then." The occurrence of such words within a statement serve as a cue to a possible non sequitur. Examples of this type error observed include: (1) A patient, replying to her son's complaint that she doesn't act like she loves him, says "look at how (another child's parents) treat him. I don't treat you that way. So I love you." She is apparently asserting that the unloving example cited exhausts the possibilities. (2) A patient states that "it didn't hurt me when (my lover) left because I expected it," claiming that her expectation of the event was the reason it was not experienced as painful. Other explanations, such as it did not hurt because she wanted him to leave, are equally probable. (3) A recent graduate, unemployed, says "I have no skills (pause) no talents (pause) so I (pause) so I guess in my mind I think, well, I might as well enjoy a moment here or there (pause) get stoned, have sex" Are there no alternative courses of action available such as learning skills or developing talents? It might also be noted that, given other information provided, the first part of the patient's statement was also hastily concluded.

b. Hasty Conclusion involves prematurely reaching a conclusion that is, however, based upon relevant evidence. Errors appropriately labeled as this type will not include words such as "therefore," but will be structured such that one part of the statement apparently "leads to" the other. What Beck calls Arbitrary Inference in part fits within this type error, that of "drawing a conclusion when evidence is lacking," but not absent. Another of Beck's categories fits here, that of Selective Abstraction, which involves

basing a conclusion upon narrowly selected elements of a situation. Examples of Hasty Conclusions observed include: (1) Dissatisfied with a quite imperfect relationship with a quite imperfect partner, a patient states that "I'm too demanding." (2) A patient relates to her mother that she'd once come close to considering suicide. Her Mother immediately responds, "Why? Why? What did I do?" She leaps to assuming personal responsibility. (3) Another patient explains her leaps in logic in relating that "they just look at me and I think 'they think I'm crazy'." What Beck calls Magnification and Minimization might also fit here, in which a person magnifies or minimizes the relevance of certain evidence in reaching a conclusion. What Ellis calls Catastrophizing (and Beck "Inexact Labelling") involves a similar process of magnifying the relevance of undesired or frustrating events in reaching a conclusion about (labeling) an entire situation.

c. False Conversion of Propositions refers to shifting the generality of one's observations by describing "some" as "all" or "few" as "none." Shifting from "one" to "some," from "some" to "most," etc. also indicates this error being made. The same process is described by Beck as Overgeneralization, which is preferable as an error type label, as its meaning is more readily apparent. Cue words for this error include "all," "whole," "nothing," "everything," "every," etc. Examples observed include: (1) A patient falsely accused twice in one week states that it "seems I always get accused of things I'm not guilty of." "Twice" becomes "always." (2) A patient describes his father as often becoming suspicious and questioning him about his activities, then says "his whole relationship with me has been a questioning one." "Many times" becomes "all of the time." (3) A

patient with both recent successes and frustrations states that "I think all I've found out is that I'm really incompetent, because nothing has turned out, it's all been a failure." "Some" becomes "all." Note also the non sequitur ("nothing" has turned out, therefore I'm incompetent), overlooking other possible factors contributing to "nothing" working out. The error of Black-is-white discussed earlier may at times also include a False Conversion of Propositions, such that a "large" difference or contrast is minimized to "small," or "some" difference is reduced to "none."

d. Suppressed Quantification refers to making a general statement without qualifying it by specifying "some," "all," etc. No explicit examples of this error were noted as being observed, and it is recommended that this error be omitted from the typology.

e. Questionable Cause occurs when a person faultily concludes something to be the cause of something else on insufficient evidence. Contiguity of events or temporal sequence are often offered in this manner as proof of causality. A cue word for this error is "because," since this error sometimes involves a non sequitur in which a causal relationship is proposed. Examples observed include: (1) A patient comments on a companion's lack of response to her trying to initiate a conversation, saying "He didn't respond much, because he was drinking." It was equally likely that the topic she wished to pursue was simply not one he cared to discuss. (2) A patient states as a presenting complaint that "When I'm depressed, I think thoughts I wouldn't otherwise think." Later comments indicated that the specific thoughts referred to preceded, and perhaps led to, his depressed state rather than vice versa. This error in reasoning was

observed infrequently. It is suggested that it be omitted from the topology, and that errors of this nature be labeled as either non sequitur or hasty conclusion, depending upon their structure.

5. Libel. Errors of reasoning included within this grouping involve doing damage to a statement or to the source of a statement rather than approaching the truth or falsity of the statement itself. They each also involve shifting the focus of a discussion or chain of thought from a central to a sometimes tangential aspect of a topic or situation.

a. Straw Man errors occur by distorting a person's statement or position on an issue and then arguing against the distortion rather than the original. What Flew calls a Psuedo-refuting Description is a variation of this error in which someone's statement is provided a derogatory label or slogan which is easily condemned. In general, this error in reasoning involves the exaggeration or caricaturing of what another has said, and subsequently not dealing with the other's actual statement. Examples observed include: (1) A patient's parents express concern about his school performance. The patient then complains that they are only interested in him in this regard. He has thus changed the subject from his school performance to his parents' singlemindedness, shifting the focus from himself to his parents. (2) A therapist says to an overweight, depressed patient that he is not primarily interested in her weight problem. She later paraphrases his statement as communicating that he didn't care at all about her weight, thus shifting the focus from what is considered of primary importance to his apparent disinterest in her weight problem. (3) A patient discusses his interactions with teachers:

"I'm unorganized. . . . They say if you come in here with a problem, be organized' . . . what they mean is 'don't come here with a problem.'" The best defense is a good offense? This type of error may be very difficult to rate, especially when the therapist's statement is the one distorted. The second example above unfolded only over a two session period. Where someone else's statement is being distorted, the rater is necessarily relying upon the distorter for the accurate statement as well, thus, many of these errors, although suspected, will remain covert.

b. Ad hominem errors involve directly attacking the source of a statement rather than discussing the statement itself. A similar error is what Flew refers to as committing a Subject-Motive shift, which involves shifting from the issue of the truth of a statement to the issue of the motives of the person making the statement or the traits of a person making such a statement, but not ever returning to the issue of the truth of the statement. An Ad hominem error must strictly contain both a statement being "refuted" and an attack which serves as the "refutation." The cue to this error is that it essentially involves name calling. An example observed included: Given signs of both interest and disinterest, a patient states that his parents are "not interested" in him, as a means of dismissing their advice or comments. Attention is focused upon their apparent disinterest rather than other problematic aspects of the relationship.

c. Damning the Origin involves prematurely rejecting a statement solely on the basis of some aspect of the source of the statement. This error constitutes an extreme variation of the maxim "consider the source." Examples observed include: (1) A patient,

realizing that her mother is psychologically disturbed, decides that she need not take anything her mother says or does seriously. Any expressed or implied criticism or advice her mother may communicate is thus automatically trivial or "crazy." It is recommended that this type error be included under the Ad hominem category, as no additional value in its remaining a separate type is apparent, and because of the similarity of the two types.

d. Creating Misgivings involves casting suspicions about the source of a statement which, though unfounded or inconclusive, have a similar intent or effect as an overt Ad hominem. The implied message, in this soft-sell Ad hominem, is "where there's smoke there's fire." No good or clear examples of this type error were observed, and it is recommended that it be included under the Ad hominem category.

6. Inconsistency. This type error occurs when a person makes statements which are inconsistent or contradictory, and where no or little evidence is present that the person has "changed his mind" in the interim between the inconsistent statements. The temporal span between inconsistent statements must be considered as relevant to deciding whether an error in reasoning has occurred or whether the original statement has been rejected in favor of the latter. Generally, the greater the span of time, the greater probability of a "change of mind" rather than an inconsistency. Examples of inconsistency observed include: (1) The following patient-therapist exchange: Patient: "I want him to straighten up and come home." Therapist: "You said 'do what you want.'" Patient: "That's what I want, for him to do what he wants." The patient presents inconsistent messages of her desires, and might be unresolved or conflicted

on this issue, although she is apparently unaware of this possibility.

(2) A patient describes a problematic conversation, first stating that "Everything he said was right" and later that "He never said

anything to me that was true." (3) A patient described her depressed

state by saying "I ache so much," and later said in describing the

same state, "I have no feeling left." Verbalizations presented as

involving a paradox, however, are not to be considered as inconsis-

tencies. A paradox, rather than an inconsistency, is presented by a

patient stating that she feels "shrunk up and blown up at the same

time." Inconsistency should be carefully distinguished from Over-

generalization, in which a counterexample to a generalization is

apparent rather than two equally specific incompatible statements

being made. It is recommended that this type error be labeled Verbal

Inconsistency.

7. Conventionalality and Compliance. Each of the errors in reasoning within this grouping involve a willingness to accept the truth of a statement by virtue of something external to the statement. Lazarus' category of Enculturation and Oversocialization, "the failure to recognize and challenge the arbitrariness of many cultural norms," describes these errors. Due to the lack of examples observed, it is recommended that the following types of errors be included within the grouping/type label of Conventionality and Compliance.

a. Ceremony or Setting refers to assigning credibility to the source of a statement on the basis of culturally endorsed ornamental accessories. The therapist's title, office, and dress often take advantage of this tendency.

b. Provincialism involves "assuming that the familiar, the close, or what is one's own is therefore the better or more important (K)." Chauvinism and some kinds of loyalty are variations.

c. Cultural Bias refers to ethnocentricity.

d. Appeal to Tradition or Faith involves uncritical acceptance of what's "tried and true" or "the way it's done."

e. Appeal to Authority involves an error in reasoning unless (1) the authority cited is personally reliable, and (2) the authority cited is qualified as an expert on the issue at hand. Also, accepting the opinion of an authority as a fact involves this error. Lazarus labels a general tendency to commit this error as Excessive Reliance on Other People's judgment. Examples observed include: (1) A patient prefacing several of his statements with "Dad has a saying" (2) A patient stating that "If you can't solve it, get mad at it. I had that ingrained in me." His parents, who "ingrained" the lesson, were uncritically accepted as authorities on how to handle frustration.

f. Impressing by Large Numbers involves accepting the truth of a statement or position because of the many people who support it. "The majority is always right" or "jump on the bandwagon" are variations of this error.

8. Reducing Alternatives. The errors in reasoning within this grouping each involve limiting the possible number of actions within a situation or evaluations of something. This reduction of alternatives typically results in an either-or, black-or-white approach or labeling process in which only two alternatives are proposed to exist.

a. False Dilemma refers to erroneously proposing that the possible number of actions or reactions within a situation are limited to two. The two alternatives offered are often of an extreme nature, but the person asserts that one can only do one or the other. Examples observed include: (1) A patient, referring to her son's complaints that she is shirking her duties as a mother, stated "When do I quit feeling guilty and say 'to hell with you'?" She saw her only two possible reactions as being guilt or anger/indifference. (2) A patient relates an incident at her parent's home in which her mother is ranting and raving at the patient's father and at the patient. The patient states that her father left the room, leaving the patient to continue the battle with her mother. The therapist asks, "He just left? to which the patient replies, "Well, yeah. He did the smart thing. I mean, he could've hit her, or leave. So he left." One or the other: physically attack or physically withdraw. (3) A patient, relating how he handles frustrations, stated that he will typically "Do nothing but get angry, then do nothing but get sad." He did not see any other possible ways for him to respond to such a situation.

b. The Wicked Alternative involves justifying one action or reaction within a given context by denouncing another action or reaction as undesirable. This type argument is only valid if the two alternatives cited are realistically the only two possible. Examples observed include: (1) A patient justifying a quite unsatisfying relationship by deciding that it was better than no relationship. These were not the only options open to her. (2) Discussing becoming involved in unwanted conversations with strangers, a patient

justifies not extricating herself from such situations with the comment "I just can't be mean to them." This error is actually a variation of False Dilemma, and it is recommended that it be included within that category in the typology.

c. All or Nothing errors occur when a person asserts that a particular event, action, etc., can only be labeled as either one thing or another. Opposite labels are offered without any dimensionality or scaling of degree recognized. This bi-polar thinking is the same as what Lazarus calls Dichotomous Reasoning, allowing only two possible evaluations of an event. The poles offered are often extreme, and the stating of two poles is necessary for a verbalization to accurately be labeled as committing this error. Examples of this error observed follow: (1) A patient, discussing her dissatisfaction with her academic success, which was above average, stated that "If I can't be great I don't want to be anything" and further related feeling that she was not great, and therefore considered herself to be nothing. The dimension of "nothing"--"great" was simplified to "nothing" or "great." (2) A women categorizes men as being either "strong but abusive" or "nice but weak." The dimensions of strong-weak, and "nice"-abusive were collapsed into a no-win dichotomy. It is recommended that, for clarity, this type error be titled Dichotomized Labeling.

