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YOU ARE WHAT YOU PERCEIVE: WHEN BELIEF AFFECTS BIOLOGY

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# YOU ARE WHAT YOU PERCEIVE: WHEN BELIEF AFFECTS BIOLOGY

By

Elizabeth Marie Murray

# A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

## MASTER OF ARTS

Department of Communication

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#### ABSTRACT

# YOU ARE WHAT YOU PERCEIVE: WHEN BELIEF BECOMES BIOLOGY

By

#### Elizabeth Marie Murray

Anecdotal evidence abounds in medical circles of sick patients who were told by their physician they would get better soon, and did; or conversely, of patients who were told they would die, and did (Benson, 1997; Dossey, 1991; Letvak, 1995). A framework is put forth to explain how communication becomes internalized and manifested physiologically. This incorporates the perspective of Symbolic Interaction, Constructivism, and Neuro-Linguistic Programming (NLP). When patients receive health messages from their physician, the content is deleted, distorted, or generalized by the neuro-linguistic programming system before it enters schemas of the conscious mind. Messages received directly by the subconscious mind are not filtered and immediately enter schemas. Subsequent messages that access health-relevant schemas stimulate cognitive activity and physiological processes. It is proposed that message salience and conscious mind relaxation impact the strength of physiological change. What a physician communicates to the patient directly affects the person's health and wellness. Copyright by Elizabeth Marie Murray 1997

To the important people in my life who have given me the strength and courage to follow my dreams: my mother and Jeff.

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#### INTRODUCTION

Mrs. Di Angelo, sixty-three years old, was admitted to the hospital with jaundice. The patient was scheduled to be taken into the operating room for surgery. When the abdomen was opened, we discovered she did not have gallstones, but gallbladder cancer. The patient was considered inoperable... While Mrs. Di Angelo was still in the recovery room, I informed her daughter of the diagnosis. She insisted I not tell her mother, "I know my mother. She will die immediately if you tell her that she has cancer". Reluctantly, I told the patient that she indeed had had gallstones, which we removed. I next saw her eight months later in my office. Her jaundice had cleared up completely, and she looked radiant and healthy. There was no clinical evidence of any cancer... The last time she came to see me, she said, "Doctor, when you admitted me to the hospital three years ago with jaundice, I was sure I had cancer. I was so relieved when you operated and found gallstones that I <u>made up my mind never to be sick again</u>".(pp. 70-71)

--Deepak Chopra, Creating Health (1991)

Placebos have been used over the years with remarkable results. They have been prescribed for almost every type of ailment: anxiety, asthma, pain, postoperative surgery, heart disease, peptic ulcers, diabetes, angina, and cancer (Beecher, 1961; Benson & McCallie Jr., 1979; Blackwell, Bloomfield, & Buncher, 1972; Butler, & Steptoe, 1986; Gudjonsson & Spiro, 1978; Hashish, Hai, Harvey, Feinmann, & Harris, 1988; Traut, & Passarelli, 1957; Turner, Deyo, Loeser, Korff, Fordyce, 1994). On average, 35%-55% of patients benefit from placebo effects (Letvak, 1995; Rossi, 1991). In fact, some investigators have concluded that their high success rate across a range of medical problems demonstrates that placebos must be a "true general ingredient in all clinical situations" (Wickramasekera, 1985).

A placebo may be used to describe either a substitute or therapeutic substance (Spiro, 1986). As a substitute, the placebo often generates such descriptive names as a dummy, sham, or inactive material containing no real value (Lynoe, Mattisson, & Sandlund, 1993).

This particular definition delineates the placebo as a false medication, designed to compare and evaluate the effectiveness of active pharmacological agents in products of known therapeutic value (Letvak, 1995; Shapiro & Morris, 1971; Spiro, 1986). Alternatively, when the term placebo is described as a therapy, it refers to its form as a medicinal therapy. Brody (1982), defined placebo therapy as " an intervention designed to stimulate medical therapy, that is believed to be without specific activity for the condition being treated and that is used...for its symbolic effect" (p.113). In many medical encounters, placebos are functioning as medical therapies. Patients respond positively to healthy provider relationships, to the comfortable settings in which medical care is received, and even the time intervals at which treatment is given (Cohen, 1996; Kleijnen, Craen, Everdingen, & Krol, 1994; Letvak, 1995; Spiro, 1986, 1991; Turner et.al., 1994). How these therapies affect the patient is two-fold: placebo responses and placebo effects.

Placebo responses refer to "the behavioral change of subjects receiving placebo" (Fisher, 1970a, p.37), whereas placebo effects acknowledge "that portion of the behavioral change that can be attributed to any therapeutic procedure that is without specific activity for the condition to be treated, as contrasted to the behavioral change due to the mere passage of time, repeated testing, or other spontaneous influences" (Jospe, 1978, p. xiv). Therefore, a placebo may be reflected in both the patient's subjective experience of illness as well as physiological tests measuring clinical change.

What makes placebos therapy so powerful? It is the words and manner used by the physician to communicate its power. Communication is central to our cognitive process and behaviors; it is intertwined with every activity of human experience. As words have allowed us to label illness and disease, and relate our meanings to these body influences (Baumann,

Cameron, Zimmerman, & Leventhal, 1989; Benson, 1997; Dossey, 1991), it can also provide the motivation to mobilize a "sick" person. The communication enacted during medical interactions enables patients to harness the power of their physician's words to stimulate beliefs of health and healing (Benson, 1997). The placebo is the symbol of the patient's experience and expectations of medical intervention. It can affect not only how the treatment works, but also the extent to which it works. Communication itself is placebo therapy; it has the ability to elicit both placebo responses and placebo effects.

The purpose of this thesis is to show the mechanism by which communication operates as a placebo therapy to directly affect our physiology. A framework has been created to illustrate the complex process. This will be demonstrated through the use of the Symbolic Interaction perspective (SI), Constructivism, and Neuro-linguistic Programming (NLP). First, communication is defined as a transactional, ongoing process that transmits information between senders and receivers. Second, when physicians send health message to their patients, the process of communication can be understood through use of the Symbolic Interaction perspective which explains how both patient and physician interpret and evaluate information during an interaction. Constructivism can then be used as an explanation for how patients create personal meaning from the communication interaction of a medical encounter. Fourth, the patient then places this self-relevant health information into interpretive categories or schemas, to determine the meaning of illness (subjective experience) and actual disease (clinical experience). Fifth, neuro-linguistic programming (NLP) recognizes however, that individuals have preferences for receiving and filtering information. In the context of a physician-patient interaction, what the physician says will activate particular schemas within his or her

patient. These schemas are responsible for storing all relevant information and become activated when communication processes stimulate internalized belief systems or deep structures of knowledge. It is the access of these deep structures through different communication styles, such as physician talk, hypnosis and self-affirmations, which elicits cognitive activity. Once cognitive activity has been employed, emotions and parasympathetic nervous system functions respond with biochemical production. The result is a manifested physiological reaction directly created by a series of communication processes.

The scope of this paper will be limited to physician-patient communication as the importance of physicians' messages and patients' interpretations of those messages can dramatically improve or impair health. Physicians are perceived to be highly credible communicators (Ley, 1988). They possess knowledge competence for treating clinical disease and gain patient trust by status and bedside manner. The artful words of a physician carry a great deal of weight because we value and often internalize their opinions on our health. What becomes communicated by a physician in a medical encounter will, to some degree, become internalized within the patient; what he or she believes enables the placebo effect to be a form of selffulfilling prophecy (Levine, 1991).

#### Chapter 1

#### THE TIE THAT BINDS: COMMUNICATION SAVVY

Why is communication so instrumental to our experience of health? Moreover, how can other people's communication messages affect us so profoundly that we enact a physiological response? According to Berlo (1960), the average American spends 70 percent of his or her active hours communicating with others. When we are not communicating with others, internal communication or intrapersonal dialogue still exists.

Communication was be defined as a "process by which information is exchanged between individuals through a common system of symbols, signs, or behavior" (Berlo, 1960, p.10). All human communication events involve a sender, receiver, message and channel (Berlo, 1960). Infante, Rancer, and Womach (1990) defined a source as the originator of specific information which becomes encoded into language and the sender is one who transmits the message to a receiver. Although the source and sender may be two different individuals, for the purpose of this paper they will be the same person (i.e., a physician). The receiver is one who then accepts the message and decodes the information to extract meaning (Infante, Racer & Womach, 1990). Within a medical context, both the sender and receiver reciprocate these roles to ensure the transactional approach of communication as well as recognition that it is an interactional process capable of generating feedback (Miller, 1966). Messages are the stimulus which the sender transmits to their receiver; it can be distorted due to noise, or anything physical, psychological or semantic which inhibits the receiver's accurate reception of a specific message (Infante, Rancer, & Womach, 1990).

As communication is a process, it is ongoing, and ever-changing. It engenders continuity of information flow between the participating parties (self or other) and the exchange of information through the channel used (Littlejohn, 1995). Communication may enter through any of an individual's channels or five senses: visual (seeing) auditory (hearing), kinesthetic (touch), olfactory (smell), and gustatory (taste) (Berlo, 1960). These will be discussed shortly. The importance of the channel used can not be overlooked as it affects the effectiveness of communication. Some channels are more effective than others for transmitting and receiving a source's messages due to individual preference for a particular channel or decreased noise entering a specific channel. Effective communication occurs when some type of meaning (i.e., transmission of symbols, signs, and behavior located within the message) is established between the sender and receiver (Berlo, 1960; Dance, 1970).

The Sapir-Whorf hypothesis (1976) advocates that language does not only tell us what to think about, but also how we should interpret information. Language exists through an individual's speech. Yet, speech contains cultural and social expectations and perceptions about our environment and those around us. Therefore, language is an abstraction of our environment (Kaplan, 1990). This abstraction becomes concrete, however, through linguistic competence when we are able to situate meaning against the larger world and constructed social relations. As such, language constructs our perceptions regarding our environment and experiences surrounding that environment. The words that are used to describe positive and negative forms of health carry strong connotations for the receiver. When language receives positive and negative evaluations,

language is no longer neutral as the receiver shifts his or her observations and finds new meaning about reality.

The meaning derived from our social interactions incorporate rules, norms, and roles (Littlejohn, 1995). How a patient views the conversation with their doctor will be attributed to the variety of communication messages used and whether they were displayed according to the rules and norms common to the culture. Individuals share common referents for basic communication understanding and utilize general regulatory patterns to enable the initiation, maintenance, and termination of interactions (Littlejohn, 1995). The perspective of Symbolic Interactionist describes how interactions are publicly negotiated and understood. The Symbolic Interaction perspective is key to recognizing that dyadic communication has the ability to produce messages capable of shaping an individual's private reality. This process is vital not only for transmission of information, but actual patient interpretations and evaluations of messages.

