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BULIMIA: A SYSTEMS/COMMUNICATIONS
CRITICAL METHODOLOGICAL ANALYSIS

by

Richard J. Holigrocki

B.A. York University, 1988

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ABSTRACT

The intent of the research is to present a
critical methodological analysis of the clinical
phenomenon referred to as bulimia. Specifically, the
project is a theoretical analysis of bulimia from the
Systems/Communications (S/C) perspective. It is
termed a "critical" analysis because it constitutes an
ongoing critical (self-reflective) commentary on a
topic. In practical terms, the present methodological
approach has two aspects. The first is the utilization
of the S/C model or framework to provide a "reasonable"
and coherent "explanation" of many of the clinical
phenomena associated with bulimia. In practice this
means selecting excerpts from a series of nine recorded
hours of therapy with a bulimic client and
"understanding" these transactions through the S/C
perspective. The second aspect is to draw inferences
concerning potential treatment practices from the S/C
perspective.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

Overview

The intent of the research is to present a

critical methodological analysis of the clinical

phenomenon referred to as bulimia. The concept and

operational specification of this so called "eating

disorder" is quite familiar to practising clinicians.

As a review of the literature will indicate, the

incidence of bulimia has increased substantially during

the last two decades. Most of the treatment techniques

associated with more traditional forms of psychotherapy

and a few innovative strategies have been used in

attempts to eliminate this most disturbing problem.

It is a researcher's nightmare to attempt to

evaluate the potpourri of treatment modalities that

have been pragmatically derived by clinicians for

eliminating the bulimic client's distress. Some forms

of treatment appear to have more operationally

definable practices (i.e. cognitive-behaviourial) than

others (i.e. psychodynamic). However, when one takes a

closer look at the therapeutic models there is

considerable overlap and "contamination" from a

research perspective.   Effective clinicians typically

override the meta-theory of their orientation and utilize their personal qualities and skills to get the job done (London, 1986).

This state of affairs is reflected in the literature by the absence of any comprehensive and systematic investigations of bulimia from an integrated theoretical viewpoint. To the author's knowledge, with the exception of the work of Bruch (1973, 1978a, 1978b) and some attempts from the cognitive-behaviourial perspective, no studies have appeared which propose a comprehensive model of bulimia based upon a unified theoretical base.

This leads us to the specific purpose of the study. Over the last 40 years, underlying principles of analysis have been emerging from diverse disciplines (anthropology, linguistics, cybernetics, biology, etc.) and have been organized under the rubric of systems-communication (S/C) theory (Bateson, 1980). While many of these concepts are highly abstract, there have been some creative and concrete attempts to incorporate them into the field of psychotherapy. These attempts were initiated by Bateson and his colleagues (Watzlawick, Haley, Jackson) and continue to develop in a variety of ways in what has become known in psychotherapy courses as "cognitive" and/or "communication" theories.

The promise of the S/C orientation and the
emphasis of many of its proponents lies in the realm of
epistemology. Epistemology refers to investigations
concerned with how people know what they know (Bateson,
1980). In other words, S/C theory presents challenging
alternatives to the basic assumptions held in the field
of psychology over the last 100 years. A theorem
derived from this perspective phrased in colloquial
terms would read, "How you know something determines
what that something is." Therefore the implication is
that any theorist (i.e. clinician) should be able to
examine thoroughly his or her epistemological
assumptions concerning clinical phenomena. These
clinical phenomenon appear as "facts" or "data" because
of the determining logic imbedded in the underlying
epistemology or paradigm. From a practical viewpoint
one could infer from the above reasoning that "what"
one "does" (i.e. pragmatics of clinical practice) is
also determined by one's conscious or nonconscious
model (London, 1986).

These remarks do not imply that it is a simple
matter to explicate in a thorough or complete manner
the totality of one's personal model or paradigm. In
fact, the training of a typical psychologist often
deters one from even considering the elaboration or
specification of one's personal epistemic model. The

focus in training typically emphasizes the rote
learning of traditional models without realizing the
inherent assumptions or hidden implications contained
in these perspectives. In addition, clinical training
has become more and more focused on techniques. This
is probably true across all the training in all forms
of psychotherapy (London, 1986). It is especially
reflected in the emphasis placed on empirical studies
relying solely on the application of statistical
methods and adherence to scientific conventionality.
The almost exclusive emphases on quantitative and the
null hypothesis testing model as the only legitimate
form of scientific practice almost assures an
exclusively fragmented positivistic approach (Bateson,
1977).

A viable alternative to the above orientation
which forces one to evaluate the assumptions and logic
underlying an approach could be called a "critical
analysis." A critical analysis is based on three
premises. The first is a clear specification of the
underlying assumptions and the constructs associated
with the model. The second is the elaboration of the
logic and the implications of the logic that is
directly associated with the assumptions. The final
premise is the delineation in operational terms of
instances of the constructs or assumptions in the

"real" world. These instances are then open to empirical consideration for a number of purposes.

In summary, the method of critical analysis consists of 1) specifying the assumptions and the language associated with the assumptions 2) delineating the logic which underlies the assumptive base, and 3) explaining real world instances empirically through the assumptions and the logic.

Organization of the Presentation

The rest of this introduction will involve an overview of the literature on bulimia, a discussion about clinical treatment, and an introduction to the S/C perspective. This will be followed by the methods section which will include an extended elaboration of the steps in a critical analysis, a description of the data, and an explanation of the structuring model that will be the map used to explore the client's informational world. In the results and discussion section, transcript excerpts from the treatment of a bulimic client will be "explained" in terms of the S/C perspective. Additionally, inferences will be drawn concerning potential treatment practices from this perspective. Appendix A contains the transcription of the fourteenth session with the bulimic client. Appendix B provides definitions of clinical meta-level concepts from a S/C perspective.

Bulimia

The phenomenon called bulimia has had a lengthy history in the medical literature dating back to 1892 by Osler and 1903 by Janet (Shapiro, 1988). During the last ten years, bulimia has shown to be of interest to a growing number of clinical researchers. What will follow will be a summary of this research as well as an overview of the various theoretical conceptualizations of bulimia used by practising clinicians today.

Incidence of Bulimia

A number of studies describing the prevalence of bulimia have been carried out using different populations and criteria for bulimia. These populations are made up of university students (patients and non-patients), high school girls, and the general population.

University students (non-patient). Pyle, Mitchell, Eckert, Halvorson, Neuman, and Goff (1983) found that 4.0% (7.8% female, 1.4% male) of 1355 university students reported having the major symptoms of bulimia. When the additional criterion of at least weekly binging was added, they found that 2.1% (4.5% female, 0.4% male) of students met the more strict definition. Finally 0.6% (1.0% female, 0.3% male) of the students met a stricter definition of all major DSM-III criteria and at least one weekly episode of

binging and purging through self-induced vomiting or laxative use.

University students (patient). Wermuth, Davis, Hollister, and Stunkard (1977) reported only one case of bulimia out of 600 university health service patients. bulimia was defined by examining the subjects medical charts. Strangler and Printz (1980) found that 3.8% (5.3% female, 1.3% male) of 500 university psychiatric patients were diagnosed as bulimic using DSM-III criteria. Halmi, Falk, and Schwartz (1981) found that 13% (19% female, 5% male) of 355 college students endorsed all the major symptoms of bulimia as defined on questionnaires based on DSM-III criteria.

High school females. Johnson, Lewis, Love, Lewis and Stuckley (1983) found that 8.3% of 1268 high school females met DSM-III criteria for bulimia. With the additional criterion of at least one weekly episode of binging, the prevalence was 4.9%. With at least one weekly episode of both binging and purging, the prevalence was 1.0% . Szmukler (1985) reported that 1 in 270 (0.4%) high school females experienced weekly eating binges that caused them considerable concern, compensated for the binging by inducing vomiting, and reported that they were preoccupied with weight and food.

General population. Cooper and Fairburn (1983)
found that 1.9% of 369 people in a sample of the
general population had binged in the past two months,
had self-induced vomiting in these two months, and had
made a positive response to the Eating Attitude Test
items concerning fears of being overweight. One
percent of these subjects admitted to vomiting weekly.

Summary. From the data above one can see that the
incidence of bulimia in non-patient university students
is between 7.8% and 1.0% for females and between 1.4%
to 0.3% for males. In university students who are
patients the incidence ranges between 19% and 5.3% for
females and 5.0% to 1.3% for males. In high school
students the incidence ranges between 8.3% and 0.4% for
females. In the general population the incidence is
approximately 1.9%.

There are many factors underlying the wide range
of estimates of the incidence of bulimia. One source
of this variability is the differences in how the
researchers define terms such as "binge" (Mizes, 1985).
Methodological difficulties also take the form of
researchers relying exclusively on non-validated
questionnaires (Szmukler, 1985). Geographic variations
in female sex-role expectations may also affect
prevalence estimates for this disorder (Mizes, 1985).
Moreover, many authors suggest that their findings may

underestimate prevalence due to patient reluctance in reporting that they binge and purge (Halmi et al., 1981; Strangler and Printz, 1980).

Clinical Description of Bulimia

Preoccupation with food and the urge to eat. A bulimic's day is centred around food and eating. Bulimics report that their minds are constantly occupied with thoughts of food, eating, and vomiting - to the extent that their concentration and everyday activities are impaired (Fairburn & Cooper, 1982; Herzog, 1982; Pyle, Mitchell, & Eckert, 1981, Russell, 1979). Garner and Davis (1986) suggest that most bulimic patients present themselves for treatment because they are guilt-ridden and perplexed about their binging behaviour. Fairburn (1982) has documented the extent to which patients' report on the ego-dystonic nature of their binges. Both the rate of consumption and the quantity of the food eaten are experienced as being beyond their voluntary control.

A number of studies have been conducted assessing the frequency of binging among bulimics. Mitchell, Pyle, and Eckert (1981), found a mean of 11.7 binges per week, with a range of between 1 and 46 episodes. Fairburn and Cooper (1982) found that in a sample of 499 bulimics 27% of the women reported binge eating at least once daily and 32.6% reported binge eating at

least once weekly. Other researchers have demonstrated that binging occurs more than once a day for many bulimics (Carroll and Leon, 1981; Pyle et al., 1981).

Binge episodes tend to last from 1 to 2 hours but may last an entire day. (Pyle et al., 1981; Wermuth et al., 1977). A mean of 1.18 hours per binge was reported by Mitchell et al. (1981). Loro (1980) indicates that subjects may report binges lasting an hour or less.

Most frequently consumed during a binge are high caloric, easily prepared food (Carroll & Leon, 1981; Mitchell et al., 1981). Examples include cookies, breads, chips, and "fast food" from a restaurant. The majority of bulimics report that they crave for a specific food during a binge (Carroll and Leon, 1981). While the consumption of a large amount of food is common, bulimics may label a small portion of a food (i.e. one cookie) as a binge and subsequently self-induce vomiting (Mizes, 1985). In a study by Carroll and Leon (1981), 50% of bulimics reported vomiting at least once per week following the ingestion of small food portions. Davis (1985, cited in Garner & Davis, 1986) reports that binges often exceed 1,200 calories, approximately 2.5 times greater than the caloric value of meals consumed by both bulimic and nonbulimic women. Other research suggests that consumption during a binge

may be as high as between 2000 to 5000 calories
(Carroll & Leon, 1981; Johnson, Stuckley, Lewis &
Schwartz, 1983).

The majority of binges occur when the bulimic is
home, alone, and during the later part of the day
(Crowther, Lingswiler, & Stephens, 1984; Davis,
Freeman, & Solyom, 1985). Binges occur mainly in the
kitchen when the bulimic is inside the home. When
outside of the home, binges mainly occur in an
automobile or fast food restaurant (Loro, 1980).

Dieting and fasting. The most common method of
weight control practised by bulimics is severe dieting
or sustained caloric restriction in both quantity and
type of food (Garner and Davis, 1986). Although the
U.S. Recommended Dietary Allowance (RDA; Food and
Nutrition Board Committee on Dietary Allowances, 1980)
for young adult women is 1,700 to 2,500 calories per
day, most bulimic patients of normal weight consume
nutritionally inadequate diets of less than 1,400
calories per day (Dalvit-McPhillips, 1984; Kirkley,
Agras & Weiss, 1985).

Not only are their diets nutritionally inadequate
but bulimics rarely eat in a systematic manner (i.e.
three meals a day) (Mizes and Lohr, 1983). Bulimics
alternate between periods of binging and fasting (Loro
and Orleans, 1981; Pyle et al., 1981). After the binge

they may not eat for 24 hours. At this time they find
themselves famished which may prompt another binge
(Pyle et al., 1981).

Description of vomiting and other purging. The
term "purging" encompasses vomiting, laxative use,
diuretic use, and occasionally diet pill use. Self-
induced vomiting is reported as the most commonly used
method for purging followed by laxatives and diuretics
(Halmi et al., 1981; Mizes, 1985; Pyle et al., 1981).
While many studies have examined the frequency of self-
induced vomiting among bulimics, less information if
available on the frequency of the use of the other
methods (Mizes, 1985).

Bulimic patients initially induce vomiting by
sticking their finger down their throat. Pyle et al.
(1981) reported that the patients usually acquire the
ability to vomit without having to elicit a gag
response.

Fairburn and Cooper (1982) found that 56% of their
bulimic sample reported vomiting at least once daily
and a further 17.5% more than once weekly. The
frequency of vomiting was higher than that of binge
eating. Mitchell et al. (1981) found that 93% of their
bulimic patients reported vomiting, averaging 11.7
vomiting episodes per week. Vomiting appeared to occur
after almost every binge. Pyle et al (1981) found that

94% of bulimic patients report vomiting. Other studies have found that 25% to 50% of bulimics use laxatives for weight control (Carroll & Leon, 1981; Johnson, Stuckley, Lewis & Schwartz, 1983).

Weight (past, present, and desired). A number of researchers have noted that many normal weight bulimic patients in the past were at times significantly "overweight" or greater than 110% of the matched population mean weight (Abraham & Beumont, 1982; Fairburn & Cooper, 1984; Garner & Davis, 1986; Johnson, Stuckley, Lewis & Schwartz, 1983; Mitchell, Hatsukami, Eckert, & Pyle, 1985). Additionally, examinations of weight histories also reveal that most normal weight bulimic patients once achieved a significantly lower weight after a period of severely restrictive dieting. This has usually coincided with the onset of the bulimic symptoms (Fairburn & Cooper, 1982; Pyle, 1981; Russell, 1979).

Evidence suggests that bulimics tend to be normal weight or slightly below, although they perceive themselves as heavier than normal and desire a lower body weight (Mizes, 1985). Pyle et al. (1981), using the Metropolitan Life Insurance Table median weight for height, found that 74% of their sample were underweight and 20% were less than 5 kilograms above the median weight. Mitchell et al (1981) reported that 62.5% of

their sample of bulimics were of normal weight, 30%
were underweight, and the rest were overweight.

Bulimics desire to weigh much less than their
actual weight. Fairburn and Cooper's (1982) study
showed that 63.2% of a sample of 499 bulimic women
stated their desired weight to be less than 85% of
matched population mean weight. In another study, Pyle
et al. (1981) reported that 91% of their bulimic sample
desired to weigh less than their present weights and
58% indicated desired weights lower than small frame
ideal weights.

Correlates of Bulimia as a Multidetermined Phenomenon

Biological. Depression has been recognized as a
major component of the bulimic syndrome (Fairburn,
1980; Herzog, 1982; Pyle et al., 1981). This has
spurred a number of researchers into examining the link
between affective disorder and bulimia. The studies
involve investigating the family history of bulimics
for incidences of affective disorder.

Hudson, Pope, Jonas, and Yurgelun-Todd (1983)
found that a high proportion of bulimic patients
demonstrate depressive symptoms. A study of 350 first
degree relatives of 75 bulimic patients indicated an
incidence of depression comparable to that of relatives
of patients with bipolar disorder. The incidence of
depression for the bulimic patients was significantly

different from relatives of patients with schizophrenia and borderline states. In another study, Hudson, Pope, Jonas, Laffer, Hudson, and Melby (1983) interviewed 42 bulimics and found that 48% of them had at least one first degree relative with major depression. Pyle et al. (1981) reported that 40% of first degree relatives of bulimics had previously had an affective disorder.

Mizes (1985) cautions that studies of affective disorder in families of bulimic patients do not provide strong evidence of a biological link between the two. Such studies did not adequately rule out the detrimental effects of living with depressed relatives. He suggests that adoptee and twin studies be carried out to more firmly establish the biologic relationship.

Psychological. Studies indicating bulimics' responses on standardized psychological measures have consistently shown high scores on depression and anxiety scales (Fairburn and Cooper, 1982; Pyle et al., 1981, Ondercin, 1979; Abraham and Beaumont, 1982). Herzog (1982) found more than 75% of a sample of 30 bulimic patients reported significant depressive symptoms as defined by the DSM-III criteria. Fairburn (1980) found depressive symptoms in bulimic patients increased as their body weight increased or if they had no opportunity to vomit after eating. General unhappiness was reported to be a frequent binge

precursor by bulimic patients (Pyle et al, 1981).
Depression and anxiety, and to a lesser extent,
boredom, loneliness and anger were associated with
bulimic eating binges (Ondercin, 1979). In a similar
study by Abraham and Beaumont (1982), tension was
reported by most bulimics as a binge precipitant.
Reports included physical signs of anxiety such as
sweating, tremulousness, and palpitations. Feelings of
derealization and depersonalization were found in many
of the patients and to a lesser extent boredom and
loneliness.

Studies of bulimic patients' MMPI scores have
found elevations or near elevations of scales 2, 4, 8,
and 9 (respectively Depression, Psychopathic Deviate,
Psychasthesia, and Schizophrenia). Notable low scores
have been found on scale 5 (Masculine-Feminine)
(Hatsukami, Owen, Pyle and Mitchell, 1982; Pyle et al.,
1981). These findings are representative of
significant depression, anxiety and worry, rumination,
and feelings of alienation, impulsivity, concern over
physical attractiveness and passive, home oriented
pursuits (Lachar, 1974).

Sociocultural. Several researchers have focused
on the contribution of sociocultural mores in the
development and maintenance of bulimia. In 1978,
Boskind-Lodahl and White indicated that bulimic women

were pursuing thinness to fit themselves into a stereotyped feminine role. Garner, Garfinkel, Schwartz & Thompson (1980) found, through documenting changes in measurements of Miss America contestants and winners, Playboy centrefolds, and the frequency of diet articles in women's magazines, that the "beautiful" woman was becoming increasingly thinner. Striegel-Moore Silberstein, and Rodin (1986) suggest that society's increasing emphasis on attractiveness and thinness (as well as its stigmatization of obesity) contribute to the increase in the prevalence of bulimia. The same authors speculate that women who have thoroughly internalized and accepted the sociocultural mores about thinness and attractiveness are the most at risk for bulimia.

Demographic Variables

Sex. Bulimia is more common in females than males. Strangler and Printz (1980) report that significantly more females than males in a university population are bulimic. White and Boskind-White (1981) report that over the past five years of working with a total of 300 bulimic patients not one of them was male. Although other researchers report having seen no males with this disorder (Fairburn & Cooper, 1982; Pyle et al., 1981) a few male bulimic patients have been found (Herzog, 1982; Russell, 1979).

Age. In a review of eight studies which cited age variables in relation to bulimia, Schlesier-Stropp (1984) reported that most bulimic patients were in their 20s, ranging in age from 15 to 51 years with means of from 21 to 25 years.

Age at onset. Most bulimics begin to binge eat in late adolescence, very frequently at the age of 18 (Fairburn & Cooper, 1982; Muuss, 1986; Pyle et al., 1981; Russell, 1979). It is rare for the problem to begin after the age of 30 (Pyle et al., 1981), although due to the secretive nature of the problem, diagnosis may not be made until this time or later (Farley, 1986 cited in Thornton & DeBlassie, 1989).

The onset of binging and the onset of purging do not generally begin at the same time. While Russell (1979) reported that purging behaviour was first experienced three years after binging began, Fairburn and Cooper (1982) and Johnson et al (1983b) found that the purging begins about one year after the binging.

Race. Keltner (1984) reports that the majority of bulimic patients are white females. Also, the total sample of 64 bulimic patients from two studies that included racial demographics were white (Herzog, 1982; Pyle et al., 1981).

Physiological Sequelae

Studies indicate that bulimics are prone to many medical complications. The majority of these complications result from repeated vomiting rather than from the use of other purgatives or from binges (Russell, 1979).

Binging. The only complication directly associated with binge eating is gastric dilation (excessive gas leading to severe stomach distentions which result in marked pain and carry the risk of fatal gastric rupture). This is quite rare and has only been documented in two bulimic individuals (Mitchell, Pyle, & Miner, 1982; Pyle et al., 1981).

Vomiting and purging. Body fluids and electrolytes are lost during vomiting. This often results in hypokalemia (Fairburn, 1980; Herzog, 1982). Among bulimics the most common result of hypokalemia appears to be weakness in the skeletal muscles after vomiting (Fairburn, 1980; Pyle et al., 1981). Fairburn (1980) reports that severe hypokalemia can lead to cardiac arrhythmias and potentially cardiac arrest.

Mitchell, Pyle, Eckert, Hatsukami, and Lentz (1983) found that 48.8% of their bulimic sample had various electrolyte abnormalities. The most common electrolyte disturbance was elevated levels of serum bicarbonate. This chemical was found to be associated

with increased frequency of vomiting and indicated probable metabolic alkalosis. Webb and Gehi (1981) suggest that severe alkalosis may cause weakness, constipation, and tiredness which can be perceived as depression. Also, severe alkalosis is associated with cardiac arrhythmias and sudden death (Webb and Gehi, 1981). The second most frequent electrolyte disturbance was low serum chloride which is also known as hypochloremic alkalosis (Mitchell et al., 1983). Common symptoms reported by Mitchell et al. (1983) are dry mucous membranes, dehydration, loss of tissue turgor, tetany (muscle spasms and convulsions), and cardiac disturbances. The other electrolyte abnormalities that have been detected are low serum potassium (Russell, 1979) and elevated serum amylase (Mitchell et al., 1983) although the physical consequences are unclear.

Researchers have investigated the effects of vomiting and purging on menstruation, sexual adjustment, and fertility. Pyle et al. (1981) report that menstrual irregularities are common with bulimics. A study of 499 bulimic women by Fairburn and Cooper (1982) found the presence of irregular menstruation in almost one half of the sample. Abnormal eating habits were found to disrupt the menses regardless of the women's weight (underweight, normal weight,

overweight). Hsu (1980) found that amenorrhea is reported less frequently and for a shorter duration with bulimia than with anorexia. Pyle et al. (1981) reported that most of the women in their sample reported satisfactory sexual adjustment prior to the onset of bulimia. After the onset of bulimia 26 of the 34 subjects indicated less sexual interest. Fairburn (1980) suggests that sexual difficulties may be common in bulimics. During the course of treatment, Russell (1979) found that 2 of his 30 patients became pregnant. Bulimia does not appear to impair fertility.

