

Adaptation: A Feedback Process

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NURSING PRACTITIONERS, researchers, scientists and educators are continually trying to establish a body of knowledge for the nursing profession. One area receiving increasing attention in this search for a body of knowledge is adaptation. As the link between health and adaptability becomes more evident, nursing intervention directed toward assisting the client to adapt to an ever-changing environment may become a unique theoretical framework for nursing. A new awareness, a clarified consciousness regarding the relationships between and among the individual person, the person's environment, nursing's involvement with the person and the individual's adaptation or health are imperative.

THEORIES AND THE CONCEPT OF ADAPTATION

Since the 1930s there has been a wealth of publications regarding theories and concepts of change, stress, coping and

adaptation. This information has been used by professional nurses who have recognized the potential for each concept in the daily lives of individuals.

The words *stress*, *adaptation* and *coping* have various, unclear meanings. For most persons, the word *stress* implies pressure or load which is being experienced at a given time. *Adaptation* and *coping* are frequently used to describe adjustment or acceptance behaviors. Similar usages are found in the literature, with some authors giving a separate interpretation to each of the two words while others use coping and adaptation synonymously.

Change

Society exists in an environment of rapid change. Toffler describes this environment as "a stream of change so accelerated that it influences our sense of time, revolutionizes the tempo of daily life, and affects the very way we 'feel' about the world around us."^{1(p17)} Meyer has compiled a chart of important events in a person's life which evoked or are associated with some adaptive or coping behavior on the part of the individual. These events may be socially desirable or undesirable and include such occurrences as change in residence, entry into school, graduation or dropping out, changes in employment and dates of important phenomena such as births or deaths in the family.^{2(p52-56)} These changes require an alteration from the existing steady state and disrupt the life patterns of the individual.^{3(p825)} It is important to note that change per se, not the desirable or undesirable aspects, should be assessed for accurate evaluation of stressfulness on the individual.

The state of health or disease for indi-

viduals in our society is based upon the ability to adapt to changes in life events. The health or disease state is synonymous with success or failure experienced by the individual in the effort to respond adaptively to environmental challenge.^{4(p344-368)}

The relationship between the inability to respond favorably to change and the onset of illness is discussed throughout scientific nursing and medical literature. Good health habits, the possession of social assets, identified value system, personal

Good health habits, the possession of social assets, identified value system, personal goals and psychological well-being are a few of the balancing factors that assist individuals to withstand high levels of change in their lives.

goals and psychological well-being are but a few of the balancing factors that assist individuals to withstand high levels of change in their lives, thus diminishing the possibility of illness, disease or injury.^{5(p71), 6(p345)} The quality and quantity of human life are influenced by the universal characteristics of human nature; the transitory conditions which humans encounter; and the human ability to determine need priorities, identify options, decide upon a course of action and accept the decision regardless of the outcome.^{4(p259)}

Stress

The most classic definition of stress is Selye's "nonspecific response of the body to any demand made upon it." Selye's theories regarding the need for stress to

maintain life are widely accepted.^{7(p13)} If the nonspecific response increases the need for readjustment, the demands placed on the body may be excessive and damaging.

Selye's concepts are centered around the General Adaptation Syndrome and describe the body's physiological response to stressors. Stressors may arise from sorrowful or joyful situations which present in varying degrees of intensity, thus requiring varying degrees of response for readjustment. When faced with these stressful situations the individual can respond through the neurological, immunological or phagocytic, and hormonal mechanism.^{8(p39)}

Since the origin of stressors varies individually, as do the responses, it has been difficult for health professionals to determine the relationships between the phenomenon known as "stress" and the concept of illness. Levi proposed that stress could be measured by identifying and evaluating the cause of the stress; by studying the behavioral reactions of a homogeneous group to different stressors; and by identifying commonalities in descriptions of feelings indexed by stressors in an interview or questionnaire (this is done through projective tests and stress reaction or response measurements). The length of time during which the stress responses persist after the initial impact is also uncertain and varies among and within individuals. This individual response factor presents another hurdle in evaluating the impact of stressors.⁹