#### Chapter 2

# MINDING OURSELVES AND OTHERS: THE PERSPECTIVE OF SYMBOLIC INTERACTION

George Herbert Mead led the interactionist movement with his work on society, the self, and the mind (Blumer, 1969). His research on these topics involved discussions of how humans use symbols to communicate and make sense of their environment. Jerome Manis and Bernard Meltzer (1978) created the Theory of Symbolic Interaction, (coined as Symbolic Interactionism by Blumer (1975)), to explore how the nature of an interaction is central to the construction and continuity of communication. Interaction implies that "human beings begin acting in relation to each other, taking each other into account, acting, perceiving, interpreting, and acting again" (Charon, 1979, p. 23). People interact and through their interactions they change, develop perspectives, and create meaning. Meaning is the result of a social act, where an act is described as "a complete unit of conduct that cannot be analyzed into specific subparts" (Littlejohn, 1995, p. 161). The meaning that is generated within and between people during their interactions is based on each person's multiple perspectives for what has occurred in conversation.

According to Shibutani (1955), a perspective is an "ordered view of one's world—what is taken for granted about the attributions of various objects, events and human nature. It is an order of things remembered and expected as well as things actually perceived, an organized conception of what is possible; it constitutes the matrix through which one perceives his environment" (p.564). The perspectives we hold are both dynamic as well as limiting. Our perspectives are dynamic in that they are constantly

defined and redefined during interactions with others (Shibutani, 1955). Often, the perspective we hold belongs both to reference groups and ourselves. Reference groups are "social systems that serve as reference points for the individual, groups whose norms and role-behaviors are pertinent predictors of his own behavior and beliefs" (Berlo, 1960, p. 158). These social systems are crucial because the reference group communicates to us what is important to know, what should be held in our perspective. When we hold a perspective about the world over time, it becomes regarded as a truth about what exists in our world. It becomes our belief. Yet, in holding these beliefs or organizational maps for sense-making, we become limited and can not see outside of our perspective (Charon, 1979). The idea of a perspective is integral to Symbolic Interaction as the meaning extracted from the interaction is consciously reduced; what becomes consciously perceived during the interaction leads to an individual's construction of his or her reality (Blumer, 1975, p. 5).

The perspective of Symbolic Interaction is based on interaction processes that lead to reference group identification, perspective identification, situational definitions, interpretation and judgment of the situation through personal perspectives, and potential change of the perspective, reference group, and interaction. This is diagrammed below in Figure 1 and based on a chart constructed by Charon (1975).

 Interaction → Reference Group → Perspective → Defining → Interpretation and Identification Making Situation Judgment
→ Potential change in Perspective, → Redefined Interaction Reference group Identification

Figure 1. Diagram of information flow by the Theory of Symbolic Interaction.

When individuals engage in interactions, the dyadic nature of the process forces the individuals to recognize both the appropriate mechanism for conducting the interaction (e.g., rules, norms, and roles) and how their unique self is approaching the situation (e.g., previous communication with the individual, currently understood relational meanings, contextual cues and language common to the culture, etc.) In addition, each individual must recognize how their roles and perception of the interaction affects each conversational turn (social act) and behavior enacted. Participants rely on their group references (i.e., family, friends, acquaintances or self-knowledge) as background for approaching the other and use perspectives common to these relational others for determining how the overall situation is being defined.

One's definition of a situation becomes his or her scope for constructing new messages and directing the flow of communication with the other. As each message is transmitted between the sender and receiver it becomes interpreted and evaluated both simultaneously as social and private. Socially constructed meaning enhances the individual perspective developed during the interaction. Subsequent interactions or conversational turns continuously allow each participant the opportunity to change his or her unique perspective for reviewing the encounter, as well as redefining the interaction, message interpretation, or altering group reference identity. As changes are made in any of these categories, they will become acknowledged by adjustment made in conversation. Overall, the continuity of these shared responses generate greater shared social meaning between the individuals through mutual definitions enacted during conversation (Littlejohn, 1995). Yet, the private meaning derived from an individual through the social

interaction may either be real or perceived (Charon, 1979). Hence, what an individual's perspective allows them to receive and perceive during the communication of socially contrived messages, becomes attached and used for redefining the perspective in subsequent interactions.

The Theory of Symbolic Interaction has been defined by seven concepts that reflect the approach of the interaction tradition (Littlejohn, 1995, p. 160):

- 1. People gain understanding from communication and the meanings they assign to their experience. Each person develops meaning through their unique perspective based on symbols; thus, the meaning they attribute to the interaction will also be unique.
- 2. Meaning is generated from the interaction between individuals and the exchange of socially constructed symbols
- 3. Society is a network of social interactions, therefore, as social interactions are generated by people, so are all social institutions.
- 4. Individual behavior is not pre-determined from prior experience, but flexible and voluntary.
- 5. Mind is an internal conversation that reflects interactions with others.
- 6. Behavior is created or enacted in the reference group in the course of interactions.
- 7. We can not fully understand human experience by witnessing a single overt behavior. Individual interpretation, judgment, and meaning must be ascertained.

Principle concepts one through four, and six, have already been discussed in substantial detail. These five components of the theory are important in showing how interpersonal communication is generated. Concepts five and seven, however, require additional elaboration. The reference to "mind being an internal conversation that reflects interactions with others'" (Littlejohn, 1995, p.160) is recognition that what one processes is the result of external stimuli impacting our perceptions. As previously mentioned, conversations are dyadic situations that continuously affect the participants involved and the messages sent. Participants affect others through shared meaning and unique perceptions that become reflected in connotations of message responses. Each sequence of the interaction (i.e., message and subsequent feedback) serves as new stimuli factoring into participants' evaluations and interpretations. Although the private meaning generated through a conversation may or may not be altered by the series of messages conveyed, it will be reflected as each person decides whether the information contained in these messages are relevant to their perspectives and require further elaboration.

The last concept outlined above denotes that a single overt behavior is not capable of illustrating the entirety of human experience (e.g., interpretations, judgments, and meaning). Individuals are unique and each person moves through a complex network for categorizing, storing, and evaluating message information; this process may be different for everyone. What one enacts behaviorally can not capture this massive process of mental activity for several reasons. First, behaviors represent primary or the most immediate representations of interpretations and evaluations that lead to intentions of acting overtly. Some lower level functioning (secondary interpretations) may be pushed aside or not fully conveyed through the action. This is particularly salient when an

individual attempts to integrate a large number of conflicting interpretations or evaluations. Thus, the behavior only represents a portion of the range of human experience.

In physician-patient encounters, the perspective of Symbolic Interaction can be viewed in terms of a medical interview. The purpose of a medical interview is to better understand what patients' concerns are for their health (i.e., how they are feeling, negative changes in health, or need for different medications) and to ascertain signs and symptoms of clinical disease. During the conversation, the physician and patient are conjoined by socially constructed symbols used in medicine. For example, patients understand what a blood pressure monitor (symbol) is because it is conceived as one by the larger social institution of medical doctors and society (reference groups). As patients and doctors share roles in this complex social network, the interactions between them are socially constructed and defined. Both parties understand their roles and capabilities of machines being used to monitor health (i.e., a blood pressure monitor) because the situational interaction is socially defined and judged as appropriate. As interactions progress, both the patient and physician will re-evaluate their perspectives of their roles, interpret each other's messages, and meet the changing communication process. The physician and patient continuously affect one another during the conversation as information contained in each message, and its subsequent feedback, has the potential to alter interpretations, judgments, perspectives and meaning for events. The following case study illustrates one unfortunate situation in which these perspectives became altered:

> Dr. Levine was a consummate clinician who possessed an awesome presence...On one occasion in the cardiac clinic the trainees were examining a patient, waiting for Dr. Levine to drop in to discuss their findings and review the case. The patient, Mrs. S., was well-known to

Dr. Levine, having been followed in the heart clinic for a decade. Dr Levine entered the examining room, greeted Mrs. S. warmly, examined her, and then turned to the large entourage of trainees and said, "This woman has TS,", and abruptly left. No sooner than he existed than Mrs. S's demeanor changed abruptly. Dr. Lown asked her why she was so upset. She replied that Dr. Levine had said that she had TS, which she knew meant "terminal situation". This amused Dr. Lown initially, for he knew the acronym stood for "tricuspid stenosis", the condition of her heart valve. Mrs. S. failed, however, to be reassured by this explanation, and her congestion worsened. Her lungs filled with fluid, and lost consciousness...Later that day, Mrs. S. died from intractable heart failure. (pp. 76-77)

-Larry Dossey Meaning and Medicine (1991)

This situation between Dr. Levine and Mrs. S. is a prime example of how the interaction between physician and patient influences individual perspectives and meaning. Mrs. S. misinterpreted the medical terminology of Dr. Levine because her unique perspective had impacted how she perceived the message information. His abrupt exist from the conversation signaled perceived meaning to Mrs. S. that 'there was nothing he could do.' Although her interpretation and evaluation of the information was incorrect, the physician's absence was an overt behavior that inadequately expressed the meaning of the entire situation. The effort by Dr. Lown again altered the interaction because new meanings, interpretations, perspectives, and evaluations could have occurred. Yet, as previously mentioned, perspectives can become limiting when they are strongly identified by a reference group. In the case of Mrs. S., her perspective of "T.S." may include only negative evaluations because relational others (i.e., family, friends, acquaintances, or other physicians she had encountered) have sent messages relating this connotation. Still, her doubt regarding Dr. Lown's alternative explanation generates an overt behavior (e.g., lungs filling with fluid). Yet, this one behavior probably doesn't

adequately capture the plethora of conflicting interpretations Mrs. S. was experiencing, as the behavior was the result of the most primary or immediate of evaluations.

While the case of Dr. Levine and Mrs. S. appears extreme, it is plausible that simple messages detailing medication, length of illness, severity of infection, etc., could substantially influence how patients perceive their ability for recovery. Dr. Herbert Benson (1997) describes a situation in which one woman required the opinion of three physicians to determine the accurate status of her health condition. The first two physicians could not locate a physiological ailment and told her "it's all in your head" (Benson, 1997, p. 50). This left the patient believing that her suffering and numbress in her limbs were the result of nondescript stress. Her symptoms were compounded with nausea and increased joint pain. Only during her third medical exam did a physician recognize the early stages of multiple sclerosis, an incurable disease that can slowly destroy the nervous system and cause death. In each of these interactions, the physician has had an opportunity to impact the patient's interpretations and evaluations for the health experience. In addition, the responses generated during these conversations between physician and patient also potentially affected the patient's private meaning (real or perceived) for the future of his or her health.

Dr. Letvak, M.D. (1995) reverberates this understanding in a recent <u>Patient Care</u> article, citing that physicians can not discount the healing power from a physician-patient bond. Dr. Letvak (1995) identifies positive or negative communication as substantially enhancing or frustrating treatment effort. He argues that communication has the ability to affect the psychosocial aspect of the patient (i.e., illness or subjective experience of disease). Researchers Baumann, Cameron, Zimmerman, and Leventhal (1989)

emphasized this patient experience in a series of blood pressure studies marking illness representations with symptoms. Baumann and colleagues (1989) found that how patients felt about their state of health was determined by what they knew about the illness and the external environment. Pennebaker (1982) says that patient knowledge evolves from beliefs as well as past experiences. The external environment includes the medical environment (setting) as well as the caretakers (physicians and nurses) involved with treatment. Hence, what is being communicated to patients may have a profound impact on their health as it influences their various perspectives of self-wellness.