Bulimic patients also experience a number of other physical symptoms. Patients occasionally experience swollen parotid (salivary) glands which result in puffy cheeks. This is hypothesized to be caused by gastric secretions (Herzog, 1982; Pyle et al; 1981; Russell, 1979). Sore throats (Fairburn, 1980; Pyle et al., 1981) and dental hygiene problems such as the destruction of tooth enamel are frequently reported (Herzog, 1982; Pyle et al., 1981). Fairburn (1980) reports that marked dehydration is common with symptoms including low urinary output, lack of energy, dry mouth, and constipation. Russell (1979) reported that the purgative use of laxatives may cause injury to the myenteric plexus of the intestine resulting in the loss of normal bowel reactivity and consequent constipation.

Johnson and Berndt (1983) reported on the frequency of bulimic medical/physical problems. Some physical change was reported by 70% of their subjects since the onset of bulimia. Menstrual irregularity was the most frequent symptom (50.7%) followed by tiredness (30.7%). Also reported was amenorrhea (20.0%), stomach disorders (16.3%), and dry skin and/or hair or hair breakage (7.2%).

Theoretical Conceptualizations of Bulimia

Cognitive-behaviourial. The cognitive-behaviourial patient is viewed as possessing faulty assumptions from which a symptom pattern is logically derived (Garner, 1986). They are described as having difficulty coping, as suffering from maladaptive habits, and as struggling with self-defeating emotional conflicts (Wilson, Rossitier, Kleifeld, & Lindholm, 1986). Cognitive techniques are used to help clients to identify their self-defeating and unrealistic cognitions and assumptions (Ordman & Kirschenbaum, 1985).

Most bulimic women experience cognitive distortions related to food, weight-loss expectations, eating, and dieting (Thornton & DeBlassie, 1989). For example, Muuss (1986) describes the "perfectionistic thinking" distortion whereby the patient may expect to have a perfect appearance, or to

be always cheerful. This distortion inevitably sets them up for failure.

Other researchers, with more of a behaviourial focus, have emphasized the role of positive and negative reinforcement for maintaining the disorder. Vomiting is negatively reinforced by decreasing the anxiety associated with eating foods that are perceived as related to weight gain (Rosen & Leitenberg, 1985). Extinction is difficult since the avoidance behaviour prevents the patient from recognizing when the aversive contingencies are not operating. Vomiting also provides positive reinforcement as it is viewed as a successful weight loss mechanism. The anticipated rewards for maintaining a particular weight are associated with positive concepts such as self-control and beauty (Garner & Bemis, 1982, Garner, 1986).

Treatment involves interventions that are directed at the patients belief structure (Garner, 1986). The faulty thinking patterns of the patient must be identified and challenged (Garner & Bemis, 1982). Contemporary behaviour therapy emphasizes corrective learning experiences in which clients acquire new coping skills, break maladaptive habits, and undo self-defeating emotional conflicts (Wilson et al., 1986).

Garner and Bemis (1982) view the challenge of faulty patterns of thinking as involving: teaching the

patient to monitor his or her own thinking, recognizing the connection between dysfunctional thoughts and maladaptive behaviours and emotions, examining evidence for the validity of particular beliefs and, substituting more realistic and appropriate interpretations based upon the evidence. The final goal is altering underlying assumptions which are the basis for more specific beliefs.

In reviewing cognitive-behaviourial treatments of bulimia, Garner, Fairburn, and Davis (1987) reported that one half of the treatments relied extensively on cognitive restructuring focused on changing distorted attitudes toward body weight, body shape and food. Other treatments focused on more behaviouristic interventions. Information is commonly derived from self-monitoring records and is used by the patient and the therapist to work toward more normal eating patterns (Agras, 1987; Fairburn, 1986). Other foci of treatment may be educating clients about bulimia, and teaching problem solving strategies (Agras, Schneider, Arnow, Raiburn, & Telch, 1989).

Psychoanalytic. From this perspective individuals are seen as having experienced traumatic developmental deprivations and interferences in childhood (Kohut, 1977). As a result of developmental arrest, patients

have developed abnormal psychic structures (Michels, 1983).

Bulimia is conceptualized as a disorder of the self. The underlying deficit is often thought to be in the patient's childhood relation to her mother. A psychologically experienced premature separation from the mother promotes the development of egocentric cognitive structures, difficulties with the separation-individuation process, and a core underlying depression (Winnicott, 1971; Lerner, 1986).

In treatment, the therapeutic relationship becomes a substitute for the nuclear family. This re-parenting is provided by the therapists empathic presence and responsiveness. Therapy is viewed as giving the patient a second chance to grow and develop (Michels, 1983; Ornstein & Ornstein, 1980).

Most psychoanalytic clinicians stress the associations between the patient's symptoms and underlying deficits and conflicts. The symptoms of binging and vomiting are viewed as only part of the problem (Lerner, 1986). The symbolically created parent-child relationship involves set structure, predictability, and empathy. Within this setting the bulimic patient may be better able to deal with the separation-individuation process (Lerner, 1986; Modell, 1976).

Family therapy. Family therapy conceptualizes the
family as a bio/social system. This system is viewed
as operating on the basis of well established and
predictable patterns of interaction of family members
where each behaviour is an interpersonal communication.
A pattern of circular causality is formed, in which
every action is a reaction to other actions (Sargent,
1986). Pathology has its roots in the family itself
and families may be referred to as disturbed or
dysfunctional (Foley 1984; Kutash, 1986). Such a
family may be characterized as one in which the members
cannot attain the desired goals of closeness, self-
expression, and meaning. When these goals of
individual needs are not being met, symptomatic
behaviour takes place (i.e. the parents get depressed
or have affairs; the child becomes school phobic)
(Foley, 1984).

Schwartz, Barett, and Saba (1985) described the
families of bulimic patients as being characterized as
having "all or nothing" positions on behaviour and
relationships. This may involve the family alternating
between over-involvement and abandonment when dealing
with the patient's bulimic symptoms and in other areas
of family life. Such family phenomena are viewed as
maintaining and reinforcing the eating disorder. The
over-involvement and abandonment by the family is

paralleled in the patient's "pseudoindependence" (Sargent, 1986). She may fluctuate between 1) maintaining an independent stance and acting as if she were responsible for herself and 2) acting like a child with the parents and encouraging their concern and involvement with her life (Sargent, 1986).

Treatment in family therapy is directed at changing behaviour and creating more adaptive patterns of interaction for all family members, not just the patient (Foley, 1984; Kutash, 1986; Sargent, 1986). As treatment continues, the family allows for greater differentiation of its individual members (Sargent, 1986). Through therapy, the family takes responsibility for the resolution of its symptoms and promotes the patient's further development (Minuchin, Rosman, & Baker, 1978; Sargent, Liebman & Silver, 1985).

Family therapy is directed at changing the interaction of the bulimic's family. The family and therapist recognize and support the patient's autonomy and encourage her increasing psychological and physical self-control (Sargent, 1986). Also, family therapy with a bulimic patient involves developing a treatment plan that identifies the need for all family members to cooperate in the resolution of the bulimic symptoms. Alternate means for responding to the stress and

emotional upset which have led to the binging must be found (Sargent, 1986). The goals are for the patient to be self-satisfied, competent, and independent and for the family to respond to the eating disorder in a successful manner (Sargent, 1986).

Group therapy. In a recent review of bulimia group treatment programs, Freeman & Munro (1988) reported that the majority consisted of short-term educational and cognitive/behaviourial approaches. Yager (1988), in a separate review, came to a similar conclusion. He found that most programs use an eclectic approach that combines cognitive-behaviourial, psycho-educational, and exploratory and supportive elements. Yager (1988) reports that group treatment programs for bulimia employ specific techniques such as cognitive restructuring, response prevention, relaxation training, assertiveness training, education about the psychology and biology of eating disorders and nutrition, the keeping of detailed food diaries, goal setting with group feedback and support, and a discussion of relationships and affect laden issues.

Pharmacological treatments. Pope, Hudson, and Jonas (1983) suggest that bulimia and depression are both due to the same underlying neurophysiological abnormality. Other researchers (Brotman, Herzog & Woods, 1984) suggest that although depression and

anxiety are important components of the bulimic disorder other psychological factors are also important in bringing about bulimia. They point out that bulimics have many psychological problems that go beyond the criteria for the diagnosis of an affective disorder. Although a relationship appears to exist between depression and bulimia the exact nature of that relationship is unknown (Brotman, Herzog & Woods, 1984).

Bulimia is treated most often with antidepressant medications (Freeman & Munro, 1988). Of the tricyclics, imipramine and amitriptyline are used most commonly. Of the MAO inhibitors, phenelzine and tranylcypromine are prescribed most often (Mizes, 1985).

Clinical Treatment: General Considerations

The more one investigates the nature of this supposedly straight forward problem, the more one encounters complexity and paradox. Clinical practice thus far has been determined almost totally by necessity derived from the constraints imposed by the potentially harmful conditions associated with bulimia (Garner & Davis, 1986). Therefore, the base of clinical knowledge that has been established and shared through published research has not been systematically organized to confront the complexity and paradoxes of treatment. Until the seminal research by Bruch (1973)

there existed no integrated perspective. Due to the impetus of her work, others have similarly attempted to approach the understanding of the problem in a more comprehensive, integrated manner, and from a specified meta-theoretical perspective. The most impressive attempts at this have been the recent trends in the work of cognitive-behaviourial theorists, such as Safran (1990a, 1990b), whose principles in part are similar to those associated with S/C theory.

Clinical practice is basically a pragmatic endeavour based on the accumulated wisdom of the trial and error learning of clinicians over the past 80 years (London, 1986). The three main schools of treatment, namely, the psychodynamic, the behaviourial, and the existential have spawned hundreds of variations. This has generated considerable chaos among the initiated. Few, if any, clinicians can claim that they follow some theoretical persuasion in some systematic fashion. Rather, it seems that a general consensus has arisen over the years that no matter what orientation one follows there are certain core practices that cross the boundaries of any theoretical orientation. As Frank (1982) notes, these core conditions could be considered necessary prerequisites for the successful implementation of any form of psychotherapy. While sharing these common constraining conditions,

therapists typically orient their work along one of the many perspectives alluded to in the above statements. The particular orientation is usually derived from their professional training and clinical experience. As long as the rules of practice (i.e. pragmatics) imbedded in their chosen perspective are perceived to be effective, minimal change or examination is required.

However, the limitations of any perspective become uncomfortably apparent when the therapist encounters complexities in the treatment process which create impasses. An initial reaction to such circumstances is to proffer new techniques or therapeutic manoeuvres from within one's own framework. When this fails, new and perhaps radically different ways of viewing the situation may emerge. If this occurs the same "problem" is now viewed from a different perspective and the pragmatics (techniques etc.) associated with this new "view" often appear quite unreasonable from the former perspective. In other words, the therapist has undergone a paradigmatic shift (London, 1986).

The purpose of the critical analysis is to "describe" a paradigmatic shift in terms of S/C theory. An attempt like this seems necessary because even though clinicians have tried to understand bulimia solely in terms of more traditional orientations to

psychotherapy, they have had very limited success in attempting to incorporate the problem into their conceptual and treatment schema.

Systems/Communications Theory

Philosophical and Scientific Context of the Theory

Kuhn (1970) wrote about how scientific and philosophical theories are formulated, stabilized and eventually revised all within the context of the prevalent paradigm of the particular era. These consecutive paradigms are the subjective world view of the scientific community which are embedded in the world view of the society during a particular historical period (which is also subjective). One of these paradigms, objectivism, is strongly rooted in the Western philosophical and cultural tradition. Johnson (1987) documents the extent to which objectivism has been elaborated by psychologists, philosophers, computer scientists, and linguists. Simply described, objectivism takes the following general form in our culture: The world is comprised of objects that have properties and are related to one another in various ways independent of human understanding. The world is as it is, independent of what any person happens to believe about it, and there is a single correct "God-Eye-View" about what the world really is like. In sum, reality has a rational structure that is independent of

the beliefs of any particular people. Correct reason
can mirror this rational structure. It is from within
this orientation that the "understanding" of objects
and the forces between them (classical mechanics) can
be considered scientific knowledge.

At the beginning of this century, physicists began
thinking about the world in a different way. There was
an epistemological revolution in science. Reality
began to be thought about in terms of its being
constructed and not discovered. This idea has recently
been influencing the social sciences (Katakis, 1990).
Von Glasserfeld (1984, 1986) suggested that knowing is
not the result of passive receiving but is the product
of an active subject's creation. Innumerable conceptual
sets about different aspects of "reality" can be
constructed. These models of the world provide us with
frames of reference, they are lenses through which we
view events. Applied to the "same" set of
observations, alternate models predispose one toward
alternate conclusions and consequences. (Wilder-Mott,
1981; Katakis, 1990). Knowledge can no longer be
thought of as a reflection of an ontological reality.
Our paradigm or epistemology specifies how objects and
events in our world should be punctuated (organized,
differentiated). What is known becomes the product of
our paradigm or epistemology and "defines" our reality

(Bateson, 1972). As Heisenberg (1958) claimed, "What we observe is not nature itself, but nature exposed to our method of questioning" (p. 56).

In the most basic sense the S/C approach is a developing epistemology or way of thinking about thinking itself. It is not a specific approach but more a series of high level concepts or abstractions which have been derived from many disciplines. The impetus of this way of thinking began in the 1920s. In the East, Bogdonov introduced a science of organization which he considered a scientific view of system (Gorelik, 1982). In the West, von Bertalanffy, using an organismic metaphor from observations of living organisms, proposed the concept of open systems which exchange matter, energy, and information with their environment. He maintained the main task of general systems theory, as he labelled it, is to study the common aspects, the generalities and isomorphisms of systems, and to formulate the models, principles, and laws that apply to generalized systems or their subclasses (von Bertalanffy, 1968).

There is often disagreement as to what exactly constitutes a particular system but most systemicists acknowledge what they refer to as a hierarchy of natural systems through the entire universe (Laszlo, 1984). Atoms, molecules, and macromolecules of life

and cells at the micro level in addition to living
organisms are examples of living open systems. At the
macro-level or cosmic level the solar system, galaxies,
and galaxy clusters are also considered exemplars of
open systems.

Many different schemes for classifying systems
also exist (Boulding 1968; Miller 1978). While these
approaches to systems theory were being developed, a
social scientist named Gregory Bateson, who formally
had no direct association with systems theory during
his early development, was devising a very similar
schema for understanding human beings, especially in
their cultural milieu (Wilder-Mott, 1981). Bateson's
endeavours are the direct links between these higher
order constructs and their direct application in
psychology and social science. (Bateson, 1980). The
therapeutic orientation entitled "communication
theory", as exemplified in the works of Jackson (1965),
Haley (1977) and others, was directly influenced by
Bateson and his epistemological perspective.

Objectives of Present Study

The purpose of the study is not to reinvent the
wheel. There are no totally new perspectives on any
form of psychological treatment. The intent of this
effort is to attempt a critical and coherent analysis

of a clinical problem from a singularly unifying perspective.

The specific operational objectives of the present research are as follows: The study is an attempt to present a critical methodological analysis of the problem or the phenomenon known as bulimia from the S/C viewpoint. Formally this will be accomplished in three steps. (1) The specification and definition of core meta-constructs underlying S/C theory. (2) The extension of these concepts and their inherent logic to clinical meta-categories such as causality, development, pathology, symptoms, etc (see Appendix B). In effect an attempt will be made in this section to "construct" these clinical meta-categories in terms of the S/C perspective. (3) Finally, in the results section, excerpts from therapy transcripts with a bulimic client will be analyzed in light of the S/C perspective developed under (1) and (2) above. These three steps form a unity of discourse which will, in effect, constitute the specific procedures underlying the critical analysis.

CHAPTER II

METHOD

The present section begins with an introduction
and explanation of the methodological approach used in
the paper. This is followed by a description of the
data base used in the critical analysis. The final
section of the method involves an explanation of the
structuring model that will be the map used to give
meaning (from the S/C perspective) to the client's
experiential (informational) world.

Methodological Focus of the Present Study

The methodological approach of the present study
should be understood as a meta-theoretical analysis of
clinical data obtained from a client exhibiting bulimic
symptoms. The analysis is based upon the
epistemological and pragmatic perspectives of S/C
theory.

Specifically, the project is a theoretical
analysis of bulimia from the S/C perspective. It is
termed a "critical" analysis because it constitutes an
ongoing critical (self-reflective) commentary of a
phenomenon.

Its modest aim is to elaborate the point that
clinical practice and theory does not grow through a

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monotonous increase in the number of clinical studies, reports, quantitative analyses, etc., but through the incessant improvement of guesses by speculation and analysis. This type of analysis stands in terms of its internal logic and its compatibility with empirical evidential support.

In practical terms, the present methodological approach has two aspects. The first is the utilization of the S/C model or framework to provide a "reasonable" and coherent "explanation" of many of the clinical phenomena associated with bulimia. In practice this means selecting excerpts from a series of nine recorded hours of therapy with a bulimic client and "understanding" these transactions through the S/C perspective. This could be appreciated as a manner of reverse translation. The researcher selects specific excerpts and/or sequences of transactions and translates (interprets) them for the reader in terms of the S/C framework. The tradition supporting this type of interpretation is found in Kuhn's paradigmatic perspective (1970). The theme that runs through his work again and again is that there are no absolute truths or facts. Every instance of observation is always a reality that is determined by one's conscious or nonconscious paradigmatic orientation. In short, how you see it creates the reality.

The second aspect of the method is to draw inferences concerning potential treatment practices from the S/C perspective. Although some of these inferences are similar to those found in clinical practice today, others may be unique and could suggest new alternatives for transcending some of the common clinical impasses and paradoxes inherent in more traditional approaches. This is in line with the theme of building new perspectives based on the foundations laid by past paradigms

Data Base for the Critical Analysis

Description of Client

Katey S. is a 20 year old female university student. Her presenting problem was that she was feeling inferior to others, upset because she did not have a boyfriend, distressed by her "perfectionism", and unhappy with how she thought about food. She reported having been depressed for the last several months and had been seeing a psychiatrist who was treating her with antidepressant medications.

The eating disorder, which was subsequently interpreted as bulimia, became manifest during the therapeutic sessions. She reported a history of worries concerning her appearance, her body image, and dietary ruminations. This pattern had existed for at least two years. There were times when the worries

were so intense that she committed her total

concentration to them. This interfered with her

interpersonal relationships to the degree that her

social life was often determined and restricted by

these worries. The incidence of reported vomiting

varied. The binging aspect of the problem seemed to

occur much more often than did the vomiting.

Her major strategies for coping with these eating

problems were unsuccessful and she became remorseful at

her failure to prevent this pattern. Guilt, disgust,

self-depreciating thoughts, and a depressive attitude

accompanied her failure.

Description of Transcripts

The transcripts relate to a bulimic woman's

transactions with a male therapist over a twenty-six

session period. The sessions were one hour long and

occurred on a twice weekly basis.

Nine of these sessions were recorded and provided

the data for the analysis. The recordings were of

sessions six, seven, fourteen, fifteen, sixteen,

eighteen, nineteen, twenty-two, and twenty-three. The

transcriptions amounted to a hundred and fifty single

spaced typed pages in total.

As a way of attenuating this volume of

information, a single transcript, thirteen pages in

length, was chosen as a prototype of the rest (see

Appendix A). This transcript was chosen for the
following reasons: (1) the organization of the session
was determined by the client and not the therapist, (2)
this transcript provided the best example of a multi-
levelled description of the client's experiential
field, and (3) this was the fourteenth session, which
was at the approximate halfway point of her twenty-six
sessions.

To protect the anonymity of the client all
identifying information was changed in the transcripts.
This included people named, dates, places, events, and
other identifying details.

Introduction to Transcript Analysis

The transcripts employed in this analysis are
viewed as samples of patterns of interaction between
the client and a significant "other" (therapist) in her
world. From these transactions between therapist and
client, I propose that an explanatory model can be
derived to "explain" how the client has structured her
reality not only in this context but in the majority of
contexts and situations she encounters.

The transcripts will not be analyzed on a word by
word or sentence by sentence basis. Rather, the
analysis will proceed on a thematic basis. A theme in
this sense will be an organized (systematized)
structuring of reality or meaning system.

The assumption is that the fundamental principles which the client uses to organize and give meaning to her world in this context are similar, in general, to the majority of life contexts she encounters. The order (latent organization) Katey sets in relation to the therapist is assumed to be isomorphic ("similar") to how she sets her relations across contexts. In other words, I am attempting to interpret this transaction in terms of a "structural" model which "explains" her behaviour (i.e. effects of the structur(ing). This is basically a hermeneutic reading of the transcript, that is, the transcript is viewed through a structural model which I assume is the structuring model she utilizes in her transactions. Structuring implies (connotes) giving meaning to the world. A hermeneutic interpretation is an attempt to describe how the client gives meaning (using a structural metaphor) to her world in an understandable manner. The implication of this approach is that her experiential world (problems, etc.) is a direct organized effect of how she, as a human being, organizes (structures) her world in a meaningful way. The model attempts to describe this structuring process and thereby "explain" the resultant experiential product (effect).

The position here is that the client's present mode of structuring experience is functionally inadequate for the tasks (adaptive requirements) she is confronted with in everyday living. The resultant psychological distress she experiences is both a sign of the type of structuring she utilizes and its deficient functional capacity.

From the S/C perspective, I am trying to explain ordered variety, that is, a recurring complex pattern of human activity. In other words, I am trying to explain a pattern of activity that appears over and over again in different circumstances. The pattern is her structural mode of giving meaning (i.e. ordering herself adaptively) to her world. In short, the assumption is that this particular systemic structuring (organization) by necessity produces a pattern of activity that I can observe, a vital aspect of which is an "eating disorder."

In "normal" circumstances, eating is a biological function. What happens if eating is no longer under biological control? What kind of control (structuring) overrides and supersedes this function? What does eating and not eating mean for the person in setting herself in relation to her world? These are the type of questions that the present model (analysis) attempts to "explain."

Nature of Experience (Mind)

The behaviour (output) of any organism is the effect of how it is organized (structur(ing)) at that moment. This output subsequently feeds back to the organism as information and is utilized as a message for the subsequent structuring/organization which leads to further behaviour (output). This tautological (circular) process involves a continual accumulation and utilization of information about the organism's relation to its environment based upon its activity in relation to that environment. From this perspective, the organism's action (ordered activity), on the basis of the information acquired from its last ordered activity, constitutes a bounded cycle (self ordering/structur(ing)). The structur(ing) produces information about the system's relation to its environment which generates a restructuring which, in turn, creates new information, etc., etc.,..

Analysis of systems begin from the ordered output (i.e. patterned activity/behaviour) of the system and the researcher attempts to infer the structural ordering of the system (components in relation) that "logically" create the ordered effects. Every activity (ordered effect/behaviour) can be viewed as an output ordered by a multi-levelled (i.e. multi-determined) structure. The consistencies (bulimia, etc.) observed

as output are "explained" by the invariant
(recursive/similar) structuring of the relation by the
self-organizing structured activity of the system.
When a system structures the same way over and over
again, its output is "invariant" by necessity.