It might be noted that of Ellis' ten "irrational ideas," numbers 1, 2, 3, 4, and 9 are each suggestive of the error of Dichotomized Labeling. The process of "catastrophizing" described by Ellis is reflected by those "irrational ideas" in which all-or-nothing evaluations are made.

9. Preserving Inertia. Each of the errors in reasoning within this grouping share a common feature of forestalling action or maintaining the status quo as an essential characteristic. Although observed examples are few, it is recommended that this grouping be retained within the typology as potentially fruitful.

a. Slippery Slope refers to arguing that taking one action in a possible sequence of actions will automatically lead to specific other actions, inevitably resulting in an undesirable predicted end point. The domino theory of political/military influence is an example of this error. No explicit examples of this error were observed in therapy. A hypothetical example would be a patient rejecting the idea of expressing anger at a friend, stating that "one thing would lead to another" with the "inevitable" result that the friendship would be destroyed.

b. Nothing but Objections refers to rejecting all proposed solutions to a problem, refusing to accept even the best possible evaluation or course of action. Avoidance of resolution through trivial objections or excuses is the apparent intent of committing this error. The unresolved problem can be one of what to do or also one of what to think or feel. This error involves requiring "perfection as a prerequisite to action" (FH). A variation of this type error is discussed by Flew as the But-they-will-never-agree fallacy, in which the truth of a proposal is confused with whether or not others will be convinced of its truth. An example observed follows: A patient, having realistically decided upon the value of ending a relationship, hesitates from acting on her decision, citing "possible"

consequences of severe loneliness, overdrinking, becoming promiscuous, the other party committing suicide, etc.

c. Tokenism refers to "mistaking a token effort, usually ineffective, for an adequate effort" (K). This error typically involves overstating the sincerity or degree of effort expended towards a given end. Token assent, or "yes, but" responses, also exhibit this error. One example of this error observed follows: A patient has previously discussed a fear of being somehow overwhelmed, engulfed, or destroyed should she become depressed. Between therapy sessions, she suffered a day-long depression. The therapist comments, "You learned a valuable lesson--that you could get through it" (i.e., a depressed state). The patient replies, "Yeah . . . but I just don't want it to get that bad again." The "valuable lesson" was only tokenly endorsed.

10. Irrelevancies. This type error occurs when irrelevant considerations are introduced into a discussion. Responses which are irrelevant to the issue at hand fall into this category. Examples observed include: (1) A therapist states that "I'm willing to take the lead, if that's the direction you want it to take." The patient irrelevantly responds that "I don't know what you want me to take about." (2) In the context of a patient relating a decision to end a relationship but not wanting to anger the other party, the therapist asks "What's wrong with her being angry at you?" The patient's irrelevant response was "Because then the relationship would be over" Further inquiry might have elicited an inconsistency, but as stated above, Irrelevancy is the appropriate label.

In the review of the initial typology it was noted that at times a verbalization will contain an error in reasoning which could accurately be labeled as involving more than one of the types of errors listed in the typology. Specifically, errors have been observed which involved Question Begging or Jumping to Conclusions which also involved Libel, Conventionality and Compliance, or Reducing Alternatives. In such cases the error is most accurately characterized by one of the latter labels, which probably have a more restricted range of applicability than the groupings of Question Begging and Jumping to Conclusions. It is proposed as a decision rule that when an error of Question Begging or Jumping to Conclusions can also be labeled as another type error, that the latter label be chosen in typing the error. The application of this rule is demonstrated in the following example of the typological analysis of errors in reasoning in a patient-therapist interaction:

Patient: I feel desperate.

Therapist: Desperate for what?

Patient: I don't know, just desperate, like I've got to do something, "quick, do something" kind of thing, and it's got . . . there's no way it's going to be anything positive, so it's going to be something negative.

Idiosyncratic Language is apparent in the patient's verbalization "desperate, like I've got to do something, 'quick, do something.'" She uses the word desperate to indicate a frantic impulsivity/compulsivity rather than the usual meaning of hopelessness of achieving something perceived as unattainable but nonetheless necessary.

Several errors are evident in the patient's verbalization "there's no way it's going to be anything positive, so it's going to be something negative." The entire statement exhibits Dichotomized Labeling. Whatever she will do as a result of "feeling desperate" is defined as being either positive or negative, which are offered as opposites with no degrees of either recognized. Could an act be neutral, or partially positive and partially negative? The statement "there's no way it's going to be anything positive" commits an A priorism in that she offers a dogmatic, "given" in advance of the facts, in advance of her acting. From this A priorism, a Non sequitur is present in the transition to the conclusion that her action will be negative. She states "so it's going to be something negative," an uncertainty presented as conclusive (X, or Y); so, thus, therefore as interchangeable terms. Following the decision rule the labels of A priorism and Non sequitur are omitted in favor of Dichotomized Labeling.

The Revised Typology:

Following is the revised version of the typology made in accordance with the suggestions stated in the review of the original typology.

1. Question Begging
 - a. A priorism
 - b. Abandonment of Discussion
2. Jumping to Conclusions
 - a. Non Sequitur
 - b. Hasty Conclusion
 - c. Overgeneralization

3. Language Perversion
 - a. Idiosyncratic Language
 - b. Overinclusion
4. Irrelevancies
5. Verbal Inconsistency
6. Libel
 - a. Straw Man
 - b. Ad hominem
7. Conventionality and Compliance
8. Reducing Alternatives
 - a. False Dilemma
 - b. Dichotomized Labeling
9. Preserving Inertia
 - a. Slippery Slope
 - b. Nothing but Objections
 - c. Tokenism

The groupings in the revised typology are arranged to facilitate decision making when more than one type labels accurately described an observed error. The arrangement makes possible a mechanical application of the decision rule such that the numerically latter type label be chosen over the numerically former. With reference to the example previously discussed, the type 8b (Dichotomized Labeling) was preferred to either type 1a (A priorism) or 2a (Non sequitur). No conceptual improvement is thus achieved, but interrater reliability should be enhanced by this arrangement and the respective simplification of the decision rule.

The practicality of this revised typology as a tool for categorizing faulty reasoning processes was determined in collaboration with two research assistants, as earlier described. The only major change in the typology resulting from this collaboration was the omission of the grouping Language Perversion. The two error types within this grouping had been (s) Idiosyncratic Language, and (b) Overinclusion.

No explicit examples of Overinclusion were found during this collaboration period. A reevaluation of the one example previously found confirmed that it would not have been overlooked as a reasoning error should the category of Overinclusion be omitted from the typology, but would have been accurately categorized as a Hasty Conclusion. The verbalization was "I don't believe in anger. (Pause) I don't believe in slamming the door in someone's face." The Overinclusion present (i.e., if one becomes angry, then one becomes overtly aggressive). It was decided that this category could be omitted from the typology without restricting the goals of comprehensiveness and conceptual clarity.

The application of the category of Idiosyncratic Language was found to defy attempts at interrater agreement, as subjective judgment seemed an intrinsic aspect of applying the label. Differential knowledge of slang or ethnic idioms, and differential toleration of an individual "language license" resulted in repeated disagreements in which there was no obvious resolution. For this reason, it was decided that this category was insufficiently definable to include in a typology of this kind, since interrater agreement as to occurrence and non-occurrence seemed nearly impossible to achieve.

These omissions were the only changes made from the revised typology to the final typology. The numerical arrangement of the categories to facilitate application of the decision rule was found to be helpful and is preserved in the final typology.

The Final Typology:

1. Question Begging
 - a. A priorism
 - b. Abandonment of Discussion
2. Jumping to Conclusions
 - a. Non Sequitur
 - b. Hasty Conclusion
 - c. Overgeneralization
3. Irrelevancies
4. Verbal Inconsistency
5. Libel
 - a. Straw Man
 - b. Ad hominem
6. Conventionality and Compliance
7. Reducing Alternatives
 - a. False Dilemma
 - b. Dichotomized Labeling
8. Preserving Inertia
 - a. Slippery Slope
 - b. Nothing but Objections
 - c. Tokenism

The following presents the error categories included in the final version of the typology of faulty reasoning processes.

Definitions, explanatory notes, and clinical examples are offered. This final typology is expected to meet criteria of conceptual clarity, discreteness, and relevance to the target population. At times a verbalization will contain an error in reasoning which could accurately be labeled as involving more than one of the types of errors listed in the typology. Specifically, errors have been observed which involved Question Begging or Jumping to Conclusions which also involved Libel, Conventionality and Compliance, or Reducing Alternatives. In such cases the error is most accurately characterized by one of the latter labels, which probably have a more restricted range of applicability than the groupings Question Begging and Jumping to Conclusions. It is proposed as a decision rule that when an error of Question Begging or Jumping to Conclusions can also be labeled as another type error, that the latter label be chosen in typing the error.

1. Question Begging. The errors in this grouping involve stating as a given fact what should validly be stated only as a conclusion based upon adequate evidence. Justification for a statement is not offered, and the statement may be presented as if it does not really require justification. Question Begging can occur as a whole statement or as part of a more complex statement or even question.

a. A priorism involves asserting (usually in passing) a statement in advance of the facts or prior to experience. Appropriate to this label are "assumptions" which might conceivably be based upon some evidence but for which no evidence or justification is presented, so that what should be in the form of a conclusion is stated dogmatically or prejudicially in absence of evidence. Examples observed in patient's verbalizations include: (1) In discussing her being abused

by a man, a patient states with conviction that "Everybody needs somebody they can shit on." And later comments that "There's no way to get hurt if you're totally selfish." Two of the Laws of Life.

(2) In discussing not exactly knowing what her "problem" was, a patient stated that "If I knew what it is, I'd just go out and change it," asserting her ability to do so, whatever the "problem," as a given. The context of the statement is that of pursuing the definition of the problem. It is necessary, and not always easy, to differentiate A priorisms from Hasty Conclusions, in which some relevant evidence is present and asserted. Also, A priori statements with a source assigned to them (e.g., my father says) are more relevantly labeled as errors of Conventionality and Compliance.

b. Abandonment of Discussion involves Question Begging with the apparent intent or effect of stopping a conversation or chain of thought. The "final word" is implicit in any such statement, which suggests "There is nothing more to say." The word "just" (e.g., that's just the way it is) is often a cue for this error being committed. Examples of this type error observed include: (1) A patient states, "I'm such a fool. I really am a fool." The therapist asks, "For what?" The patient replies, "Just for being such a fool. I'm just such a fool." Oh. Of course. (2) Apparently at wits end to demonstrate to the therapist that there are any redeeming qualities to a man she is involved with, a patient says "You don't understand him like I do." Decisive, final; one could insert the "just" quite readily. And the statement occurred as it became more and more apparent that it was the patient who did not understand the man's character and motivations. (3) Two examples with regard to a patient

refusing to either feel or express anger include "I just don't think that being mad would solve anything," and "I believe in justified anger, (pause) but I know I'd never feel . . . justified." What makes you think that? How do you know? Sometimes, however, a person will abandon a discussion without committing the above error in reasoning, and such a verbalization should not be labeled as this type error. Examples include "now I'm confused" as a means of avoiding pursuing a topic, or "I can't look from her perspective. I don't want to." The second sentence ("I don't want to.") excludes this verbalization as an error in reasoning.