While interpersonal communication between physician and patient is vital, what happens once the patient has received a number of health messages? How does the patient extract meaning from the different pieces of information used during the medical encounter and link it to their unique perspective for illness or wellness? This turns our attention to the intrapersonal side of the communication event as described by Mead's research. The internal conversations of our mind provide the crux of physiological change in mind-body communication.

#### Chapter 3

## I AM WHAT I THINK: THE THEORY OF CONSTRUCTIVISM

Meaning is consciously generated from an interaction; it involves the activity of our mind to process information content. The mind is "action that uses symbols and directs these symbols toward the self' (Charon, 1979, p. 86). The self has been characterized as that which is both personalized (how your perceive yourself) and generalized (how others perceive you) (Littlejohn, 1995). Mead (1936) describes the mind as symbolic interaction with the self where we manipulate symbols covertly; we think, engage in minded behavior, and hold conversations with ourselves. Troyer (1946) expands this view in that the mind is not the brain. According to Troyer (1946) brains have the capacity to store information and manipulate symbols necessary for the mind, but "brains, per se, do not make mind" (p. 200). Rather, it is the social interaction that we have with others that influences the symbols we use and the making of our mind or consciousness (Choran, 1979). Although individuals possess the symbols, signs, and behaviors categorical of their reference groups (society), they may be processed very differently by different individuals. People construct different meanings for their social interactions because language use (i.e. connotations) may change and affect how we view ourselves and interaction processes.

The theory of Constructivism was developed by Jesse Delia, Barbara O'Keefe, and Daniel O'Keefe (1982) to describe 'how' individuals filter information and view the world. Constructs "are organized into interpretive schemes, which identify something and

place the object into a category...we make sense of the event by placing it into a larger category" (Littlejohn, 1995, p. 116). Constructivism enables individuals to begin with general and simple information and move towards relatively complex and specific constructs (Werner, 1957). It promotes a system for the mind to place information into an interpretive framework that can be later processed by the brain.

Reality does not exist in raw form; reality is constructed by the individual who perceives it to exist (Delia, O'Keefe, & O'Keefe, 1982). What one perceives becomes part of a large category of schematic associations that are used to make sense of the material. The schematic associations, generated in preconscious awareness, include not only new or current interpretations of information, but also contain basic representations of the information (i.e. previous interpretations, perceptions, and evaluations). These associations also relate the information to our construction of reality (that which we perceive to be part of our environment) and construction of self (how we perceive, interpret, and evaluate to be relevant to ourselves). So, while we have become socialized to use common symbols in communication to convey information, we also have used this information to create private meaning of ourselves. As many constructs found in our schematic associations have social origin, they "are learned through interaction with other people...culture seems especially significant in determining meanings of events" (Littlejohn, 1995, p. 116). Constructivism provides a rationale of how dyadic interaction impacts the mind and enables the individual to create private meaning.

Schematic associations or schemas are tangible mechanisms by which we create the meaning of communicated information (Marcel, 1983). Schemas have been defined as "a cognitive structure that represents knowledge about a concept or type of simulus..schemas

are concerned with ..abstract generic knowledge that hold across many particular instances" (Fiske & Taylor, 1991, p. 98). As previously mentioned, both general and self-schemas exist. Self-schemas are "cognitive-affective structures that represent one's experience in a given domain" (Fiske & Taylor, p. 182). For example, if individuals receive information pertaining to an outbreak of the flu virus, they not only retrieve general information within their schema (e.g., what does it mean to be sick, such as feeling nausea, lethargy, achiness, etc.) but perform self-reference and self-perception of how the flu has or could influence them (e.g., "If I get sick I'll not want to be bothered with anyone" or "When I'm sick my back and legs always ache"). The self-schema held by a person can be either positive or negative (Markus & Wurf, 1987). Although most negative self-schemas have been linked primarily to issues of stereotyped attributes (Bodenhausen & Wyer, 1985) application of negative self-information appears to "be automatic and unintentional" (Bargh & Tota, 1988).

Individuals recall general schemas when they pertain to general or basic issues, such as their relative wellness or concept of medication, but incorporate self-schemas when health is self-relevant. As the schemas are generated in preconscious awareness, preconscious schemas trigger both conscious and unconscious processes. This enables individuals to gain awareness of the many internal representations and beliefs available to explore personal health. Once numerous schemas have been sufficiently activated, they continue to compare and contrast message content differences. If the person maintains high self-involvement for a desired outcome (e.g., wellness and health), then he or she would subsequently generate interpretations and evaluations to match or counter other forms of information.

Schemas are complex as "we usually spend a lot of time in our own company" (Linville, 1982a). Self-schemas continue to assist in separating relevant from mundane

information enabling a "stable, coherent picture of the world and the self out of fragmentary and complex perceptual input" (Smith, 1993; p. 13). Those schemas which are not challenged by external information (e.g., conversations with others) over time become increasingly complex (i.e., more information that is seen as congruent enters the stable schema) (Fiske & Taylor, 1991). In addition, stable schemas are easier to recall (i.e., increased accessibility) because a large quantity of information resides within these schemas that are viewed as relevant to a variety of topics. For example, if one holds a schema that "the Earth is round". then this schema will probably hold other related pieces of information regarding geography. the planet, and understanding of geometry. When stable schemas are easily recalled, accessibility refers to "the ease or speed with which a perceiver could apply a representation to a new input" (Smith, 1995, p.17). Every time schemas are recalled, memory for information within the schema increases (Fiske & Taylor, 1991). As our self-schemas are important to how we view ourselves within the context of our surroundings, they are continuously accessed. Thus, many self-schemas reach a level of continuous accessibility (Wyer & Scrull, 1989).

When schemas have chronic accessibility, an individual places greater attention on the information contained within the association. Attention has been defined as "the amount of selective cognitive work you do" and comprises two components: direction (selectivity) and intensity (effort) (Fiske & Taylor, 1991, p.246). By categorizing information to construct meaning, a person is selectively attending to only information present in their related schematic association. The amount of information someone is able to attend to is based on how highly developed their interpretive schematic associations are: highly cognitively developed individuals may be able to elaborate on more

information than one who is less cognitively developed (Littlejohn, 1995). When a person selectively attends to the most relevant or salient information, he or she is " looking at information they have sought out" (Eagly & Chaiken, 1993, p. 590). Intensity also manifests in this context as personal constructs are extremely salient with generated self-schemas. Salience is "the extent to which particular stimuli stand out relative to others in their environment" (Fiske & Taylor, 1991, p. 246). When individuals are attempting to create meaning from preconsious schemas, they interpret only selected material that is relevant to them (Bargh & Thein, 1985). According to Fiske & Taylor (1991), "if salient stimuli elicit attention, are perceived as prominent, ...it would stand to reason that they also should enhance memory" (p.251). Memory, then facilitates not only what we think of ourselves (how we have constructed our reality), but also the accessibility of information and mechanism by which we continue interpreting salient information in our schemas (Taylor, 1981a).

Constructivism is the framework for how individuals hold and 'construct' their schemas or internal representations. The number, type, and accessibility of both general and self-schemas determine how individuals view themselves and their environment. Constructivism then engenders a personal reality. It explains why individuals may interpret and process differently because everyone possesses different types of schemas for understanding the world around them. For each person, his or her sense of self and reality will create private meaning that will influence preferences in how information is selected and processed. This is very important in the context of physician-patient communication because what is said during the social interaction will affect how many schemas are recalled during the interaction and how the patient ascribes total meaning to

the situation. For example, if a physician says to his or her patient, "I think we need to run some more tests to be sure you don't have cancer" several schemas will be recalled. The person may recall self-schemas of what it means to be sick, what it means to have more tests run, and what it means to them to have or not have cancer. Within each of these schemas, the patient will access different pieces of information relating to each of these constructs. While the physician and patient continue to discuss the potential health threat of cancer, the patient will sort through each of their different schemas to create overall meaning for the situation. In some cases, the patient may decide that running additional tests are preventative, not a major concern, and they appreciate their doctor for being so careful with their diagnosis. In other cases, the patient may recall concepts of cancer and just review information that relates to how horrible cancer is, what it has meant for friends and relatives who have experienced cancer, and how scary it would be to have this disease. In either situation, the patient is creating their private meaning and interpretation of surface language (i.e., direct language use). Constructivism is key to how these internal representations are constructed, held, and expressed in the mind.

As individuals create meaning and make personal choices based on their schematic associations, the cognitive activity stimulates neurological centers. More specifically, it facilitates neuro-linguistic programming (NLP). It is here that we focus on 'how' individuals receive communication messages and filter information from private meaning into conscious thoughts and beliefs. Filtering processes that assist one in constructing their internal representations or schemas are a component of neuro-linguistic programming.

#### Chapter 4

## MIND YOUR OWN BUSINESS: NEURO-LINGUISTIC PROGRAMMING

Neuro-linguistic programming (NLP) is "a model of the structure of our subjective experience and how that experience influences our behavior" (Dilts, 1983). Richard Bandler and John Grindler developed the original processes involved in NLP in the late 1970's with the construction of a language therapy text. <u>The Structure of Magic</u> was the first in the series to depict NLP as an epistemology of mind experience; focusing on how we process information and root it in deep structures of belief and thought (Bandler & Grindler, 1975). In our everyday existence, what we experience is not the totality of the world. Sensory communication channels (visual, auditory, kinesthetic, olfactory, and gustatory), part of the neuro-linguistic system, filter information through deletions, distortions, and generalizations. (Bandler, 1979). It is these five senses that divide the often confusing environment into pieces that individuals can process and reorganize to construct a personal or unique perspective of the world (Dilts, 1985).

Most people operate on three principle senses: visual, auditory, and kinesthetics (Bandler & Grindler, 1975). These main representational systems enable individuals to access the meaning of language and local environment (known as the territory) (Dilts, 1983). Language follows a "transderivational search" where words are triggers used to bring some information into conscious experience, while eliminating other aspects which appear to be unimportant (Bandler, 1979, p. 15). This search allows the filtering process to occur where insignificant stimuli are deleted, so the mind can focus on only relevant information. In Bandler's Frogs Into Princes (1979), he describes that "there's an illusion

that people understand each other when they can repeat the same words. But since those words internally access different experiences, which they must, there is always going to be a difference in meaning" (p. 16). Although individuals may share socially constructed symbols in a common reference group, one can not expect that the same meaning carried in a message. This is because all people are different not only in prior experiences/ perspectives, but differ in the preferred method of receiving and processing information.