Structural ordering is continually being
recreated. For the organism (system), the ordering
(structur(ing)) is its active method of making sense of
its world. The experience (realized effect) of a
system is always an effect of how the system structures
(orders its relations meaningfully) its informational
world. Meaning, therefore, is not distinct from the
structuring.

Any set of circumstances that may occur, that are
not registered as input by the system's structure will
not be recognized (information) by that system.
Incompatible happenings (not recognized by the
structure) cannot be processed (structured) by the
system and therefore do not become information for the
system. The major premise underlying all of the above
is that a person (self-organizing system) meaningfully
relates to its world in terms of the information
created by its active structuring. Understanding the
information structuring processes therefore is critical
in analyzing a system.

The organism is set up to confirm evidence for its way of ordering throughout its environment. The effects of what has been ordered by the structur(ing) of the organism is called "information." Structuring creates structure. All that is "known" to the organism directly through its activity (structuring) serves to determine the subsequent structure of that system.

Types of Structuring

Above I mentioned that behaviour is an effect of the organizational structur(ing) of the organism. It has also been mentioned that this structur(ing) is multi-levelled. In this next section, I will attempt to describe the potential types of structuring that characterize a "level" and will elaborate upon this description in later sections.

The organism, and in particular the brain, can be thought of as a bio/informational, multi-levelled, hierarchically ordered unity which is regulated by information produced from its biological processing as it acts on its environment. Thinking of the brain in bio/informational terms requires viewing brain functions from two simultaneous perspectives. Brain processes are both biological and informational complementarities. Both of these aspects are created simultaneously and will be viewed as being multi-levelled and hierarchically ordered. The brain, in any

ontological sense, is not split into these separate
aspects. This is our way of merely taking core aspects
of a unity and because of methodological necessity
viewing them as distinct. Using this complimentary
perspective of the brain is merely a means by which the
model can be explained to the reader in what I feel to
be the clearest way possible.

Each biological level has a corresponding and
complimentary informational level. For example, at the
level of the sensory neuron (biological) messages
(information) are sent to higher levels in the brain as
intensity. This message (information) of "intensity"
is an informational effect (output) of the complex
functions of the lowest sensory level in the hierarchy.
"Intensity" is information, that is an experience, or a
potential experience. Intensity can't be found or
located in any sensory neuron. It is a unified effect
(output) of the total sensory system. While intensity
is a product of the bio/sensorium, it is not identical
with the sensorium. This logical distinction is
crucial. Though information is produced as a
complementarity of a particular level of biological
functioning, it is not identical (i.e. totally
reducible) with that functioning. The implications of
this view are the core to understanding the concept of
"mind" used later in this work.

Hierarchically lower bio/informational levels send messages "upward" to inform higher levels of their current status and are effected, in turn, by messages from higher levels. These messages are, in turn, utilized at these higher levels to adjust the total system in relation to its environment. All messages sent to higher levels of ordering are transformed signals from lower levels and stand for the state of the lower levels. For example, a signal representing the intensity of stimuli can be sent to a higher level of biological/informational integration whereby that signal, combined with other such signals, can come to represent a specific type of sensation (kinaesthetic, vestibular, visual, tactile, sensory etc.). This will be explained in greater detail later in the paper. For now, what should be noted is that there are many bio-informational levels which are ordered hierarchically in relatioi: to one another.

Self-Ordering (Cybernetics)

Every bio/informational system must have a way of regulating or controlling its continuous relation to its environment. A comprehensive study of such regulatory control processes has been undertaken under the name of "cybernetics." This section will begin with a discussion of the concepts of "system" and "communication" from an S/C perspective. Cybernetic

systems will then be explained in general terms with a focus on Powers' (1973) cybernetic model of human behaviourial organization. This section will conclude with the application of Powers' model to the areas of conflicted systems, reorganization of systems, and behaviour.

System

First and foremost, the concept "system" is not a real entity existing out there in the real world. It refers rather to a viewpoint or a way of framing reality. In the simplest sense it is a principle utilized by a "knower" denoting relation. System, in this respect, is a structure of elements, attributes, entities considered in relation. The term whole is often applied loosely as a substitute for the word system (Wilden, 1972).

Perhaps the most important principle implied in this viewpoint is that the relational entity (system) can be understood only through an appreciation of the pattern of relations, either internally or externally, that define it. In this regard, the S/C perspective appreciates the individual as a bounded (conceptually speaking) organized relational unity.

The person system (the individual), or as Koestler (1979) calls it a "holon" (a special term for "whole"), should be considered from two viewpoints

simultaneously. Koestler refers to this as the Janus

faced quality of any system. From one perspective, we

can appreciate it as a bounded structure which is

composed of many sub-structures (sub-holons) or more

properly speaking sub-systems. From the other

perspective, we can acknowledge it as a unity and view

its relation with other systems. Therefore a person is

viewed as a system composed of subsystems, and as a

unified system interacting with other systems.

Communication

The second most important concept to be elaborated

upon is that of communication. The word communication

in this context refers to the emergence of information

(meaning) as the person (system) transacts his or her

"doings" with the world. From this outlook the

organism is continually acting in one manner or another

on its world and, in the process, it is investing this

world with significance or meaning (i.e. creating via

its structuring of information about that world) based

upon these transactions. The messages it receives

about its transactions with its world will be referred

to as "information." The actual ordered activity

(output) which is triggered by this structured

information will be designated as "communication." The

concept communication reinforces the idea that all

"output" of a system is created for the purpose of

setting the system in relation (i.e. transaction).
Communication, therefore, is a necessity in all complex
systems, and permits the utilization of information for
the system's continual adaptation and self-maintenance
(Ruesch & Bateson, 1968). All information acquired by
human systems is, by definition, meaningful to them.
It is important that the concept of information retain
the connotation of "meaning" throughout this
discussion.

Cybernetic Systems

One branch of S/C theory is referred to as
cybernetics. Cybernetics is the science of
maintaining order in a living or non-living system
(Campbell, 1982). The subject matter of this science
is not events and objects but information (Bateson,
1972). Cybernetics is concerned with the communication
and manipulation of information and its use in
controlling the behaviour of physical, chemical, and
biological systems (Porter, 1969). Basically,
cybernetic or self-regulating devices use negative-
feedback (deviation reduction) to maintain a steady
state (homeostasis) (Wilden, 1987).

Since all phenomena in the universe have a
tendency to become entropic (disorderly), for order to
exist, random deviations from that order must be
corrected continually (Campbell, 1982). The human body

is full of mechanisms that serve to maintain it in a normal healthy state of equilibrium. For example, the body functions to maintain a set body temperature, an adequate supply of oxygen, constant levels of blood sugar, protein, sodium, and calcium. The list is endless.

The correction of these random deviations from a set order is accomplished through using information about the behaviour of the system (feedback) to produce different, more consistent systemic behaviour (Campbell, 1982). The process of this "deviation-reduction" is called "negative feedback." An example of a simple mechanism using negative feedback to maintain a steady state may be useful here. Consider a thermostatic system. Temperature is expressed in this system by the bending of a bimetallic strip. Depending on how the strip bends, it will make or break an electric connection that controls a furnace. You set the point at which this connection will be made or broken. Let us say that you would like the temperature in your house to be twenty-two degrees Celsius. By setting your thermostat to this temperature, the behaviour of the temperature sensitive bimetallic strip is affected. If the temperature in your house is lower than twenty-two degrees, the furnace is turned on. If the temperature is higher than twenty-two degrees the

furnace is turned off. The furnace being on or off affects the temperature in the room which affects the bimetallic strip which affects whether the furnace is turned on or off and so forth. Eventually the difference between the temperature you set and the temperature in the room is reduced to zero. This is a closed loop involving a negative feedback process (Bateson, 1980; Porter, 1969).

All simple control systems which incorporate negative feedback can be regarded as "error-actuated" systems. This means that the desired behaviour of the system (room temperature at twenty-two degrees) is compared with the actual behaviour (actual room temperature) and the difference is used to constrain the actual behaviour of the system to approach the desired behaviour (furnace is turned on or off) (Porter, 1969).

Powers' Cybernetic Model

In this section, I will present Powers' (1973) cybernetic model of human behaviourial organization. It is a complex model but a basic understanding is necessary to appreciate the later sections of this analysis. This model is based upon eight levels of brain functioning. These eight levels will be briefly described below. A more detailed examination of the cybernetic aspects of these levels will follow.

In general, Powers' model consists of a
hierarchical structure of feedback control
organizations in which higher-order systems perceive
and control an environment composed of lower-order
systems. "Order" refers to levels in this discussion
and can be used interchangeably. Only first-order
systems are viewed as directly interacting with the
external world. All subsequent levels act on other
levels. The entire hierarchy is organized around a
single idea. The principle is that the system
(higher-levels) controls its relation to the world by
means of setting goals (adjusting reference-signals)
for lower-order (level) systems.

First-order control systems: Intensity control.
Some of the first-order input functions are involved
with the control of muscular effort. Other neural
currents come from first-order input functions that
respond to pressure, light, sound, vibration, taste,
and so on. First-order perceptions are not what are
normally referred to as sensations. Instead, they are
the dimension of experience along which all sensations
can vary, and along which all sensations are similar.
These perceptions represent only intensity, or the
sense of how much of any sensation is present.

The set of all sensory endings can be called the
set of first-order input functions. The first-order

input functions are located between the physical
environment and the higher-order organizations in the
brain. The set of all perceptual signals from
first-order input functions is the only environment to
which higher systems can respond. The other systems
cannot directly respond to any physical stimuli.

Second-order control systems: Sensation control.

First-order intensity signals coming from
different sensory modalities are combined at this
level. Auditory, visual, kinaesthetic, and vestibular
intensities may all contribute to a single sensations.
Speech, for example, may involve sound and effort.

This set of control systems is hierarchically
superior to the first-order control systems. The
second-order control systems control the first-order
systems. There may be hundreds of second-order systems
that are active at the same time and operating
essentially independently of each other but they all
produce overt behaviour by a similar means. Second-
order systems send reference signals to first-order
systems (which produce patterns of forces involving
many or all of the skeletal muscles of the body), and
they all receive information from sets of first-order
input functions (sensory endings).

Third-order control systems: Configuration
control. Third order control is the control of
configurations. The quantities controlled by third-
order systems are primarily kinaesthetic involving
position control, but can be evidenced in other senses
as well. This system does not control how these
positions are attained or how they change (transition)
but only the configuration of the positions themselves
(for example, the position of a hand when it makes a
"peace" sign but not how it gets to that position).

When many first-order intensity signals stimulate
the visual cortex in a set combination, the effect of
this stimulation (now called second-order) gives rise
to perceptions of "objects" or forms, such as, stars,
coloured disks, balls, spots, marks, and black wheels.
These may be called visual configurations. Similarly,
there are auditory configurations, such as, ringing,
humming, buzzing, and the perception of phonemes.

Fourth-order control systems: Control of
transitions. At the fourth-order we reach the level of
organization required to carry out a controlled
movement, to create a rising tone of voice, to draw a
circle, or, in general, to control a smooth transition
from one intensity, sensation, or configuration to
another. Perception of change is not restricted to any
single sense. In the visual field, a cursor on a

computer monitor which flashes on and off in rapid
succession at different points on the screen appears to
be moving. An analogous sense of auditory change can
be created by playing a scale quickly cn a piano.
Similarly, discrete tactile sensations may feel like a
touch moving on the skin; or a series of temperatures
may be sensed as "cooling" or "warming."

At this level of order the organism can detect
movement and rate of change, and see objects and
arrangements and static patterns. Each of these
configurations is composed of a number of sensations
and each of these sensations is associated with some
average degree of intensity. The organism is able to
cause configurations of its own limbs to change at
controlled rates. It can maintain these configurations
against disturbances and can control the magnitude of
sensations, as well as the intensity of its own effort
signals.

This organism is still very elementary. Although
movement and its own position can be controlled, the
organism cannot select one movement instead of another.
For an organism with only four orders of control
system, the reference signals for movement must
originate either from stimuli, or from genetically
transmitted and stored information

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Fifth-order control systems: Control of sequence.
This control system is associated with perception and
control of the sequence in which lower-order
perceptions occur. This can involve every sensory
modality. A melody is a sequence of pitches. A
progression of guitar chords is a sequence of pitch
configurations. The bouncing of a tennis ball is a
sequence of rising and falling motions. A spoken word
can be considered as a particular sequence made up of
phonemes (third-order) and diphthongs (fourth order).
It is not until fifth-order that we can produce the
coordinated actions of diaphragm, vocal cords, tongue,
and jaw necessary to generate a word as a unitary sound
event and perceive that a word has been spoken.

Sixth-order control systems: Control of
relationships. The sixth-order of perception and
control concerns relationships. By adjusting the
lower-order reference signals and thus changing
perceptual inputs, the sixth-order system creates and
maintains whatever degree of the particular
relationship it is being told to perceive. In other
words, the sixth-order control system has nothing to do
with what type of relationship it is controlling but
serves to maintain the relationship that it is
instructed to maintain. For example, if you are
picking up a cup, your goal at this level is to put

your hand in a set relation to the cup (hand on cup).
Whether to pick up a tea cup or a paper cup is a
concern of higher-orders.

Seventh-order control systems: Program control.
The seventh-order of perception and control involves a
structure with tests and decision points. For example,
let us say that a woman named Pam was looking for a
tape recorder in a store. She walks into the store and
then walks down the first aisle checking each shelf;
there are no tape recorders. She walks down the second
aisle checking each shelf; no tape recorders. She
walks down the third aisle and finds the tape
recorders. This "program" is a structured list of
relations (relation between Pam and aisle, shelf, tape
recorders) that follow a sequential order. Programs
such as this are hierarchical. Once she finds the tape
recorders, Pam "branches" to the next programs: "choose
a tape recorder" and then "bring a tape recorder to the
cashier" each of which are made up of many sub-
programs. Other such examples of programs are building
a backyard deck, filling a car with gas, or picking up
a pencil.

Programs can be organized to obey any set of
rules. The rules of formal logic are only one type of
many possible sets of rules that a program can obey.
For example, a program could be composed of grammatical

rules, superstition, deduction, expectations about the consequences of behaviour in the world, rules for organizing a written paper, rules of games, and so on. These rules are all highly patterned and highly "rational" in their internal consistency.

Eighth-order control systems: Control of principles. The eighth-order control systems are what guide a system in picking which programs or strategies it should use. All complex human endeavors employ heuristics (principles). The eighth-order systems can operate in a condition where no program could succeed since the situation is too complex to handle with any set algorithm. A football team will have a game plan, but this is not a specific program like a diagrammed play. I have a general idea of how to defend this thesis, but I cannot say before the defence what the specific content of the transactions between myself and the committee will be. Principles are perceived and controlled at a level higher than the level at which logical or grammatical structures can be constructed. The meaning of an utterance is dictated by these higher-orders.

The eighth-order systems select a set of programs and put them into operation to keep a principle true. Once we have learned to perceive our environment in terms of a particular principle, we become able to see

the state of that principle in all of our lower-order perceptions related to it. We learn to behave in such a way as to control that state.

Hierarchy of deviation reduction processes. As mentioned above, there is a hierarchy of negative feedback control organizations in all behaviour. A higher-order system sets the reference signal (goal) for a lower-order system and the entire lower-order system serves to actualize this signal. This model functions by means of hierarchically ordered deviation-reduction processes.

Imagine that there was a man named Bernie who typically liked to behave in the most relaxing way that was possible at any given time. One day he looked at his book shelf and decided that he needed to go to the store to get a magazine to read. There were a variety of potential ways that Bernie could have gone to the store. He could take a leisurely stroll, ride his bike, or take his car. Since Bernie was constrained by his bike's flat tire and his car was being fixed, the alternative he was left with was to walk to the store. On his trip he carried out a number of activities, such as walking to the store, opening the door to the store, greeting his friend who was just leaving, finding the magazine in the store, picking up the magazine,

greeting the cashier, paying for the magazine, leaving the store, etc.

Let us examine how some of these acts can be carried out with respect to a hierarchy of negative feedback control or deviation-reduction processes. Below I have written out a program based on Powers' (1973, p. 71) three-level control system model. This can be used to model Bernie's hand being placed on the magazine. Below each segment of the program I explain the program lines in terms of Bernie and the magazine.

```
Relationship Comparator
     INPUT perceived relationship signal (from visual
     input) AND relationship reference signal (from
     higher order)

     Relationship error signal = (perceived
     relationship signal - relationship reference
     signal)

     IF relationship error signal = zero THEN GOTO
     Higher Order Comparator

     IF relationship error signal not zero THEN GOTO
     Position Comparator
```

The relationship comparator (see above) serves to control for the relationship between Bernie's hand and the magazine. The perceived relationship signal (current relationship) is the visually represented perception of Bernie's hand and the magazine. The relationship reference signal (the desired

relationship) is the desired visual relationship
(Bernie's hand on magazine). The relationship error
signal is the difference between the current and
desired relationship. If there is no difference
between the current and desired relationship then the
goal has been carried out. Bernie's hand is on the
magazine. A signal standing for this state is then
sent to a Higher Order Comparator (not shown). If
there is a difference between the current and desired
relationship between Bernie's hand and the magazine, a
relationship error signal is sent to the Position
Comparator (see below).

Position Comparator
        LET relationship error signal = position
        reference signal

        INPUT perceived position AND position reference
        signal

        Position error signal = (perceived position -
        position reference signal)

        IF position error signal = zero THEN goto
        Relationship Comparator

        IF position error signal not zero THEN GOTO
        Effort Comparator

        The Position Comparator (see above) serves to
control for the kinaesthetically sensed position of
Bernie's hand. The perceived hand position signal is
the current kinaesthetically sensed position of

Bernie's hand. The position reference signal (derived from the relationship error signal) is the desired kinaesthetically sensed position of Bernie's hand. The position error signal is the difference between the current and desired positions. If there is no difference between the current and desired positions, Bernie's kinaesthetically sensed position of his hand is as desired by the higher level. A signal is then sent back up to the Relationship Comparator because it is possible that a new relationship reference signal has been handed down from a higher order. If there is a difference between the current and desired hand position then a position error signal is sent to the Effort Comparator (see below).

Effort Comparator
        LET position error signal = effort reference
        signal

        INPUT perceived effort signal AND effort reference
        signal

        Effort error signal = (perceived effort signal -
        effort reference signal)

        IF effort error equals zero THEN GOTO Position
        Comparator

        IF effort error signal not zero THEN GOTO Output
        Function

The Effort Comparator (see above) serves to control for the sensed effort in Bernie's hand. The

perceived effort signal is the current muscle-tension.
The effort reference signal (derived from the position
error signal) is the desired muscle-tension. The
effort error signal is the difference between the
current and desired muscle-tension. If there is <u>no</u>
difference between the current and desired muscle-
tension, the muscle-tension is as desired by the
Position Comparator. A signal is then sent back up to
the Position Comparator because it is possible that a
new position reference signal has been handed down from
the Relationship Comparator. If there is a difference
between the current and desired muscle-tension, a
signal is sent to the Output Function (see below).

Output Function (Environment)
    MOVE muscles: (changes perceived effort signal,
    perceived position signals, and perceived
    relationship signal)

    GOTO Effort Comparator

Output (see above) involves the movement of
muscles that cause the arm and hand as a whole to move
toward the magazine. This movement changes the
perceived effort signal (or muscle-tensions), the
perceived arm and hand position signal, and the
perceived relationship signal. A signal is then sent
back to the Effort Comparator and continues the Effort

Comparator-Output Function loop until the difference between the current and desired muscle-tension has been eliminated.

The final effect of this program was that Bernie's hand was put into a set relationship with the magazine. This was accomplished through control of the hand-magazine relationship, control of hand position, and control of muscle tensions which were all hierarchically related (with control of muscle tensions being at the bottom of the hierarchy). Each level of organization except the lowest one corrected its own errors by altering the definition of the reference condition for the immediately lower level. Each single level of organization continued to resist disturbances of the variable associated with it, even though the reference condition that defines what made up a disturbance may have changed (Powers, 1973).

Conflicted systems. In the system described above there was no conflict. The system was working toward a single goal (hand on magazine) that could be realized. Conflict occurs when the system is working to realize two incompatible goals at once (Powers, 1973). For example, let us say that Bernie's two favourite magazines were Fisherman's Quarterly and Cybernetic Systems. He had come to the store unaware that both his favourite magazines would be for sale. The tough

part for Bernie was that he had only three dollars and each of the magazines sold for that amount.

His system has two incompatible goals (hand on Fisherman's Quarterly and hand on Cybernetic Systems). As he moves toward Fisherman's Quarterly (error reduction) he gets further away form Cybernetic Systems (error amplification). As he moves toward Cybernetic Systems (error reduction) he gets further away form Fisherman's Quarterly (error amplification)

After spending a good hour in front of the magazines the store manager walked up the Bernie. The manager says to Bernie, "you have been here a long time, perhaps I can help you?" Bernie though has two other incompatible goals: 1) to be pleasant and 2) to not let anyone push him around. Bernie replies, "that's very nice of you sir" but decides that this manager is pushing him around and adds "don't you have anything better to do than watch me?" The manager scurries off. An hour later the manager returns angry and says, "Listen, you either get out of my store or I'm going to throw you out!" Bernie yells, "You can't push me around, I'm a paying customer!" and then he apologizes with a nervous giggle and leaves the store.

Behaviours in a conflicted system fluctuate from one reference level to another. The conflict frustrates the purpose for which either reference level

was set up. Systems lower than this conflicted system behave normally. Although Bernie can't decide on which attitude to adopt, once a choice is made, he has no difficulty communicating in a manner consistent with the adopted attitude. He can act pleasantly or he can stand up for his rights. What makes his behaviour unusual is how he fluctuates from one attitude to the other. Similarly, although he is impaired in his magazine choice selection, once a choice is made, there is no kinaesthetic impairment in his ability to pick it up.

Lower system conflicts affect the higher systems. If the conflicted system is only one of the many means available for achieving a higher-order goal, the result will be a switch to an alternate means of control or a readjustment of the reference signal at the level of conflict. This is known as reorganization (Powers, 1973).

Reorganization. Reorganization is the process of changing functioning within the hierarchy of control systems. When a human system is in a state of irreducible error (difference), the experience is that of anxiety. Chronic conflict likely leads to a reorganization or re-ordering of the system. Ideally, reorganization will alter perceptions or choice of goals so as to eliminate the conflict.

For example, imagine that a person thinks that he is "worthless" and says that he is "depressed." One day he wakes up and is smiling, friendly to his wife, and starts singing in the shower. Looking into the mirror while shaving, he notices that he is smiling and enjoying himself this morning. He then asks himself, "how can I be enjoying myself when I am depressed and a worthless person? I must be getting used to this state; how absolutely pitiful." He laughs sardonically at himself, and continues through his day as miserable as ever.

The question the man asks himself maintains his organization. As long as he tries to answer this question he cannot reorganize. The question assumes foremost that he is a depressed and worthless person. In a sense, it is a trap that he cannot escape from through logically reasoning with himself. If reorganization was to occur then he would no longer ask himself this question. However, there is no guarantee that reorganization will have good long-term effects (Powers, 1973).