Adaptation

The attention that has been given to the adaptation process equals the importance

of adaptation to human existence in a changing world. Murray and Zentner equated adaptation to health. They define health as a "purposeful, adaptive response physically, mentally, emotionally and socially to internal and external stimuli in order to maintain stability and comfort."^{10(p7)}

The dynamic but finite quality of adaptation is related to the aspect of change which is inherent in adaptation. Murphy viewed change as "constant and universal." She states that humans are continuously "faced with the unchanging law that change will occur"—change within the human environment, between humans and the environment, among humans and within humans themselves.^{11(p46)}

Toffler warns about the limits to adaptability:

When we alter our life style, when we make and break relationships with things, places or people . . . we adapt; we live. Yet there are finite boundaries; we are not infinitely resilient. Each adaptive reaction exacts a price, wearing down the body's machinery bit by minute bit. . . . Thus man remains a biosystem with a limited capacity for change.^{1(p324)}

Mechanic referred to the importance of viewing adaptation as a transactive process between people and their life situation. The process of adaptation depends on the degree of fitness between the skills and capacities of individuals and the type of challenges with which they are confronted. To the extent that capacities are fitted well to the challenges, the flow of events is routine and ordinary.¹²

Lazarus states that as environmental change is perceived, the individual cognitively appraises the situation to determine the significance of the change. This

54 appraisal will determine the quality and quantity of the emotional stress state which will occur as a result of the environmental change. Coping methods, or self-regulatory processes as Lazarus calls them, as well as cognitive appraisal, are key mediators of the individual's stress reaction. Psychological and concomitant physiological response to threat by humans is neither uniform nor simple. The stimulus must first be perceived, then interpreted in the context of prior experience, and finally if read as a threat it is still to be confronted by psychological barriers known as coping methods. Lazarus suggests that the key mediator of Selye's General Adaptation Syndrome may be psychological. The pituitary cortical response to a stressor may require that the individual first recognize the threat and cognitively appraise the potential impact.^{13(p146)}

Coping

Coping refers to efforts to master conditions of harm, threat or challenge. Lazarus defines coping mechanisms as "those direct active tendencies aimed at eliminating or minimizing a stressful event which are task and reality oriented."^{13(p8)}

Freud refers to defense mechanisms as a unifying process rather than discrete entities, and identifies five of their most important properties: defenses are a major means of managing instinct and effort; they are unconscious; they are discrete from one another; although after the hallmark of major psychiatric syndromes, defenses are dynamic and reversible, and they could be adaptive as well as pathological.^{14(p77)}

Vaillant defines the "ego mechanisms of

defense" as "unconscious and sometimes pathological, mental processes that the ego uses to resolve conflict among the four lodestones of our inner life: instincts, the real world, important people and the internalized prohibitions presented by our consciences and our culture."^{14(p75-90)}

Nursing Management and Adaptation

In Rogers's view, adaptation means the promotion of harmony between humans and the environment with the ultimate goal for the individual and nursing being the achievement of the highest state of health for the individual. Nursing strategy must consider the wholeness of humans and "derives its safety and effectiveness from a unified concept of human functioning."^{15(p224)}

The importance of this statement for nursing cannot be overemphasized or overamplified; here Rogers is advising what system science has taught—that all known factors which concern an event or a process must be located and specified, and only in that way can the investigation be secure in the correctness of conclusions. For nursing, the caution denotes the need for a complete perception of unitary humans utilizing three principles of homeodynamics. These principles are named complementarity, helicy and resonance, and clearly support the concept adaptation in that each of the three terms postulates humans' inevitable interrelationships with the environment. *Complementarity* is "the continuous, mutual, simultaneous interaction process between human and environmental fields."^{16(p8)} *Helicy* refers to the unitary nature of the human-environment relationship by involving

rhythmicity and negentropic evaluation as components of the innovative changes that take place in a spiral fashion. *Resonancy* refers to the fact that changes in the pattern and organization of the human field and the environmental field are propagated by waves.