Figure 2. Neuro-Linguistic Programming system

Within the five communication channels or sensory modalities (see Figure 2), there exist submodalities that enable individuals to focus on different aspects of territory information. For example, in the visual modality, submodalities may include brightness,
color, size, and clearness. Similarly, the auditory modality could include submodalities of loudness, pitch, and tone. The kinesthetic modality could be subdivided by dichotomies of soft/hard, thick/thin, and strong/weak. Each subcomponent of the modality enables a person to access a level of information. Eicher, Jones, and Bearley (1986) have specified how these three primary sensory channels (modalities) have resulted in six types of communication preferences:

- 1. Visual sensory modality: the individual receives visual information and prefers usage of the visual imagery for understanding and meaning. For example, the person would prefer information visually presented in books, charts, letters, electronic mail, or videos.
- 2. Auditory sensory modality: the individual receives auditory information and prefers usage of audio imagery. For example, the person would prefer information in auditory presentation such as face-to-face interaction, telephone dialogue, voice mail or audiotapes.
- 3. *Kinesthetic sensory modality*: the individual receives kinesthetic information and prefers usage of kinesthetic imagery. The person would prefer to touch and feel physical objects, examine working models of operation, perform physical service.
- 4. Visual expression modality: the individual expresses him or herself through verbal discourse by using visual imagery. For example, the person would prefer to give a poster session of research than an oral presentation.
- 5. Auditory expression modality: the individual expresses him or herself though auditory discourse by using auditory imagery. For example, the person would

prefer to verbally discuss their research and receive comments orally from panelists.

6. *Kinesthetic expression modality: the individual expresses him or herself verbally through kinesthetic imagery.* For example, the person might describe a project and continuously show the working model during a presentation.

While individuals might respond primarily to one of these six types, they may also use a secondary modality to assist in information processing. Those who only choose to use their preferred modality may filter large quantities of information entering from other channels (e.g., deletions). For example, a visual sensory person might lose critical pieces of information when they are explained orally and not located on written materials. Losing pieces of informatoin could inhibit the person's understanding of the larger picture. When this occurs, the neuro-linguistic channels become both a filter and a roadblock (Bandler, 1979). Roadblocking can be very dangerous when it becomes activated in a medical setting. As previously shown in the case of Dr. Levine and Mrs. S., she failed to be reassured because her modality was keenly attuned to the auditory sensory modality, she failed to take in other pieces of information which more appropriately addressed the nature of her health condition.

As previously mentioned, the sensory channels or modalities assist individuals in filtering information to enhance the meaning of communication messages. When we enter a conversation, our prior experiences, various perspectives, and cognitive processes become triggered to help make sense of the verbal discourse. This complex network of understanding, however, is rooted within a deep structure. A deep structure holds the internal representations we hold about ourselves, our emotions, our experiences, and our psychosocial state of being (Bandler & Grindler, 1976) (see Figure 2). They hold together the schemas we hold about ourselves and our larger environment. What we hear is then our surface structure or "the complete representation of what we take in from our sensory modalities" (Bandler & Grindler, 1975, p. 36). In between the deep structure and surface structure, we find the filtering effects. (see Figure 2) Filters are responsible for deleting, distorting or generalizing incoming information before it is entered into our deep structure (i.e., schemas). It is how our mind has deviated from the surface message (e.g., the language we hear during interactions with others) and what ends up in the deep structure (e.g., schemas that allow comprehensive meaning unique to a person). Figure 3 illustrates the common network associated with surface and deep structures described in Bandler and Grinder's (1975) <u>The Structure of Magic</u> :



### Figure 3: Illustration of movement from Surface to Deep Structures.

Once information has entered our deep structure, it regenerates and becomes added to the schemas already present for understanding and meaning (Bandler & representations or schemas are permanently stored and recognized as being true information (Bandler & Grindler, 1975). Information that becomes added into our deep structure can enhance schemas by adding internal images from visual cues or promote self-talk to further reduce the information and quantify the content (Jamieson, 1996). We are capable of generating thoughts about thoughts, representations of representations, and combinations of deep-structure schemas. This hierarchy of knowledge continues to build with the continual bombardment of information received and entered into the deep structure. Over time, stable schemas begin to exist in our deep structure and become internalized as beliefs.

Beliefs are "hundreds of thousands of statements that we make about self and the world" (Rokeach (1973, 214). They may either general or specific; simple or complex (Eagly & Chaiken, 1993). Beliefs are developed gradually, through repeated contact with information and individuals over time. The internalization of a belief is well rooted in our deep structures because we view it as a trusting way to understand the world. This makes sense because once we view it as stable, it reduces our need to create or change our schemas (Eagly & Chaiken, 1993). It also is motivated by our desire to be right; we want to believe that our belief is correct because it represents not only our constructed reality but is central to our sense of self (Aronson, 1988).

When many beliefs center around particular experiences, they form a core belief system where the central beliefs are the most resistant to change. Those beliefs which are relatively insignificant will lie at the periphery of this system and are easier to alter with new information and experiences (Rokeach, 1973). In general, central beliefs are intrinsic to our self-schemas as "the ultimate purpose of one's total belief system, which includes

one's values, is to maintain and enhance...the sentiment of self-regard" (Rokeach, 1973, p. 216). So what we believe about ourselves remains of central importance and can have a strong and lasting effect as to how we relate to others.

Many of the beliefs we hold about ourselves involve beliefs about objects (i.e., how we feel about them) or beliefs we hold in them (i.e., about a particular relationship that exists between the object and some quality of it) (Fishbein & Ajzen, 1975). For example, we may believe in our ability to perform good dental hygiene (brushing, flossing, and mouthwash) and derive a positive evaluation of the self (self-belief) for maintaining behavior that rewards the belief. Similarly, we may have a belief about an object such as a flu shot at the physician's office. While we may not appreciate the pain associated with the injection, the self has a greater belief that the flu shot will protect us (relationship quality) from disease. The concept of beliefs directly applies to mind-body communication, as conscious awareness mediates the beliefs we have generated and maintained.

#### Chapter 5

### THE ROLE OF THE CONSCIOUS MIND

Consciousness is often described at a purely ontological construct. It has been presented as being synonymous with the terms "awareness" or "a process of brain function" (Ellis, 1995, p. 2; Velmans, 1996, p.2) or that which "describes a phenomenal experience" (Marcel, 1983, p. 240).

We do not describe the individual as creating their consciousness, but being endowed with an experience through sensory perception, internal representations, and beliefs, which drives their sense of being (Armstrong & Malcolm, 1984; Marcel, 1983). This experience is transferring information from the external world (territory) through sensory modalities to deep structures where processing centers within the cognition relay understanding. In this manner, consciousness is said to be 'transductive' as it refers to "the conversion or transformation of matter, energy, or information from one form to another" (Rossi, 1992, p. 23).

While many mind-body researchers agree that consciousness is localized 'somewhere in the brain', (Davidson, 1980; Eigen & Winkler-Oswatitsch, 1992; Flohr, 1991; Sperry, 1987; Wheeler, 1990) consciousness itself exists in multiple forms (Dyer, 1994). The three primary representations are commonly referred to as the subconscious, superconscious, and conscious mind.

The subconscious mind refers to that which is primarily unconscious and is associated with notion of the id (Freud, 1957). The superconscious mind is "the deepest and most inaccessible level of the psyche—the collective or transpersonal conscious"

(Schultz, 1986, p. 82). The superconscious mind imposes a similar stance as Freud's superego, which possesses heightened intensity for perfection. The conscious mind falls somewhere in the middle. It is the rationality and reason associated with continuous awareness of the self and everyday life. The conscious mind is considered akin to the concept of the ego (Freud, 1957). For this discussion, the superconscious mind is not relevant; only the conditions of the subconscious and conscious mind will be addressed.

The subconscious mind is a large reservoir of information that was once conscious but has been forgotten or suppressed as the content was irrelevant or upsetting (Freud, 1974). It is the larger, invisible part of ourselves that contains the driving force behind our behaviors, which include primal instincts and basic desires (Freud, 1989). Our subconscious mind acts like a computer; any information that enters the system automatically becomes categorized and stored. It has "no critical factor; it accepts as absolute truth any idea allowed to enter" (Tebbetts, 1987, p. 11). Yet, the subconscious is only granted access to the information based on what has been accepted by the conscious mind at the time. For example, if a patient hears from their doctor, "Your health is poor and you need to take better care of yourself' the patient's subconscious mind will only gain access to parts of that message attended to by the conscious mind. If the patient's conscious mind had internalized that 'Your health is poor' but not 'You need to take better care of yourself' then the patient would subconsciously acknowledge their health was poor, yet not seek tools to improve their state of health. In addition to serving as a memory bank, the subconscious provides other basic functions as listed in the following list (Tebbetts, 1987):

- The subconscious serves as a reservoir of information. This includes information related to prior experiences, thoughts, feelings, perceptions, and beliefs.
- The subconscious controls and maintains regulatory functions of the body.
  This includes involuntary actions such as breathing, circulation, digestion, and waste removal.
- 3. *The subconscious is the threshold of our emotional states.* It is often through the emotions accessed by our subconscious mind that allow for its domination over the conscious mind.
- The subconscious is the origin for imagination and dreaming. All forms of these intense experiences are deeply rooted in the creative parts of the subconscious mind.
- 5. The subconscious enables rudimentary behavior. Daily rituals of conduct, such as dressing, eating, playing a favorite sport, are contained in the subconscious mind Customary activities do not require direct reaction from consciousness. It also enables general muscle movement and reflex behaviors.

We are often functioning with the subconscious mind at work. Sleeping persons and individuals under general anesthesia are said to be in subconscious states (Kihlstrom, 1996; Marcel, 1983). Kihlstrom (1996) comments that "sleepers are not strictly conscious, at least they do not seem to be conscious of events in the world outside their own dreams" (p.34). Individuals under anesthesia possess similar characteristics to sleepers as they are "unresponsive to surgical events, cannot remember them after the operation is over and have no memory of experiencing pain or distress during the procedure" (Kihlstrom, 1996, p.35; similar comment from Kihlstrom & Schacter, 1990). Both sleepers and individuals under general anesthesia would be classified as primarily subconscious, however, as neurological activity continues while the individual 'sleeps', it is primarily the subconscious mind operating.

When information enters directly into the subconscious mind, it is accepted as being true. Even if the two parts of the mind (conscious and subconscious) differ (i.e., the conscious mind wants to rationalize the new information), "the subconscious opinion will be the dominant one" (Tebbetts, 1987, p. 11). This is because the subconscious is the seat of emotions, which are fueled by our desires, goals, and core belief structures. As the subsconscious mind enters all information as being true, they become as strongly entrenched as our beliefs (Tebbetts, 1987). To disregard our subconscious information and believe it is false, is the equivalent of destroying our self-concept or sense of self. This is because once a complex of personal subconsciousness has been formed, or "a pattern of emotions, memories, perceptions and wishes surrounding a common theme", it is no longer under conscious control. In fact, it has the ability to intrude and interfere with the conscious mind (Schultz, 1986, p.81).

The conscious mind dramatically differs from the subconscious mind. The job of the conscious mind is to "evaluate and compare new ideas with previously accepted ideas and in this manner determine its veracity before allowing it to enter the subconscious memory bank" (Tebbetts, 1987, p. 11). When the

conscious mind is activated due to arousal or preferences to continue interpreting and evaluating incoming information, it performs a series of psychological functions. The functions of perception, recognition, judgment, and memory enable an individual to perceive and experience their environment in a practical manner. It is through these functions that the conscious mind is able to guide the self and the subconscious mind.