Often the chronic error can be largely corrected without the reorganization of the system. For example, by avoiding those situations requiring the use of the conflicted system (Bernie can avoid stores or people), substituting imagined information for the

uncontrollable perceptual signals from the conflicted

system (Bernie imagines that he does not see

Fisherman's Quarterly and takes the Cybernetic Systems

magazine), or changing his rules of logic in ways that

are temporarily useful but over time will cause even

worse intrinsic errors (Bernie decides that he can only

purchase Fisherman's Quarterly if he has a fishing rod

in the car, or he decides to steal both or one of the

magazines). All of these methods do not remedy the

conflict although they serve to relieve felt anxieties.

They are known to clinicians as defenses. The system

is defending itself against the threat of experiencing

the error associated with conflict. It is not

defending itself against anything external (Powers,

1973).

Understanding behaviour. All behaviour is the

attempt to eliminate the difference between current

perceptions and desired reference conditions. Once

reference conditions and current perceptions are known

the relationship of a large number of seemingly

unrelated responses to a large number of seemingly

unrelated stimuli (perceptions) becomes completely

predictable. The controlled perception does not

directly cause behaviour. Only the difference (if one

exists) between that perception and its reference

condition evokes a "response." The perceived

difference of the system, and not the environmental situation in any "actual" sense, leads to responses. Powers (1973) states, "The purpose of any given behaviour is to prevent controlled perceptions from changing away from the reference condition. Purpose implies goal: The goal of any behaviour is defined as the reference condition of the controlled perception" (p. 50).

Logical Types and Learning

In the past few sections the focus has been on the bio-informational organization of the brain. In this section, the informational side of human organization will be emphasized, in particular, the phenomenon of learning. As with other aspects of brain functioning, learning can be described as a structuring process that occurs on many hierarchically ordered levels. In other words, simple learning precedes (and is a part of) complex learning. You learn how to crawl before you learn how to walk.

One method that can be used to understand different informational levels (i.e. levels of learning) is the theory of logical types. This theory will be briefly described and applied below to the subject of learning.

Logical Types

A logical type is a conception that was originally created by Bertrand Russell (1872-1970) to use in distinguishing between levels of logic and reality (Wilden, 1987). First, we say that the logical type of a class is distinct from that of its members. The class is higher than the member of that class. For example, the class of mammal is of a higher logical type than the member "zebra." Furthermore, no class can be a member of itself.

Second, Bateson (1977) mentions a less obvious assertion of the theory: a class cannot be one of those items which is correctly classified as its nonmembers. For example, if we create a class called "books" we can state that computers and televisions are members of a large class of "non-books." It is an error to count the "class of books" as an item within the "class of non-books." This can easily be explained by the following. The class of "chairs" is of the same logical type (order of abstraction) as the class of non-books. Therefore, since the class of chairs is not itself a chair, the class of non-books is not itself a non-book.

Third, the theory of logical types says that paradox (confusion, etc.) will be generated if these simple rules mentioned above are violated.

<u>Learning</u>

The word learning denotes some kind of behaviour "change." The type of change that is involved requires some attention. Bateson (1977) suggests that the phenomena of learning can be investigated through the rubric of Logical Types. He suggests that all learning is in some degree stochastic (contains components of "trial and error") and that an ordering of the processes of learning can be founded upon a hierarchic classification of the types of error which are to be corrected in the various learning processes. Basically, and I will elaborate on this below, zero learning is the label for all acts which are not subject to correction by trial and error. Learning I is the label for learning by trial and error. Learning II is the label for the learning of a rule about Learning I (what has been learned by trial and error). Learning III is the label for learning to revise rules learned in Learning II.

<u>Zero learning</u>. Zero Learning is the label for all acts which are not subject to correction by trial and error. For example, if you already know how to ride a bike, the act of riding a bike for you provides you with Zero Learning. There is no change in your bike riding behaviour from one day to another. Other examples of Zero Learning are: (1) an animal in an

experimental setting that has completed its "learning" and is responding correctly to the stimulus almost one hundred percent of the time, (2) the case of habituation, whereby an animal has ceased to respond overtly to what was formerly a disturbing stimulus, (3) the pattern of response mainly determined by genetic factors and only minutely determined by experience, (4) cases of highly stereotyped responses, and (5) electronic circuits, where the structure of the circuit cannot change in response to the impulses passing within the circuit.

Learning I. Learning I is the label for the learning by trial and error. This type of learning represents the class of phenomena which are described as changes in zero learning. This is seen in the cases where an entity gives at Time 1 a response that will differ at Time 2. For example, a child learns how to ride a bike. This is accomplished as the result of many experiences of falling and getting back onto the bike. The end result is a change in behaviour over time.

Learning II. Learning II is the label for the learning of a rule about Learning I (what has been learned by trial and error). Learning II has been referred to by a variety of names, such as, "deutero-

learning," "set learning," "learning to learn," and "transfer of learning."

For example, imagine Bernie owned an apartment with only one working electric wall socket. Bernie liked to do two things: read magazines and listen to the radio at night. With only one electric wall socket Bernie tried many combinations of plugging in the radio and the lamp until he finally found one that served his purposes. He would read with his lamp on until he got tired and then listen to the radio in the dark until he fell asleep. This worked fine for Bernie. When he got tired he would just unplug his light and plug in his radio. He learned this combination through trial and error learning (Learning I). One summer night, while listening to his radio he decided that what he needed in his apartment was a fan. The next day he bought himself the fan, but to his surprise he had to unplug the light or the radio to use it. The next day he exchanged the fan for an air conditioner, but the situation had not changed. It dawned on Bernie on the third day that <u>with only one electric wall socket, he could only have one electric appliance working at any one time</u>. This is Learning II, he learned a rule about what he had previously learned through trial and error.

Learning III. Learning III is the label for learning to revise rules learned in Learning II. Learning III occurs rarely. When it does occur, it is likely in the context of psychotherapy, religious conversion, and in other circumstances which involve a profound reorganization of character (Bateson, 1977).

For example, Bernie appeared on a television game show one evening and had the misfortune of winning a number of electric appliances. Some of these appliances, such as the digital alarm clock and the frost free refrigerator required that he keep them plugged in all the time. As you might imagine, with only one electric wall socket, this was a stressful time for Bernie. Luckily, it provided a suitable context for Learning III to emerge.

Any revision of Bernie's Learning II rule "with only one electric wall socket, you can only have one electric appliance working at any one time" would be an example of Learning III. After spending days and sleepless nights of plugging and unplugging his fridge, lamp, radio, and readjusting the time on his digital alarm clock, it occurred to Bernie that he could go to a hardware store and buy himself an eight-socket electric power bar that would plug into his one wall socket. This is Learning III, a revision of his past rule.

The above example, deals with only one Level II rule. People may have thousands of rules that they have learned from family, friends, formal education, tradition, culture, etc. They could be very aware at Level II of the effect of every rule and the consequences of deviating from it. A person may feel "embarrassed" if their house is not clean when company arrives or "guilty" if they steal from a store. This discomfort "informs" them that one of their rules have been violated. As a society, we share many such rules. Such rules, in sum, are the conventional order we experience among us. Although they may know many rules, few come to question the general principles that underlay these rules.

Level III learning is having insight as to the underlying meaning of all of these rules. It is the learning of the principle from which these rules are based. While a person may change individual rules, this does not have any effect on the underlying principle. Take "capitalism" as an example of an underlying principle. A woman may sell her computer firm in order to retire in Barbados and enjoy the fruits of her labour. Selling her privately owned company will not necessarily change her other actions that are consistent with a capitalist structure. On the other hand, insight into the principle will change

the meaning of the Level II rules that are based on
that principle. The person undergoing such a change
may behave in the same manner, but his or her meanings
of these behaviours may change.

There is an old story about a Japanese farmer.
Every morning he woke up, fed his livestock, worked in
the fields with his wife all day, ate his dinner, made
love with his wife, and fell asleep. One night he
awoke from his sleep; he had attained enlightenment.
The effect was profound. He felt at one with himself
and the universe. The following morning he woke up,
fed his livestock, worked in the fields with his wife
all day, ate his dinner, made love with his wife, and
fell asleep.

The message that is implied in this tale is that
although his activities had not changed, he now had
different meanings for them. In the past, he worked in
the fields to make enough money for food and clothing
and enjoyed making love with his wife for the physical
pleasure it gave him. After his enlightenment, all of
his actions were viewed by him as bringing him closer
to Buddha. In recognizing a unifying principle
underlying his behaviour, the significance or meaning
of his acts had changed. His "enlightenment" (insight)
was at once an awareness of his way of giving meaning

to his world and a reorganization of that meaning. This is a Learning III phenomenon.

In summary, the levels of learning described above are considered as a dependent hierarchy. Each level depends upon (and encompasses) all lower levels. For example, Learning III could not occur without prior learning at levels zero, one, and two. The farmer attaining "enlightenment" was dependent upon a prior ordering that included rules of learning II (he farms to pay for food), behaviours of Learning I (specific ways to harvest a crop), and habit patterns of Zero Learning (the holding of a farm implement). Conversely, the farmer could follow rules of Learning II (farming to pay for food, putting on his boots so he does not hurt his feet) without having to engage in Learning III (the realization of a unifying principle underlying all of his Level II rules).

Logical Types and Language

In the following section, language will be discussed in terms of logical typing and in its relation to experiential referents. This will provide a background upon which will be drawn a transactional model regarding how people frame (organize) their relations with others.

Logical Typing: Names, Rules, and Behaviour

Bateson (1980) gives an example of how logical typing leads to confusion of thought. Imagine a psychologist is studying the "exploring tendencies" of a rat. She puts the rat in a maze that contains certain corridors with electrified grids on the floor. The psychologist will find that the "exploring tendencies" cannot be extinguished by the rat's encounter with the parts of the maze that contain the electric shocks. From encountering the shocks the rat learns not to enter those particular parts of the maze, he still continues to explore the rest of the maze. The contrast is between learning about the general (exploring) and learning about the particular (certain painful parts of the maze).

It is important that the rat not learn the general lesson. The shock informs the rat that he did well to put himself in that part of the maze to gain the information that it contained the shock. The purpose of the exploration is not to discover whether exploration is good, but to discover information about what is being explored. "Exploration" is a name for a way of organizing actions, it is a name for the set of rules that guide the rat's behaviour. The name is of a higher logical type than the rules which are of a

higher logical type than the behaviours they govern
(Bateson, 1980; Wilden, 1972).

Language

The human organism functions on many
hierarchically ordered levels. At the lowest level
information is a difference perceived by sensory
nerves. When I perceive the visual intensity of the
light being reflected from my hand and the wooden desk
it rests on, I experience a different set of sensory
intensities. This is information to my system. If the
lights were off then I would not experience this
difference. It would be noise, not information.
Information travels from the lowest levels to the
highest levels always standing for the state of prior
levels. At the high levels these neural signals can be
abstracted into words and symbols.

Many experiences do not involve the high level
ordering of naming. Imagine that you are sitting down
on a bench resting. A child comes up and pokes your
leg with a pin. This is a recognizable difference
between one state and another. Almost immediately pain
is experienced. The word-abstraction "pain" has
nothing to do with this process, it need never come up.

Naming necessitates the bounding of experiential
happenings. Imagine a child at a dinner table. He is
playing with the salt shaker and is doing a good job of

making it imitate the sound and action of a space shuttle taking off. His father says, "stop playing with that and eat your dinner." What was at first noise (not a difference recognized) became information to the father (a difference between eating and not eating). This set of behaviours or event was also given the name "play." For the child in this situation, "play" is the abstraction standing for the experiential state of his body at the time that his father spoke to him. This experiential state is multi-levelled involving as components: vestibular, kinaesthetic, visual, tactile sensations, objects and configurations, relationships between these objects, and consciously, his symbols for what he is doing.

Language is the effect of many levels of prior ordering. From the above comments, it is apparent that information has to be transformed in many ways before it is represented as a word. Physiological sensations are transformed into perceptions, which are further transformed into objects, then relations between objects, then symbols for these objects and relations, which are combined based on syntactic rules for language. On this level of high order transformations we communicate with one another. The name is obviously not the thing named.

Use of Language

The logic by which learning occurs is an
associative logic. If I kick you in the shin then you
feel pain. The next time you see me you will not
expose your shin to me. At this experiential level we
are the same as the rat mentioned above. The rat, when
shocked by the electric grid, will not put himself in
the same relation with it the next time he sees it.

Unlike the rat, we take this visual/kinaesthetic
experience and make it a symbol. In this case the
symbol stands for a number of bodily happenings. This
organization of happenings, once named, is now distinct
from any other bodily organization. "Kick" stands for
a bounded bodily organization which we can call its
experiential referent. The name is on a higher logical
level than its experiential referent.

I can carry with me the word "kick." I could be
alone, away from anyone who would kick me, and wonder
"maybe outside that door is a person who may kick me."
Of course the only way for me to find out is to open
the door, but should I risk being kicked? The mouse
cannot pose such a question.

Names can also be combined to make propositions.
I can say to you "When you kick me I feel pain."
Depending upon whether or not you share the same
experiential referents with me, this sentence may or

may not mean to you what I intend it to mean. For example, if you were born without legs and I talked to you about kicking a football, you could not understand the word "kicking" as I do. Implied in my use of the word, is a whole bodily organization involving vestibular, kinaesthetic, visual, and tactile sensations. Similarly, a person that has been blind from birth may be able to say that blue is his favourite colour but his experiential referent for blue could not be the same as that of a person who could see. "My favourite colour is blue," may be only a grammatically correct proposition, or a communication that the blind person can imagine colours, it need not be "true" in any other sense. In work in artificial intelligence, a computer may be programmed to print out grammatically correct sentences. It may print out, "My friend lives in New York" or "I like trees." The rules of grammar that are being correctly followed have nothing to do with the referents of the words.

Codification of Social Learning

The human organism is equipped to detect common features (actually common differences) in apparently diverse events. The patterns or elements that are common to a number of happenings are abstract. It is these abstract relationships which are retained by the organism. However, if the organism is to abstract then

it must be exposed to a sufficient number of events which contain the same factors. Only then will it be equipped to cope with the most frequent happenings that it may encounter.

In the social sphere, information is acquired about relatedness to people through continuity and consistency of exposure to similar social events. When events are registered by a child they become symbolically represented and remain available for future reference. Slowly over time information is acquired through the representation of outside events in the mind of the child. These happenings in and around a child are recorded in a codified form. This codification process leads to the accumulation of a vast amount of information and acquisition of rules about how to use this information.

Ruesch and Bateson (1968) suggest that a person's genetic endowment forces him to seek social relations. After birth, an infant would die if it were not fed, clothed, sheltered. It has been reported that institutionalized children who were adequately cared for in every bodily respect were nevertheless handicapped in their physical and emotional development; they frequently withdrew, became depressed, and some even appeared to die as a result of insufficient psychological care (Spitz, 1965).

The child's first social contacts and early development determine, in part, how he will communicate with others. His first social experiences are with his or her primary care givers, then with other members of the family, and later with peers at school and on the playground. From these people the child learns different ways to act on the world and symbols that stand for certain aspects of these actions.

Ordered Activity (Developmental)

Ordered activity is a strange combination of words On the one hand, activity implies continuity and change. On the other hand, the concept of order implies a lack of activity (invariance), a stopping of action, and a recognizable pattern at a given point in time. In systemic jargon, continuing activity is referred to as a diachronic process. The prefix, "dia" refers to "through" and "chronic" refers to "time." In simpler English, diachronic connotes processes or activity occurring over time. However, a human observer finds it extremely difficult, if not impossible, to perceive and organize a continuous flow of events over time even though he or she might speculate that the phenomenon is best understood in this manner. A more manageable mode of knowing about continuously occurring activity is to "chunk it" or stop it in time. That is, perceive it as an event in

time, that is organized, and stable. This view permits the observer to decompose the "event" into discernable units or parts which after proper analytical procedures may be reconstituted as a unity or a whole. This type of analysis is referred to as a synchronic perspective. It is an attempt to make believe that the underlying continuity can be stopped in time and analyzed into its constituent parts at any particular moment (Wilden, 1972). The synchronic approach has many distinct advantages in that it affords the observer the opportunity of decomposing the ongoing continuity into proposed parts and to investigate the relationship between these parts from some theoretical perspective. On the other hand, one always realizes that something is missing from an analysis of this type. This realization is especially important when one is required to analyze a living, processing, entity as a unified totality which is continually acting (adapting) to its world. This requires a diachronic perspective. In short, the synchronic and diachronic viewpoints constitute a methodological perspective which the systemic theorist utilizes in attempting to understand the ordered activity of self-organizing and continually adaptive systems. These are complimentary perspectives and their relative merits and demerits as

methodological procedures should be kept in mind during the following discussion.

Whenever the concept of psychological development is being investigated, one is immediately confronted with stage and continuous adaptation phenomena (synchronic and diachronic perspectives). "Stage" refers to a synchronic description of the organism at a given point in time along the presumed developmental trajectory typically followed by the organism under consideration (Piaget, 1971). More simply, the investigator methodologically stops the developmental trajectory at a given time and discusses the structural characteristics at that time or stage. On the other side of the coin, the researcher realizes that this stage is only a temporary developmental weigh station and that the organism is continually adapting to its environment as a whole thereby creating new stages or structures along the way. Piaget (1971) has captured, to some extent, this bi-perspective (diachronic and synchronic) relationship in the terms accommodation and assimilation.

One of the major limitations of many theoretical analyses is the limited descriptions they provide of the structuring of a single individual. It is one thing to say that a system has structure and that this structure is imposed on a continuous background of

adaptivity. However, few attempts to describe specific instances of the establishment of this structure can be found in the literature.

Therefore, a very modest attempt will be made to model how a particular organism in its adaptive surrounding (diachronic functioning) is required to structure its activities (synchronically) in order to accommodate to that surrounding. This will be used as a miniature model for structured activity or as I shall call it "ordered activity" of all types.

All structured activity starts in a structur(ing) context. The fact that this structur(ing) context exists is often overlooked, especially in the Piagetian viewpoint which hardly mentions the pre-structured world into which the child is born. Sometimes from this viewpoint it almost appears that their child has to guess at the structure it must learn or this structure is innate. However, anyone who has lived in this world for more than one day and has confronted parents, friends, associates, or society, realizes that his or her activity is constantly being structured and that significant consequences are associated with the determined expectancies (structured ordering) of these significant others.

Therefore, the example I will use as a structuring context will be what I shall call, in general, the

dinner time context. Everyone on this planet has some ritual (i.e. pattern of ordered activities which they engage in) for the communal sharing of food. When one observes the variety of patterns that families and/or cultures have established in this regard, a true appreciation for the complexity of structuring possibilities for a single activity becomes apparent. However different each might be, they are all similar in that the purpose of this whole structured pattern of communal interaction is to insure survival of the group in terms of the biological requirements in a social context. Therefore, in the most general sense, the "cause" of this communal pattern of food intake might be seen as originating though biological necessity. Yet, it is embedded in a very complex social matrix of meaning which has been culturally transmitted and determined in its specific form. In this every day context the biological necessity acquires social meaning.

One of the most intriguing insights people might gain, if they reflect on their personal learning in this regard, is that they rarely, if ever, recall when or how they acquired the complex pattern of dinner time eating/socialization activity which they engage in and most probably communicate structurally to their progeny. To make this more concrete, let us posit a

hypothetical example of a child in our culture who is between three and four years of age and is being structured in terms of learning the whole complex pattern of ordered activity surrounding dinner time.

Arbitrarily, we can bound (interrupt) the diachronic continuity that is experienced by the child by beginning with the child sitting in the living room viewing the television and hearing a call from the kitchen that dinner is ready and that he should go and wash his hands and take his seat at the table. This simple beginning might seem almost banal to anyone from an analytic viewpoint but from a structural viewpoint we can speculate on the variety of types of ordering or structuring which are antecedent and assumed if this communication is to elicit its effects. For instance, dinner time activities have been established as occurring at a particular time and all the participants should be aware in one way or another that they are obligated to partake of the meal at this time and not another time. Preparations had been made, food purchased, tables set, social structuring of where people sit and the respective roles and duties in this miniature community had to be established. These rules or performances change depending upon age, status, and role. They are communicated, enforced, and reinforced again and again for their continued maintenance.

Certain sanctions are imposed (i.e. constraints,
punishments) when the ordered activity of any of the
participants does not follow these rules. All the
participants in this simple ritual have to constantly
illustrate that they are following the rules. If they
are seen to deviate, they have the capacity to self-
correct.

What is amazing about this ritual is that if an
interviewer walked in on this family constellation and
asked how, when, where, and why these rules were
established, she or he would only receive vague
answers, even from the most insightful members of the
family. While each member of the family might not be
able to verbalize a specific instance of a rule or its
origin (i.e. that is the ordered activity that is
required in this particular context) they would almost
assuredly be able to specify instances of ordered
activities that violate (i.e. are not) the rules. In
summary then, it is proposed that individuals learn
patterns of ordered activity (rules from an observer's
viewpoint) by acting in particular structuring contexts
and in effect have their activities structured by
others who have already accumulated a set of
proscriptions about the types and sequences of ordered
activity (rules) that should constitute an appropriate
pattern of interaction in that context. This pattern

of ordered activity presumably satisfies the mutual goals of the group members. Both the learner and the teacher are usually unaware of the rules but they are intimately aware of the types of ordered activities that are acceptable and not acceptable in this context.

Before I analyze a particular child's behaviour in this context, I will include an example from Bateson (1977) to exemplify a complex systemic proposition that underlies this whole discussion and the example given above. In one of the "metalogues" or conversations with his daughter, Bateson and his daughter were discussing the meaning of the word "tidy." These metalogues were constructed conversations which served the purpose of illustrating very complex systemic concepts to the reader. In this particular metalogue, his daughter Mary Catherine asked her father what "words" mean. Bateson, in his typical fashion, would not respond to such a general question with a general answer, but as always he posed another question. This subsequent discussion question elicited a dialogue which would then serve as a metaphorical answer to the initial inquiry. As the story goes, he turned to his daughter and directed her attention to her bookcase and pointed to some books on one of the shelves. He then asked her, "do you know what is meant by the word 'tidy'?" She said that she certainly did and he

subsequently asked her to describe (operationalize) "tidy" for him in terms of the three books and two bookends on one of the shelves. To make a lengthy dialogue shorter, she said that "tidy" for her was having the two tall books at either end and the shorter book between them. In addition, all the books once in that configuration should then be located in the middle of the shelf. That was "tidy" in this context for her. Bateson then commented that, for him, "tidy" had a completely different aning. Tidy for him referred to the "messy" configuration of papers on his desk. The two "meanings" of tidy could not be further apart.

But more importantly, he asked her another question which has fundamental implications for systemic thinking. He asked her, "Daughter, how many ways could those books be tidy for you and how many ways could they be untidy?" She responded, "Your being silly Daddy, there is only one way for my books to be tidy, but many, many ways for them to be untidy."