2. Jumping to Conclusions. Errors within this grouping involve making conclusions on insufficient evidence. The evidence is consistent with the conclusion but is not strong enough to require or warrant asserting the conclusion.

a. Non Sequitur occurs when a conclusion does not necessarily follow from the given premises, but is stated in deductive form (e.g., X, therefore Y). Non sequiturs are structured with a word "link" between the premise(s) and the conclusion such as "therefore," "thus," "so," or "then." The occurrence of such words within a statement serve as a cue to a possible non sequitur. Examples of this type error observed include: (1) A patient, replying to her son's complaint that she doesn't act like she loves him, says "look at how (another child's parents) treat him. I don't treat you that way. So I love you." She is apparently asserting that the unloving example cited exhausts the possibilities. (2) A patient states that "it didn't hurt me when (my lover) left because I expected it," claiming that her expectation of the event was the reason it was not experienced as

painful. Other explanations, such as it did not hurt because she wanted him to leave, are equally probable. (3) A recent graduate, unemployed, says "I have no skills (pause) no talents (pause) so I (pause) so I guess in my mind I think, well, I might as well enjoy a moment here or there (pause) get stoned, have sex" Are there no alternative courses of action available such as learning skills or developing talents? It might also be noted that, given other information provided, the first part of the patient's statement was also hastily concluded.

b. Hasty Conclusion involves prematurely reaching a conclusion that is based upon relevant but insufficient evidence. Errors appropriately labeled as this type will not include words such as "therefore," but will be structured of Hasty Conclusions observed include: (1) Dissatisfied with a quite imperfect relationship with a quite imperfect partner, a patient states that "I'm too demanding." (2) A patient relates to her mother that she'd once come close to considering suicide. Her mother immediately responds, "Why? Why? What did I do?" She leaps to assuming personal responsibility. (3) Another patient explains her leaps in logic in relating that "they just look at me and I think 'they think I'm crazy.'"

c. Overgeneralization refers to shifting the generality of one's observations by describing "some" as "all" or "few" as "none," disregarding counterexamples to the generality offered. Shifting from "one" to "some" to "most" etc., also indicates this error being made. Cue words for this error include "all," "whole," "nothing," "everything," "every," etc. Examples observed include: (1) A patient falsely accused twice in one week states that it "seems I always get

accused of things I'm not guilty of." "Twice" becomes "always."

(2) A patient describes his father as often becoming suspicious and questioning him about his activities, then says "his whole relationship with me has been a questioning one." "Many times" becomes "all of the time." (3) A patient with both recent successes and frustrations states that "I think all I've found out is that I'm really incompetent, because nothing has turned out, it's all been a failure." "Some" becomes "all." Note also the non sequitur ("nothing" has turned out, therefore I'm incompetent), overlooking other possible factors contributing to "nothing" working out.

3. Irrelevancies. This error occurs when irrelevant considerations are introduced into a discussion or "arriving at conclusions." Responses which are irrelevant to the issue at hand fall into this category. Examples observed include: (1) A therapist states that "I'm willing to take the lead, if that's the direction you want it to take." The patient irrelevantly responds that "I don't know what you want me to talk about." (2) In the context of a patient relating a decision to end a relationship but not wanting to anger the other party, the therapist asks "What's wrong with her being angry at you?" The patient's irrelevant response was "Because then the relationship would be over" Further inquiry might have elicited an inconsistency, but as stated above, Irrelevancy is the appropriate label.

4. Verbal Inconsistency. Errors of this type occur when a person makes statements which are inconsistent or contradictory, and where no or little indication is present that the person has "changed his mind" in the interim between the inconsistent statements. Examples of Inconsistency observed include: (1) The following patient/therapist

exchange: Patient: "I want him to straighten up and come home."

Therapist: "You said 'do what you want.'" Patient: "That's what

I want, for him to do what he wants." The patient presents inconsistent messages of her desires, and might be unresolved or conflicted on this issue, although she is apparently unaware of this possibility.

(2) A patient describes a problematic conversation, first stating

that "Everything he said was right" and later that "He never said anything to me that was true." (3) A patient described her depressed

state by saying "I ache so much," and later said in describing the same state, "I have no feeling left." Verbalizations presented as

involving a paradox, however, are not to be considered as inconsistencies.

A paradox, rather than an inconsistency, is presented by a patient stating that she feels "shrunken up and blown up at the same time." Inconsistency should be carefully distinguished from Over-

generalization, in which a counterexample to a generalization is apparent rather than two equally specific incompatible statements

being made. It is recommended that this type error be labeled

Verbal Inconsistency.

5. Libel. Errors of reasoning included within this grouping involve doing damage to a statement or to the source of a statement rather than approaching the truth or falsity of the statement itself. Errors of this type also involve shifting the focus of a discussion or chain of thought from a central to a sometimes tangential aspect of a topic or situation.

a. Straw Man errors occur by distorting a person's statement or position on an issue and then refuting the distortion rather than the original. In general, this error in reasoning involves the

exaggeration or caricaturing of what another has said, and subsequently not dealing with the other's actual statement. Examples observed include: (1) A patient's parents express concern about his school performance. The patient then complains that they are only interested in him in this regard. He has thus changed the subject from his school performance to his parents' singlemindedness, shifting the focus from himself to his parents. (2) A therapist says to an overweight, depressed patient that he is not primarily interested in her weight problem. She later paraphrases his statement as communicating that he didn't care at all about her weight, thus shifting the focus from what is considered of primary importance to his apparent disinterest in her weight problem. (3) A patient discusses his interactions with teachers: "I'm unorganized They say 'if you come in here with a problem, be organized' . . . what they mean is 'don't come here with a problem.'" The best defense is a good offense? This type of error may be very difficult to rate, especially when the therapist's statement is the one distorted. The second example above unfolded only over a two session period. Where someone else's statement is being distorted, the rater is necessarily relying upon the distorter for the accurate statement as well, thus, many of these errors, although suspected, will remain covert.

b. Ad hominem errors involve directly attacking the source of a statement rather than discussing the statement itself. An Ad hominem error must strictly contain both a statement being "refuted" and the attack which serves as the "refutation." The cue to this error is that it essentially involves name calling, or an extreme version of the maxim "consider the source." Examples observed include:

(1) A patient, realizing that her mother is psychologically disturbed, decides that she need not take anything her mother says or does seriously. Any expressed or implied criticism or advice her mother may communicate is thus automatically trivial or "crazy." (2) Given signs of both interest and disinterest, a patient states that his parents are "not interested" in him, as a means of dismissing their advice or comments. Attention is focused upon their apparent disinterest rather than other problematic aspects of the relationship.

6. Conventionalality and Compliance. This error involves a willingness to accept the truth of a statement by virtue of something external to the statement. Important variations include: Cultural Bias (ethnocentricity, chauvinism); Appeal to Tradition or Faith (uncritical acceptance of what's "tried and true" or "the way it's done"); Appeal to Authority (an error in reasoning unless (1) the authority cited is personally reliable, and (2) the authority cited is qualified as an expert on the issue at hand; also, accepting the opinion of an authority as a fact); Impressing by Large Numbers (accepting the truth of a statement or position because of the many people who support it). Examples of Conventionalality and Compliance observed include: (1) A patient prefacing several of his statements with "Dad has a saying" (2) A patient stating that "If you can't solve it, get mad at it. I had that ingrained in me." His parents, who "ingrained" the lesson, were uncritically accepted as authorities on how to handle frustration.

7. Reducing Alternatives. The errors in reasoning within this grouping each involve limiting the possible number of actions within a situation or the possible number of evaluations of something. This

reduction of alternatives typically results in an either-or, black-or-white approach or labeling process in which only two alternatives are proposed to exist.

a. False Dilemma refers to erroneously proposing that the possible number of actions or reactions within a situation are limited to two. The two alternatives offered are often of an extreme nature, but the person asserts that one can only do one or the other. Examples observed include: (1) A patient, referring to her son's complaints that she is shirking her duties as a mother, stated "When do I quit feeling guilty and say 'to hell with you'?" She saw her only two possible reactions as being guilt or anger/indifference. (2) A patient relates an incident at her parent's home in which her mother is ranting and raving at the patient's father and at the patient. The patient states that her father left the room, leaving the patient to continue the battle with her mother. The therapist asks, "He just left?" to which the patient replies, "Well, yeah. He did the smart thing. I mean he could've hit her, or leave. So he left." One or the other: physically attack or physically withdraw.

An important variation of this error involves justifying one action or reaction within a given context by denouncing another action or reaction as undesirable. This type argument is valid only if the alternatives cited are realistically the only possible. Examples observed include: (1) A patient justifying a quite unsatisfying relationship by deciding that it was better than no relationship. These were not the only options open to her. (2) Discussing becoming involved in unwanted conversations with strangers, a patient justifies

not extricating herself from such situations with the comment, "I just can't be mean to them."

b. Dichotomized Labeling errors occur when a person asserts that a particular event, action, etc., can only be labeled as either one thing or another. Opposite labels are offered without any dimensionality or scaling of degree recognized, allowing only two possible evaluations of an event. The poles offered are often extreme, and the stating of the two poles is necessary for a verbalization to accurately be labeled as committing this error. Examples of this error observed follow: (1) A patient, discussing her dissatisfaction with her academic success, which was above average, stated that "If I can't be great I don't want to be anything" and further related feeling that she was not great, and therefore considered herself to be nothing. The dimension of "nothing"--"great" was simplified to "nothing" or "great." (2) A woman categorizes men as being either "strong but abusive" or "nice but weak." The dimensions of strong-weak, and "nice"-abusive were collapsed into a no-win dichotomy.

8. Perserving Inertia. Each of the errors in reasoning within this grouping share a common feature of forestalling action or maintaining the status quo as an essential characteristic.

a. Slippery Slope refers to arguing erroneously that taking one action in a possible sequence of actions will automatically lead to specific other actions, inevitably resulting in an undesirable predicted end point. The domino theory of political/military influence is a variety of this type error. No explicit examples of this error were observed in therapy. A hypothetical example would be a patient rejecting the idea of expressing anger at a friend, stating that "one

thing would lead to another" with the "inevitable" result that the friendship would be destroyed.

b. Nothing but Objections refers to rejecting all proposals of solution to a problem, refusing to accept even the best possible course of action or evaluation. Avoidance of resolution through trivial objections or excuses is the most common form of this error. The unresolved problem can be one of what to do or also one of what to think or feel. An example observed follows: A patient, having realistically decided upon the value of ending a relationship, hesitates from acting on her decision, citing "possible" consequences of severe loneliness, overdrinking, becoming promiscuous, the other party committing suicide, etc.

c. Tokenism refers to "mistaking a token effort, usually ineffective, for an adequate effort." This error typically involves overstating the sincerity or degree of effort expended towards a given end. Token assent, or "yes, but" responses also exhibit this error. One example of this error observed follows: A patient has previously discussed a fear of being somehow overwhelmed, engulfed, or destroyed should she become depressed. Between therapy sessions, she suffered a day-long depression. The therapist comments, "You learned a valuable lesson--that you could get through it" (i.e., a depressed state). The patient replies, "Yeah . . . but I just don't want it to get that bad again." The "valuable lesson" was only tokenly endorsed.

CHAPTER III

RESEARCH DESIGN

The general purpose of this research is to expand the number of types of errors in reasoning within the psychological literature, meeting the following criteria:

1. Demonstrating the overt presence of errors in reasoning within a predominantly non-psychotic sample of psychotherapy patients;
2. Demonstrating errors in reasoning as occurring within the context of a "normal" psychotherapeutic interview in which the elicitation of errors in reasoning is neither a special nor a primary concern of the therapist; and
3. Demonstrating the conceptual clarity (recognizability and discreteness) of the proposed types of reasoning errors.

The general design of this research is the unobtrusive observation and rating of patient's verbalizations within a psychotherapy interview, while screening out patients with possible psychosis. The method of rating verbalizations allows for the analysis of interrater agreement on the occurrence of the specific proposed types of errors in reasoning. Preliminary research in the development of a typology of errors in reasoning (see Chapter I and II) has included a literature review of both psychological and philosophical sources, and the viewing of taped psychotherapy sessions, noting the occurrence of various logical errors in patients' verbalizations. This preliminary research has also included (see Chapter II) the development of a nominal rating

scale of types of errors in reasoning in conjunction with two raters who had no previous experience with this research.

Sample

Subjects for this research consist of adult (18+ years) psychotherapy outpatients. Outpatients rather than inpatients were chosen to maximize the probability of a non-psychotic sample. The source of these subjects has been The University of Tennessee Psychological Clinic, where patients are aware of the research orientation of the facility, where permission for possible unobtrusive research is routinely obtained, and where interviews are routinely audio or video recorded.

Specifically the sample includes twenty-one recordings of psychotherapeutic interviews, no two recordings being of the same patient. (This sample consisted of eight males and thirteen females.) A sample of twenty-one should be large enough to insure that various types of errors in reasoning will occur with sufficient frequency to assess the presence and recognizability of these error types. Psychotherapy sessions have been chosen as the data source to maximize the probability that significant problematic aspects of a person's life or way of living will be a natural topic of conversation. Discussions of the problematic aspects of a person's life is believed to increase the probability of the occurrence of explicit errors in reasoning.

Interviews judged as being highly structured by the therapist, rather than being less structured and more open, were not included in the total sample of twenty-one patients observed. The structured versus open aspect of each interview was assessed by the therapist's

response to the following statement: This interview could best be characterized as being primarily

1. Open, the therapist's questions and comments being of a typically general nature, the patient being encouraged to discuss aspects of his/her life at some length, or

2. Structured, the therapist's questions and comments being of a typically specific nature, the patient being encouraged to respond specifically and to discuss aspects of his/her life fairly briefly.