The conscious mind can perform a "subjective, experiential, inward looking point of view" seen in self-consciousness (Sommerhoff, 1990, p.15). It has also been described as "the ability to recognize self-reflexive consciousness of the self or some aspect of the self" (Velmans, 1996, p.2). When this occurs, an individual is using an introspective approach to understand the experience and how that experience impacts them (i.e., how they view themselves or their place in the world). It is guided by the individual's deep structures (internal representations of thoughts, beliefs, and past experiences) and directs the person to consciously perceive him or herself in that manner. Thus, what the conscious mind has generated in preconscious thoughts (general and self-schemas) becomes translated into a known reality.

In general, the conscious mind is our logical filter. It evaluates all information and utilizes the concepts of neuro-linguistic programming of deletion, distortion, and generalization to determine what information becomes part of our cognitive structures. The conscious mind is that part of ourselves of which we are aware; it is what we think and how we process information in an aware state. In

constrast, we are typically unaware of subconscious processing and unaware of information that embeds in the subconscious mind.

When a person moves between different levels of awareness, from general consciousness to primary subconsciousness, they are signaling a dynamic change in the depth of the self's influence over ideas and thoughts (Watkins, 1987). When we engage in this shift, the conscious aspects of self are pushed aside. Information that has transcended the senses automatically enters our deep structures and bypasses the series of filters that delete, distort, and generalize (Watkins, 1987). Information becomes permanently attached to current schemas or generates new connections with old ones if the mind has not previously encountered specific experiences (Smith, 1995). Figure 4 illustrates the process that enables our conscious mind to become relaxed and increase information flow to the subconscious regions of the mind (Watkins, 1987, p. 167).





Figure 4. Relationship between Message Salience and Depth of Relaxation on Impact of Health Message to Physiology.

When the conscious mind becomes relaxed, subconscious awareness (i.e., the logical mind filter) can then access the subconscious mind and deep structure directly. The individual's mind proceeds to interpret and evaluate incoming information as being true because the conscious filters have been removed. The conscious mind does not challenge this categorization because the cognitive processes involved in determining information distortion or incongruency are not activated during subconscious message reception which occurs at deep states of relaxation. What become internalized at deep states of relaxation travel immediately past the filters of neuro-linguistic programming and directly into the deep structures of the mind where they are mapped as part of our internal representations. Information becomes recognized as belief. Over time, if these beliefs are not challenged they will become part of the central core of the larger belief system where they will remain fixed. Our beliefs are extremely powerful since what enters our subconscious reservoir holds greater priority than general conscious goals because beliefs are elements of our subconscious mind. What we think about the self at this most basic level provides the stimulus for emotions which are key to inciting biochemical pathways for our bodies.

Emotions are a "complex assortment of affects, beyond merely good feelings and bad, to include delight, serenity, anger, sadness, fear and more", and can be "intense feelings with physical manifestations" (Eagly & Chaiken, 1993, p. 411). Emotions affect our general preferences, evaluation, and moods; they govern what we feel and how we experience events (Eagly & Chaiken, 1993). Although our range of emotions is vast, most people experience similar effects

from the same emotions (i.e., happiness, sadness, fear, and surprise). In fact, the human species appears to be 'hard-wired' to express the similar physiological characteristics for different emotions. However, differences that exist between individuals in emotion generation may be related to the degree of conscious/subconscious reception during message intake. The greater the conscious interference and challenge for information veracity, the greater the chance for neuro-linguistic programming processes to alter original message content by filters, deletions, or distortions. In the end, what emotion becomes expressed or felt will be a function of the information that was finally received within the deep structure or internal representation and the strength to which the message was internalized (e.g., peripheral or core belief).

When emotions are generated, it stimulates many cognitive processes such as information retrieval and storage, cognitive processing, and memory (Eagly & Chaiken, 1993). Whether we experience happiness, sadness, anger, or depression, we cognitively recognize the existence of the emotion and become consciously aware of its impact on our mood and experience of a situation. This is because emotions stimulates physiological arousal and cognition (Schachter, 1964). According to Schachter (1964), and Schachter and Singer (1962), emotions become mediated by cognitive processing as the mind attempts to make sense of the behavior. During the experience of emotions, schemas are activated and called into the conscious mind where active nodes of information that relate to the emotion are present and tapped (Eagly & Chaiken, 1993). It is the continuous process of retrieving and making of sense of information during the experience of

emotions are what stimulates the neurological or cognitive energy necessary for starting biochemical processes in the body. It is now time to make the final leap of understanding; the assessment of where and how our physiology becomes activated or a shift has occurred

#### Chapter 6

### MINDING OUR BODIES: HOW THE MIND-BODY CONNECTION WORKS

We can not see our mind in conscious or subconscious mind, but they do have a physiological source of interaction with our bodies (Tebbetts, 1987). The conscious mind has been identified with "the somnic nervous system which enervates the voluntary muscles, the controlling force of which lies in the cerebral cortex, the outer coating of the brain" (Tebbetts, 1987, p. 138). The thinking and reasoning components are in the frontal area of the brain. When we receive sensations from our internal thoughts and feelings, it becomes registered in the thalamus, at the base of the cerebellum. Here our brain interacts with different nerve connections in the cerebral cortex that facilitate biochemical processes able to interact with the rest of neurological activity (Tebbetts, 1987).

Similarly, our subconscious mind is also located near the cerebral cortex. Recently, it was discovered that memories are located in the temporal lobe of this cortex and can be stimulated by surgeons during exploratory brain surgery (Tebbetts, 1987). Memories, thoughts, and schemas drive emotive patterns that can be processed in the right hemisphere of the brain (Stacks & Sellers, 1989). It is in the cerebellum, where the conscious mind directs subconscious activity such as breathing and eye blinking (Tebbetts, 1987).

It is believed that our thoughts, feelings, beliefs, attitudes, etc. are mediated by neuropeptides located in the mind-brain's limbic-hypothalamic system which have the ability to correspond to different molecule receptors in other body systems (Ader, 1981;

McDaniel, 1992; Rossi, 1992). These neuropeptides communicate with specific messenger molecules: neurotransmitters of the autonomic system, hormones of the endocrine system, and immunotransmitters of the immune system (Reichlin, 1993). The hypothalamus sits at the interface between the brain and these several important regulatory mechanisms. The hypothalamus conjoins a myriad of neurotransmitters and neurohormones, which are interconnected, central to endocrine secretion, neuron activity, and cell behavior. (Ader, 1981; Rossi, 1992). Messenger molecules from the central, autonomic, endocrine, and neuropeptide systems become stimulated from reactions within the brain (mediated responses from other body systems, or most recently, suprahypothalmic stimuli) (Reichlin, 1981, 1993, 1994). Each of the anterior pituitary hormones under the neuroendocrine control of the hypothalamus become stimulated by secretions from these stimuli and have direct and indirect effects on our biology.

Hall, McGillis, Sangelo, and Goldstein (1985) have dedicated their research to understanding the biochemical outcomes of mind-body medicine. They have shown that the human body has bi-directional circuitry. It has the ability to communicate information of systemic functioning back to the hypothalamus via neurotransmitters, translate the information for cognitive interpretation, and then continue to redirect information back to specific pathways, which may affect body response. It is the continuation of synapses (energy nodes) in the brain being stimulated by neurotransmitters and neuropeptides, which are believed to alter physiology. As new information becomes transduced by neurons traveling back and forth between different body systems and compartments of the brain, the central nervous system becomes activated (i.e., sympathetic and

parasympathetic). Once the central nervous system responds to the constant biochemical stimuli, it activates more body systems to assist in the cellular communication process.

Dr. David Bohm has provided a theory to explain how this bi-directional mechanism of psychological stimuli influences cognitive activity and therefore, a physiological response. Dr Bohm (1985) believes that 'meaning' holds the necessary significance for the mind and body to operate together. His theory (1985) consists of soma-significance (i.e., the body affects the mind) and signa-somatic (i.e., the mind affects the body). The term 'soma' refers to a Greek work meaning "the body" whereas significance "is derived from the Latin term significans, "that which is signified; meaning" (Bohm, 1987). Soma-significance refers to the manner in which disease or physiological influences create effects in the mind. For example, when an individual has a high fever (body influence), she or he may have incoherent dreams, hallucinations, or feel extreme emotions (e.g., sadness, isolation, or despair). Comparatively, the term signa-somatic refers to how cognitive factors are capable of generating alterations in our body. Other researchers, such as Perelson (1988b.), agreed that various degrees of mindbody communication must be present. Specifically, he saw the mind and body as interconnected and inter-related components that required continuous communication to maintain each of the different body systems throughout the living organism (Perelson, 1988b.). Bohm would argue that 'meaning' is the inter-connection and that, "there is only one "field" of reality as a whole, containing the universal but relative distinction between generalized soma (matter) and generalized significance (mind) which... are not separate substances" (Bohm 1987). Thus, the mind and body are not merely connected, but exist as a united entity. While Bohm's complimentary theories (1985) provide insight into how

the mind and body could be inter-connected, how does the meaning an individual have for an event become manifested in their physiology?

As early as the 1980's, it became apparent through both experimental and clinical studies that psychological stimuli such as stress and depression were able to positively influence the onset of physiological disease (Lown, 1980; Stein, Keller, & Schleifer, 1985). Lown (1980) identified a significant proportion of patients who were identified as possessing high levels of stress, were also found showing signs of disease earlier and had a reduced ability to fight off infection. In a similar study involving subjects who were experiencing bereavement, Dr. Steven Schleifer and colleagues (1983) found that lymphocyte activity was severely decreased in men who had recently experienced the loss of a spouse to breast cancer. Alternatively, dispositional optimism has had a profound impact on decreasing medical interventions such as pain killers, fewer post-operative complications, and improved expectancies for general health (Scheier & Carver, 1987; Scheier, McGovern, Abbott, Matthews, Owen, Lefevbre, & Carver, 1989). Increasingly, evidence is surmounting that psychological stimuli are altering physiological function.

It appears that Bohm's concept of 'meaning' is the result of individuals internalizing psychological stimuli through sensory channels into deep structures, translating the information into conscious awareness, activating cognitive processing centers, and generating biological responses. Through the interaction of neuro-linguistic programming, we develop deep structures of understanding by beliefs, schemas, and prior experiences. The conscious mind triggers our subconscious deep structures once a relevant event exists to retrieve the schemas and beliefs. The recall of our subconscious

information (deep structure) by our conscious mind then stimulates chemicals that facilitate emotions and engender further cognitive processing of the message content. The cognitive component of the mind uses this information to activate biochemical pathways of our physiology. Hence, our unified mind and body creates a continuous communication network that transmits new messages and information from the subconscious to affect the body and vice versa. It is this mind-body communication which provides theoretical explanation for mind-body medicine.