From this perspective, we could conclude that once she established the order that represented tidy for her, using this order as a reference point, she could recognize an infinite number of instances of "non-tidy." In other words, structured ordering once established tells us instantly what "is" and what "is

not." The implication of this phenomenon will be described below.

Although Bateson did not pursue the following question in the dialogue, he could have asked her how she learned the "rule" (her personal structural ordering) for the concept "tidy" in the first place. Remember, when I refer to the word "rule" here, I don't actually mean a rule but an ordered placement of books which I call a rule because this is the ruled ordering that she imposes on these books. Had Bateson asked this question it is highly probable that she would have said something like, "I don't know, that's just the way I see tidy. I'm certain I learned it somewhere and sometime. I only know today when things are tidy and when they are "not tidy" I know how to make them tidy. Unlike you daddy I am very uncomfortable when my books are "untidy." Bateson could have responded, "But dear I know when my books are tidy for me, don't let your "tidy" get confused with my "tidy."

The implications of this dialogue are extraordinary. The ordered arrangements of the books which we call "tidy" is an ordered pattern of activity which Mary Catherine Bateson presumably learned at some point in her life consciously but now has been relegated to a non-conscious level which directs and orders her activity in relation to putting books on a

shelf and which constantly provides information for her
to maintain activity that corresponds to "tidy." This
is no longer under conscious control. Any signal that
triggers the sense or recognition of "not tidy-ness"
now "steers" her (cybernetically) into a "tidy" mode.
It is as if this concept of tidy (ordered activity) is
now a miniature program for ordering activity of a
certain type in her brain that gives this "dis-ordered"
world meaning (i.e. tidy). She uses this structured
ordering again and again in a non-conscious mode vis a
vis her relation to those books on that shelf and other
shelves.

What is most intriguing in all of this is that all
of this structuring activity (i.e. being tidy in
relation to the books) is constantly being self-
corrected, constrained, and determined by any instances
that signal the absence of tidy (i.e not tidy).
Therefore, one does not have to go beyond or outside
the system to look for an immediate and self-generated
cause of continued ordered activity. Once the system
acquires its original order (i.e. structure) whatever
it may be, it uses this structure (i.e. error signals)
as its cybernetic reference point (goal) for
continually ordering itself in relation to its
contextual environment. Any instance that does not
"fit" this goal is negative feedback (a recognized

difference) and self-corrective operations are triggered to achieve this goal (i.e. tidy). This whole concept of a system utilizing ordered activity (structur(ing)) which generates internal error messages (information) to order its adaptive behaviour to its context, hopefully, can now can be appreciated in the context of the cybernetic principles discussed in the last few sections.

Now, lets get back to the dinner table activity which was selected because unlike "tidy" it is a much more complex sequential pattern of ordered activities that is learned. Here the term "dinner time activity" signifies a sequential and complex pattern of activity in a specified or bounded context which involves multiple and continual transactions between people. Books don't talk back to people and set structure on them, but people do just that in social exchanges. Yet the child in both circumstances would have had to establish a "structuring" orientation in order to carry out adaptive activity in both contexts. I posit that the structuring principles acquired in continuous (diachronic) social transactions are learned in a similar fashion and once learned provide a dynamic (doing) structural (synchronic) framework for acting on the world.

Hypothetically, the child walks into the dining room, looks around, chooses the chair (i.e. selects from their prior structuring ordering), seats himself in the chair in a prescribed manner, utilizes utensils according to coded prescriptions, makes requests, directs communications in acceptable ways of interacting, follows a multiplicity of non-eating social prescriptions, and finally concludes by terminating the process according acceptable standards. If one accepts the general description of the above pattern, it becomes immediately apparent that every structured activity (bounded ordered activity) or sub-activity described can be thought of as a miniature "tidy." Every sub-unit of activity described above is a bounded ordered unit of activity which the child has to learn to discriminate from the continuous flow of diachronic processes operating in his field in order to "adequately" function in this context. Once discriminated (i.e. sitting in chair means facing forward, putting hands on the table, feet in a certain place, and not anything else) the ordered activity constitutes "proper sitting." He need not know the words "sitting" or "proper." All that is required is that he is framed in this structured activity that we call "sitting" and every time he acts outside of that frame there is an effect that is usually negative from

his point of view which brings him back once again in that structured activity. It is not for many years that he will understand (in some logical sense) that this is proper seating behaviour. As he sits there and deviates from this posture, effects from the structuring context automatically bring him back into this ordered frame. Over time this ordered frame is no longer consciously registered (it is non-conscious) and with practice, his original structuring which was "outside" is now a bio/informational structure (non-consciously structured) which will instantaneously signal him that he is operating outside of the ordered activity (structure). This error signal provides him with the information necessary to self-correct his ordered activity. Again, this self-correction of the ordered activity of sitting can happen totally outside of reflective awareness. This we typically call "habit" or "learning". Note that from the viewpoint of an external observer this observation pertains to an invariant aspect of the child's activity. "Invariant" meaning a pattern of ordered activity that occurs again and again that is recognizable to an observer and to which she can respond. Therefore, from a systemic viewpoint, when we say someone has learned something, we mean we have observed a repetitive, ordering that is an effect (output) of a constrained, rule following,

self-correcting structure which is "information" for us
in constructing our theory.

Hopefully the reader can acquire a deeper
appreciation from this discussion of the construct
structur(ing) (self-ordered activity) which will, in
turn, facilitate the appreciation of core entailments
of this term during the case analysis. The
psychological terms "guilt" and "pathology" and all
their implications will be considered from this
structural perspective.

But to anticipate this, an extended elaboration of
the present example with clinical overtones will be
presented to help bridge the transition between the
abstraction called "structuring" and what we more
commonly label in clinical parlance as "guilt."

Let's assume that 1) our youngster is sitting at a
table and he has spilled his milk, 2) "spilling milk"
is outside the usual structural ordering (i.e. the
social convention that you don't spill milk as directed
by the "other"), and 3) this is the first time that the
child has spilled his milk, so the meaning of the act
is indeterminate because it is not a category of
neurally ordered activity that has been given meaning
in a transactional social context. It is not yet
"improper" eating behaviour for the child. In other
words, at this hypothetical instant, the spilling of

the milk has no transactional social meaning for the
child simply because it is not part of the structuring
(i.e. his personal structural orientation to eating).
In more common terms, the meaning of the spilled milk
(i.e. the structuring activity that is milk spilling
and its effect as output in altering the child's
relation to his world) is still open to determination
in this context. The effects (consequences),
occasioned by this structured activity (i.e. the types
of responses from others and their affective quality)
will determine the specific meaning of the event for
the child. "Spilling" has no meaning for the child in
and of itself but always acquires meaning through its
transactional significance to others. It has only
structural "meaning" as a product of an organized
nervous system which produced this order. It has no
social-transactional ordering. This will be imposed on
it from the other's structural perspective in terms of
the consequences (i.e. their response) to the act. The
neural ordering is about to acquire its social-
transactional significance which henceforth will be an
inseparable informational aspect of the neural
ordering. In other words, at this hypothetical
junction, structured neural action receives its social
meaning and that social meaning becomes an inseparable
part of that structured neural activity. In this one

instance, the child is informed of the meaning of this
bio/informational structuring (ordered activity) in a
particular social matrix (context).

Biological and informational ordering have fused
and the child, of course, does not know any of this
(and probably would be quite uninterested). All he
knows is that when he spills his milk he perceives an
effect which, in turn, is immediately "meaningful" to
him. This structural ordering becomes the foundation
for future structuring (i.e. contextual meaning)
associated with this activity.

Adaptive and Dysfunctional Structural Ordering

Now from the clinical point of view, I will
describe some possibly deleterious effects associated
with bio/informationally ordered activity. The simple
act of sitting in a chair will be used as an example.

Let us look at two types of interactions between
parent and child. One type will be adaptive and the
other dysfunctional. From these consistent
interactions the child will be learning to punctuate
the world and attach words to these experientially
punctuated happenings. Imagine that a family has been
seated for dinner and the child is standing on his
chair. The mother (and I could use as an example the
father, aunt, or any other primary care giver) would
like the child to sit in his chair with his legs

extending over the front and begin to use his utensils
to eat.

One form of adaptive interaction would be the
mother placing the child in the chair and saying, "if
you sit down with your bum on the chair and face the
table you can eat and when you are finished you can go
out and play. But if you remain standing on your
chair you will not be able to finish the meal and you
will have to go to your room." When the child sits
down the mother says, "good." This sounds simple but
it is actually quite complicated. The mother must know
exactly what behaviours she does want the child to do,
what behaviours she does not want the child to do, and
what activity the child likes so she can remove it if
he does not perform the desired behaviours. If the
mother can learn to interact this way then the child
learns from this pattern 1) the experiential referent
for "good" in a certain context, 2) mother desires
specific behaviours and 3) whether or not he carries
out those behaviours, what he does will have some
predictable effect on his future situation. This
situation is bounded. It is bounded in the sense that
if the child remains standing throughout dinner he will
not be able to go out and play. He will still be able
to play indoors, he will not be made responsible for
his parents anger, the situation will extend no

further. He knows what is a "good" behaviour and he knows what is a "bad" behaviour. When he is sitting in his chair his whole body is organized to do so. Sitting involves a combination of vestibular, kinaesthetic, visual, and tactile sensations that provide an experiential referent for the word "sit." The context of the kitchen also provides additional visual cues that are associated with the word "sit." The next time the child is standing on his chair and mother looks at him and says, "be good" he has a symbolic representation of the whole event. Once he is signalled, he knows non-consciously how to organize his body to conform to this command. He knows what to do to be "good" in specific ordered activity terms.

In the dysfunctional interaction the mother says, "look what your doing! No wonder I haven't been able to sleep for a week" or "no wonder this family is falling apart" or "look how angry you are making your father" or "don't be bad, bad boys go to hell." What is the difference between the adaptive interaction and the dysfunctional interaction? The mother has not specified what behaviour she wants the child to engage in and the situation is not bounded perceptually for him. The implied ramifications of the child's standing at the dinner table are now that he is responsible for his mother's loss of sleep, for the difficulties

between the parents, and a dire consequence in the afterlife. All these consequences are beyond the child's control but are implied as being a function (potential effect) of his present ordered activity. The child does not know and never can know what to do to terminate these implications (effects). But he is constantly warned that almost any ordered activity (unspecified) can have disastrous consequences. He does not know what is the "good" thing to do. What is good has not been made explicit to him. Unlike the first child (with access to ordered activity), this child does not have an experiential referent for "good." Good is an abstraction without a referent. Also, since the parent is controlling by threat ("If you continue to do that the family will fall apart"), the child thinks that his continuing to engage in the unspecified action labelled as "bad" by others will effect the harmony of the whole family. This makes him believe that he is very responsible for complex states of experiences in, or transactions between, others over which he has no control. Therefore, if events do not work out, he believes that he has caused them to happen.

Children who are consistently exposed to one or the other of these types of interactions will develop very different orientations toward the world. The

child exposed to the adaptive interactions will have a referent for "good" and therefore will know what behaviours to do to be "good." He will have a sense of deferring gratification (he must do A before being rewarded with B) and can work toward some desired goal with some degree of certainty of what will happen. Conversely, the child exposed to consistent dysfunctional interactions will not be so fortunate. "Good," for this child, does not have an experiential referent and acting results in the potential occurrence of a number of potential disasters. The child finds that his actions lead to his family not getting along, his dad becoming angry, or his going to hell. If disaster is always a potentiality he must try to act in a way so as not to cause disaster. His only way of trying to prevent something from happening is to try to control the world. However, since he has no structured reference for what is "good" (i.e. tidy), what is "bad"? He requires this type of information for adaptive control. How many ways are there to be not "good" especially if you don't have a referent for good? Every potential ordered activity has this possible connotation. His only recourse is to search "outside" himself for this referent. But because of the fickle nature of people and the ever shifting definition of "good" no stable referent can be found.

Self-organizing systems require internalized referents for control and this is often referred to as autonomy.

Picture two people entering a room and both looking at one another. One person is thinking, "I hope she does not talk to me, I wouldn't know what to say, that would be awful, what should I say? She will hate me. I'll just say my name and tell her I have a headache and don't feel like talking." Meanwhile the other person has extended her hand and has started talking, "Hi, how are you? Sure is hot in here." The first person is predicting that a disaster will occur (the other will hate her). She is engaged in thinking about how she can control the situation to prevent such an occurrence (by pretending she has a headache). She feels responsible for controlling for a disaster, thinking that if one occurred it would he her fault. The potential disaster is as real as she makes it. The more she tries to control herself and the other person the more it seems as if a disaster will occur if she is not controlling. This scenario can only be judged from its internal logic. Although not as adaptive as other ways of organizing oneself toward another, her rules are completely orderly. She cannot experience her world outside of this order.

An organism is always acting on its world. Even when a human organism is sleeping it is busy breathing

air in an out of its lungs or adjusting various muscle positions. The organism does not stop acting until its death. The environment of an organism is always being ordered (made sense of) by that organism. Whether a cell or a human organism, both act upon their world and perceive (order) the effects of their actions on their world. The effects they perceive are changes from past perceptions. These changes (or differences) are the information the organism gains about its actions on its world. These differences or ordered doings are codified and represented in the mind.

For example, if a dog sniffs at a moving black shape on a side walk and gets bitten on the nose by it, the next time he comes into contact with a similar moving black shape on a side walk he will avoid it. This is an example of Learning I or one-trial learning. At some level, he has made sense of his environment. He has acted on his world (by sniffing) and has ordered the effects of his actions (a difference in sensation associated with a particular relation to a moving black spot). A moving black spot on a side walk, at a later time, serves as a stimulus for triggering the association in his memory between the particular past relation to the spot (nose on black spot) and the sensation of pain.

The term "structure" refers to the present state of all the organisms multi-levelled and hierarchically ordered processes. An action is a unified manifestation of this structure, it is the effect of all of these levels functioning together. Action or behaviour in the world is perceived by the same structure that created it. This structure adapts to this "new" perception, it changes in relation to this ordered doing. A "new" action is now the effect of a "changed" structure. When a "new" action is perceived by this "changed" structure, the structure will change again. This is a non-linear process. Ordered doing is structured "information" that is used to build future structuring foundations. In other words, while action is the result of the structure of the mind, the structure of the mind is the result of the action (ordered or perceived doings). As with any cybernetic process, causality is circular.

As was said above, ordered doings or actions are codified and represented in the mind. If an ordered action has been performed, it can be performed again-- the structure is in place for it. The more ways an organism has acted in its past, the more potential ways it has to act in its present. It has more alternatives available to select from. The term "variety" refers to this range of ordered activities that an organism can access.

CHAPTER III

RESULTS AND DISCUSSION

Systemic Organization

The systemic analysis of the transcripts will
focus on the client's self-organizing structuring of
her world. Invariant patterns of order(ing) denoted in
the transcripts will be postulated as effects which
represent this structuring. In other words, the
patterns of these redundant ways of ordering herself to
her world is her structur(ing). From these patterns,
one can posit the types and levels of information which
account for the ordered invariance. The implication of
this approach is that isolated aspects of this labelled
invariance, whether they be eating activity, instances
of responsivity, emotional states, etc., cannot be
understood outside of an appreciation for her holistic,
purposive, relational ordering as "system."

From this reference point, eating "means" a whole
organized strategy of relating to her world and an
active structuring of it (i.e. making sense of it).
The diverse aspects of the self are represented by
different modes of activity associated with bodily
functions, and integrity. "Bulimia" is merely a name
for one invariant (repetitive) phenomena whereby the

client utilizes her body (physically and symbolically) in a particular manner and for a specific set of purposes. As artists may use paint as a medium by which they relate (connect with, give meaning to, etc.) to their world, she uses "body," and all its relevant aspects, as her primary medium. Katey constantly talks about her struggle to maintain her weight, control her caloric intake, select the "right" foods, and exercise to control all the latter. The difficulty with this is that attending to her body has limited effects on her functional adaptation to her world.

The lack of variety, in terms of the limited repertoire of adaptive competencies she possesses, is the other side of the coin. It is as if the body and its attributes have become the main substitute for her void of real competencies. The symbolic body and its attributes now "stand for" all these absent competencies.

The body, as organized information (effects), services many functional relations other ordered activities (competencies) typically service. The physical/informational aspects of the "body" metaphor: 1) reduce stress, 2) provide conscious concerns so she can avoid present concerns, 3) provide her with a rationale for how and why she is meaningful to others (sense of validation), 4) are content areas over which

she can exercise a modicum of control, 5) provide a reference for the evaluation of the self, 6) are an acceptable social medium for "knowing" herself and are socially reinforced, 7) are ways of controlling her transactions with significant others, 8) are ways of "worrying" about her world that prevent her from "seeing" the more frightening implications of her deficit states (this "worry" aspect of her bodily concerns is her primary way of identifying with others and eliciting concern from them), and 9) are very dissatisfying experiences (the sense of loss of control of her body in this regard prevents her from ego-syntonically taking responsibility for her state of affairs).

If these speculations are correct, an enormous number of primary adaptive functions have been delegated to this rather simply constructed "body" metaphor. In colloquial terms, it's placing all of one's psychological, informational, and adaptive capacities (eggs) into one basket. In another metaphorical language, Katey has been reduced to almost a single dimension. She is represented, controlled, and meaningfully defined by the "body" metaphor. A few examples of her use of the "body" metaphor are given on the following pages.

Eating used to deal with stress:

> C: ... I'm still feeling ... stressed out or ...
> I'm still feeling down on myself "oh I have to eat
> something else to make me feel better" ... I hate
> it ... sometimes, sometimes I just hate eating and
> I hate food ... (Session 14)

> C: ... like in grade thirteen I would write exams
> and stuff I'd always go have some chips or
> something ... cause I guess I was nervous or
> whatever ... and that, that ... cravings coming
> back when I'm nervous or ... like I'm feeling ...
> the past little while ... I recognize it now and
> it makes me angry when I ... feel like I can't do
> anything ... about it ... but sure there is
> something to do about it .. but just at the time
> I'm like ... "I have to eat something, I have to
> eat something, I have to eat something." (Session
> 14)

Thinking about food instead of immediate situation:

> C: Even when we went to my grandmother's
> apartment I was fine ... and then sometime during
> dinner or after dinner ... I don't know what the
> change was ...

> T: Well how was dinner?

> C: Fine ... I ate what I wanted and I was like
> ...

> T: No, no ... I mean how did people get along or
> how did you ...

> C: Fine ... and everybody was like laughing and
> everything and I'm ...

> T: Were you laughing?

> C: Yah. But I don't know I could ... some where
> inside I could feel that I wasn't totally happy
> like totally into it and just enjoying myself ...
> like everybody else ...

> T: Did you stop and explore that with yourself?

C: No ... I guess I let it grow ... (T: Hmm.)
and it came out afterwards ... like I can feel ..
like I'm like "Oh no" ...

T: Can you think back to what that may have been
related to during that day? That feeling of
unhappiness?

C: I know .... I have it right now ... I can just
... thinking about that day ... (T: Hmm hmm.)

T: How do you feel?

C: Awful ... like tears are just behind my eyes
right now ...

T: Feels really sad.

C: Yah. I can't think of any specific event ...

_____

T: Is it something somebody maybe didn't do or
something somebody may have done?

C: I can think of like everybody was like joking
around and I was kind of ... like in the morning
... I was kind of like just ... just out of it ...
I wasn't really ... sort of in the mood and my
brother and sister and parents are laughing ...
_____ ...

T: What are you feeling?

C: _____ that happen ...

T: Like if you could have said ... put that into
words at that time what could you have said?

C: That I was sad? ... and ... I want to say that
I'm feeling left out ... but I wasn't ... I don't
know if I'm feeling ...

T: Is that how you are feeling though ... left
out?

C: Right now ... But there was ... logically I
wasn't... but ...

T: Why weren't you left out?

C: If I was left out it would of been my fault
... like there was no excuse to not be happy ...

T: So what did you want ... at the time?

C: I don't know ... I just wanted to feel ...
like there are some days when I'm just joking
around with everybody ... feel really good to be
_____ happy ... that day I woke up and opened my
birthday presents and I had all kinds of neat
stuff ... and my sister did too like our birthdays
are only two days apart ... all I can remember
right now was how happy everyone was about her
presents more than mine because hers were more
surprises than mine were (T: Hmm hmm.)

T: She was a bit more of the centre of focus ...

C: Not really that much more ... but ... some of
the things ... she got really special things that
she didn't ask for but my mom knew that she would
like ... and I got ... I got what I wanted ... but
they weren't surprises ... like I got _____ ...
like she got some jewellery ... that my mom got
her ... she was trying it on and ... it just
seemed so dumb ...

T: How were you feeling then?

C: I really liked it ...

T: Yah but how were you feeling?

C: I wasn't feeling totally sad but ... but I was
feeling like there was an inner ... churning of...
unhappiness ... (T: Hmm hmm.) so I guess I was
just ... in that situation I'm like wondering ...
eat a big meal tonight so I shouldn't eat anything
today ... I should just eat a little bit but there
is a ton of ... there is so much chocolate in our
house ...

T: I'm just thinking that this may keep your mind
off the unhappiness.

C: Yah ... I guess so ... so I would have a
chocolate ... I'll just have one ... then I'll
have one more ... then I'd feel _____ after I had
the second one because I thought I was only
supposed to have one ... _____ like five minutes
later I'd be having some other candy ... _____ ...
then I'd feel awful ... I can't keep control of
myself ... then we went for dinner ... they had
like tons of chocolate everywhere ... another

thing was, was my sister my sister has ... she
lost about ten pounds and since like December ...
_____ when we went to the dinner it didn't really
bother me ... maybe it did ... fine ... but ... we
went to my grandparent's place and everybody was
saying how much my cousin looked ... how great she
looked and everything like that and how much she
lost and _____ ... and then they go ... then
they say "oh yah ... but you're, you're always ...
and you you're always thin ... " and then I
thought ... and then at dinner ... like I was
watching her eat ... and like she ate normal and
then ... for desert I said "you're not going to
have any desert?" ... she said "no I don't want
some" ... and I'm sitting there just dying to have
a desert ... and so then I would have a desert and
... I just _____ "oh sure, she can control herself
and not have desert and I'm having desert" well
maybe I'll _____ her ... so I said "do you want
some candy?" and she's like ... "Why would I want
candy?" ... eat those and ... like and then I just
got worse ... I was really upset about how I can't
control myself ... felt like I was losing control
of myself ... so then I got all ... down in the
dumps and then we were going "bye, bye" pretending
we were really happy and then I get in the car ...

T: So a lot of this went right back to when you
were opening presents.

C: And it makes me mad ... I don't want ... why
am I such an attention getter? ... like why do I
feel ... like nothing or whatever when I don't
have ... all the attention? ... (T: Hmm hmm.)

T: Were you aware at the time that you were
feeling that you needed more attention?

C: No ... I just thought it was ... fat ... like
why am I so fat? .. I don't know ... I'm having a
bad day ... (Session 19).