The Roy Adaptation Model designates humans and their interaction with the environment as the units of analysis of nursing assessment. Nursing intervention takes the form of manipulating parts of the system of humans or the environment. The four subsystems of humans are delineated as physiological needs, self-concepts, role function and interdependence.¹⁷

Rogers and Roy affirm the wholeness of humans; that humans are open systems with a pattern and regularity; that they are tied to the environment and that the total human—physiological, psychological, sociocultural and developmental—must be considered. The two nurse scientists acknowledge that the nurse can provide support at various levels and at all places on the continuum or spiral in the adaptive and readaptive process of living. There is agreement here about the meaning of the concept and nature of humans and human adaptation, and the concept and nature of nursing. It is this feature of the scientific endeavor—achieving agreement on the meaning of terms that is “more important than the actual form of the definition.”^{18(p48)}

This applies not only to nurse scientists but to the other scientists who have been discussed above. Though the terminology and approach to adaptation vary with these scientists, there is unification in the thought that humans are in constant interaction with a changing environment. This

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environment precipitates stimuli or stressors, which necessitates activity or response on the part of the individual.

ASSUMPTIONS AND VALUE ORIENTATION OF THE CONCEPT ADAPTATION

The following are assumptions basic to the process of adaptation (see Appendix for definitions of terms).

1. Adaptation is necessary for all persons, at all times, in varying degrees.
2. The mind controls the body.
3. The perception of the extent to which a particular stimulus or life event is stressful is idiosyncratic, differing from individual to individual.
4. Similar stimuli, both quantitative and qualitative, will elicit different responses in the same individual.
5. Qualitatively different stimuli of equal toxicity do not necessarily elicit the same syndrome in different people.
6. The value system of the individual has an influence on adaptation to stimuli.
7. Clients' personal endeavors are requisite for their own adaptation.
8. The value system of the nurse will

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affect the adaptation process of the client.

9. Nurses and other health personnel are uncertain of their role and responsibility in the client's adaptation to stimuli.

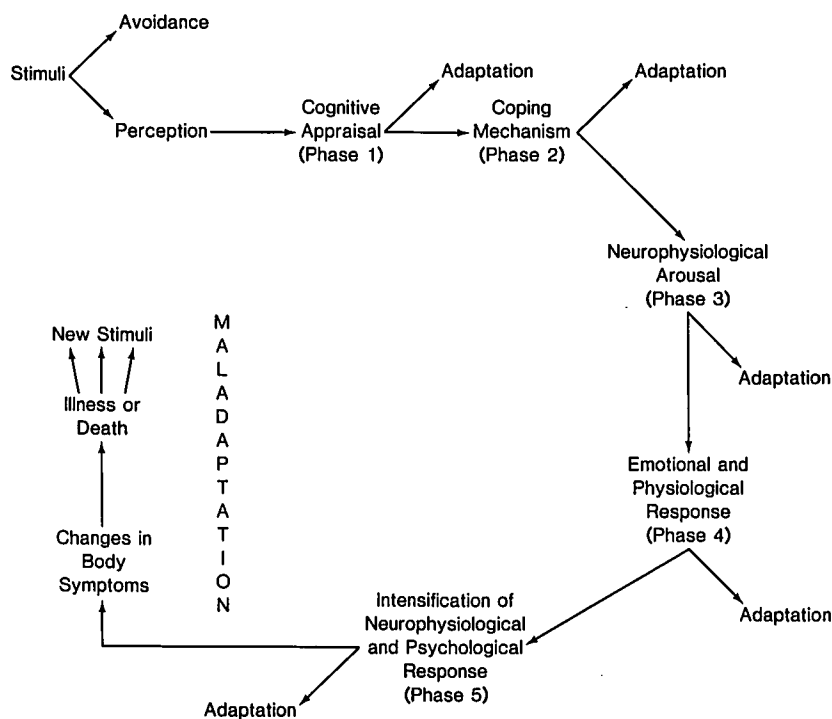
ADAPTATION—A CONCEPT FOR NURSING

The process of adaptation is viewed as a feedback system with five possible phases. (See Figure 1.) Following perception of a stimulus, in the first phase the stimulus, which may be an internal or external variable, is **appraised** or evaluated within the cerebral cortex for its magnitude and potential impact on the individual's inter-

nal and external environment. If the stimulus can be analyzed and resolved **cognitively**, adaptation occurs at this initial phase. If the stimulus is perceived as threatening it is then acknowledged as a stressor requiring further activity to achieve a satisfactory degree of resolution.