### Chapter 7

#### WHERE TO GO FROM HERE:

### THE FRAMEWORK FOR COMMUNICATION AFFECTING BIOLOGY

Communication scholars have spent an inordinate amount of time considering the variables that moderate health and wellness. This is often conducted through multiple experimental procedures, which determine the strength of these moderating interactions. For example, research has focused on compliance gaining and persuasions strategies to assist patient's adhering to prescribed regimens (Burgoon, Parrott, Burgoon, Coker, Pfau, & Birk, 1991; Hall, Roter, & Rand, 1981; Ley, 1988). Work also has been conducted on individual factors that contribute to health, such as level of optimism, stress, and lifestyle behaviors (Blanchard, Barbour-McMenamin & Smith, 1985; Spiegal, Bloom, Kraemer, & Gottheil, 1989; Scheier & Carver, 1987; 1989; Street, 1991,). While each of these studies have contributed enormously to scholars understanding of how communication indirectly affects the human body, it has neglected the direct effects that occur from communication messages. That is, focus for communication impact has been incorporated as a intermediary effect for health attitudes, patient behaviors or compliance, but not how communication directly affects physiology.

In the medical setting, the communication that occurs between physicians and their patients is central not only to understanding the health concern in question, but also generating meaning about it. As previous studies have shown, patients respond to situational cues within the medical encounter (i.e., setting, time intervals, appearance of medical therapy, applicability of prescribed therapy) and physician variables (i.e.,

support, advice, effective listening, and positive messages) (Cohen, 1996; Kleijnen, Craen, Everdingen & Krol, 1994; Letvak, 1995; Spiro, 1986; Turner et al., 1991). These cues and variables are affecting patient meaning because the how and what is said within the interaction has the potential to alter the perception of the situation and of their health. When communication generates effects within patients, through their subjective experience or clinical experience, it is functioning as a placebo. As words are powerful devices for labeling, defining, and generating meaning, what is being communicated in these medical interactions can not be overlooked in terms of patient effect. The reaction of a patient to the medical interaction has the potential to generate or reduce healing. This leads to the first proposition:

### P1: Communication functions as a placebo therapy as it has the ability to elicit both placebo responses and placebo effects.

Patients grant physicians inordinate power. Physicians possess high status within society for their medical titles and are viewed as credible sources (Ley, 1988). This credibility is based on both medical competency and the trust constructed in the physician-patient relationship. We listen to those who possess source credibility because we require and trust the knowledge they impart to us (O'Keefe, 1990). As a result, physicians need to become aware that their words can be powerful tools in promoting or frustrating medical treatment. This is especially relevant in situations where the patient views their physician as being central and instrumental to their health. In this situation,

what the physician says can impact how the patient reviews their own health and thinks about relevant health concepts because the patient trusts their physician's words.

P2: Patients who perceive their physicians as being credible communicators will consider their physician's words more importantly when thinking about selfhealth than patients who do not view their physician as being a credible communicator.

When individuals meet with their physicians to discuss personal health issues, what and how the physician communicates information is of central importance. For example, when a doctor tells a patient "Your temperature and blood pressure are normal, but your laboratory tests show a high white cell count", the patient moves through a variety of steps, according to the Symbolic Interaction perspective. First, the patient will access schemas that contain both general and self-relevant information regarding blood pressure and body temperature. This knowledge is derived from personal experience as well as from interactions with others. Since the patient has a shared meaning for what is body temperature and blood pressure due to societal language that is used to describe these artifacts, he or she is able to recall a set of concepts that explore them. These concepts include questions of normalcy, links to disease, corrective measures, and current health beliefs. As the patient responds to the physician, his or her feedback will affect situational definitions for both persons and how the next series of conversational turns will be interpreted and evaluated. Every time a new message is exchanged, both parties have the opportunity to change perspectives, modes of information interpretation, and redefine the interaction. This leads to :

### P3: Physician-patient interactions involve communication processes that can directly impact the patient's perception of and meaning associated with his or her health.

As a patient continues to receive and provide feedback from information during the interaction, he or she recalls and integrates the message content into appropriate schemas. General schemas and self schemas become important as they enable cognitive structures to exist where knowledge can be placed about the diagnosis, treatment, course of illness, and self-relevant information. The schemas, which are located in preconscious awareness, organize the content for present and future recall. The patient relies on this process to continuously interpret and evaluate information regarding their health. When information provided by the physician is perceived as being salient to the interaction, the patient attends to it and determines whether or not the information is congruent or incongruent with other information located with their network of schemas. Congruent information often readily integrates into schemas whereas incongruent information requires greater elaboration. The patient must first determine the veracity of information; those messages, which are perceived as being true, enter schemas. Incongruent information could require even more cognitive elaboration for the patient to determine whether or not it should be incorporated into general or self-schemas. Information, however, that does enter the general or self-schemas influences the personal choices

made, based on how information is interpreted. As a person's sense of self and reality is a function of how our schemas affect our perceptions; private meaning will be different among individuals. This private meaning affects the preferences of how each person prefers to select and attend to information. This leads to:

# P4: Patients construct their own private view of their health and environment based on available schematic associations.

In medical settings where patients receive information from their physician, their privately constructed view of themselves and their reality affects communication preferences. Patients use the five sensory modalities, and additional related submodalities, differently in assisting with message comprehension. What the patient hears from their physician (eg., actual words during the encounter) remains part of the surface structure. The initial verbiage enters through primary and secondary modalities where they can become filtered (i.e., deleted, distorted, and generalized) and then mapped to deep structures that contain the network of schemas. What determines the extent to which the information becomes filtered depends on the number of channels on which the patient relies to attend to information, and the patient's immediate state of consciousness. Patients who utilize several modes for receiving communication messages will have a greater quantity of information to interpret and evaluate. When patients are at full conscious awareness, the incoming information is subjected to greater cognitive challenge before it enters a schema. Figure 5 illustrates how a fully conscious patient makes sense of a diagnosis by the physician.

Surface Structure:	"Your temperature and blood pressure are normal, but your laboratory test shows a high white cell count"
Deviation # 1:	"My blood pressure is all right, it's not a problem."
Deviation # 2: Deviation # 3:	"My laboratory tests show something is wrong with my blood sample."
Deviation # 4:	"I haven't felt my normal lately, maybe something is wrong"
Deep Structure:	"I look healthy but the doctor says I'm sick" $\rightarrow$ "I'm sick."

## Figure 5. Example of patient movement from Surface to Deep Structure with Congruent Information.

Under these circumstances, once the patient has recognized the information as being salient, he or she must assess the veracity of information. As neuro-linguistic process is responsible for channel preferences, the patient preference for selectively attending can affect the filtering process. If the patient verifies the message as being congruent, then filtering occurs until the patient has sufficiently comprehended the information and is capable of engendering private meaning within the interaction.

If the patient disagrees with the veracity of the information because it conflicts with information currently in their network of schemas, they fight against the information. Figure 6 illustrates the alternate process for handling incongruent information.

Surface Structure:	"Your temperature and blood pressure are normal, but your laboratory test shows a high white cell count"
	" I am also concerned about the rash on your back."
Deviation # 1:	"My blood pressure is all right, I can't have a problem."
Deviation # 2:	"My temperature is not too high, how can I have a high count."
Deviation # 3:	"There is nothing wrong with my blood sample, it must be a mistake."
Deviation # 4:	"The doctor is wrong since everything else checks out fine."
Deviation # 5:	"Still the doctor says I have a rash, I really could be sick."
Deep Structure:	"I look healthy but the doctor says I'm sick" $\rightarrow$ "I'm sick."

# Figure 6. Example of patient movement from Surface to Deep Structure with Incongruent Information.

In this case, the patient views the physician's words as being incongruent and expresses doubt about the diagnosis. If additional information is received from the physician that corroborates the health concern, then the patient will again recall relevant schemas and re-evaluate the veracity of the message. This process could occur several times before the patient makes a final decision and constructs private meaning surrounding the information. This leads to:

P5: Patients preferences' for receiving communication messages from their physicians affects how the message is interpreted and integrated into schematic associations.

P6: Patients are more likely to integrate congruent, salient health information regarding their personal health condition or concern into their schematic associations, than incongruent, salient health information.

Different levels of consciousness also affect the process. If the patient receives the message under heightened subconscious processing (e.g., full relaxation, hypnosis) then the impact of the message will be stronger than if received in general conscious awareness.





The message received when the subconscious mind dominates will not be subjected to the extensive filtering process of deletions, distortions, and generalizations. The information goes directly to the subconscious schemas and beliefs, as the conscious mind is not directing filtering activity. Figure 7 illustrates how conscious awareness influences communication messages being mapped to deep structures or internal representations of the mind. The conscious mind acts as the gatekeeper for filtering processes. The subconscious mind does not argue with messages that bypass the filtering system. The information quickly becomes categorized with other health-related meanings that have been communicated in the past and, if continuously accessed, it will be internalized as belief. As previously mentioned, the subconscious mind "has no critical factor; it accepts as absolute truth any idea allowed to enter" (Tebbetts, 1987, p.11). This leads to:

P7: Patients who receive communication messages from their physicians under heightened subconscious awareness will not filter (i.e., delete, distort, or generalize) the information; it will move directly from the surface structure to deep structure.

**P8:** Patients who receive communication messages from their physicians and place the information directly into deep structures will be automatically verified true.

**P9:** Patients who continuously access information held in their deep structures, over time recognize the information as a belief.

As previously discussed, beliefs are powerful. When internal representations are activated (i.e., deep structure information) they generate cognitive stimulation and send forth the relevant schemas for new information interpretation and processing. Emotions are experienced when cognitive processing stimulates arousal and neurological function. The emotion is recognized as activated nodes within neurological pathways influence biochemical processes and produce the neuropeptides necessary to begin communication been mind and body.

### P10: Patients who experience emotions while cognitively processing communication messages from their physicians will stimulate biochemical pathways of the body.

Once neurotransmitter and neurohormones have become stimulated, specific neuropeptides communicate with specific messenger molecules with autonomic, endocrine, and immune systems. Bi-directional communication continues between the different body systems and is continuously regulated by the hypothalamus. It is not known which emotions are the most positive for engendering health and healing; however, it can be said that once emotions are present, cognitive activity does affect the body through biochemical pathways. Still, as the body responds to the cognitive processes, the body's reaction is a product of initially communicated information and becomes expressed through the private meaning one creates after neuro-linguistic programming and conscious awareness influence the psychological content.This leads to:

P11: Physiological responses are a byproduct of cognitive activity which has been stimulated by neuro-linguistic programming filters and internal representations (schemas) and the private meaning established by an individual.

Physicians cannot ignore that the language used during a medical interview can play a significant role in maintaining and creating health. Each experience with our physician becomes 'organic' in nature and we incorporate the new information into quantifiable understanding. What is being communicated is directly affecting our body. It affects *not only how we think about our health, but also how we will process future information related to health.* 

### Chapter 8

### NEW DIRECTIONS IN HEALTH COMMUNICATION

Communication is central to our construction of self and how we make sense of our reality. While scholars have spent considerable time studying how communication indirectly affects a person's health, no research to date examines how communication directly affects health through research on attitudes, intention, behaviors, and compliance. When patients seek the administrations of their physician and attend to the information cognitively, communication can serve as a placebo therapy. It is able to produce similar benefits to that of drug placebos.