Her informational map, which is so necessary for

ordering herself to her world, has been severely

reduced in size. It is not only too small (i.e. lacks

complexity and variety) but it also does not contain

the critical heuristics (rules of ordering in relation to specific contexts) she requires. For instance, Katey's focusing on what she wants to eat or how she looks, is not likely to help her in dealing with a complex interpersonal situation with another person (i.e. her family members, male peers). This transactional sequence requires many extensive facts (competencies) of interpersonal ordering which she simply does not possess. The fear and anxiety, originating in a system confronted with this dilemma, is adapted to by 1) reducing the "logic" to lower-levels of logical (metaphorical) typing and 2) utilizing a simpler and seemingly controllable map (schema) which directs the way to desired end states. The "logic," or heuristic (rule) in this instance, can be stated in the following manner: "As soon as I am such and such a weight, I will look physically attractive. Once I have this particular physical appearance, I will be able to relate better with people (sister, brother, parents, friends). They will accept me on this basis." Obviously this reductionistic logic or heuristic rule will never satisfy or substitute for the social/interpersonal competencies necessary to achieve a complex reciprocal pattern of interaction with the other (i.e. a male). Yet, she cannot "recognize" the inadequacy of her map (metaphor)

because she has no contrasting map for ordering her
world (giving meaning through structuring). She can
only "see" what she can structure. In a later section,
the self-organizing (self perpetuating, self-
reinforcing) nature of this logic will be discussed.

Self-Determining

What Katey says in the transcripts (effects) is
understood in terms of a self-determining process.
Based on her ordered structure and its inherent "logic"
she orders herself in relation to the world. The
ordered effects of the client's acts feed back to her
as information about her relation to the world. This
information determines how she will subsequently act.

Informationally speaking, the "world" is not
outside of the client. Recall that even at a sensory
level, the only way that she is connected with any
outside world is through the registration of intensity.
Intensity is not "out in the world." It is information
"in her brain" as computed by her receptors about her
relation to the world. The "intensity" message is a
creation based on a relation of the structured ordering
of her sensory system and the informational "qualities"
of the external object in relation to the structure.
Therefore, what one tries to use to set his or her
relation to the other ("out there") is not "out there."

It is information computed at different levels in the
brain and organized as experience for the individual.
Control refers to the regulation of this information by
acting on the world (behaviour).

"Bad" things that she has done:

> C: I think about the things that I'm worried
> about or ... think about bad things I've done like
> negative things like ... I only got .. I got a "B"
> on my mid-term the other day ... and I wanted at
> least an "A-" on it ... or I think about other
> things like I haven't cleaned my room this week or
> ... like I'll think of negative things ... that's
> why I think it's really bad in when I worked by
> myself ... in this little factory ... (T: Hmm
> hmm.) ... and I was always looking at my watch "o-
> kay ... I eat at twelve o'clock only an hour and a
> half more ... only fifteen minutes more" and stuff
> because I was left alone to my own thoughts ...
> lot of time they weren't ... very positive ... I
> don't know why I'm so negative and so hard on
> myself ... it's hard ... being so hard on yourself
> ... (Session 14)

In this excerpt, she describes thinking about
"bad" or "negative" things. As long as she considers
them "bad," she will try not to think about them. She
attributes her being left alone with her "negative"
thoughts as the cause for her focusing on the time
(twelve o'clock) when she will eat. Nowhere is it
necessary for any "outside" world to exist apart from
herself.

Meaning of Language

To reiterate, language is a symbolic/informational process. Language type symbols refer to, or stand for, things which are not identical with themselves. A word or sentence is not identical to its referent. The major question concerning all sign and linguistic systems is how and what the sign/symbol stands for. In other words, what is a symbol's "true" referent? Most people think that words refer directly to real world "things" such as "chairs" or "feelings." They assume that dialogues composed of such words actually refer to what is said.

In normal discourse, this representational relation is employed as the basis for understanding or mapping our minds onto other minds. Simply put, when the "other" uses words which denote categories or things we assume that 1) these things or categories exist, and 2) that the words being used are employed as referential categories in the same meaningful way as we ourselves would employ them (i.e. "anxiety").

Yet, after an extensive analysis of symbolic systems, it is apparent that these two fundamental assumptions are overly simplistic and most certainly do not represent how language or symbolic systems are associated with psychological states (i.e. referent states). A reformulated and more inclusive view of the

symbolic process has been put forward by Lakoff &
Johnson (1980). A sampling of the assumptions they
posit will be presented below and discussed in terms of
a clinical perspective that one can utilize when
reading the transcript.

According to their model, words are really
categories. Meanings of words can be found in the
underlying structure of the communication and not "out
there." As Lakoff and Johnson (1980) put it, a word is
a category of mind. They refer to it as metaphor.
This category or metaphor through a complex set of
transformations neuro/linguistically and through social
determinates has become "information" (i.e. a
metaphorical category) potentially available to many
minds. The metaphor "chair" now stands for all the
associated characteristics that constitute "chair" as
structured in each mind that "possesses" it (i.e. has a
shared code and social learning experience).
Obviously, some characteristics (core aspects of the
metaphor) are structured by a similarity across "minds"
(brain processes) which permit the mapping of chair in
one mind onto the other for mutual understanding. On
the other hand, the referent aspects are unique to each
mind that holds "chair" as a category. These perceived
core similarities of the "chair" category, which are
more easily shared, are provided largely by the more or

less physically invariant aspects of a "chair" such as a parallel form (seat) in contact with a perpendicular form (back) all of which rests on some base (legs) in relation to a constant plane (floor). Any form that produces these ordered but generalizable invariant relations can be considered as an informational category for "chair."

Complications arise however when words like "good" or "bad" serve as categories. Obviously, there are no constraining invariant physical characteristics that serve as core aspects of these percepts. Yet, people use these words every day and seem to "know" what they signify but have extreme difficulty communicating their referents. In psychology the majority of categories of concern in therapy have this illusive signification. It seems that the ontogeny of the individual (informational structuring) provides the structuring of the "words" which is, in turn, the meaning of the word for the user. In short, the client's use of the words cannot be understood in terms of our conventional denotative inferences but only from her unique structuring of her world. When word meaning (referent) is approached systematically from this perspective, while "new" logical and implicative inferences emerge from her discourse, these "logic" and structur(ing) rules are representative of the ordering principles

(rules imbedded in her metaphor) that she possesses.

They are not so "new" after all.

Consider how she is using the word "good" below:

> C: Exactly ... I still feel bad about .... with
> yelling at my snapping at my mother (laughs) like
> I guess it's ... I was entitled to my bad mood but
> ... kind of thing happens (VERY FAINTLY: just
> apologize) ... it doesn't happen often ... but I
> knew once that happened and <u>I said "oh, oh this
> isn't going (laughs) to be a very good day" cause
> I thought I was in control</u> ... (Session 6)

> C: ... it was good because I... I think normally I
> would have lost more control than I did this
> morning ... started screaming and stuff which
> really doesn't help (T: Hmm Hmm) (laughter)
> (Session 16).

> C: Yah ... it was a good day cause he wasn't
> really moody and ... he was really tired and
> usually when he's tired he is like really crabby
> mood and I was more tired than he was so ...
> (Session 22)

The word "good" in the first two excerpts refers

to her maintaining her control. In the third excerpt,

she refers to a "good" day as a day when she is more

tired than her father and her father isn't moody. This

may be "good" because she is in control of her father's

negative mood state.

Clinically speaking, the transcript's meaning, as

the referent for a pattern of symbols used by the

client, is her private psychological domain

(structured). This domain need not be "objective" in

any way or directly understood by others. It was established (non-consciously) by Katey in her active manner of ordering her social/interpersonal world.

Therefore, what her words stand for need not refer to any "real" or objective thing, state, or condition. However, they always refer to, in a meaningful way, how she "sees" the world. In order to understand the private meaning of her dialogue, one must have the same type of knowledge (model) of the ordered structure of the system (i.e. person) that forms the referent base for the dialogue. In short, for us to understand her unique meaning (i.e. the referents for the words, and ordered acts) we must have a model of her structure, logic, and rules of ordering.

Different therapeutic systems are, in essence, different attempts to model this psychological structure. From this perspective we "know" the "meaning" of her words in as much as we possess a model of her structured ordering processes.

All systems (people as information organizers) generate messages that have purposeful and pragmatic aspects. This is the teleonomic aspect of any ordered activity. Ordered activities function like propositions (effects, messages) that set the system in relation to its world in terms of the overall structure or purpose of that system at that point in time. The

"world" is "effected" by these ordered acts and the living system processes this event as information and subsequently structures its own effect (output).

From a clinical perspective, everything the client says is ordered output and is therefore structurally "designed" purposively. As output it influences her relation to her world. Since this effect (output) is a product of her ordered structure, its purpose is derived from the "logic" of the underlying structure. She need not be aware of this logic or the teleonomic goals. An observer becomes aware of these general purposes (controlled informational states) through a model which he or she is using to understand the structuring logic embedded in the metaphor of the client. From a cybernetic perspective, purpose implies control in relation to controlled states (usually non-conscious) determined by her structure. In summary, for an observer (clinician) to understand the symbolic output of a system, the observer must be familiar with the logic, rules, codes, and purposes (controlled states) which constitute the pattern of structuring.

To overstate the case once again for emphasis, the "meaning" of the client's words for the observer are a function of the model the clinician has for the logic embedded in the informational structuring of the person. This model provides the user with a coherent

pattern of purposes, rules, and codes, that "create" the meaningful world of the client. Everything that the client says (output) can be "explained" as an effect of the model of her structuring. This is all the clinician ever has to work with and is, in effect, his or her own theory. For the observer (therapist) to create a model of the client's structuring, the observer must use his or her own referential ordering. The client cannot see beyond her personal ordering, and the observer is similarly limited. Only to the extent to which both have had similarly ordered structures can they map their minds upon one another and share mutual meaning.

Symbols can be combined utilizing constructed rule systems to form "logical" and rule bound conventional forms of discourse (i.e. common language, scientific symbols). The transcript is an example of a discourse that presumably follows her implicit logic. This is her personal rule system (logic) that is used to order and construct her reality at different levels. It operates much like the grammatical rules of language but, in this instance, precedes language.

While symbols may be combined to represent this psychologically ruled format, there are inherent limitations in what these symbols can represent in regard to that ordered system. These limitations will

be evident no matter how sophisticated the representational system involved may become. In other words, language is only the map and never the territory. Language is a metaphor for her psychological ordering and never a direct description of it.

Psychological ordering (experience) is a continuity and language is the imposition of a discontinuity. Since language is discrete (broken up into units) it can never fully represent the continuous flow of experience. It must, by necessity, focus on one aspect to the exclusion of others. Therefore, language is always inadequate in conveying the continuous experience of living.

Linguistic usage can create for the user and the receiver confused and paradoxical messages which generate forms of communication which could be labelled "pathological." Language creates the impression that some things are real when they are not. In ther words, words create realities which people attempt to deal with. Since these words do not necessarily refer to operations or functions that one can control they may be left in a helpless position without this realization. When one uses words in this illusory manner by attempting to control for reified abstractions which have no operationally specifiable

parameters, one is chasing windmills (i.e. the difference between the goals, "I want to get rid of that old radio" and "I want to get rid of my badness").

This whole process of symbolic/linguistic-representation functions largely on the basis of rules which are not observable and are unknown to the user. The rules are the recursive, invariant, cybernetically controlled patterns of activity (structured ordering) on lower levels than the symbolic. These processes underlying this rul(ing) can never be "conscious." In other words, processing is done non-consciously in what Chomsky calls the deep structure of the brain. However, this hidden and implicit structure determines how she experiences her world.

Finally, changing implicit structur(ing) of this type requires the reprogramming of the non-conscious levels of neuro/informational processing. Paradoxically, higher symbolic levels of ordering (i.e. words, "insight", interpretation) have minimal reprogramming (reordering) effects.

The client's structure was formed by her recursive ordering (acting and acquiring structured variety) and adapting to the world of possibilities she encountered based on this non-conscious ordering. If it is established through this type of dialectical exchange (non-consciously) then the reorganization requires

particular types of dialectical communication-
transactions that would establish a new structur(ing).
Language, as a restructuring device, is very limited
since the words are referenced to the old structuring
order.

Model of "Guilt"

In this section, "guilt" will be viewed as a
control system which is a determined effect of defined
patterns or types of communication. Prior to
discussing guilt a simple example of driving a car may
provide a contrasting reference required for the
succeeding presentation.

Let's examine how an ordered system functions to
control what it perceives. Imagine that a car is being
driven down a road. How does a "good" driver do this?
The driver keeps his eye on the road and has a built in
program (ordered structure) for adjusting to the
"input." If he is driving "too close" to the curb or
to the solid white line in the centre of the road, he
perceives this relation as information (i.e. the
difference between an ideal position and the present
position). He immediately changes the position of the
steering wheel to correct the error. He is, in effect,
creating a zero error condition. He is a "good" driver
because he is maintaining a directed purpose (zero

error condition) in terms of the context of "driving."
In this instance he has a very specific notion of the
ideal state of affairs (keep car oriented in the middle
of the two boundaries). Because he possesses this
reference he "knows" when he is deviating from it in
terms of a specified difference signal. Given this
"type" of structural information he can easily
eliminate the difference (i.e. control for this
perceptual signal via his behaviour). The term "good"
usually is used as a commentary, after the fact, by
himself or an observer for maintaining this
conventionally agreed upon zero reference state. He is
a "good" driver because he has achieved a continuous
purposeful end state (cybernetically defined) based on
a structur(ing) program the operation of which he was
probably largely unaware. He was only able to control
(i.e. direct his activity) in terms of the information
provided by this structure. He was not able to control
the structuring program itself. His behaviour was in
service of this program.

"Good," therefore, is not a quality, state, or
capacity he possesses. If you value safe driving, you
may say that he drives his car safely, and therefore he
is a good driver. It would not be appropriate to say,
he is a "good" driver, implying that he has an internal
capacity for being "good" which he can control. The

safe driving (specific acts) makes him a good driver not the other way around. "Good" is an evaluation by the other of "acts" that have already taken place and a non-controllable "symbol." Being "good" or not being "good" cannot be a cause for doing anything. It is only an evaluative label attached to ordered doings that have already been performed. In other words, "good" is a commentary (word) which evaluates an ordered doing. It does not and cannot "cause" that ordered doing (effect). "Good" is an abstraction. This confusion between "good" as an evaluation and "good" as a quality, state, or capacity or efficient cause is fundamental to an understanding of the phenomenon of guilt.

Guilt is a control system which is derived from certain structured patterns of communication. The system acts on the world and is structured into a "guilt" mode by the "constraint" (structuring) processes of the other. The other organizes the system's activities in a certain way so that the final effect of the systems acting on the world is an experience of guilt. The person then learns the "logic" of this structuring non-consciously (like driving a car) and, with practice, actively structures the world similarly (i.e. acting generates the experiential effect labelled guilt).

For example, imagine that a two or three year old girl is playing with her toys on the stairs. Her parent walks in and says, "put your toys away right now." Experientially the girl has an immediate effect (state of experience that she can recognize such as crying and yelling). The parent, in response, may say to the child, "stop that, it is bad to be angry that way." A label has been attached to her experience (i.e. angry) along with a negative term (bad). This pattern of activity has also been labelled socially in that the parent does not approve of such an act.

From such transactions the child begins developing a number of attributions. The parent has made the effect (anger) of the parent/child interaction something that is negative (bad). By saying "it is bad to be that way" the child understands this experience as "you are bad." The child does not discriminate between anger and herself. In essence, the message, "stop that, it is bad to be angry that way" transformed by a child means, "my parent is angry because 'I' am a bad girl." The cause of this negatively labelled effect (output of the child) is attributed by the child and observer alike to the "badness," reified as an efficient cause, possessed by the child which one presumably can control.

This implies that "bad" is a state, condition, or characteristic inside the individual who is the receiver of this type of communication (structuring). The logic formed from these conditions is that this state or condition called "badness" causes this anger and that the "badness" must be controlled if someone is to be "good." The state of "good," for the child utilizing this logic non-consciously, implies necessity to control for the "bad" rather than performing specified ordered "good" activities (based on designated perceived differences the correction of these differences would represent "good" behaviour which could be rewarded socially). However, in the guilt inducing person (communicating) error-reducing conditions are rarely specified.

The guilt changes, alters, modifies, and confuses the conditions under which the child could act so as to create a zero error condition (i.e. meet the standards that are set and labelled as good). Instead, this confused inept communication is overlooked, denied, etc. and the quality of "badness" in the child is affirmed as the cause. The logic is, "you must act good without anyone telling you consistently what the reference conditions are." The logic is often then twisted inferentially to imply, "you are good if you are not bad." From a cybernetic (control viewpoint)

this exacerbates the child's behaviourial control of his or her perceptions. This command appears achievable (X is achieved by not doing Y) but functionally it is impossible to achieve.

In the transcript, it is posited that the client has not been told what being "good" is. No discernable "ordered doings" are posed to represent good. Therefore, confusion arises because she tries to not be "bad" but does not know what activity to do to be "good." In addition, she is made to feel further "guilt" for not controlling her "badness."

The development of further guilt also seems to occur as an effect of the confusion of two levels of logical typing. The first level involves transactions as described above. The parent says, "look how messy your toys are. You are a bad girl." The girl then tries to control her "badness." She tries to play with the toys in a way that she is not bad but never is told when she has ordered the toys in a "good" way.

The second level, involves transactions of the sort, "how many times have I told you to put your toys away? Look how angry and upset you have made me! You are a bad girl." She now tries to play with her toys (i.e. be good) in such a way so that her mother is not "angry" and "upset." The inferential logic behind this communication is that if her parent is "unhappy," she

This implies that "bad" is a state, condition, or characteristic inside the individual who is the receiver of this type of communication (structuring). The logic formed from these conditions is that this state or condition called "badness" causes this anger and that the "badness" must be controlled if someone is to be "good." The state of "good," for the child utilizing this logic non-consciously, implies necessity to control for the "bad" rather than performing specified ordered "good" activities (based on designated perceived differences the correction of these differences would represent "good" behaviour which could be rewarded socially). However, in the guilt inducing person (communicating) error-reducing conditions are rarely specified.

The guilt changes, alters, modifies, and confuses the conditions under which the child could act so as to create a zero error condition (i.e. meet the standards that are set and labelled as good). Instead, this confused inept communication is overlooked, denied, etc. and the quality of "badness" in the child is affirmed as the cause. The logic is, "you must act good without anyone telling you consistently what the reference conditions are." The logic is often then twisted inferentially to imply, "you are good if you are not bad." From a cybernetic (control viewpoint)

this exacerbates the child's behaviourial control of his or her perceptions. This command appears achievable (X is achieved by not doing Y) but functionally it is impossible to achieve.

In the transcript, it is posited that the client has not been told what being "good" is. No discernable "ordered doings" are posed to represent good. Therefore, confusion arises because she tries to not be "bad" but does not know what activity to do to be "good." In addition, she is made to feel further "guilt" for not controlling her "badness."

The development of further guilt also seems to occur as an effect of the confusion of two levels of logical typing. The first level involves transactions as described above. The parent says, "look how messy your toys are. You are a bad girl." The girl then tries to control her "badness." She tries to play with the toys in a way that she is not bad but never is told when she has ordered the toys in a "good" way.

The second level, involves transactions of the sort, "how many times have I told you to put your toys away? Look how angry and upset you have made me! You are a bad girl." She now tries to play with her toys (i.e. be good) in such a way so that her mother is not "angry" and "upset." The inferential logic behind this communication is that if her parent is "unhappy," she

is "bad." If her parent is to be happy, she must be good. But she has no way of being "good," therefore, she is never able to prevent (control) her parent(s) from experiencing negative mood states, stress conditions, and the like. This eventually leads to the feeling that she should be responsible for other people's feelings toward everything. The "guilty" person struggles to make others happy and satisfied without others ever telling her how she can do this. The only alternative she has within this rule system is to try to not do whatever it is that may make her parents upset or angry. This is a life long goal that can never be achieved because of the cybernetic conditions descried above. She has no conscious realization of this logical rule system and its recursive and invariant determinations of guilt. In fact, it feeds back on itself (positive feedback) and conditions get worse and worse. Her only alternative is to utilize her inept metaphor (map) to adapt to this, which as we have seen causes her more grief. If any of what is described above represents her personal experience, then the world in which she exists is hellish.

The bind is that it is impossible to control not to do something, if the thing not to be done has to be done. We all have to eat, express ourselves sexually

and aggressively. To try and not eat, not have sexual thoughts, or not be angry at other people will not prevent these things from occurring. One only ends up "feeling guilty" since he is unable to control what he sets out to control.

Below are some examples of the client trying to control for not worrying, not doing anything "disruptive" (upsetting), not eating, and not doing what she knows how to do.

Trying not to worry:

> C: I came home ... and there was chocolate there so I had a little piece of chocolate ... even though I was full ... just ... I don't know ... if it was another time like I had a chocolate ... dessert something when I came home from aerobics ... but when I came home from the restaurant ... even though I was full I had a piece of it .. (T: Hmm hmm.) ... normally I would feel worse than I did ... and I said "well oh well" (laughs) so I had it ... <u>try not to worry about it too much</u> ... (Session 15)

Trying not to do anything "disruptive" (upsetting):

> C: My mom ... yah ... (T: Yah.) ... yah ... I always used to get upset especially if I upset my mom ... when I was really ... like in high school I spoke to you that time ... like once my mom got all upset ... and I got even worse ... because she's the worst person in the world you ever want to see upset because she does so much ... <u>so I try not to</u> ... like I ... like I said I used to come home and dump my problems now if I have problems or something ... unless they're ... ____ but I ... I don't keep them all in ... but I don't make them sound like the end of the world any more either ... I don't want them ... compassion and everything ... least saying well I'm having a problem with this or that ... (T: Hmm hmm.) ...

so she listens to me ... and I, I don't ... <u>I try
not to do anything disruptive or ... like upset</u>
... _____ ... cause I don't like to do anything
... upsets other people .. cause I don't like it
when other people upset me ... I'm just tired ...
right now ... keep saying I wish our basement was
done so I don't have to ... my dad would be
relaxed a little bit more and ... that's what I
said to my mother and brother I said ... I don't
want this done because ... I want ... I want this
done so we don't have any more ... major problems
or worries about who's going to show up when the
dry wall guy's coming and ... lessen the load ...
I don't know ... so frustrating sometimes ... when
other people are upset ... and you really can't do
anything about it ... least I'm ... learning how
to ... not let it upset me as much as it did ...
(Session 18)

Trying not to eat:

C: No ... at the time I'm like "o-kay well ...
I'm <u>not going to eat</u> anything else and then the
next day I'd wake up and ... have a muffin and it
would click in my mind "this many calories ...
this ... it has this much fat ... shouldn't eat
this ____" and if I'd eat something that I
shouldn't eat ... that I'd feel worse _____ ...
"see how stupid you are you can't even control
what you eat" _____ feel bad ... and I just feel
so alone ... after I'd throw up ... because I know
my parents are really helpless to do anything ...
(Session 19)

Trying to like herself by <u>not</u> doing what she knows how
to do:

C: Just ... relax and like myself for what I do
and if I make mistakes ... <u>don't come down hard on
myself</u> ... and ... <u>not worry</u> all the time about
what a lot of other people are thinking ... or ...
<u>not try to be perfect</u> and .. kind of stuff like
that ... having enough energy ... to do anything I
want to ... just being basically happier ... I
guess it's got to do .. yah ... it's got
everything to do about liking myself ... (Session
23)

Control

We all attempt to order our perceived world by means of behaving in ways that control the information we have about that world. The information we try to control depends upon how we actively structure (i.e. chunk up, or divide up) our world. What is different between the client and possibly you the reader is not that she controls and you don't but how and what you each control. Her difficulty is that she is trying to control for what cannot be controlled and is using structuring principles (logic, rules, etc) that create experiential states that are "illusory." In trying to ward off disaster by controlling these experiential states in herself and in others, she by necessity courts disaster. She tries to control her parents' negative feelings, or her dissatisfaction, or tries to be "perfect" for herself and others. She "knows" no other way to set herself in relation (control) to her world than to follow the non-conscious determinants of her structuring.