No patients interviewed by the author were included in the sample, as the author may have elicited errors in reasoning that would otherwise not occur or remain covert. Any patient diagnosed as psychotic by the screening technique was included in the sample for purposes of analyzing interrater agreement. However, verbalizations of such patients cited as exhibiting reasoning errors will be excluded from any discussion of the potential clinical utility of specific results of this research. This will minimize the possibility that any verbalizations discussed as illustrative of reasoning errors will be a manifestation of a thought disorder. Similarly, the verbalizations of any subject not completing the screening are not utilized in discussion but were utilized in assessing interrater agreement.

Screening

Subjects for this research were administered the MMPI-168 as a screening for psychosis. The MMPI-168 is a brief form of the Minnesota Multiphasic Personality Inventory (MMPI) which takes only approximately 30 minutes for the subject to complete. It is relatively

simple to administer, score, and convert to standard scores. Graham (1977) states that of the various short-forms of the MMPI, "The MMPI-168 is the most promising abbreviated form currently available." Discussing the MMPI and the MMPI-168, Faschinbauer and Newmark (1978) state that within the current literature, "No significant differences occurred between the two forms with regard to general diagnostic or interpretive accuracy." Any subject whose MMPI-168 profile exhibited one or more clinical scale equal to or greater than a T-score of 70+ was diagnosed according to profile and single scale interpretive information presented by Lachar (1974). A subject thus receiving a diagnosis of psychotic (or latent psychotic) severity was not included in the data sample used for discussion of the results of this research.

No feedback was provided to patients' therapists subsequent to the diagnostic screening, so as not to influence a patient's treatment at the clinic. This decision was due to the fact that the MMPI-168 is not presently recommended as a clinical tool, further validation research being required for it to be utilized for other than research purposes. While potentially a valuable source of clinical information, the MMPI-168 is still in the development stage, and clinical usage would be premature and possibly misleading to the therapist.

It might be noted that in addition to the formal screening procedure outlined above, therapist permission was always obtained before soliciting a patient's participation in this research. It is expected that this likely created a de facto screening to rule out psychosis, as it is expected that the more disturbed the patient, the less willing the therapist might be to have that patient contacted as

a research participant. Since the subject pool was also of an out-patient nature, the number of subjects being diagnosed psychotic as assessed by the screening procedure was expected to be low.

A patient's signature on the consent form was obtained prior to administration of the MMPI-168. A copy of the consent form is found in Appendix A.

Training of Raters

Two research assistants were trained to recognize and transcribe the occurrence of the various types of errors in reasoning described in the final typology of faulty reasoning processes (see Chapter II). The duration of time employed in this training period was approximately 25 hours over a nine week period. The training involved discussion of the typology, assigning ratings to specific verbalizations provided by the researcher, reviewing tapes of therapy sessions as a group and discussing reasoning errors observed, the two assistants reviewing tapes and discussing their findings with the researcher, and, finally, the two assistants rating tapes independently and comparing their observations for accuracy and reliability.

Collection of Data

The two trained research assistants independently observed video and audio tapes of psychotherapy interviews of the twenty-one patients in the sample. These raters were responsible for identifying the tape being reviewed, the type of any explicit error in reasoning that occurred, and the verbatim verbalization exhibiting that error. Due to the relatively low ratio of occurrence to non-occurrence of any one of the types of errors in reasoning, or of any error in

reasoning, non-occurrence (i.e., "no error in reasoning explicit in X verbalization," or "Y type error not explicit in X verbalization") was not recorded, for statistical reasons elaborated below.

Treatment of Data

The data collected is nominal in nature. Interrater reliability, or agreement, was assessed. For nominal data interrater reliability and interrater agreement are equivalent (Tinsley and Weiss, 1975). Data was organized by compiling the ratings, from each rater, concerning each type of error in reasoning. The ratings collected for each type error was analyzed to ascertain whether disagreement existed between raters concerning the occurrence of that error in each verbalization cited. For each type of error rated, a 2x2 table of interrater agreement was constructed as follows, with a statistic of percentage agreement calculated from the table.

		Rater B	
		occurrence	non-occurrence
Rater A	occurrence	a agreement on occurrence	b disagreement
	non-occurrence	c disagreement	d agreement on non-occurrence

Cell d will not be employed. Due to the low ratio of occurrence to non-occurrence of any one type of error in reasoning, interrater agreement would be unrealistically inflated by the inclusion of cell d due to the large number of verbalizations of non-occurrence

type. The statistic for interrater agreement called for is that of effective percentage agreement. Hartmann (1977) explains that in data of this type "percentage" agreement is calculated on only those occasions in which either or both observers rate the target behavior as having occurred." Jensen (1959) described the same procedure: "The correct formula for percentage agreement . . . is the number of actual agreements divided by the number of possible agreements and not simply the number of observations." For a 2x2 table constructed as above, the formula for calculating effective percentage agreement is $a/(a+b+c) \times 100$.

Cohen (1960) discusses a statistic for interrater agreement with nominal data that corrects for expected, chance agreement. This statistic, Kappa, was also employed. The formula for Kappa is $(P_o - P_c)/(1 - P_c)$, where P_o equals the proportion of ratings in which the two raters agreed, and P_c equals the proportion of agreements expected by chance. P_o will equal the number of observations in cell a (agreement on occurrence) of the 2x2 table. P_c will equal 1 divided by the number of possible ratings, the number of possible ratings being the number of type errors in reasoning listed in the typology plus 1 (no error/non-occurrence). For this data, $K = [P_o - (1 \div 16)]/[1 - (1 \div 16)]$, or $K = (P_o - .0625)/.9375$.

Due to low ratio of occurrence to non-occurrence in such data noted earlier, and due to the raters having no clear "units" of data to attend to, it is possible that the agreement on occurrence of errors in reasoning will be very low for the entire sample. Should this occur, the likelihood that the above factors are involved will be approached through constructing 1x2 table of agreement as to type of

error occurring in those verbalizations cited by both raters as exhibiting an error. The same statistics will be calculated as in the 2x2 tables.

Verbalizations cited by both raters	a	b
	rater agreement as to type of error exhibited	rater disagreement as to type of error exhibited

When interrater agreement is acceptable, types of errors will also be ranked in order of relative frequency of occurrence within the sample. Types of errors within the same typological grouping in which poor interrater agreement occurred may be combined under the group heading should this increase interrater agreement. For group errors, $K = [P_0 - (1 \div 9)] / [1 - (1 \div 9)]$, $K = (P - .11) / .89$. Errors in reasoning in which poor interrater agreement occurs will be rejected from the typology or included with qualification.

The presentation of results will include agreement statistics, examples of cited errors in reasoning, and a transcript of ratings of a sample subject. These presentations will, with the preliminary research presented in previous chapters, form the basis for Chapter V of this dissertation.

CHAPTER IV

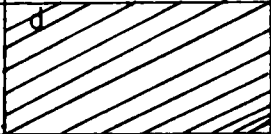
RESULTS

I. AGREEMENT STATISTICS

This section will present agreement statistics for each error type of the typology. Effective percentage agreement and Kappa will be calculated for each type error. The error types will be presented in the sequence of their appearance in the typology. Following the presentation of agreement for each error type, agreement statistics will be presented for those verbalizations rated by both raters, inclusive of error type rated. The sample from which the ratings were obtained included twenty-one subjects. Results of screening diagnoses as determined by a MMPI-168 profile analysis included, of these twenty-one, fifteen non-psychotic, two psychotic, and four no MMPI-168 obtained. From this sample of 21, a total of 208 verbalizations were cited by one or both raters as exhibiting an explicit reasoning error.

1. Question Begging

a. A priorism

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 9	b 25	a+b+c = 50
	non-occurrence	c 16	d 	
		effective percentage agreement = 18%		Kappa = .13

b. Abandonment of Discussion

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 4	
	non-occurrence	c 5		

$a+b+c = 9$
 effective percentage agreement = 0% Kappa = --

2. Jumping to Conclusions

a. Non Sequitur

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 5	b 25	
	non-occurrence	c 10		

$a+b+c = 40$
 effective percentage agreement = 13% Kappa = .07

b. Hasty Conclusion

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 1	b 20	
	non-occurrence	c 12		a+b+c = 33
		effective percentage agreement = 37%		Kappa = 0

c. Overgeneralization

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 6	b 12	
	non-occurrence	c 18		a+b+c = 36
		effective percentage agreement = 17%		Kappa = .11

3. Irrelevancies

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 0	
	non-occurrence	c 2		a+b+c = 2
		effective percentage agreement = 0%		Kappa = --

4. Verbal Inconsistency

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 1	b 11	
	non-occurrence	c 2		a+b+c = 14
		effective percentage agreement = 7%		Kappa = .008

5. Libel

a. Straw Man

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 0	
	non-occurrence	c 0		a+b+c = 0
		effective percentage agreement = --		Kappa = --

b. Ad hominem

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 0	
	non-occurrence	c 0		a+b+c = 0
		effective percentage agreement = --		Kappa = --

6. Conventionality and Compliance

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 6	b 11	
	non-occurrence	c 1		

$a+b+c = 18$
 effective percentage agreement = 33% Kappa = .29

7. Reducing Alternatives

a. False Dilemma

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 1	b 10	
	non-occurrence	c 1		

$a+b+c = 12$
 effective percentage agreement = 8% Kappa = .02

b. Dichotomized Labeling

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 1	b 0	
	non-occurrence	c 4		a+b+c = 5
		effective percentage agreement = 20%		Kappa = .15

8. Preserving Inertia

a. Slippery Slope

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 4	
	non-occurrence	c 0		a+b+c = 4
		effective percentage agreement = 0%		Kappa = --

b. Nothing but Objections

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 0	
	non-occurrence	c 0		

effective percentage agreement = -- Kappa = --

$a+b+c = 0$

c. Tokenism

		Rater B		
		occurrence	non-occurrence	
Rater A	occurrence	a 0	b 0	
	non-occurrence	c 1		

effective percentage agreement = 0% Kappa = --

$a+b+c = 1$

The following tables present agreement statistics for those verbalizations cited by both raters as exhibiting errors. This comprised approximately one-fifth of the total number of verbalizations cited by either or both raters.

rater agreement as to type error		rater disagreement as to type error		a+b = 40
a		b		
	29		11	
effective percentage agreement = 73%		Kappa = .71		

rater agreement as to error group		rater disagreement as to error group		a+b = 40
a		b		
	34		6	
effective percentage agreement = 85%		Kappa = .83		

The agreement statistics presented in the preceding section will be discussed with regard to the purposes of this research in Chapter V of this dissertation.

II. EXAMPLES OF CITED ERRORS IN REASONING

The following presents examples of errors in reasoning cited in this research. Up to three examples from each category of the typology will be presented, as far as is possible and demonstrative. A brief note clarifying the manner in which each example characterizes

the category of faulty reasoning to which it belongs will be included. These examples will be utilized in Chapter V of this dissertation, and thus meet the following criteria for presentation: (1) Interrater agreement, or agreement between rater and author; and (2) A screening diagnosis of non-psychotic as determined by a MMPI-168 profile analysis. The significance of these examples toward illustrating the overt presence of errors in reasoning in a non-psychotic sample, and that such errors are potentially clinically relevant, will be elaborated in Chapter V of this dissertation.

1. Question Begging

a. A priorism

The following examples involve asserting as given a statement in advance of the facts or prior to experience. In the first example, a person asserts "knowing" what change will procure satisfaction in his life.

Pt: It's like I can't control my thinking--It's like I'll try to concentrate on this--then I'll daydream over here for awhile. When I'm able to concentrate, I'll be satisfied. When I'm able to concentrate on something as well as I'm able to concentrate on my daydreams, when I can lose myself in a daydream, I'll be satisfied.

In this next example of an A priorism, the quality and outcome of a hypothetical circumstance is asserted as foreknown.

Th: How is it an argument at the (restaurant)?

Pt: You mean how do I see it as an argument?

Th: What do you mean by that?

Pt: I just, I see myself as talking to him and, uh, him convincing me I should stay in the kitchen. (Pause)
I guess I place him above me, that he's right, even before I have a discussion with him, he's right and I'm wrong.

This last example asserts as known one result of a potential personality change.

Pt: If I were to become uninhibited, I wouldn't be here.