What does this mean for current interactions of physicians and their patients? Language needs to become 'patient-centered' or designed to fit the sensory and cognitive processing patterns for a unique person. It makes sense as each patient creates unique constructs relating to self from which the self extracts meaning from the environment. The surface structure of a message requires more careful consideration by the physician because language is impacting these personal constructs and meaning will be different for each person. These personal constructs are integral to how communication is being received through their sensory modalities. Physicians need to interview patients and use mirroring responses to ensure that the patient is 'hearing' the physician and 'interpreting the material correctly.' If physicians are able to reach the preferred sensory modality in their delivery of patient health messages, then it will enhance filtering efforts and proceed

more quickly to the subconscious mind where information can be incorporated into schemas and beliefs.

What does this mean for conventional medicine? As medicine is both an art and a science, it is important for medical professionals to recognize pharmacological agents may not always be necessary for treating every disease. The mind is a potent regulator of our body systems and should receive greater prestige as a mechanism of therapeutic healing (Dossey, 1991). It explains why individuals get well without drug interventions, specialized nutritional protocols, or expensive medical devices.

Better understanding of the mind-body connection could also provide a substantial reduction in expensive treatments that medical insurance is unable to cover, or for those who ca not afford health insurance. Over time, a significant savings would be possible and patients would not have to deal with potential side effects often caused by pharmacological treatments.

Two areas in particular have concretely demonstrated mind-body communication in the field of medicine. These are the effect of affirmations, and hypnosis. In each case, the mind is directly altering physiology; it serves a holistic treatment of the body. The final summation of this paper will reflect on the potential for these three forms of communication illustrating how the body can be directly affected from a physician's messages.

### Application of Direct Communication Affecting Physiology: The Use of Hypnosis

Hypnosis was first used medically in the in ancient times, but received recognition as a psychological phenomenon by Braid in 1841 (Watkins, 1987). Modern hypnotherapy has

long been considered a successful medical intervention by both researchers and practitioners, especially in the areas of pain therapy, anesthesia, addictions, cancer, respiration, blood flow, viral infections, genetic disorders and psychosomatic conditions (Clawson & Swade, 1975; Cozzi, Tryon, & Sedlack, 1987; Dossey, 1991; Green, Green, & Santoro, 1988; Hall, 1983; Newshan & Balamuth, 1990; Spanos, Stenstrom, & Johnston, 1988).

There are almost as many definitions for the term hypnosis as there are individuals who practice the technique. According to hypnotist Marilyn Gordon, hypnosis is a "transformation of access to the inner mind where a database of patterns, habits, thoughts, visions, traumas, dreams, and old experiences exist" (Dee, 1996, p. 10). Others have described a heightened awareness whereby their conscious mind "had been asked to step aside, allowing the mind to experience the true you within" (Carey, 1996). Still, many have equated it with the location somewhere on a continuum between what are popularly called sleep to wakefulness (Pavlov, 1928). Still others have equated hypnosis with relaxation and visual imagery (Benson, 1993; Edmonston, 1991; Green, Green, & Santoro, 1987; Gruen, 1972; Kirsch, 1994; Newshan & Balamuth, 1990). For purposes of this investigation, the term hypnosis will be defined as the "state of consciousness at which the conscious mind has been relaxed to an extent at which it is capable to access the subconscious mind, including: inner experiences, including thoughts, emotions, stored information, and universal knowledge and be receptive to messages of suggestion" (Dee, 1997, p. 10).

When an individual becomes induced to a state of hypnosis, there is a decreased response or a slowing down in the external sensory system which, in essence, signifies the relaxation of general conscious awareness and all physiological processes (Cheek, 1980). Induction into hypnosis is often equated with relaxation. Anesis, or the correspondence of

relaxation and hypnosis, has received considerable interest in recent years. In 1981, William Edmonston, Jr created a theoretical framework whereby relaxation precedes and serves as the fundamental basis associated with hypnosis. According to his framework, when an individual begins the hypnotic process he or she will elicit light relaxation until after the induction is completed. Individuals who are in a nonhypnotic state have also been found to mimic identical physiological processes as those who were deeply induced (Edmonston, Jr., 1981). For example, Edmonston, Jr. (1981) conducted a study in which electrodemal response conditioning, heart rate, and oral temperature were compared among three groups: one hypnotic group, and two groups varying in levels of relaxation (low and high). Both the high relaxed condition and those involved in hypnosis received similar delayed mean reaction times on the clinical assessments. Overall, findings show that deep relaxation or hypnotic induction allows access to the deep structures and internal representations of the subconscious which are receptive to message suggestions.

The ability of an individual to enter this state varies greatly by the person's ability to relax their conscious mind and their desire to initiate the process (Spanos, 1990). Researchers believe that hypnotizability signifies the subject's propensity for the "degree of control with which it is possible to access different states of consciousness, psychological awareness, or cognitive functioning" (Evans, 1991). Although individuals may vary widely on hynotizability, research has shown that regardless of depth of consciousness, a person has the capability of receiving the message suggestion. Message suggestions are considered to be those stimuli which allow individuals to perform such tasks as understanding the specific causes of problems, releasing of current life or past life traumas, explore unanswered questions, or finding methods to redirect our current patterns of thought (Dee, 1996).

As individuals began to experience message suggestion in a medical setting, they found remarkable results. Consider the following case study in the 1950's of a sixteen-year-old boy with a severe case of ichthyosis or "fishskin" disease:

The body was severely afflicted with thickened, scaly, deformed fissured skin covering almost all of his body. Infection was so extensive and foul smelling that he could not attend school...After he was hypnotised, Dr. Mason suggested to him that the thickened, disfigured, infected skin disappear, one extremity at a time, and be replaced by healthy, pink, normal skin.... Mason's hypnotic suggestions brought results. He extended the treatment from the extremities to the entire body. Soon, for the first time in his life, the boy had healthy-appearing skin. (pp. 151-152) --Larry Dossey, <u>Meaning and Medicine</u> (1991)

In the above case study, the suggestion to produce healthy, pink skin was accepted by the subconscious mind because the presented information did not receive any conscious interference or noise. In addition, during the hypnotic state, the individual has a "specific, innate ability to access or change one's own patterns of mind-body communication by the use of psychological suggestion alone" (Rossi, 1992, p. 18). The hypnotic suggestion was capable of producing new thought patterns by transforming the child's constant view of disfigured skin into a different visual image. Visual imagery, when using during hypnosis, can have powerful effects as can be seen in an additional case study of a woman who suffered from chronic low back and leg pain for twenty years and sought treatment with a chronic pain outpatient group for assistance:

Patient A (as described anonymously in the study) was also investigating surgical interventions when she entered the outpatient group. Through her first session of visual imagery she saw a pain creature image of a mule facing away from her, kicking her with its hind legs. She reported great suffering during the first week, the pain portrayed with the color red (red was a color associated with severe pain)...by her fourth session, she was able to hide from the pain images and also felt less pain, which she described as green or yellow instead of red. In the last week, no pain creature appeared in the session. Rather, she imagined herself looking at the beach and feeling happy...Her progress, though initially difficult, was steady and she reported increased socialization and activities. In the second to last week, she announced that she had taken a part-time job. (p. 36) --Newshan & Balamuth "Imagery for Chronic Pain" (1990)

Visual imagery is the process of directing an individual to visualize a particular scene or picture (Cheek, 1980). Through either guided sessions or self-constructed units, visualization allows individuals to recreate scenes with changed information or develop diagnostic information about the individual (Cheek, 1980).

When hypnosis and visual imagery are evoked as a therapy for an individual, the altered state of consciousness readily accepts all forms of information as being true (Hilgard, 1991). As the mind continues to process the incoming communication messages, again no conscious filtering mechanism takes place. All information is accepted as true, and immediately internalized into the deep structures as belief into the subconscious. When the individual is asked by the hypnotist to use this new information in moments of post-hypnosis it signals the conscious mind and cognitive activity. As the individual makes evaluative judgments and creates thoughts based on their beliefs (as induced by hypnosis), emotions arise and stimulate the biochemical reactions for immunotransmitters, neurohormones, and messenger molecules to connect with the autonomic nervous system. Once again, the hypothalamus-limbic system becomes readily activated and begins to diagnose the course of action according to the message suggestion. The mind has become the originator of physiological healing and wellness.

### Application of How Communication Affects Physiology: The Use of Affirmations

Self-talk and affirmations, have commonly been used in discussions of intrapersonal communication as central to understanding one's self-concept or sense of self. Many view self-talk as a reflection necessary to "philosophical and psychological explanations of the
processes of socialization (Berger & Metzger, 1984, p. 273). This fits well with the ideas expressed in the Theory of Symbolic Interaction because language symbols are socially constructed (Manis & Meltzer, 1978). It is an opportunity for our mind to decode the communication messages from others and find personal meaning. This behavior can be a potent discussion relating to the health and well-being of the individual.

Self-talk can be either positive or negative. When it is positive, it can enhance self-schemas and behavioral performance; in contrast, negative self-talk can confirm negative internal representations and beliefs and be destructive (Berger & Metzer, 1984). The following case study illustrates how quickly physiology can deteriorate when negative self-talk confirms negative beliefs:

"Mr. Casey, a sixty-four-year-old insurance salesman with a history of heavy smoking came to me for a routine physical examination. He had no symptoms of disease and felt perfectly well, but because of his smoking, I ordered a chest x-ray to be taken. It revealed a large lesion in the lower lobe of the left lung. Further testing disclosed that the lesion was consistent with a diagnosis of lung cancer. When Mr. Casey heard his diagnosis, however, his condition suddenly and rapidly deteriorated. Within three days he was coughing up blood, and in three weeks he developed a severe, uncontrollable cough and shortness of breath. He died from lung cancer one month later". (p. 70) --Deepak Chopra Creating Health (1991)

In this situation, the rapid progression of symptoms and death was observed directly after the diagnosis of cancer occurred. The patient appeared to die from the diagnosis as his body had been extremely strong prior to the routine physical examination. His downfall originated in his general schemas (of cancer and what cancer means for health) and self-schemas (how cancer related specifically to his health). The patient's schematic associations of cancer (i.e., cancer is bad, most people who contract cancer die from it, and cancer makes people sick) became incorporated into cognitive processing as his conscious mind was intentionally activated.

When individuals have intrapersonal communication, they look at their current self and compare it with a possible self or future self). The possible self includes "ideas of what people may become, what they would like to become, and what they are afraid to become" (Markus & Nurius, 1986). They are important in serving as a method of articulation and realization of what they want to avoid or accomplish; it can be an incentive or dissussion for behavior (Taylor & Fiske, 1993). When possible selves provide the incentive for a goal, the individual recruits appropriate self-schemas to create and rehearse the necessary actions to pursue the goal (Markus & Wurf, 1987). This forces the individual to incorporate self-knowledge (schemas) with other salient information necessary to bring about the goal. For example, if Mr. Casey was trying to beat the cancer, he would envision his possible self as healthy in the future. He would then conjure relevant thoughts and beliefs about cancer that would aid his ability to focus on the goal (high effectiveness of cancer treatments, overcoming the disease or a positive outlook for new life opportunities once cancer was in remission). Once the self has activated these internal representations, the conscious mind has become focused on them. It becomes intent on "incorporating conditions of one's own message and being aware of one's own awareness in any of these conditions" (Hikins, 1989, p. 39). In other words, the act of thinking about the internal representations becomes the object of intentionality and directing the conscious mind to become aware of the information within our thoughts.