Controlling others' negative moods:

> C: I don't know it just seems that everybody's trying to make everybody else happy and no one seems to be happy ... and it, it's really upsetting me cause ... if he says he's not been happy in a while ... I don't know it's kind of a reflection on ... it's not really but it seems like a reflection on us ... something ... like a lot

of it's him because he gets so upset about everything ... things that are useless getting upset over ... like he can be frustrated and everything ... but getting ... outright angry about a lot of things isn't really helpful ...

T: How is it ... how is it a reflection on you all?

C: Like if he's not happy ... well we're not ... being a good family or ...not helping enough out with ... helping him out enough and ... we're not doing the right things to make him happy ... if we're doing the right ... everything perfect ... he still wouldn't be happy ... that's just what it seem like sometimes ... (Session 18)

C: ... I guess I can say something to him ... it's just hard when he's in a good mood because you don't want to ... I don't know ... I don't want to ... wreck his good mood or something ... like I'm afraid of wrecking his good mood somehow ... and then if he's in a bad mood I'm afraid cause he's just going to get angrier ... (Session 18)

Controlling her moods:

C: ... it just seems like ... general atmosphere of our house is kind of down ... everybody's worried about what everybody's thinking or feeling or what mood they're in ... and I hate _____ like that ... I'm trying to ... I don't know ... control my own moods and ... I shouldn't have to worry about what everybody else is feeling too ... but it's hard because it's sometimes so upsetting (Session 18)

Controlling her eating:

C: No at the time I'm like "o-kay well ... I'm not going to eat anything else and then the next day I'd wake up and ... have a muffin and it would click in my mind "this many calories, this it has this much fat, shouldn't eat this _____ " and if I'd eat something that I shouldn't eat ... that I'd feel worse _____ ... "see how stupid you are you can't even control what you eat" _____ feel

bad ... and I just feel so alone ... after I'd
throw up ... because I know my parents are really
helpless to do anything ... (Session 19)

C: ... but with me I want to ... feel control ...
have more ... control over it (EATING) ... it's
... it's just an area where I feel I have ... I
have not that much control it seems ... conscious
control over what I do ... (SILENCE FOR 15
SECONDS) ... cause it really bothers me because
sometimes I can't even enjoy ... what I'm eating
because I'm like thinking ... "oh no I'm going to
finish this soon what else can I eat ... after?"
... like if we go out for dinner or something ...
(T: Hmm hmm.) ... and I'll eat ... and I'll be
done ... I'll be probably even I don't know even
grouchier than (laughs) before I ate because I
know ... now ... now I'll have to wait for a long
time before I can eat again ... before I get to
eat again ... and then I'll concentrate ... o-kay
... o-kay I'll be eating ... and thinking about
what I'm gonna eat ... "When I'll go home I'll
have this" and all I think about that ... or I'll
think ... "where else can I eat ... what else ...
how else can I eat before?" (Session 14)

Controlling her actions:

T: What's a "dumb, dumb?"

C: I don't know... for me it's ... someone who
can't do everything they want to do ... someone
who doesn't have control ... forgets things ...
things like that ... control over my own ... and
that would include remembering everything ... and
doing everything ... I want to do ... not letting
anybody down ... (Session 6)

Pathology and Treatment

Pathology from this perspective has two general

components. The first component is the system's lack

of variety. Variety, of course, refers to all

non-conscious adaptive structurings (competencies)

across the spectrum of content domains associated with interpersonal functioning. Lacking this, the client does not possess the experiential referents (access to this variety) which would allow her to cope in the myriad of interpersonal (meaning) domains.

Second, the structuring process that Katey uses is self-defeating. Treatment necessitates that she gain more variety (ordered doing). She must engage in different acts and must also order these acts along other principles. She needs both more variety and a different structuring process. This can only be accomplished by making her aware of every contingency and having her engage in behaviours that are consistent with alternate ways of structuring.

Here is a situation that seems to portray much of what we know of her structural ordering:

Eating because she feels "dissatisfied" or wants "to feel better":

> C: This big ... my sister made it ... so I thought I ate ... you know ... that much ... after all ready eating two pieces ... it's awful ... it's that ... it's nervous eating ... that bothers me a lot ... I'm just wandering by the kitchen just grabbing something to eat not even thinking about eating it ... now I know when I do that so I do think about <u>"why am I eating this?" ... trying to figure out why ... well sometimes I come to the conclusion cause I'm not ... like I feel insecure I feel ... dissatisfied for some reason</u> ... (T: Hmm hmm.) I'm looking for something that will make me feel better ... or I'm nervous .. right before exams ... (Session 15)

C: No ... I guess I ... like ... <u>crave something to ... make me feel better</u> ... or something ... cause I'm nervous or whatever ... feeling down ... it's awful I get so angry after ... kind of like ... like ... I wish food didn't have so much power over me ... it doesn't have any but ... sometimes it just seems impossible ... (Session 14)

Feeling "better" after eating then feeling that she is "losing control" or is "down on herself":

C: Hmm hmm ... the problem is is what I crave most is like chocolate ... cause it makes me I don't know it makes me feel the best ... not even chocolate just sweet things ... but if there's chocolate that would be my first choice but anything else sweet ... like, like that's what I would crave too .. sometimes I would go down and eat an apple instead ... but ... that's better for me and <u>I feel better after eating that but</u> ... just the whole idea of nervous eating and ... binging or whatever ... I don't like (laughs) ... <u>it makes me feel like I'm ... losing control</u> ... (T: Hmm hmm.) ... over the situation ... because I don't want to eat ... but I go in there and I'm like have to eat ... don't have to but I feel like I have to ... it's bad ... (Session 15)

C: O-kay ... <u>satisfies me for the moment</u> ... but if I'm eating out of the ordinary ... I don't know ... <u>it just numbs whatever I'm feeling first ... whenever ... when I'm eating it and then soon as I'm done I'm like ... I'm still feeling ... stressed out or ... I'm still feeling down on myself "oh I have to eat something else to make me feel better"</u> ... I hate it ... sometimes, sometimes I just hate eating and I hate food ... because ... ugh ... it doesn't have control ... I guess it does have control over me but it's like it's saying it can't have control over me ... (T: Hmm hmm.) ... (CLIENT EXHALES LOUDLY) (Session 14).

"Throwing up":

C: Exactly ... like I can eat them ... but like just normal eat them but if I'm like eating them just cause I'm stressed out or whatever ... feel even worse ... (SILENCE FOR 19 SECONDS) ... what

was it Saturday? ... yup ... <u>Saturday I made myself throw up again</u> ... because I ... forget what I ate ... oh yah ... my sister made chicken wings ... we all had chicken wings ... and there was like a whole bunch left over ... <u>and I was like full</u> ... and I went back in and walking around the kitchen just looking at the chicken ... so I cut a little piece off it ... and I cut another one, I cut another one and I ended up eating like half of what was left and <u>I was like full already so I felt really sick ... from eating that other half ... so I went and made myself throw up</u> ... yah and I ate that <u>then I ate an apple and then I ate some cookies</u> (laugh). (Session 14)

Feeling "guilty" when she "throws up":

C: I don't know I didn't ... when I'm not like happy or thinking about something else it's just ... I don't know it seems to be an outlet or something like that ... I guess it's I don't know I feel down on myself or ... I can't see how it can .. maybe insecure but I can't see how those feelings ... wasn't feeling I wasn't in like a really good mood up to then ... probably even worse because I ended up worrying about the eating ... it was awful ... and then <u>I feel really guilty after that after I made myself throw up cause I think "oh great that's really smart ... cause you eat so much and then you get so sick I have to go and throw up"</u> ... (VERY FAINTLY: it's not fair) (Session 14)

To highlight the pattern, she feels "dissatisfied" and "craves something to make her feel better." She engages in "nervous eating" and this "satisfies her for the moment." Soon she feels that she is "losing control" and remains "feeling down on herself." She then "throws up" and "feels really guilty."

How can the therapist break this cycle? The
therapist must provide her with more variety, with
alternative ways to act. She needs to understand that
when she is experiencing "A" then she does not have to
do "B." She can also do "C," "D," or "E."

Let us assume that her original dissatisfaction
was caused by her father being upset and her wanting to
make him happy. The therapist could tell her that the
next time she feels "dissatisfaction" she is to go to
her room and call a friend. She will continue to
interpret this recommendation in accord with her
present ordering structure. After talking to her
friend for a while, she may start "feeling upset" with
reference to how she is being a "bad" daughter and not
caring about her father. What should she do when this
reoccurring perception returns? She may perhaps go for
a walk. Now she will think, "what a terrible daughter
I am to walk out and leave my father when he needs me
to cheer him up." The therapist and client could act
out all of these situations. For example, having her
role play saying to her father, "I'm not responsible
for cheering you up, I'm going to go to the university
and study and be responsible for my own life." If she
does go to the university, she probably thinks, "I'm
such a selfish daughter, only thinking of my self, what

a bad person I am." The therapist and client could act out how she will respond to this.

She would thus be required to learn to engage in alternative acts for <u>every</u> informational aspect of her private informational sequences. Every step along the way she must be given variety. Just talking is not enough. She must know what to do (i.e. how to act to control her perceptions), and recognize the implications, and effects (goals) of acting in this manner.

A second consideration is that her present way of ordering her world provides her with many "rewards." For example, if she is angry at her mother, she can vomit to get her to worry about her, give her attention, etc. Therefore, she needs to know an alternative way to communicate (express her anger). For example, instead of staying at home and eating food in an attempt to control both her and her parents negative mood states, she could walk out and yell, "I don't have to listen to this, I'm going out" or "I'm angry at you because you are always trying to get me to solve your problems." Whether it is "true" or not, this provides her with an alternate way of dealing with this situation. It is quite different than trying to communicate through her eating or not eating.

A third consideration is that the less variety one has, the harder it is to give up that variety. Imagine someone with a wealth of past experiences in interacting with others socially. If one pattern of interaction is changed, the person is only required to give up a fraction of what she has available. This woman has a very limited repertoire of social interaction patterns. Giving up her pattern of relating to her world through her body is giving up most of what she knows, and, in effect, it would be erasing her identity. It is no wonder that she resists change.

APPENDIX A: TRANSCRIPT OF THERAPY SESSION

C: I guess I've been really stressed out this past
weekend ... (T: Hmm hmm.) ... yah ... really ... like
every night before I go to bed ... it seems to me all
upset ... about everything ... and ...

T: What's everything?

C: I don't know I just get ... sad over school ...
over my ... my ... trying to be friends with my brother
and sister ... um ... about my eating ... things like
that ... (T: Hmm hmm.) ... like I've been really
really been upset ... especially over my eating ...
it's not so much just gaining weight as ... I guess
when I'm nervous or something I eat ... and have
nervous eating ... it's really bothering me ... cause I
don't want to ... like I don't know ... I wish there
was some other way I could take out stress _____ ... it
seems sometimes like I don't feel satisfied if I'm not
eating something ... when I'm ... studying or worrying
about something or something like that ... really
bothers me ... (T: Hmm.) ... and I don't normally
overeat ... or anything ... but I'll just eat and I'm
already full ... just keep eating more cookies or
something like that because ... I ... I don't know ...
it relaxes me or ... doesn't really relax me .. doesn't
really work in the end ... but the time I'm eating them
I feel better ... and when I'm studying and stuff I'm
like ... constantly running downstairs and getting
something to eat ... _____ I don't like doing that
... I wish I could feel ... relaxed or something ...
doing something else ... cause eating's really not a
good thing to do ... cause it just, it just ..
satisfies you at that that moment ... it doesn't like
two seconds later when you're studying you're like ...
o-kay what else can I have to eat cause I'm still not
feeling any better ... (T: Hmm hmm.) ... it's not good
... I've just really been upset ... I don't know I got
to learn how to deal with stress better ... or
something ... cause I'm like really tense over
everything ... I get, like ... stupidest things are
getting me upset .... and that sets off a chain
reaction with other things that I'm worried about ...
_____ do ... what was I doing last night? ... um ...
something I think it was with my sister last night that
set it off ... or she didn't ... I don't know like she,
she doesn't acknowledge me or anything and I was like
... all week I've really kind of been upset over that
because I'm trying so hard to really talk to her and
stuff and she's just kind of like ... ____ she doesn't
... like I'm doing all the trying ... and I'm not

really getting any positive feedback from her ... and
my parents say "well that's natural for sisters to be
like that" and I'm like "yah, I know" but ... it kind
of bothers me .... but I forget she did last night or
something ... oh she was upset over something and it
upset me that she was upset over a stupid thing ...
and I was saying "well how come ... " I was talking to
my mom and saying "how come we're both like crazy how
come we both can't deal with stress or ... school and
things like that?" ... well _____ I don't know ...
because my sister was worried about she's runs this
club in college ... (T: Hmm hmm.) ... and stuff like
that ... and deadlines coming up and she just couldn't
... like when I came home yesterday ... I said "hi how
you doing" and she's like "awful I didn't realize
life's so awful" and I'm like "well what happened today
for you to say like ... say to me like that " and she's
like "oh just everything, everything" and when my
parents came home she started like crying ... well she
had already gone to her room and she was really upset
... and I kind of got upset too ... and then I kind ...
thought of all ... all the things that I can't ... and
hard having problems dealing with like stress ... like
I'm putting stress on myself ... instead of like using
it to my advantage like ... I guess there ... I never
read a book or anything on it but I guess you can use
stress to motivate yourself or something like that ...
getting _____ ... I guess it is I'm worried about exams
and I'm worried about my marks a lot ... (T: Hmm hmm.)
... this is my first semester ... and I'm worried about
money ... right now because I didn't ... get that many
hours for my part-time job ... in October ... at the
canning factory because they don't need the ... help
... and ... and then I got I'm thinking about well I
have to pay tuition and we're going on a trip for
Christmas and ... I want to go to New York ... with my
friends and I'm like "Oh my God am I going to have
enough money to do anything?" ... and I'm all worried
about that ... something I really have no control over
(laughs) ... at this point but ... this kind of I don't
know build up inside and like ... when something like
yesterday happens I get upset all of them ... come
rushing out.

T: What don't you have control over?

C: Well I can't do anything about the money right now
... I can't get any more hours ... and I can't like
really get any more I have enough for tuition and I
have just barely enough ... to get me by for Christmas
and the trip ... and probably New York but I don't ...
I don't like being so close to the edge ... it just

worries me ... cause I don't like borrowing from my
parents either ... but there's nothing I guess I can do
about it right now ... cause they ... I can't make any
more (laughs) money right now ... I'm going to get some
probably for Christmas and things but ... _____ it
worries me ... and then when I think about the money
part I'm like "oh, you're so stupid why didn't you win
a scholarship?" _____ ... not worried about this so
much ...

T: What if you didn't have any money?

C: If I didn't have any money? ... _____ come to
school and I'd have to get a job and then I'd be as
unhappy as I was last year ... (laughs) ... because I
...

T: You wouldn't be able to go to school?

C: Well if I had no money? well yah ... well my
parents would pay but I'd pay them back ... I don't
know I don't want to do that ... like there would be no
problem with them paying ... but I would feeling ...
feel like I was really kind of letting them down ...
cause it's my responsibility to pay ... _____ ... even
though I don't ... like my dad pays well I don't have
very many hours at all ... right now ... and then I
think about my friends who made more money than I did
in the summer _____ ... they made more money they have
scholarships or they have all this cash in the bank and
I'm like ugh _____ that's fine ... _____ those are the
two main things on my mind ... marks and money ... and
then just other ... like smaller things bug me to ...
_____ ... to ...

T: Do you need money or do you want money?

C: Probably need a little bit more ... I'd like to
have a little bit more so I wouldn't have to worry so
much about it ... like it's hard because Christmas is
coming and ... I need it a little bit but I want a
little bit more than I need ... just so I can ... not a
buffer ... I'm not worried about things like that ...
yah ... and I'm not really having all that much fun
lately (laughs) ... like I've gone out ... I went out
one ... I went out on Saturday night ... Friday night I
didn't go out ... which is fine and everything ... I, I
studied and I watched T.V. ... and wrote Christmas
cards (T: Hmm hmm.) ... and I don't know I just ...
the past ... two or three weeks I really haven't had
that much fun cause of mid-terms and essays and things
and now that I'm done ... I think I'm done I have to

start studying for ... finals and ... like I have to
study hard ... um ... sometimes not jealous ... but I
just think ... so lucky cause like a couple of my
friends are like serious friends and ... they have a
boyfriend they can go out with the night before they
have their test and come home and study a little bit
and then ... like ace it ... like it ... high eighties
... nineties ... _____ ... something like that ... and
I have to study so hard (laugh) ... like I stay up late
and I get up early and everything and ... sometimes my
marks are ... really really good ... but I just got
back my ... english ... and I only ... I got a "B" and
I wanted more than a "B" but ... nothing can do about
it now ... and sometimes I'm doubting how well ... how
my intelligence ... or things like ... _____ ... guess
I've been generally down on myself ... past little
while ...

T: So how is it when you think about how other people
have scholarships and don't have to study as much as
you and have boyfriends?

C: Hmm ... I feel ... I feel more ... not jealous of
them ... I feel more "Come on Kate why can't you have
that stuff too" ... or ... "work harder to get that
stuff" ... like ... especially for my ... right now
it's marks _____ down and I get like "stupid and
dummy" and things like that ... and I have ... and then
when I worry about eating and that ... I think "stupid
why can't you just eat like a normal person" ... no
one's really ... like no one's ... really just ...
_____ normal person but I wish ... there was some other
outlet for me ... I don't know ... something else for
me to do ... instead of eat ...

T: Are you stupid?

C: Sometimes ...

T: And what is it to be stupid?

C: To worry about everything and ... I don't know ...
not work hard enough I guess ... not achieve higher
marks and that ... having ... it seems sometimes I have
no control over ... eating at all ... like I'll dinner
... it's the worst at night time .. we'll have dinner
and sometimes I'll have dessert or something ... and
I'll go upstairs and I'll just ... sit there and I'm
like ... I have to eat something else ... and I'll go
down in the kitchen and I'll be like ... I can't eat
anything else .. why I'm not even hungry I'm full ... I
just ... have to eat something else ... and then once

I've eaten something else ... it's not ... enough because I'm still ... I don't know ... nervous or whatever it is ...

T: So you do things you don't want to do.

C: Yup ... or it was kinda bad last week like I would be ... in school or at home and I'll be "can't wait for my next meal, can't wait, can't wait" like ... out of the ordinary can't wait ... not just "o-kay we're gonna eat something good for dinner" or whatever like ... I'm living for dinner ... and I'm living for lunch ... and I hate it ...

T: Are you hungry?

C: No ... I guess I ... like ... crave something to ... make me feel better ... or something ... cause I'm nervous or whatever ... feeling down ... it's awful I get so angry after ... kind of like ... like ... I wish food didn't have so much power over me ... it doesn't have any but ... sometimes it just seems impossible ...

T: Does food have any power over you?

C: It doesn't have power over me ... but ... like I guess I let it or something ... it shouldn't ...

T: So what is eating like for you?

C: I enjoy it at the time ... but as I like start to finish whatever I'm eating I start getting like ..

T: "I enjoy it" what's that like?

C: I like the taste ... (T: Hmm hmm.) ... like eating normally I like the taste and I like eating cause I'm hungry ... but when I eat otherwise ...

T: How does it make you feel when you're eating?

C: O-kay ... satisfies me for the moment ... but if I'm eating out of the ordinary ... I don't know ... it just numbs whatever I'm feeling first ... whenever ... when I'm eating it and then soon as I'm done I'm like ... I'm still feeling ... stressed out or ... I'm still feeling down on myself "oh I have to eat something else to make me feel better" ... I hate it ... sometimes, sometimes I just hate eating and I hate food ... because ... ugh ... it doesn't have control ... I guess it does have control over me but it's like it's saying

it can't have control over me ... (T: Hmm hmm.) ...
(CLIENT EXHALES LOUDLY)

T: So talk some more about eating ... you feel very
special about eating ...

C: I don't know why ... it's just ... like I look
forward to it ... not, not like normal looking forward
to it ...

T: I don't know what you mean by that.

C: O-kay well you're just "oh yah I'm gonna have
supper I can remember we're having pizza I'm gonna be
late for dinner oh yah I can't wait" ... I'll be like
sitting in class ... and I'll be like ... o-kay only
two more hours then I can eat ... and I'll be like ...
and I ride home and I can't wait to get in the house
and eat something ... and it's just awful ... like my
whole ... sometimes it's all I really think about is
I'm looking forward to eating something ... whether I'm
hungry or not ... like yesterday ... I went to the
curling game ... and I had ... a muffin around five
o'clock ... and as soon as I was done the muffin .. I
said "oh my gosh I shouldn't have eaten that ... cause
um ...I'll probably pig out at the game ... and I
thought "oh yah it's really bad because I'm not ... and
now I'm gonna be hungry" but I'll go to the game and
I'll see everybody eating and everything and then I'll
go "now I'll have to eat something too" ...

T: So what other things make you feel like you feel
when you want to eat something? Do you ever get that
feeling with anything else? Something you want to do
... very badly ... but you know that you shouldn't do?

C: Like ... I can't really think ... like eating is
something I'm really focused on right now ... nothing
else ... it's not that I should ... well yah I
shouldn't eat the way I eat ... it's just ...

T: How are you right now with eating?

C: I just had lunch and I'm like really full ... but
just as I ... I remember finishing lunch and I thought
"o-kay ... let's see ... it's two o'clock or two thirty
now ... and I have dinner at six o-kay I can last that
long ... and I was thinking "what do I have to occupy
my time until that time in between so I won't think
about it? ... because if say if I had nothing to do ...
during that time ... so I'd think about eating ... say
if I'm ... at home reading the newspaper or ...

listening to the radio or something ... and I'm in the
mood like I've been in couple ... the past couple of
days I'll like go out and eat ... cause I'm bored or
whatever ...