Th: You wouldn't be here?

Pt: Yeah, because I would find all this sorta silly and meaningless. That's possible.

b. Abandonment of Discussion

The following examples involve question begging with the apparent intent or effect of stopping a conversation or chain of thought. The first two involve asserting a "simple fact" which obstructs inquiry by the therapist.

Pt: (Discussing self-destructive behaviors) I'm just so used to it. I guess that's why I do it so much. It's something I've always done.

Pt: (Dog-phobic patient discussing checking in advance if host or hostess has a dog) It's just something I have to do. I feel I have to anyway.

The final example involves this process internally, as a means of "thought stopping."

Pt: (In discussing his early sexual experience, which conflicted with his religious beliefs) I tend to

rationalize. I explained it to myself as there are some things I couldn't control and this was one of them.

2. Jumping to Conclusions

a. Non Sequitur

The following examples involve asserting a conclusion which does not necessarily follow from the given premises, but is stated in conclusive form (e.g., X therefore Y). In the first example, the structure is "because" X then Y.

Pt: (Discussing how she was different from her family while she was growing up) feeling separated or different from our family, and I felt like I was unlovable, I think, and because of being different . . . I thought that because I wasn't like them, I couldn't be loved.

In the following non sequitur, the premise and conclusion are presented as X, "and so" Y.

Pt: Traffic is I become enraged over something little like traffic and that's when I thought, "I really hate people." I really, I wasn't worried about it, but I really, I really felt like I hated everyone, and then it dawned on me the only time I ever hated people was in traffic. And so what I've decided that I really hate are the machines. I hate the machines, the hundreds of machines going back and forth, some killing people, some, you know, just tailgating and swerving.

In the final example, both premise and conclusion are presented very succinctly (X, "so" Y).

Pt: I don't particularly like him, so whatever he says has very little impact on me.

b. Hasty Conclusion

The following examples involve prematurely reaching a conclusion that is, however, based upon relevant evidence. The first hasty conclusion clearly presents some significant events upon which an important decision was apparently based. (The last sentence of the example contains a non sequitur which both raters missed.)

Th: (Asks what attracted patient to her husband originally)

Pt: He was exciting and dashing and fun and real dominating. During the last few years before that, my parents had been having a hard time and I had come to the conclusion that the reason, one of the reasons at least, that their marriage was such a mess was that my mother was allowed to dominate the situation. And my father was weaker and didn't stand up to her. Well, he did in a way, but not in the right way, I don't guess, but and I saw characteristics in myself that were like my mother and figured that what I needed in a husband was someone who could dominate me. And if I were submissive and didn't feel like I could dominate the situation, then my marriage would be happy.

The second example nearly stereotypes the "hasty" aspect of such errors.

Pt: The very time I realized that was when my roommate brought over his girlfriend and I'm there, I'm in a T-shirt and I've been studying and scroungy and everything, and so I go to talk and I start talking to them, and all of a sudden I'm aware--she talks about her friend and so I'm thinking to myself, "yeah, I'd like to get to know your friend" but then, you know, she never brings up the subject so then all of a sudden I look at myself and see, "Jesus, no wonder--she comes in and I'm like this, the T-shirt, you know, I don't do this I don't do that."

Th: So you started a list of all the things you feel are negative about yourself.

Pt: I look at myself and I understand why that she didn't bring up the subject of her friend.

The last example again involves relevant evidence and an at least uncertain conclusion.

Pt: (Discussing conflict with younger niece) So I took it away from her and I slapped her and she started crying carrying on and my daddy came over and saw what had happened. And he slapped me, and I thought "He doesn't love me anymore--she's totally displaced me--even my daddy doesn't love me anymore."

c. Overgeneralization

The following examples involve shifting the generality of one's observations by describing "some" as "all," or "few" as "none." The first example shows the therapist challenging the patient's "everything."

Pt: I got excited about it and everything lately, I get all excited about it and everything goes downhill on me.

Th: A lot of things sound like they're going uphill.

Pt: Yeah, a couple.

The next overgeneralization proposes that with regard to one critical dimension, "everybody" is the same, "everytime."

Pt: (Discussing history of substance abuse) I don't know where to go to meet other people. Everytime I go to meet other people they're the same type of people. They end up turning out the same way. I got away from that in high school. I mean, when I got out of high school that summer, I got away from it. If it wasn't me, it was killing me and it was killing my family. I figured I'd straighten myself out and I met Steve and stayed straight. When he dropped me, I found the same people again. Everybody around gets high or drinks.

The final example involves a report of someone else's overgeneralization and the presentation of the counter-evidence.

Pt: We just got a whole lot of stuff done and I felt real good about it. And my mother says, "Oh, I

didn't get anything done." She only washed about two loads of clothes and spent the whole morning in the garden.

3. Irrelevancies

These examples involve irrelevant considerations or topics being introduced into a conversation. Few things may be completely irrelevant to clinical inference, but that perspective apparently eludes the therapist in this first example, as the patient seems to derail the train.

Th: So if you set the standard up that "if you're going to leave, I'm not going to do anything," you're going to end up not doing anything for a long time--It's going to be a long series of not doing anything.

Pt: I just realized I've been doing this for about eight months now, haven't I?

Th: Doing what?

Pt: Coming here.

Th: Oh, uh, yeah. I guess seven or eight, seven and a half I guess.

Pt: Doesn't seem like it's been that long.

Th: Why?

Pt: I don't know.

Again, a dynamically relevant communication is conversationally irrelevant, with the effect of there seeming to be two monologues rather than one dialogue.

Pt: Today I am more nervous for some reason.

Th: Well, we are going to be, uh

Pt: (Interrupting) But I do itch. (Itching was earlier discussed as sign of anxiety.)

Th: You do itch, yeah, so do I a little bit--we are going to be closing and finishing a couple of weeks and

Pt: (Pointing) I was itching my finger, heh.

4. Verbal Inconsistency

These examples involve statements which are inconsistent or contradictory, and in which no or little evidence of a "change of mind" is present. The first example involves a patient denying what she had said earlier in the session. A reaction of fear is later described as indifference.

Pt: I'm not only scared of dogs. I'm really scared of animals. It's just that dogs are the ones I always run into on the street. (Patient also reported staying in her house to avoid cats.)

****Later, when questioned about fear of other animals****

Pt: Well, I guess you could call it a fear. I don't really like cats or rabbits or to feed horses sugar out of my hand. It's just not my style.

The next example of verbal inconsistency involves contradictory statements in which no revision of position was evident to the rater.

Th: Why would you think I might be uncomfortable?

Pt: Well, I suppose that there's no reason for you to be uncomfortable. I suppose that you might be

because this is part of your course. You're trying to become a psychologist and there's maybe some pressure on you to perform and do a good job.

The last example again involves inconsistent statements in which ambivalence is not expressed consciously.

Pt: I guess one reason I brought that up was taking that IQ test through Omni. It's a ridiculous test. I really shouldn't be taking it. It's suppose to be a test for geniuses It looks like a good test to me, but it's hard, extremely hard.

5. Libel

a. Straw Man

No examples of this error is available from this research, as no instances of its occurrence were cited by either rater.

b. Ad hominem

Again, no instances of this error's occurrence were cited. No instances of errors in this grouping, Libel, were cited.

6. Conventionality and Compliance

These examples involve a willingness to accept the truth of a statement by virtue of something external to the statement, such as Tradition or Provincialism. In the first example, the "something external" is one's parent.

Pt: I don't want to grow up any faster than I have to, you know, because momma says, "Well, college is here and this is supposed to be" (pause) at least when they looked at it, "It's supposed to be the

most fun time of your life as well as a, you know, good learning experience for everything and, you know, enjoy it while you're there because when you get out you'll be working and everything and you won't have that to go back to.

In the next example, the authoritative source is more ambiguous.

Pt: I've always grown up hearing or believing if you ignore it, it will go away.

In the final example, there is again an appeal to a specific authority.

Pt: It's like Joe gets upset over little things. And Mother always taught me to look for the good things, simple, good, try to find the best you can out of everything, that way things won't bother you so much.

7. Reducing Alternatives

a. False Dilemma

The following examples involve erroneously proposing that the possible number of actions or reactions within a situation are limited to two. The first example illustrates the black-and-white quality of false dilemmas as the patient insists that one person or the other is at fault and to be blamed when problems exist between them.

Pt: (Discussing being unhappy in relationship) I usually don't get angry with people even, I usually just get upset and a lot of times if somebody gets mad at me or something and I tell them,

I feel like, like, well, "What have I done wrong" instead of what have they done.

The final example involves chosen action rather than reaction, in which only two possibilities are clearly seen.

Pt: (Discussing making impressions socially) Now I wonder if I'm sorta fading into the background, you know what I mean? And I don't want to fade out either. But I also don't want to be pushy.

b. Dichotomized Labeling

These examples involve asserting that a particular event, action, etc. can only be labeled in either one way or another. The first example shows a therapist succinctly stating the patient's dichotomized labeling.

Th: (Summarizing patient's statements) I see . . . if you weren't the center of attention then you're ugly and sloppy and dumb, etc., etc.

The second example shows a trite phrase of either-or use quite seriously by a patient.

Th: Are you aware of how controlled you're talking now, how controlled you are?

Pt: I guess I'm pretty, yeah, I am very controlled. Is that good or bad?

The final example again involves a therapist's summary, and again a dichotomy of value judgment.

Th: (Summarizing long conversation in which patient discussed having abruptly quit playing rugby after two and a half years on a successful team) It's

like you're playing rugby, thinking, "Wow, this is great, I'm going to go on to stardom," the rugby olympics or whatever, and then after two years "gee, now we're just still playing around, just a bunch of amateurs here," and then you think "well, shit, this is just crums--fuck this shit-- I mean I want superstardom--no more backlot rugby for me."

Pt: Really.

8. Preserving Inertia

a. Slippery Slope

The following examples involve asserting that one action or event in a possible sequence will automatically lead to others, inevitably resulting in a undesirable end point. The first example begins with one ambiguous event and tumbles to disaster.

Pt: (Discussing roommate's boyfriend leaving the house)
That's the first thing he ever said he was going to do that he actually seemed like he was going to do. Which means if he's going to do something like that, he might decide to marry her which means she'll be moving out which means I'll have to find a new roommate because I can't live there by myself. I don't have the money to pay.

The final example involves a person inhibiting oneself because of the chain of events that might follow action.

Pt: I really feel like I've always been afraid to admit that I was good at anything. (Pause) Afraid

I won't be good at it anymore. (Pause) It means I'm gonna have to try it.

Th: Do you recall what you said a few minutes ago about being good at something?

Pt: That if I admit that I'm good at something that I might not be good at it anymore, that everybody is going to be watching and I'm going to have to be better at it. I've said that before, haven't I?

b. Nothing but Objections

No example of this error is available from this research, as no instances of its occurrence were cited by either rater.

c. Tokenism

The following example involves mistaking a token effort for an adequate effort. This is the only available example, and involves a token assent to or consideration of the truth or significance of the therapist's comment.

Th: (Responding to patient's discussing incompleteness)
I think you're talking about therapy too.

Pt: Yeah, probably. I hadn't thought about that exactly because there's so much stuff . . . (on and on, returning to previous content).

Sample Case: Ratings of One Subject

The following is a transcription of the verbalizations cited as errors by each rater on one subject. Additional explanatory notes as to the ratings of each verbalization have been kept to a minimum to preserve the "raw" quality of the data. This subject meets the

criteria for utilization for discussion listed earlier, and the transcript will be discussed with regard to the purposes of this research in Chapter V of this dissertation.

One.

Pt: (Discussing feeling like she has a lot of things hanging over her that will never end) "Going to work is the only thing I enjoy doing (1) because I know when I start and I know when I'm finished--when I clock out, and everything else is never done (2) (Goes on to give examples of how, when she finishes one paper or project, she has to start on another one and only at the end of the quarter is everything done.)

Rater A

1. Overgeneralization
2. Overgeneralization; Doesn't recognize counterexamples she provides herself.

Rater B

1. Overgeneralization; Elsewhere talks of enjoying and getting along with her parents.
2. Overgeneralization; Gets papers for school done.

Two.

Th: (Discussing incompleteness) I think you're talking about therapy too.

Pt: Yeah, probably. I hadn't thought about that exactly because of there's so much stuff . . . (on and on, returning to previous content).

Rater A

(Not cited)

Rater B

Tokenism

Three.

Pt: All this stuff is going on in the house and I can't seem to get it done.