The second phase incorporates the **coping mechanisms** of the individual. The manner in which the individual reacts intuitively and spontaneously to stimuli evolves over a period of time. The pattern viewed as successful to the individual may not consistently lead to adaptation; nevertheless, the tried and tested behavior will usually be implemented precipitously after a stressor is perceived. The limbic

FIGURE 1. A FEEDBACK PROCESS OF ADAPTATION



system, which is more complex than the diencephalon, is believed to be the portion of the brain which may trigger the responses and behaviors classified as defense mechanisms. The limbic system is frequently referred to as the visceral brain. It is considered an "old part of the brain in terms of evolution and involves the regulation of basic biological or visceral function."^{19(p48)}

The coping mechanisms designated within this phase of the model include the stages or levels identified by Vaillant in his report of a 32-year study on adaptation. Vaillant selected 18 mechanisms which he organized into four levels. The behaviors which denote these mechanisms are open to interpretation.

1. Level I, Psychotic Mechanisms, includes denial, distortion and delusional projection. These mechanisms may be observed in children prior to age five and are also identifiable in the dreams and fantasy lives of adults. Outside this realm, the consistent use of these three mechanisms would denote nonacceptable behaviors and require further demands upon the body for resolution.
2. Level II, Immature Mechanisms, includes fantasy, projection, hypochondriasis, passive-aggressive behavior and acting-out. These mechanisms are commonly seen in children and adolescents as well as in adults with physical and depressive illness and addiction. Behaviors resulting from these mechanisms are not socially acceptable.
3. Level III, Neurotic Mechanisms, includes intellectualization, repression, reaction-formation, displacement and dissociation. These mechanisms are commonly used in children and adults as neurotic hang-ups or defenses. Those patterns that are established as frequently used methods for responding to stimuli can readily be converted to more effective mechanisms through professional guidance and counseling or through individual introspection and analysis of behavior.
4. Level IV, Mature Mechanisms, includes altruism, humor, suppression, anticipation and sublimation. These mechanisms commonly facilitate adaptation for individuals from adolescence to old age.^{14(p383-386)}

Stimuli which elicit a mature response are resolved within this phase, thus facilitating adaptation. Stimuli or stressors which are not resolved precipitate a neurophysiological arousal. This arousal may be the result of a major stressor which does not trigger or initiate a coping mechanism or the mechanisms from Level I, II or III having been utilized unsuccessfully.

The third phase is **neurophysiological arousal** which occurs when the hypothalamus alerts the autonomic nervous system and the endocrine system to an invading stressor. Impulses received by the autonomic system are transmitted by reflex back to the organs, thus initiating a complex series of neurophysiological and biochemical changes in the body. The sympathetic nervous system is responsible for the changes occurring in the body—changes which are indicative of neurophysiological arousal. The body is prepared either to defend itself against the stressor or to resolve and incorporate the stressor into the body system. If adapta-

tion does not occur during this arousal phase, the body responds in many varying ways.

The fourth phase incorporates the **emotional and physiological responses** of the body to the neurophysiological arousal. These responses include sympathetic responses, endocrine responses, immune responses and emotional responses. Within the fourth phase the results of sympathetic nervous activity are clearly observable. The occurrence of adaptation during this phase initiates the parasympathetic response, inducing a state of relaxation. If the body has not adapted to a stimulus-stressor at this time, it is obvious that the body will be called upon to provide more intense efforts to solve the problem.

The fifth phase includes **intensification of neurophysiological and psychological response**. Body responses to stimuli from the sympathetic and parasympathetic systems are indicative of the efforts exerted. It is highly desirable for adaptation to occur during this phase since the failure of adaptive response will initiate changes in body symptoms heralding maladaptation or illness. Such changes precipitate new stressors for the body provided death does not occur.