T: It's like one of these stories of a person in a
dark prison cell ... waiting for .. the next meal ....
there's nothing to do ...

C: Hmm hmm.

T: The one thing that satisfies ...

C: Yup ... you see it's awful ... because I remember
I was at the game last night ... and I had a cookie ...
it was a big cookie and I ate it really slow cause I
thought ... "I'm not going (laughs) to eat anything
else cause I'm not hungry" ... so I ate it slow so I
wouldn't have to worry about it ... by the time I'm
done it will be just a couple like half an hour left
... and I can go home ... and do homework or something
and go to sleep ... cause even at the game I ... like
I'm occupied watching it but I'm still ... my focus
isn't entirely taken up by something ... so then I
finished the cookie ... and I started to feel like ...
no, no there's nothing else I can eat ... but I'm like
watching everybody walk by with ice cream and stuff
like that ... and I start talking to the two girls I
went with ... and we started laughing and everything
and I felt ... good _____ and I'm like _____ so
when I'm like in a good mood I don't ... it doesn't ah
worry about it ... it doesn't bother me ... like at the
beginning of school and that ... like I hardly ... like
I regulated my meals ... I was able to eat when I could
and when I was hungry I ate ... but when I'm bored or
I'm down ... or nervous or something ... I don't know I
lose some of the power ... or something like that ...
it just seems like ... eating fills whatever void there
is ... insecurity or the nervousness about school ...
_____ ... I don't like that ... (laugh) ...

T: Were you feeling the same way about eating a month
ago?

C: Well say ... well I was like ... in September
October when I was doing like fine in school and I was
having lots of fun and stuff and the mid-terms really
hadn't hit yet or they were there all spread out ... I
just ate ... whenever ... so I .. I could tell ... even
like ... cause there were times when I was bored or
something... in the back of my mind it was there ...
and I guess I've always been like that ... but I never

recognized it until I moved to France ... and then ...
cause I was really ... like sad and ... kind of alone
in my family and so that's all that I did was I ... my
retreat would be the kitchen and I would just munch on
anything ... that was there ... and I gained a lot of
weight from it and that when I noticed "my gosh I'm not
eating right ... at all" cause I can remember before
... like in grade thirteen I would write exams and
stuff I'd always go have some chips or something ...
cause I guess I was nervous or whatever ... and that,
that ... cravings coming back when I'm nervous or ...
like I'm feeling ... the past little while ... I
recognize it now and it makes me angry when I ... feel
like I can't do anything ... about it ... but sure
there is something to do about it .. but just at the
time I'm like ... "I have to eat something, I have to
eat something, I have to eat something."

T: It must be very distracting for you between meals.

C: Yup ... yup ... it is ... cause sometimes at
nighttime after I eat dinner I'm like .. o-kay ... I'm
already planning what I'm going to eat for breakfast
the next day ...

T: Does it prevent you from doing anything?

C: Sometimes yes sometimes no ... it depends how
severe it is ... like sometimes like the other day ...
on Sunday ... what was it? ... we had company over for
dinner ... (T: Hmm hmm.) ... and we ate dinner ... and
I forget I was nervous and upset ... oh yah I just had
an argument with my sister ... and I was kind of upset
over that I was kind of upset because I didn't ...
hadn't finished my homework yet ... and after I
finished dessert I kind of like hung around the kitchen
just looking at something _____ eat ... hung around
hung around I'm like not hungry at all ... I'm so full
... but ... I can't I have to eat so I said, "no, no
... I'm going to go downstairs and study" ... so I went
downstairs sat down with my english and I'm like, "I
can't study" like I'm reading and it's not sinking in
... "I have to eat something" ... so I went upstairs
and I got a can of pop ... and that kind of satisfied
me for a while ... sometimes it's not that bad ...
sometimes it is it's awful ... and some like ... times
like that I hate the food ... because I hate ... like
thinking about it all the time ... it's awful ...

T: Thinking about it as if it has some magical
qualities.

C: Exactly cause I know it doesn't ... because it only
makes you feel good ... makes me feel good like ... the
second I'm eating it not ... it doesn't have any
lasting effects ... cause I'm doing something enjoyable
I guess ...

T: You've just eaten a meal and you are under a lot of
stress so you look for something to eat to relieve that
stress ...

C: Yup ... most of time like chocolate or cookies or
something like that ... like normally if I'm hungry I
can eat a banana an apple normal like good food cause I
like eating good food ... or when I'm like stressed ...
sweet ... only if it's something sweet ... it's most of
the time something sweet ... something that really that
tastes really, really good ... like pizza or something
like that ...

T: The same things that you feel even more guilty for
eating ...

C: Exactly ... like I can eat them ... but like just
normal eat them but if I'm like eating them just cause
I'm stressed out or whatever ... feel even worse ...
(SILENCE FOR 19 SECONDS) ... what was it Saturday? ...
yup ... Saturday I made myself throw up again ...
because I ... forget what I ate ... oh yah ... my
sister made chicken wings ... we all had chicken wings
... and there was like a whole bunch left over ... and
I was like full ... and I went back in and walking
around the kitchen just looking at the chicken ... so I
cut a little piece off it ... and I cut another one, I
cut another one and I ended up eating like half of what
was left and I was like full already so I felt really
sick ... from eating that other half ... so I went and
made myself throw up ... yah and I ate that then I ate
an apple and then I ate some cookies (laugh).

T: And you were eating all these things because you
were under stress?

C: I don't know I didn't ... when I'm not like happy
or thinking about something else it's just ... I don't
know it seems to be an outlet or something like that
... I guess it's I don't know I feel down on myself or
... I can't see how it can .. maybe insecure but I
can't see how those feelings ... wasn't feeling I
wasn't in like a really good mood up to then ...
probably even worse because I ended up worrying about
the eating ... it was awful ... and then I feel really
guilty after that after I made myself throw up cause I

think "oh great that's really smart ... cause you eat
so much and then you get so sick I have to go and throw
up" ... (VERY FAINTLY: it's not fair)

T: How do you feel now?

C: Still sad ... not so great ...

T: You seem tense.

C: Yah ... cause I don't know I'm angry that this is
happening.

T: Take a deep breath.

C: Yah.

T: Deep breath ...(CLIENT INHALES AND EXHALES) ...
Take a deep breath ...   (CLIENT IS BREATHING DEEPLY AND
SLOWLY) ... Where are you tense? Which muscles are
tense?

C: My neck and my arms.

T: Close your eyes ... see if you can relax those
muscles ... while breathing deeply ... maybe force
yourself to tense them up a bit and relax them ...
tense them real tight ... then just let them relax ...
(SILENCE FOR 20 SECONDS)

C: _____ I get so upset ... cause I see this as
another fault ... and I want to and then ... just like
... when I had depression and then ... I'm like "what
am I crazy?" ... (SILENCE FOR 18 SECONDS) ... and
sometimes I'm just I'm like "I just want to pack it in
... I'm not enjoying life at all" ... not suicide
because I would never ... can't see myself killing
myself ... sometimes I just wish I could disappear and
just ... solve all these problems ... (T: Hmm hmm.)
... cause I know I should be so successful .... if I
could just go work out some of these insecurities or
... (SILENCE FOR 25 SECONDS) ... just like ... times
like these I just want to ... it's not worth it ...
_____ trouble ... like being me ... (T: Hmm hmm.) ...
I'm like "I wish I could just trade with someone else
or get someone else to be me for a while _____ "
... I don't know I wish that (laugh) I could just
disappear ...

T: Or if you could just transcend all of those
different problems.

C: Yah ... sometime ... cause I've done so many things
that are so like you know ... really good and ... even
when I had like depression in the summer I still I
never missed a day of work ... I've done so much
volunteer work for (laugh) _____ (T: Hmm hmm.) ... I
made so many friends and _____ different provinces
_____ ... just sometimes ... all the problems just beat
me down ... instead of thinking of the positive things
... I guess I dwell on them because I want to get rid
of them ... and I ... like yesterday ... or _____
Monday, Sunday .... I felt so helpless ... (T: Hmm
hmm.) ... I'm like ... I don't know what to do ... I
don't know what to do ... it is not good because ... if
I give up ... then I'm not (laugh) going to get
anywhere ...

T: You give up?

C: _____ give up and say "o-kay ... well gonna be
have to be this ... like this for the rest of my life
... and ... just suffer trying to _____" ... just the
inside of my head I don't know what to do ... (SILENCE
FOR 19 SECONDS) that's still my biggest problem is
feeling comfortable with myself or liking myself a
_____ because the past couple of days I can ... just
... remember so many times where I've called myself
"stupid ... idiot" ... cause I have so many .. like I
have these problems ... and I don't know if I blow I
guess I blow them out of proportion sometimes ...
(SILENCE FOR 26 SECONDS) ... sometimes I feel ... I
really feel defeated ... by them ... I better know what
to do with the eating ... cause I guess everybody in
our family is kind of like that ... except my mom ...
like my brother'll have dinner ... have dessert ... and
like half and hour later he'll be coming into the
kitchen just grabbing a handful of chips or something
like that ... eating this or munching on that my
sister's the same way ... and I know they're not hungry
... cause my sister recognizes it she's like ... she'll
go into the kitchen sometimes she'll go "no, no I'm not
hungry ... what am I doing in here?" ...

T: But for you it's more of a crime when you do it
yourself?

C: Not more but ... cause sometimes I'll ask her when
she goes in there, "are you really hungry?" and she'll
be like "no" and then she'll leave ... and she'll be
like ... not angry at me but she'll be like "yah I
guess she's right" ... but with me I want to ... feel
control ... have more ... control over it ... it's ...
it's just an area where I feel I have ... I have not

that much control it seems ... conscious control over
what I do ... (SILENCE FOR 15 SECONDS) ... cause it
really bothers me because sometimes I can't even enjoy
... what I'm eating because I'm like thinking ... "oh
no I'm going to finish this soon what else can I eat
... after?" like if we go out for dinner or something
... (T: Hmm hmm.) ... and I'll eat ... and I'll be
done ... I'll be probably even I don't know even
grouchier than (laughs) before I ate because I know ...
now ... now I'll have to wait for a long time before I
can eat again ... before I get to eat again ... and
then I'll concentrate ... o-kay ... o-kay I'll be
eating ... and thinking about what I'm gonna eat ...
"When I'll go home I'll have this" and all I think
about that ... or I'll think "where else can I eat ...
what else ... how else can I eat before?" like when I
went out to my friend's music recital and we went out
to dinner before ... and I had a ... tossed or
something like that and it was done and it was really
good and I was full ... but then I wasn't ... like I
was feeling really insecure ... and really ... down
that weekend ... and _____ recital and I'm sitting
there going "I wonder if there are refreshments
afterwards? or if I stop back at her house if she has a
new white chocolate brownie or something there" ... yah
... and I'm waiting to go back ... and so like I'm
watching the recital and I'm sitting there going ...
"Jeese ... what can I have is there anything at home?
_____" like ... and then we'll go out somewhere and
I'll ... pretend I'm having fun and everything and I'll
just want to ... "hurry up I got to go home" so I can
eat something or ... it's not always like that ... but
those really extreme cases ... I hate it ... ugh ...
cause my mind is not on anything that I'm really doing
I'm not enjoying myself cause I'm worrying so much
about where I am going to eat again ... (T: Hmm hmm.)
... and when it's really bad then I start worrying like
if I'm gonna get fat or not ... but that hasn't really
been the case so much ... like ... I don't know if I
say that but I sure don't _____ it didn't seem _____
it just seemed ... cause I don't know ... punishing
myself for not ... for eating so much ... I have
control ... _____ can't eat all that _____ (SILENCE
FOR 19 SECONDS) ... it is awful ... ugh ... I don't
know when it started though ... either ... and I can
always think like high school when I think of things
like that ... not necessarily so, so extreme sometimes
... yah I can think of sometimes where I was like ...
out somewhere and then like "can't wait until we leave
so we can go ... we can go to pizza go have pizza
after" or whatever ... or waiting for the high school
dance to finish so we could all go to Swiss Chalet and

eat something ... whether I was hungry or not ... cause
I was talking to some South American people and they're
like ... people in North America focus ... I don't
understand ... they didn't understand why we focus so
much on food ... like going out and eating ... watching
T.V. and eating or .. I was talking to one she goes,
"it's really weird we go to a dance and we go out and
eat afterwards and I'm like not hungry at all" ... and
come to think of it I'm not usually I was never really
hungry either ...

T: It's like you always want to be doing something
that you're not doing.

C: Hmm hmm ... (SILENCE FOR 16 seconds) ... yah it's
really I hate myself either way ... if I eat ... I'm
all ugh ... "way to go" ... "here we go again" or if I
don't eat I'm like ... "I have to eat something though
... I can't just ... I just can't ... not eat
something" ...

T: You're not happy with how you are at the present.

C: No ...

T: How are you right now?

C: _____.

T: Do you feel like eating?

C: No because I'm full ... and I'm not really ... I
don't know for some reason right now I'm just not
worried cause ... I guess I'm talking about something
... or doing something ... so I'm not even thinking
about eating right now ... it's especially when I have
... I'm alone with myself and I'm ... I think about the
things that I'm worried about or ... think about bad
things I've done like negative things like ... I only
got .. I got a "B" on my mid-term the other day ... and
I wanted at least an "A-" on it ... or I think about
other things like I haven't cleaned my room this week
or ... like I'll think of negative things ... that's
why I think it's really bad in the summer time because
I worked by myself ... in this little factory ... (T:
Hmm hmm.) ... and I was always looking at my watch "o-
kay ... I eat at twelve o'clock only an hour and a half
more ... only fifteen minutes more" and stuff because I
was left alone to my own thoughts ... lot of time they
weren't ... very positive ... I don't know why I'm so
negative and so hard on myself ... it's hard ... being
so hard on yourself ... (T: Hmm hmm.) ... cause even

on the weekend on ... what was it? ... Saturday
afternoon ... I sat down and I was watching a movie on
pay television ... and I'm like sitting there "I should
do my homework now _____" and I was really enjoying
the movie and everything ... I went out on Saturday
night ... "I have to work early tomorrow ... just
remember that" ... like I had fun and everything but
there is always ... well not necessarily always ...
something is always hanging over my head ... _____ ...
I don't feel myself ... relax ... not worrying about
something ... if I'm not doing something ... if I'm not
doing something ... not productive or whatever ...

T: When was the last time that you relaxed?

C: I would say Saturday kind of but I still ... I
didn't relax because I was .. like I was after the
movie really good ... and then I realize I was looking
... "o-kay I have ... to finish this up by four-thirty
so I have two hours to study about ... go out ... and
then were going to have dinner _____ ... we're going
out after and I have to take a shower so I only have
how much? ... three hours to study to ... (T: Hmm
hmm.) ... and I'm watching a movie _____ enjoying
myself."

T: _____ long time _____ last time you relaxed ...

C: It's been a while (laughs) ...

T: What is relaxing?

C: Just enjoying myself for the sake of enjoying
myself.

TAPE ENDS

APPENDIX B: DEFINITION OF CLINICAL META-LEVEL CONCEPTS

The meta-level concepts defined below exemplify the basic components of any major psychotherapy. If therapists from different theoretical perspectives were asked to define these terms then their definitions would be quite different. For example, think of the different referents the concept "pathology" has from a behaviourial or psychanalytic perspective. Based on their held assumptions and presuppositions they cannot see the pathology recognized by the other perspective in the same way. Pathology (as with all concepts) stands for something else. As Bateson (1980) discussed, "the name is not the thing named" (p. 32). With this in mind, the meta-level concepts below are defined in terms of the S/C perspective. This is, in a sense, a recursive enterprise. Many of the terms used in the following definitions are themselves terms that are also defined.

System (As Abstraction)

We are observers constrained in what we see on many levels (molecular, physiological, psychological, cultural). As we order (make sense of) the world, we see entities that are in consistent relationships with one another. Such a pattern of entities-in-relation is, for our purposes, a "system." A system does not

refer to a real ontological entity in the real world. It is an effect of how we frame our world.

Living and Non-Living Systems

A cell, an appendix, a spider, a person, an elephant, a herd of elephants, a tree, and a rainforest are all examples of living systems. Each is constantly adapting to its environmental constraints. These adaptations are the effects of its interactions with its environment. They are "learned behaviours" or "emergent properties." For example, the child learns to stay away from a hot stove as a bean plant learns to stay away from the shade. Non-living systems such as a rock, a nail, a flute, or a truck also interact with their environment. However, the effect of their interactions do not involve learning. A rock will be crushed or a truck will rust--neither will have changed, during subsequent interactions with their environment they will act in the same manner.

Person as System

A person is a specific type of living system characterized by additional complexity. The complexity lies in the realm of abstract symbolization or the "psychological." The psychological can override the biological to such an extent that death can result. One needs to look no further than political activists, such as Irish Freedom Fighters, who die from refusing

to eat. Whales and dolphins may also possess this added complexity.

Order(ing)

Ordering is a process of making sense of the world. If we stop time (synchronic) and look at the effect of our ordering we call this "order." All systems are engaged in the process (diachronic) of continual ordering. The process of ordering involves dividing the world up (chair, not-chair; fun not-fun; living, not-living). Differences are thus created and are viewed in how they relate with one another. Invariant patterns of relations become known to us (order).

Ordered Activity

Ordered activity refers to actions that have been socially bounded. Individuals learn patterns of ordered activity (rules from an observer's viewpoint) by acting and in effect have their activities structured by others (bounded) who already have accumulated a set of proscriptions about the types and sequences of rules that should constitute an appropriate pattern of interaction in that context.

Non-Conscious/Conscious Ordering

Ordering is primarily non-conscious. Our conscious thoughts and language are effects of non-conscious ordering. Therefore, we are unable to be

conscious of our own ordering processes. Any thoughts
we may have regarding the functioning of non-conscious
ordering can only be the effects that ordering.

Language

Language is an effect of many levels of prior non-
conscious ordering. Words often stand for multi-
levelled experiential states involving many sensory
components (i.e. fire). The extent to which two people
have had similar experiential states that have been
bounded by a symbol is the extent to which they can
understand the meaning of that symbol (word) in
conversation.

Relational Ordering

No ordering system can exist in isolation. All
ordering occurs in relation to some environment. The
nature of this relation is constantly evolving as an
effect of the ordered systems' interaction with its
environment. For example, if I say, "hello!" to you,
this is the effect of my present state of non-conscious
ordering of the environment (seeing you in the hall).
You reply, "hello, its good to see you," an effect of
the transaction between your ordering and the evolving
context. We are in an ordered relation to each other,
we can characterize this as a greeting relation. Let's
say that instead of saying, "hello, its good to see
you," you turned around and walked away. The effect of

my ordering may be "she is busy and may not have seen me" or "she may be angry at me."

Causality

Action is the effect of an ordered system's transaction with its environment. This effect becomes part of the environment and is subsequently re-ordered leading to further action (effects). Causality is therefore circular and dependent upon where in the loop the observer plans to begin and end the analysis.

Information

Information is a message created about a relation. As an ordered system interacts with its world, the recognized effect of the interaction is information (the effect "informs" the system). However, if an effect is observed but it is not recognized by the system being studied, the effect is not information in the system (it is only information to the observer).

Difference

Ordering involves dividing up or punctuating the world (creating difference). News of a difference can be represented (re-presented or transformed) into a difference in the ordering system. The represented difference is information.

Metaphor

All that is known is known through metaphor. Metaphors structure concepts and this structure is

reflected in our literal language. For example, the metaphor "a theory is a building" leads to statements such as "I am building a foundation for my theory" or "I must support my theory." Metaphors are only maps of the world, they know one "thing" in terms of another "thing." Therefore, there will always be limitations in the extent to which a metaphor accurately serves as a model for the world.

Organization (Causality)

An organization (ordered system) is the effect of a pattern of ordering. An organization is caused by its consistent recognition of the same differences in its interaction with its environment.

Change

Change is when an ordered system does not perceive (create) the same differences as it did before. It may be perceiving new differences or it may perceive as the same what was before perceived as different. Changing is re-ordering. The changed system interacts with its environment at Time B differently than it did at Time A (this is both the cause and effect of change).

Development

Development is the continued ordering of the world. Effects of past orderings are continually re-ordered. The present ordering has emerged (developed)

from the ordered systems continued interaction with and adaptation to its environment.

Variety

The more variety an ordered system has in the ways in which it orders its world the greater its adaptability to that world. An ordered system with limited variety will not perceive as many differences, will not change as often, and will not act in as many different ways as an ordered system with greater variety.

Pathology

Pathology is the slowed development that occurs with lack of variety. The system is ordering in a manner in which change (re-ordering) is not occurring. Pathology is "located" in the ordered system's relation to its world.

Context and Meaning

Context is intimately tied to meaning. Without context, words and actions have no meaning at all. Action can be in context or define context. Action or messages that define context (i.e. laughter) "classify" other messages. Such context-defining actions could be considered a higher logical-type than the actions that they classify.

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Communication

Communication is the process of creating meaning (information) through interaction. This is how a system orders itself in relation to its environment. The recognized effect of the system's interaction with its environment informs (communicates to) the system.

Symptom

A symptom is an effect taken as an indication of pathology by an observer. The lack of variety of the system is evidenced in the reoccurrence of the symptom (effect) in many varying contexts. A symptom is ordered by (communicates to) other ordering systems.

Effect

Transactions between an ordered system and its environment produce effects. Effects are recognized differences (information). Action is an effect of ordering. How a system orders its world can only be known through its effects (action). A change in effects (action) is a change in ordering.

Relation

Relation is not one thing or another but a transaction. Effects are created through relation. The nature of this relation, when known (recognized, meaningful), is information.

Structure(ing)/Function(ing)

Function is what is done and functioning is doing. Structure is the order that is made of what is done and structuring is the creating of this order. Whether we see structure or function depends on how we look at "something." For example, observe this sheet of paper. If you looked through an incredibly high powered microscope then you could see that it is comprised of molecules that are functioning over time in relation to one another. If, though, you took a picture of these molecules (stopped time) you would be ordering their structure. Similarly, if you could observe this paper over a considerable length of time then you would see that it is slowly decaying (functioning). However, as you observe the paper now, you order it (structuring or your functioning) as a structured thin three dimensional solid.

Self-Organization

Order is contained within imaginary boundaries (the organization or system). The system is autonomous in the sense that it is functioning to maintain itself and its world as ordered. Although autonomous, an ordered system is always in relation with its world.

Contingency

What an ordered system does (action, effect) is contingent on the relation between its ordering and its environment.

Levels of Order(ing)

Systems are ordered and order on many different hierarchical levels in their relation to multi-levelled contexts. For example, molecules, organelles, cells, organs, organisms each function as autonomous ordered systems that maintain themselves and their environment as ordered. Each level is constrained in its ordering by the order (organization) of other levels. A person system is comprised of the following levels of ordering: biological/organic, sensory-motoric, perceptual, symbolic, social/communicational, and metaphorical.

Directed Activity

All systemic activity is an effect of the system's structured ordering and directed towards meeting certain goals. Acts incongruent with that ordering cannot be known. Continued incongruity (conflict) must lead to re-ordering (reorganization) or system failure will result.

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