(Later)

Pt: Everything's fixed, there's nothing for me to do--and the stuff that is for me to do--you know, it's getting done--slowly but surely the screens are going up and everything's getting fixed

Rater A

(Not cited)

Rater B

Verbal Inconsistency

Four.

Pt: (Discussing roommate's boyfriend leaving the house)

That's the first thing he's ever said he was going to do that he actually seemed like he was going to do. Which means if he's going to do something like that, he might decide to marry her which means she'll be moving out which means I'll have to find a new roommate because I can't live there by myself. I don't have the money to pay.

Rater A

Slippery Slope

Rater B

(Not cited)

Five:

Pt: I don't want to find a new roommate because I don't know anybody, you know what I mean, I know it's not going to

work out, some stranger coming off the street answering an add.

Rater A
(Not cited)

Rater B
A priorism

Six.

Pt: I can't enjoy this time right now. It's like I thought, you know, last quarter I was looking, last quarter I was happiest looking forward to being happy this quarter. And here I am this quarter and I think I should be happy but instead of just being happy or doing what I want to do, I keep thinking about the future, you know, all these things are going to happen to me and what am I going to do?

Rater A
A priorism

Rater B
(Not cited)

Seven.

Pt: It's like this stuff shouldn't bother me, you know, but it really bugs me and uh, I don't know, it's like everything, just everything bugs me at this point. Nothing is all right (1). I just jump on everything.

Th: It seems like you're jumping on yourself, really getting down on yourself.

Pt: Yeah, I don't know what's wrong with me. It's like I said, everything should be perfect right now, right? (2). Last quarter I set it up; this quarter is going to be perfect. And nothing is perfect. And uh, it's like I don't enjoy anything (3). I want to recapture what I had

last quarter, looking forward to this quarter. It's like I thought it would be, so it should be perfect, right? (4).
But it's not and so I wonder what's missing? Where is the perfectness, what's missing?

Rater A

1. Overgeneralization. Elsewhere says likes work, getting along better with her roommate and mother and satisfied with her major change.
2. Non sequitur because planning something to be perfect doesn't mean it will be.
3. Overgeneralization; See above
4. Non sequitur

Rater B

1. Overgeneralization; Is getting along with school and likes her major.

Eight.

Pt: Everything is just like it should be but it's not good.
It's not like everything is letting me down. You know what I mean?

Th: It's no good because . . .?

Pt: Because it's good.

Rater A

No error; recognizes and presents it as a paradox.

Rater B

(Not cited)

Nine.

Pt: If I don't even paint the house, you know, the house is not going to fall apart, if I don't even paint it for the next two years, you know it's not stuff that's necessary--

Th: Or urgent.

Pt: Or urgent, yeah--but, it's like if I don't plan it out, if I don't have it done, the whole world is going to fall apart or something.

Rater A

(Not cited)

Rater B

Non sequitur

Ten.

Pt: (Discussing her roommate and roommate's piano) It's like now she's adding something or I feel she's adding something to the house with her presence and the things she can bring into it and I don't want to lose her now. And I think (her roommate's boyfriend) (inaudible phrase) he's going to go off and be a big strong man who can handle bears and take her away and take my piano and the whole thing is going to go crashing down. I'm not going to have any roommate. Not going to have any piano, nothing.

Rater A

Slippery Slope
(author agrees)

Rater B

Overgeneralization
(author disagrees)

Eleven.

Pt: Every man I meet has some quality like my dad.

Rater A
(Not cited)

Rater B
Would like to call
Overgeneralization
but can't.

Twelve.

Pt: (Discussing difficulties with male professors) I'm going to have trouble accepting it (feedback on English paper) from him (her professor) because it's going to be criticism (1), (2).

Rater A
1. Whole quote is non sequitur
2. Underlined is A priorism

Rater B
(Not cited)

Thirteen.

Pt: (Discussing switching majors) I was in Spanish to begin with and you couldn't do anything with a foreign language at all except teach it (1) . . . but English anyway you went you could go in any field (2).

Rater A
(Not cited)

Rater B
1. Overgeneralization
2. Overgeneralization

Fourteen.

Pt: I'm real happy with what I've decided to do since it's sorta open. I don't have to go into one channel and

stay there for the rest of my life--which is probably what I'll end up doing anyway the way I'm so organized, you know what I mean? So I don't know why I want to have all this openness around me since I'm gonna close all of it anyway!

Rater A

(Not cited)

Rater B

Hasty Conclusion

Fifteen.

Pt: You don't always have to have a problem--that's not a focal point for somebody's life, some big problem they've got to solve. But it seems like that's all I have after all these years and now it's gone and I don't have anything else to fill it up.

Rater A

(Not cited)

Rater B

Verbal Inconsistency; See (Fourteen). First stating happiness at "openness," now stating "don't have anything."

Sixteen.

Pt: (Having earlier stated not having enough time to do all she had to do) I have too much time to sit around and do the stuff I want to do.

Rater A

Verbal Inconsistency

Rater B

(Not cited)

Seventeen.

Pt: (Discussing making impressions socially) Now I wonder if I'm sorta fading into the background, you know what I mean? And I don't want to fade out either. But I also don't want to be pushy.

Rater A

False Dilemma

Rater B

(Not cited)

Eighteen.

Pt: (Discussing same issue as above) I don't want to just do that exactly (inaudible phrase) you know, into the walls or whatever. But I don't want to really stand out exactly.

Rater A

False Dilemma

Rater B

(Not cited)

Nineteen.

Pt: (Discussing mood in which there seems to be nothing important enough to talk about) At this stage, nothing is really all that important, I mean, the important things are shelter and food and that kind of--at this level in society, everybody has that stuff so in my opinion nobody should be speaking to anybody . . . there's nothing to say (1). Sometimes I realize that's not it and I want to talk . . . but other times, it's just like that's it--anything that's not absolutely vital to survive or whatever is just nothing--then it goes back to the other extreme--

everything is everything, vital, necessary (2).

Rater A

(Not cited)

Rater B

1. Non sequitur
2. Dichotomized Labeling

Twenty.

Pt: I feel very frustrated all the time. It's like I'm right at but I can't figure out what it is (that is making her unhappy) or it's right there staring me in the face, whatever it is or it may already be here and I don't realize it, you know. It's already affected me. I can't, you know. It's just like nothing is working out; (1) nothing is where I can put my hand on it and I don't know if it's anything tangible or just spring fever. I don't know whether that's it or not, or just some little phase . . . I just don't know where to find the missing piece.

Th: (Suggests the missing piece is something in patient's self)

Pt: Yeah, I feel like I know what it is too (2). I feel like if I can just learn to accept things.

Rater A

1. Overgeneralization
2. Verbal Inconsistency;
says doesn't know
what's the matter in
first part, was stated
in response to Th's com-
ment but goes beyond Th's
suggestion.

Rater B

2. Verbal Inconsistency;
See (Fourteen)

CHAPTER V

DISCUSSION

I. GENERAL DISCUSSION OF RESULTS

Results of this research will be discussed with specific emphasis on the expressed purposes of this research. As noted earlier, these purposes include expanding the number of types of errors in reasoning within the psychological literature, meeting the following criteria: (1) demonstrating the overt presence of errors in reasoning within a predominantly non-psychotic sample of psychotherapy patients, (2) demonstrating errors in reasoning as occurring within the context of a "normal" psychotherapeutic interview in which the elicitation of errors in reasoning is neither a special nor a primary concern of the therapist, and (3) demonstrating the conceptual clarity (recognizability and discreteness) of the proposed categorization system of reasoning errors. The illustration of the potential clinical relevance of the observed errors in reasoning with regard to the assessment of psychological disturbance will also be a focus of discussion.

Chapter II presents the findings of the preliminary research involving the development of the typology of faulty reasoning processes which has been used as the nominal rating scale in this observational research. That chapter presents the work of supplementing and refining the categories of faulty reasoning offered within the field of psychotherapy via an interdisciplinary approach, including philosophical sources. The categorization system developed, a nominal rating scale,

focuses primarily on faulty reasoning processes rather than on irrational content, and was designed to yield data applicable to all expressed purposes of this research.

A screening procedure was employed to ensure a predominantly non-psychotic sample and to ensure a strictly non-psychotic sample being used for discussion of issues of clinical relevance. Results of the screening indicated a small proportion of subjects defined as psychotic by this procedure. It is probable that this low proportion is a function of various factors in the research design which acted as conjunctive de facto procedures to exclude psychotic subjects. These factors include: (1) The research site being a University Psychology Clinic. The subject pool thus consisted predominantly of University students, individuals capable of a reasonably successful level of adaptive functioning. The subject pool was also thus exclusively outpatient, also indicating a level of adaptive functioning more typical of non-psychotic than psychotic patients. (2) Therapist permission was always obtained before soliciting a patient's participation as a subject in this research. It is expected that the more disturbed the patient, the less willing the therapist to have that patient employed as a research participant. (It might be noted as a possible result of such de facto "screening" that even those patients defined as psychotic by the screening procedure did not appear to be overtly psychotic either with regard to their MMPI-168 profile or their verbalizations cited as exhibiting reasoning errors.)

The low ratio of subjects defined as psychotic and the de facto "screening" described above suggest that the sample from which verbalizations were rated was indeed predominately non-psychotic. The over

200 verbalizations from this sample cited by the raters as exhibiting reasoning errors provide substantial evidence that overt, explicit, unelicited errors in reasoning do occur in non-psychotic patients. These data support the initial requirement that the following research goals have been adequately met; demonstrating the overt presence of errors in reasoning within a predominantly non-psychotic sample of psychotherapy patients, and demonstrating such errors in reasoning as occurring within the context of a "normal" psychotherapeutic interview in which the elicitation of errors in reasoning is neither a special nor a primary concern of the therapist.

The statistical results regarding the evaluation of interrater agreement will be discussed in assessing the extent to which the results of this research have fulfilled the goal of demonstrating the conceptual clarity (recognizability and discreteness) of the nominal rating scale of reasoning errors developed and utilized. The statistics of effective percentage agreement and Kappa calculated to assess interrater agreement are consistently and disappointingly low for the ratings results for each of the types of errors comprising the typology of faulty reasoning employed. The obtained effective percentage agreement ranges from 3% to 18% for types of errors in which greater than 10 errors were cumulatively rated, with Kappa ranging from 0 to .13. The results indicate poor agreement as to the occurrence of specific types of errors. Effective percentage agreement and Kappa were also calculated for those verbalizations which were cited as exhibiting errors in reasoning by both raters, regardless of specific type designation. For these data, which included forty ratings, effective percentage agreement was 73%, and Kappa .71. With error types

combined under common groupings in these data, effective percentage agreement was 85%, and Kappa .83.

Making sense of the low interrater agreement statistics and the remarkable improvement of these statistics when only verbalizations rated by both raters were considered, requires discussion of relevant literature, the research design employed, and the nature of the phenomena being rated. In reviewing the relevant literature, several factors apparently influence the level of interrater agreement in research utilizing nominal rating scales (House and House, 1979). Each of these may be applicable to this current research. These factors include:

1. Increasing clarity and objectivity of category definitions increases agreement (Guttman, et al., 1971).
2. Increasing frequency of occurrence of phenomena being rated increases agreement (House and House, 1979).
3. Increasing complexity of rating scale or phenomena being rated decreases agreement (Mash and McElwee, 1974; Jones, Reid, Patterson, 1975).
4. Agreement decreases as a result of rater "drift" without frequent retraining and reliability checks (Wahler, House and Stanbaugh, 1976).

The ratings were made over a period of several months, the phenomena rated were complex, and the frequency of occurrence was low. These factors might partially explain the low agreement obtained. That agreement dramatically increased when only verbalizations cited by both raters were considered supports concluding that the complexity of phenomena and low frequency of occurrence may indeed be important

factors, and also suggests that adequate clarity and objectivity of category definitions may have been achieved. The quality of training appears to have been adequate for identifying (rating) the type of error of verbalizations recognized as exhibiting an error, but inadequate for consistently recognizing those verbalizations "needing" rating. Therefore, while sufficient to fulfill the other goals of this research, the design employed was insufficient to yield data that adequately demonstrates conceptual clarity (recognizability and discreteness) in the typology of faulty reasoning developed and utilized.

While this research allowed for the analysis of interrater agreement, it was not designed to artificially maximize that agreement. Specifically, the process and content of the psychotherapeutic interviews were left intact, and patient's verbalizations were not selected or edited in any way prior to rating. The natural interactional context and conversational flow were thus preserved, as was the complexity of these processes. Indeed, the interrater agreement obtained further impresses on one the complexity of human thought and communication.