Consciousness is necessary for self-awareness, and it is this awareness that directs intentionality (Sperry, 1987). When we intentionally think about the intrapersonal communication within our mind, we are producing a bi-directional pathway similar to what Hall and colleagues (1985) described for our bodies. Our intentionality signifies that we recognize self-messages and those messages are guiding or directing our conscious mind (Hikins, 1989). By recognizing the link between our thoughts and consciousness we can understand why self-talk is so important to the health of an individual; it stimulates our schemas and forces thought on those pieces of information. The more we access these schemas, the greater the chance it will become internalized as a belief (Eagly & Chaiken, 1993).

When self-talk enters the mind as a positive or negative belief, it minimizes or maximizes the effort necessary to deal with a health threat or condition. The more aware the individual is about their own health and information relating to their health, the greater the opportunity for the belief to be activated as new information enters sensory modalities. The sensory channels are very important for the use of affirmations.

Affirmations are one particular method of arriving at self-talk. They often involve a communication message that is continuously heard, read or both, by the individual. For example, golfers who perform affirmations before entering a senior-level competition (e.g., PGA or LPGA golf tournaments) have higher quality of practice, stronger performance during the tournament, and suppress stress easier (McCaffrey & Orlick, 1989). McCaffrey and Orlick (1989) conducted interviews with fourteen of the top men and women golfers to assess their playing strategies and success. Often, players could be overheard reciting or seen with a tape recorder playing their different mental preparation

strategies, such as "My practice is always with quality shots in mind" (golf practice, p. 259), "I have an optimal state in mind which is not too up and not too relaxed, only golf is on my mind, and feelings are on an even keel" (tournament playing affirmation, p. 264) and "I have everything to gain and nothing to lose" (stress strategy affirmation, p. 268). In each case, the individual using the affirmation is focused on the words and reinforcing the information. As the information is being either read and/or heard by the person, several different sensory modalities are being used. When individuals use more than one communication channel at a time, memory is improved and thoughts enhanced (Paivio, 1991). The use of additional channels, when combined with a person's preferred channel, also enhances meaning and understanding. Constant encounters with the message also make the message is viewed as truthful by the person, then conscious awareness will not find the information contained in the message as discrepant and it will flow directly to deep structures of the subconscious.

The impact of conscious awareness eventually leads to cognitive processing and involvement of the cerebral cortex for physiological action. Biochemical processes are again stimulated and the hypothalamus acknowledges production of neurohormones and neuropeptides to facilitate communication between different body systems and the mind.

#### Chapter 9

## SUMMARY AND CONCLUSIONS:

#### THE FUTURE OF COMMUNICATION AS HEALING THERAPY

Most people do not think about their conscious or subconscious mind and how it affects them in everyday life. In this sense, we engage in mindlessness or "when one is not especially alert, thoughtful, or creative" (Fiske & Taylor, 1993, p.284). Mindlessness does not mean we possess no conscious awareness, but it does suggest that we do not have high conscious awareness in many situations because they are routine or organized in the subconscious. When we are mindless, we no longer pay attention to individual components of an object or process; everything appears to blend together. Langer (1978) demonstrated that when a person overlearns a task, they become less creative and less able to modify their performance. This translates both into our schemas as well as other information that transcends our sensory channels. As our schemas are relatively enduring (especially self-schemas), we take most information for granted and do not focus on specific parts of the message. (Eagly & Chaiken, 1993). The routinization becomes problematic in health care settings when the self receives information through sensory, but doesn't allow the conscious mind to intentionally elaborate on it. For example, when patients have consultations with their physicians after a medical exam, patients often hear "You look fine and seem healthy." Usually, this is only the beginning of the message for the doctor, but the patient, recognizing that similar messages will follow, ignores the rest of the information. The patient does not realize that the physician may be giving directions to improve body health, dealing with stress, or commenting on areas of health

While this framework is only the beginning to understand the complex nature of how communication directly affect our body, specific forms of communication (i.e., hypnosis and affirmations) have already been shown as placebo therapy. These methods work well because they alleviate mindlessness, the conflict of the patient searching for congruent messages, and saves cognitive energy from reduced time spent in processing. Even though the manner in which patients receive the health suggestions may be different (subconscious entry for hypnosis, conscious for placebo and affirmations), they provide the impetus for beginning the series of internal processes necessary for the communication to directly affect physiological health processes.



## Depth of Relaxation

# Figure 8. Proposed Impact of Health Message from General Awareness to Subconscious Awareness through Application of Affirmations, Hypnosis, and Physician Talk.

Future research in this area should explain different contexts in which these mind-

body applications work. Although previous research shows that these treatments have

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been effective under a variety of conditions, perhaps some are better in assisting a patient based on severity of the health condition, amount of attention required for the process to work, and alternative treatments available. A second area of important research on this topic would involve discussion of how medical language or health suggestions affect the state of a person's conscious awareness. Are there particular words or phrases that physicians and other health care personnel should avoid because of their possible interpretations and meaning by patients? A third area of research would extend the number of applications shown to extend mind-body communication. While hypnosis, placebo effects, and affirmations have strong research typing to clinical setting, other types of mind-body interventions require this rigorous research process. As new medical treatments and interventions are developed, it will promote the ideals of mind-body communication to both the general public as well as medical professionals. These would provide valuable insight on how individuals are receiving and making use of health communication messages.

Several issues in conventional medicine also need to be addressed. First, physicians and other health care personnel must recognize the importance of neurolinguistic programming patterns (i.e., individuals' preferred sensory modes of processing). They need to understand that their patients have preferred sensory channels for receiving information. It should be incorporated into physician and nurse training programs to ensure that entire messages are being accurately. In addition, medical professionals should acknowledge that filtering mechanisms will be different for each patient. If physicians present information in both the preferred and secondary channels, chances improve considerably for patients to remember and incorporate the information.

A second area of concern is the medical interview itself. When patients visit with their doctors, the examination and adjunct conversation has become routine. This is substantiated even by the language we use: "routine exam" or "routine visit" (Ley, 1988). While the interaction may be common, the outcome is very personal. If physicians were to recognize and change how they interviewed patients (i.e., the questions they ask, the order in which questions are asked, time guidelines for a medical visit, amount of acceptable talk time for physician and patient), patient information reception and conscious awareness of the material would significantly improve. Patients would be forced to think about the medical information and have that information direct intentionality of conscious awareness. To this extent, it strengthens the physician-patient relationship because communication skills become central to the healing processes. This relationship improves understanding and meaning during the interaction. It might also improve patient satisfaction as patients want to be seen by physicians that will meet their individual needs (Ley, 1988).

Finally, mind-body communication efforts require medical professionals to review their conventional manner of handling patient therapy and care. Mind-body medicine is holistic. It can be used in conjunction with other prescribed therapies. In general, physicians need to realize that pharmacological agents, especially antimicrobials, need to be used sparingly as common bacteria continue to change form and threaten world-wide epidemics (Benson, 1997). According to Dr. Cohen of the Center for Disease Control, "we already have some untreatable infections and some bacterial strains are just an antibiotic away from being untreatable" (p. A-18). To this extent, mind-body medicine

is inexpensive and possible. Mind-body doesn't encourage bacterial resistance and also reduces side effects common to many medications.

Patients already possess the materials to influence their body; the key is teaching recognition and mastery of the complex processes affecting the mind and body. It involves integration of external and internal messages by neuro-linguistic programming and the use of the conscious and subconscious mind to further the desired health goals. New research in this field will provide substantial insight and better understanding of 'how' communication can promote personal health and healing.

In recent years, researchers have recognized that psychosocial influences and emotional states play a major role in determining outcome of patient health and disease. These include bereavement (Bartrop, Luckhurst, lazarus, & Kiloh, 1977); affect and breast cancer (Spiegal, Bloom, Kraemer, & Gottheil, 1989); coronary disease (Dembroski & Costa, Jr., 1987; Jenkins, 1971; Kneip, Delamater, Ismond, Milford, Salvia, & Schwartz, 1993); influences of dispositional optimism (Leedham, Meyerowitz, Muirhead, & Frist, 1995; Scheier & Carver, 1989; Scheier, Matthews, Owens, Magovern, Sr., Lefebvre, Abbott, & Carver, 1989); effects of hostility and disease (Adams, 1994; Kiecolt-Glaser, Kennedy, Malkoff, Fisher, Speicher, & Glaser, 1988); gastrointestinal tract disorders (Blanchard, Radnitz, Schwarz, Neff. & Gerardi, 1987); well-being and skin disorders (Koo, 1995); social networks and mortality (Berkman & Syme, 1979); and stress (Cohen, Tyrell, & Smith, 1991; Engel, 1971; Johannsson, Laakso, Peder, & Karonen, 1988; Kiecolt-Glaser, & Glaser, 1986). Hard sciences researchers have made progress in understanding the biological regulatory pathways responsible for psychoneuroimmunology, the study of how the mind stimulates immunology, and psychoneuroendocrinology, the study of how the mind affects the

endocrine system, concluding that an extensive network of cellular communication does exist (Ader, 1981, 1985; Blalock, Harbour-McMenamin, & Smith, 1985; Bloom, 1985; Kiecolt-Glaser & Glaser, 1995; Manuck, Marsland, Kaplan, & Williams, 1995; McDaniel, 1992; Pert, Ruff, Weber, & Herkenham, 1985; Reichlin, 1993).

While effort has been spent on explaining the human body, communication scholars have attempted to operationalize how communication affects the medical setting. This has included: use of power in compliance-gaining situations, affective ties between patient and provider, use of report and rapport talk, communication relating to medical decision-making, politeness and accommodation strategies, patient satisfaction, patient compliance, patient and physician role and communication strategy expectations, and assessing the quality of medical interaction (Buller & Buller, 1987; Burgoon, Parrott, Burgoon, Coker, Pfau, & Birk, 1991; Cecil, 1996; Kritchevsky & Simmons, 1991;Robbins & Wolf, 1988; Roter, Hall, & Rand, 1981; Staudenmayer & Lefkowitz, 1981; Street, 1991).

Although each segment of a medical encounter is important and worthy of communication research efforts, little time has been spent on how communication directly affects physiological health and subjective well-being. What the physician says during the medical interaction, especially in the diagnosis of an illness (how the long the illness will last, what symptoms a patient is likely to experience, and preconceived notions by that patient), appear to strongly influence the patient's actual health outcomes, and experience of health or disease. It is important to further this knowledge for both theoretical explanation as well as practical application in the medical field. This thesis offers a first step in what truly might be called "health communication".

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