The task of the raters was also complex. They needed to listen first for verbalization in which reasoning processes were exhibited, while also listening to verbalizations and interactions on a more general level of understanding what was being communicated. When a reasoning process was identified, they needed to then determine if that reasoning was sound or faulty, and, if faulty, in what way. It might further be noted that the patients were likely not consciously engaged in reasoning, and were thus not concerned with the logical

structure of their verbal sequences. It was the rater's task to "structure" the patient's verbalizations by viewing them through a "frame" of attending to reasoning.

The decision to develop a categorization system based on reasoning processes rather than cognitive content reflected an awareness of such complexities. Process does not occur in discrete behavioral units or edited transcripts, and involves factors beyond what can be transcribed. It seems to be an inherent aspect of this approach that one is attending to emotion as well as words and that the final attention to logical form is one of both appreciating and seemingly neglecting other levels of communication. Discussion of the potential clinical relevance of the examples of faulty reasoning obtained should further illustrate the complex interrelating of patients verbalized reasoning with other aspects of their overall functioning.

II. ILLUSTRATION OF POTENTIAL CLINICAL RELEVANCE

Discussion of the examples of specific types of errors cited by the raters and discussion of the ratings of one subject, as presented in the previous chapter, leads to a focus on illustrating the potential clinical relevance of observed errors in reasoning with regard to the assessment of psychological disturbance in non-psychotic individuals. In order to illustrate potential clinical relevance, discussion will emphasize the degree to which the cited verbalizations and the type of reasoning error being exhibited aid in formulating potentially clinically useful diagnostic hypotheses or inferences regarding the psychological functioning (and dysfunctioning) of the patient making the error. The utility of specific error types will be

discussed first, and then the utility of the categorization system in aiding in the evaluation of a specific patient will be addressed.

1. Question Begging. The examples presented of both A priorism and Abandonment of Discussion (see Chapter IV) each suggest specific aspects of psychological disturbance in the patients exhibiting them, and are thus diagnostically relevant.

a. A priorism

The first example, in which the patient asserts "knowing" what change (increased concentration and decreased daydreaming) will procure satisfaction in his life, is clinically relevant in indicating (1) a high degree of subjective distress regarding his lack of concentration and apparently intrusive daydreams, (2) a probable resistance to examining the bases for this disturbance or exploring other areas of difficulty, and (3) the probable significance of exploring the pattern and content of the daydreams.

The second example, in which the nature and outcome of a hypothetical circumstance (a discussion "resulting" in the patient becoming convinced of being wrong) is asserted as foreknown, indicates depressive signs of (1) an expectation of failure, (2) a sense of inferiority, and (3) an expectation of being exposed as in error or at fault.

The third example of A priorism, in which the patient asserts as known one result (i.e., terminating therapy) of a potential personality change, indicates (1) subjective distress regarding being "inhibited," (2) probable resistance to exploring other areas of difficulty, (3) a passive aggressive interpersonal style, at least in this interaction, and (4) probable experienced anxiety or sense of

threat either in the therapeutic relationship, with others in general, or in response to a specific interaction.

b. Abandonment of Discussion

The first two examples, in which a "simple fact" is asserted which obstructs inquiry indicate similar traits (or states) of (1) lack of introspection, (2) a fatalistic attitude toward symptomatology, (3) probable anxiety regarding exploring precipitants or dynamic aspects of symptoms, and (4) a possible expectation of magical benefit via the therapist doing something to the patient.

The final example, in which an internal "thought stopping" process is described, indicates, (1) the use of rationalization, (2) a tendency towards "splitting-off" different aspects of oneself rather than attempt integration or resolution of conflict, and (3) possible impulsivity prior to employing (1) and as a feature of (2).

2. Jumping to Conclusions. The examples presented of Non Sequitur, Hasty Conclusion, and Overgeneralization are each clearly diagnostically relevant.

a. Non Sequitur

The first example involves asserting believing that "because I wasn't like the rest of my family, I couldn't be loved." This example indicates (1) subjective alienation and yearning for affection, (2) depressive low self-esteem, and (3) possible depressive egocentricity.

The second example, in which the patient states that since she only hates people in traffic, then she must only hate automobiles, indicates (1) the situation specific emergence of typically

repressed generalized rage, (2) this patient's apparent investment in then denying that rage as object directed, and (3) this patient's (again typically unconscious) perception of others as hostile and destructive. Hypotheses regarding naive conventionality and a hysterical personality might also be entertained.

The final example of a Non Sequitur, in which the patient succinctly states "I don't particularly like him, so whatever he says has very little impact on me" indicates (1) an inflated sense of personal control or invulnerability, (2) a likely tendency to respond to interpersonal conflicts by attempting to categorically reject the other, and (3) a possible ideational (obsessive or paranoid) adaptive style.

b. Hasty Conclusion

The first example presented, in which the patient concludes that she needs a "dominant" husband based upon observing her parents' relationship, provides indications of both current functioning and historical determinants. Inferences might include: (1) the at least second generation repetition of a marital relationship in which sado-masochistic features are prominent, (2) an attempt to suppress elements of maternal identification, (3) conscious emphasis on a dimension of dominance/submission in understanding interpersonal relationships, and (4) possible conscious endorsement of norm of male dominance and female submissiveness as "right and natural."

The second example, in which a probably unintentional oversight is afforded significance, is clinically significant in suggesting (1) social anxiety, (2) egocentricity, (3) depressive low self-esteem, and (4) obsessive rumination concerning personal "faults."

The last example of Hasty Conclusion, in which parental intervention in a sibling conflict is understood as involving total rejection of a sibling, indicates (1) the intensity of affect and high subjective significance of the sibling conflict, (2) poor object constancy, (3) a sense of being unloved, although whether this is more depressive or paranoid is unclear and (4) a possibly high frequency of physical violence within the family. As might be suggested by the somewhat diffuse nature of these hypotheses, this verbalization is most significant in prompting further inquiry regarding the above leads. Such inquiry could readily involve facilitating an elaboration by the patient of the situation, its generality, and her responses to it.

c. Overgeneralization

The examples presented each clearly indicate a process of selective attention, and an apparent inability to integrate contrasting experiences. In the first example, "everything goes downhill for me" indicating depressive affect and a sense of pessimism and failure. In the last example, "I didn't get anything done," again indicating a sense of failure and possible negativism.

The second example, in which continuing substance abuse is related to peer influence and "everybody," "everytime" "turning out the same way," indicates (1) a seeking out of peers supporting substance abuse, (2) probable self-destructive and rebellious traits, (3) recurrence of symptoms precipitated by loss, and (4) a fatalistic attitude towards being able to change.

3. Irrelevancies. Each of the two examples of irrelevancies have an odd quality of confusion and obfuscation, and a resultant

disruption of communicative flow between the patient and therapist. Also, in each example it is not clear that the patient means to be disruptive, as was obvious in the examples of Abandonment of Discussion. Each irrelevancy does seem somehow relevant, but in a tangential or disguised way. The clinical significance of these examples, then, may simply be their confusing quality, such that the interviewer may well wonder "what's going on now with this patient and between us?"

4. Verbal Inconsistency. The examples of verbal inconsistency presented are each clinically relevant in suggesting hypotheses concerning specific aspects of the patient's psychological functioning that may be problematic.

The first example, involving later denial of an earlier described phobia, indicates (1) a variable willingness to admit to symptomatology, and probable difficulty in presenting oneself as weak, (2) a possible breach of rapport or sense of alliance with the therapist, and (3) utilization of rationalization to preserve a desired self-image.

The second example, in which the patient first retracts, then elaborates a suggestion that the therapist might be uncomfortable in the situation, indicates (1) an evasive and possibly passive-aggressive verbal style, in which an emphasis on being tactful or inoffensive interpersonally may be present, (2) a tendency to focus attention on others and become "uncomfortable" oneself when the focus of attention, (3) utilization of projection as a defense, and (4) a need to feel "equal to" the other. The reasons provided as to why the therapist might be uncomfortable also suggest good social insight.

The last example of verbal inconsistency, in which an exam is described first as "ridiculous" then "good . . . but . . . extremely hard" indicates (1) probable fragile sense of competence, (2) probable vascillating states of devaluation of others and self-devaluation, and (3) possible general difficulty resolving ambivalence.

5. Libel. No example of either Straw Man or Ad Hominem were cited by either rater and may occur relatively infrequently. Due to this lack of examples, the clinical relevance of verbalizations exhibiting these errors cannot be supported. Due to the potentially low frequency of this error, a decision to omit it from the typology should await results of larger samples.

6. Conventionality and Compliance. As the name of this group of errors (only the heading of which has been retained in the typology: see Chapter II) would suggest, each of the examples presented indicates traits of (1) accepting on faith someone else's "truth," and also, (2) maintaining that "truth" as ego-alien or foreign rather than integrated into one's self. In the first examples the other's truth is an expectation of college life as enjoyable plus enlightening, and that such a combination is unique to that phase of life. In the second example, the other's truth is "if you ignore it, it will go away." In the third example presented, "look for the good things . . . that way things won't bother you so much." In each of these there seems to be an abandonment of one's own judgment or reality testing, and yet some underlying uncertainty regarding the ideas one is subscribing to. The clinical relevance of the occurrence of such errors may be the indication of lack of individuation and unconscious conflict regarding conscious identifications.

7. Reducing Alternatives. The examples of False Dilemma and Dichotomized Labeling provide striking illustration of diagnostically relevant, salient psychodynamic issues.

a. False Dilemma

The first example, in which the patient insists that one person or the other is at fault and to be blamed when problems exist between them, indicates (1) the aggressive blaming attitude noted above, and a probable lack of empathy, objectivity, or ability to determine shared responsibility, (2) an inhibition of externally directed aggression, and (3) a depressive tendency to assume responsibility for interpersonal conflicts or difficulties.

The second example, in which the dichotomy of being a social "wallflower" or being "pushy," indicates (1) conflicts regarding assertiveness, (2) a tendency towards withdrawal, and (3) possible conflicting tendencies toward exhibitionism.

b. Dichotomized Labeling

Each of the examples presented involves issues of self evaluation and indicates salient dimensions (or rather, dichotomies) upon which these patients evaluate themselves. In the first example, the dichotomy is to be either "the center of attention" or "ugly and sloppy and dumb, etc.," indicating tenuous self-esteem confirmed via exhibitionism and being noticed and responded to, with depressive tendencies of self-derogation regarding being socially unattractive. In the second example, issues of the need for control and the related obsessive concern with good vs. bad are obvious. In the third example, narcissistic themes of being "a star" vs. being associated with "amateurs" are evident, in either case the patient salvaging self-esteem,

first while maintaining relations with others and then through rejecting his past peers as inferior.

8. Preserving Inertia. The clinical relevance of verbalizations exhibiting errors in this group is supported by the examples presented.

a. Slippery Slope

The first example, in which the patient relates one actual ambiguous event which she's sure will inevitably result in a hypothetical disaster, indicates (1) diffuse anxiety and pessimism regarding the future, (2) an expectation of the actions of others as precipitating problems, (3) anxiety regarding a possible object loss, and (4) probable egocentricity.

The second example, which involves inhibiting oneself because of the chain of events that might follow action, indicates (1) the obvious inhibition, passivity, and immobilization, (2) an expectation of success leading to increased demands or higher stands, and (3) the depressive expectation of inevitable failure.

b. Nothing but Objections

No examples of this error were cited by either rater, and the clinical relevance of verbalizations exhibiting this error cannot be supported. Due to the potential low frequency of this error, a decision to omit it from the typology should await results of larger samples.

c. Tokenism. The only available example of a verbalization exhibiting this error involves a token assent to, or consideration of, the truth or significance of a comment by the therapist, which is clinically relevant in indicating (1) anxiety regarding the specific

comment, and subsequent avoidance of either challenging or pursuing its import, and (2) a disruption of the therapeutic alliance in which the patient likely either feels threatened or misunderstood by the therapist. Diagnostically, the occurrence of this error would signal the interviewer to rule out tokenism as characteristic of this patient's response to others, which would suggest passivity, dependence, and possibly passive-aggressive features.

The above discussion of examples of verbalizations exhibiting specific types of errors with regard to clinical relevance supports the goal of this research of illustrating the psychodiagnostic utility of attending to errors of reasoning of non-psychotic patients. This was illustrated for every type of error for which even single examples were available. (Error types in which no examples were available included the Libel grouping, i.e., Straw Man and Ad hominem, and the Nothing but Objections type under the preserving Inertia grouping.) Verbalizations exhibiting errors in reasoning appear to provide a rich source of clinical hypotheses regarding diagnosis and case formulation, areas of further inquiry, targets of intervention, and the therapeutic relationship. While the development of this typology stressed cognitive process rather than content, many of the clinical hypotheses generated above have been based on the content of the verbalizations. Both the breadth of such content and the breadth and specificity of clinical hypotheses illustrate the flexibility and openness of first attending to errors in reasoning on a process level and next regarding specific content.

To further illustrate the clinical relevance of errors in reasoning explicitly verbalized by non-psychotic subjects, the

transcription of data on one subject (presented in Chapter IV) will next be discussed. The method of discussion will differ from that of considering each specific example of errors in reasoning independently, or even successively. It is to be hoped that earlier discussion of examples of each type of error illustrated the clinical relevance of each of the categories of faulty reasoning included in the typology. The following discussion will focus on one case in which the utility of the typology as a whole will be addressed in developing inferences adequate to psychodiagnostic formulation. With this in mind, the discussion will proceed primarily as a case discussion, with references to specific verbalizations cited in this context. (Specific verbalizations will be identified by the number immediately above their presentation in Chapter IV rather than repeated in their entirety.) The verbalizations cited by either rater as exhibiting an error or errors in reasoning provide the sole basis for the case discussion.

Sample Case:

This patient presents with diffuse subjective anxiety which is apparently generalized across a variety of situations and relatively persistent. She currently is prone to feeling overwhelmed and poorly able to cope with her world and experiences a prevalent vague dissatisfaction, describing this state as feeling "frustrated all the time" (twenty). She has likely also experienced a decrease in the quantity and quality of gratifying experiences in her life. She is currently poorly able to maintain a present, here-and-now orientation, but anticipates failures and is generally pessimistic regarding the future. Her level of current functioning is also impaired by an

increased reactivity to frustrations and a tendency to emphasize the negative or problematic. Subjective generalized anxiety, persistent vague dissatisfaction, decreased frustration tolerance, and mild negativism are aspects of her symptomatic presentation.

This patient is apparently undergoing, or has recently concluded, important transitions in her life style which have precipitated her current crisis. While able to specify some specific events or changes (only alluded to in the available data), she is poorly able to understand the impact such transitions may have had on her. This lack of insight is, of course, consistent with her experience of generalized anxiety and vague dissatisfaction. She is able to only vaguely report a sense of loss and emptiness, as if something is missing which she cannot identify. One aspect of her inability to identify "the problem" is likely her naive idealistic expectations that one can plan guaranteed happiness. She states "I thought it would be, so it should be perfect, right?" (Seven).

The compulsivity suggested above is confirmed as an important aspect of this patient's personality and current symptomatology. She is apparently someone who typically functions best with a good deal of structure, and is currently utilizing planning and well organized activity as a partially as a partially effective means of modulating experienced anxiety. She presents herself as requiring a focus or specific task in order to maintain subjective comfort. In addition, and to her disadvantage, she likely is poorly able to adaptively self-initiate activity or organization without felt distress, but is dependent upon externally imposed structure. For example, she reports

enjoying work "because I know when I start, and I know when I'm finished--when I clock out" (One).

Ambiguity, then, is problematic for this patient, and, at least as an aspect of her current symptomatology, she is poorly able to organize her own time and energy. Ambiguity, which can involve having too much to do or too little to do, elicits anxiety and is immobilizing. Without structured activity this patient is likely unable to modulate feelings of anxiety, dissatisfaction, frustration, and negativism, which then grip her. Additionally, this patient's "open future" and the requisite task of shaping her own future is overwhelming to her. A comment of the patient particularly poignant in illustrating the anxiety of ambiguity (and the haven of structure) is: "it's like if I don't plan it out, if I don't have it done, the whole world is going to fall apart or something?" (Nine).

This patient does, however, express conflict regarding her attitude towards structure vs. ambiguity, or constriction vs. openness. She is able to recognize the urgent, driven quality of her constricted compulsivity, and explicitly states her attraction for having options. This conflict is felt and consciously unresolved, and she somewhat negativistically laments "so I don't know why I want to have all this openness around me since I'm gonna close all of it anyway!" (Fourteen).

Indications as to interpersonal functioning include that this patient likely tends toward interpersonal passivity and has difficulty being assertive. Her mode of relating is somewhat egocentric, and she probably has poorly developed social insight or social skills. She currently is experiencing anxiety regarding the possible loss of a

peer relationship, is pessimistic regarding establishing gratifying new relationships ("some stranger coming off the street" (Five)), and expects the actions or reactions of others to be problematic, but whether these expectations are primarily a function of her current state or are more characteristic personality traits is unclear. This patient has tendencies toward withdrawal and social isolation, while also being concerned that she not be a wallflower. She likely has a poor capacity for conscious impression management. She is currently likely somewhat withdrawn, egocentric, and self-absorbed as she monitors and worries over her anxiety and unhappiness.

In summary, this patient presents in an acute crisis in which subjective generalized anxiety, persistent vague dissatisfaction, decreased frustration tolerance, and mild negativism are symptomatic. She characteristically is a compulsive individual requiring substantial external structure, who currently feels overwhelmed by the ambiguity of her "open future" while also desiring options rather than constriction. Interpersonally, she is likely passive, slightly withdrawn, egocentric, and has deficient social skills or social insight. While additional specific information would be necessary to make a clinically justifiable diagnosis, based on these limited data provisional DSM III diagnoses include: Axis I: Adjustment Disorder with Mixed Emotional Features, and Axis II: No diagnosis, R/O Atypical Personality Disorder with Obsessive-Compulsive features. (It might briefly be noted that this patient's MMPI-168 profile suggests poor insight, egocentricity, shallowness or interpersonal withdrawal, hypersensitivity, a sense of being "pressed" by aspects of one's lifespan, and an ambitious, energetic, possibly inefficient, coping

style. This supports specific hypotheses discussed above, and is generally consistent with the ease discussion.)

That verbalizations exhibiting errors in reasoning appear to be consistently clinically relevant suggests that such errors do not occur on a "random" basis, but tend to occur when cognition concerns problematic, poorly resolved or unresolved aspects of the patient's life. A conclusion from the previous discussions of clinical relevance may be that the occurrence of a reasoning error provides the interviewer or psychotherapist with a signal to attend well to the patient's cognitive processes and content at that particular moment, in the context of the current interaction. As seen earlier, an alert response to such a signal can provide a rich yield of hypotheses regarding psychodiagnosis and case formulation.

Errors in reasoning, then, seem to occur on a selective basis. Another way of stating this is that a person's cognitive organization is selectively mildly disrupted such that what's being said doesn't quite "make sense" or doesn't quite "follow." Attending to the verbalizations in which such disruptions occur reveals a variety of relevant phenomena broad enough to encompass the range of signs and symptoms of psychological disturbance. The error may reveal a readiness to believe or perceive in a particular way, as in examples under the grouping Jumping to Conclusions or Slippery Slope. The error may reveal conflict or ambivalence regarding a certain issue, as seemed evident in examples of Verbal Inconsistency or Conventionality and Compliance. The error may reveal resistance or anxiety in the interaction, as is evident in examples of Abandonment of Discussion or Irrelevancies. The error may elucidate a particularly idiosyncratic

aspect of one's worldview or current cognitive set, as evident in examples under the grouping Question Begging. The error may reveal fairly primitive "resolutions" of certain issues in which splitting or dichotomization processes are evident, as in examples under the grouping Reducing Alternatives. And in each particular cognitive content is at least as important as the process, still further enriching the comprehensive nature of possible clinical hypotheses.

III. CONCLUSIONS

Discussion of the results of this research support the conclusion that the following purposes of this research have been fulfilled: (1) Expansion of the number of types of errors in reasoning within the psychological literature (see Chapter II); (2) Demonstration of the overt presence of errors in reasoning within a non-psychotic sample; (3) Demonstration that such errors occur within the context of a "normal" psychotherapeutic interview in which the elicitation of errors in reasoning is neither a special nor a primary concern of the interviewer; (4) Illustration of the potential clinical relevance of such errors in reasoning with regard to the assessment of psychological disturbance. The other goal of this research, that of demonstration of conceptual clarity of the proposed typology of faulty reasoning via interrater agreement was only partially suggested, but not substantially fulfilled.

It is the author's impression that substantial revision of the typology is not at this time warranted, but that further research might support the following possible changes or indicate others. The grouping of Libel yielded no examples upon which to discuss that

grouping's clinical relevance, and the occurrence of verbalizations which would explicitly meet the proposed criteria for inclusion might be too low to justify this separate grouping. On the other hand, this grouping is the only one in which the defense of projection is captured in the cognitive process, and thus there is reluctance to delete this grouping without further research. That examples of Slippery Slope did not seem consistent with a function of Preserving Inertia but were rather one hasty conclusion after another, suggests that its current placement in the typology may be misleading, but a larger sample would be needed to determine this. That interrater agreement (with verbalizations cited by both raters as exhibiting an error in reasoning, inclusive of all categories in the typology) increased from 73% to 85% when error types were combined into their respective groupings suggest that difficulty differentiating between error types within a grouping may exist in which case change of the typology or criteria would be required.

Future research utilizing the proposed typology must first address the problematic issue of conceptual clarity and rating reliability. Designs in which high-frequency data in which units of observation are delineated, and which ratings are performed over a brief period of time, might best approach this question. Should the clinical utilization of the typology still appear viable, subsequent research might involve utilization of the typology in the ongoing assessment of the psychotherapy of specific cases, comparing hypotheses based upon analysis of verbalizations exhibiting errors in reasoning with hypotheses based upon other data such as psychological testing, comparing the types of errors and content of errors exhibited

by samples of patients from differing diagnostic groups, utilization of the typology with psychotic patients, etc. As noted early in this dissertation, research in this area has been minimal, but a multitude of interesting possibilities exist. Further research with regard to errors in reasoning in non-psychotic patients seems well justified by the results of this research, and would add needed emphasis on cognitive aspects of psychological disturbance in which formal thought disorder is not evident. The restrictive definition of a "thought disorder" may in time need revision as our knowledge increases as to the kinds and degrees of cognitive dysfunction corresponding to differing diagnostic categories and individual psychodynamics.

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APPENDIX

CONSENT FORM

Consent to Participate in Research

Research is being conducted at the UT Psychological Clinic involving the use of the MMPI-168 personality inventory. Subsequent to the regular clinic intake interview, we are asking that you complete this fairly brief true-false questionnaire at a time convenient for you. (The questionnaire should take you about 30 minutes to complete.) In addition, the tape recording routinely made of your initial session at the clinic may be reviewed by the researcher, and then returned to the interviewer.

Participation in this research is completely voluntary, and refusal to participate will in no way affect your treatment at the clinic. The results of this research will be held in the strictest confidence by the researcher, and will similarly not influence any assessment or treatment you may receive at the Psychological Clinic.

Thank you for your consideration. Should you have any questions concerning this research, please contact me (Larry Brown at 974-2161. Your signature below will indicate that you have read and understand this consent form.

I have read and understand the above statement.

Signature

VITA

Larry Herbert Brown was born in Ft. Belvoire, Virginia on July 4, 1953. He attended primary schools in Evanston, Illinois, Austin, Texas, and Rialto, California, and graduated from St. Thomas Aquinas High School, San Bernardino, California in June 1971. He entered the University of California at Riverside in the Fall of 1971, and in June 1975 received a Bachelor of Arts degree with a major in Psychology, graduating with high honors.

The author entered the Graduate School of The University of Tennessee, Knoxville in the Fall of 1975 as a student in the department of Psychology's Clinical Psychology training program. As a Clinical Psychology graduate student he served clinical practice at Daniel Arthur Rehabilitation Center, The University of Tennessee Psychological Clinic, and the Oncology Service of The University of Tennessee Health Sciences Center, Knoxville. He received letters of commendation for three consecutive quarters for excellence of performance in the training program's psychotherapy practicum. Following completion of course work, the author completed a year of Clinical Internship at the Texas Research Institute of Mental Sciences, Houston, where he is currently employed on the Inpatient Service. He received a Doctor of Philosophy degree with a major in Clinical Psychology in March 1981.

The author is married to the former Sherlynn Ann Risky of Modesto, California. Their family currently includes two children, Laurence Evans, born in Knoxville, and Jason Anderson, born in Houston.