The reticular system, a "column of cells" occupying the central portions of the

mid-brain, is the communicator between all cognitive and neurophysiological activities. This system is viewed as the integration between cortical and subcortical functions. Adaptation to stimuli occurring at any of the five phases is announced to the major regulating components of the body. The reticular system is viewed as a constant stimulus to the brain, sending messages that are perceived as relevant and rejecting those that are irrelevant. This system also controls, tempers and refines muscular activity and contributes to high mental processes through focusing of attention, introspection and reasoning.^{19(p51)}

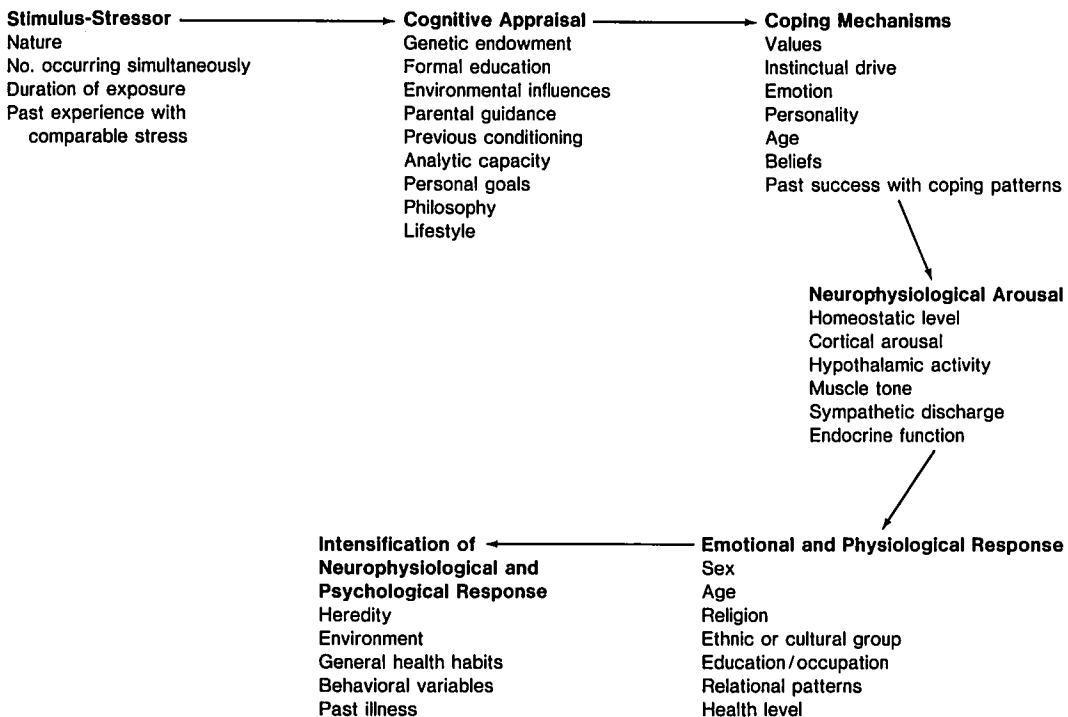
ANTECEDENTS AND CONSEQUENCES

Each phase of the adaptive process is governed by physiological, psychological and sociocultural variables which provide the basis for stimuli perception, interpretation and subsequent holistic unique response. Some of these antecedents and consequences within the process of adaptation are shown in Figure 2. The variables are identified for each possible phase of adaptation.

These variables should provide some insight into the type of data that must be obtained from the client to evaluate the adaptive process, and are the basis for observable empirical and clinical referents. Many of the variables are applicable to each of the phases; nevertheless, these are perceived as the major variables which are incorporated in the adaptive potential for each phase. Each phase of the feedback model for adaptation is proposed as a

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**FIGURE 2. ANTECEDENTS AND CONSEQUENCES
WITHIN THE PROCESS OF ADAPTATION**



potential operation through which stimuli are resolved and incorporated to increase the individual's utility, performance and pleasure within the chosen environment.

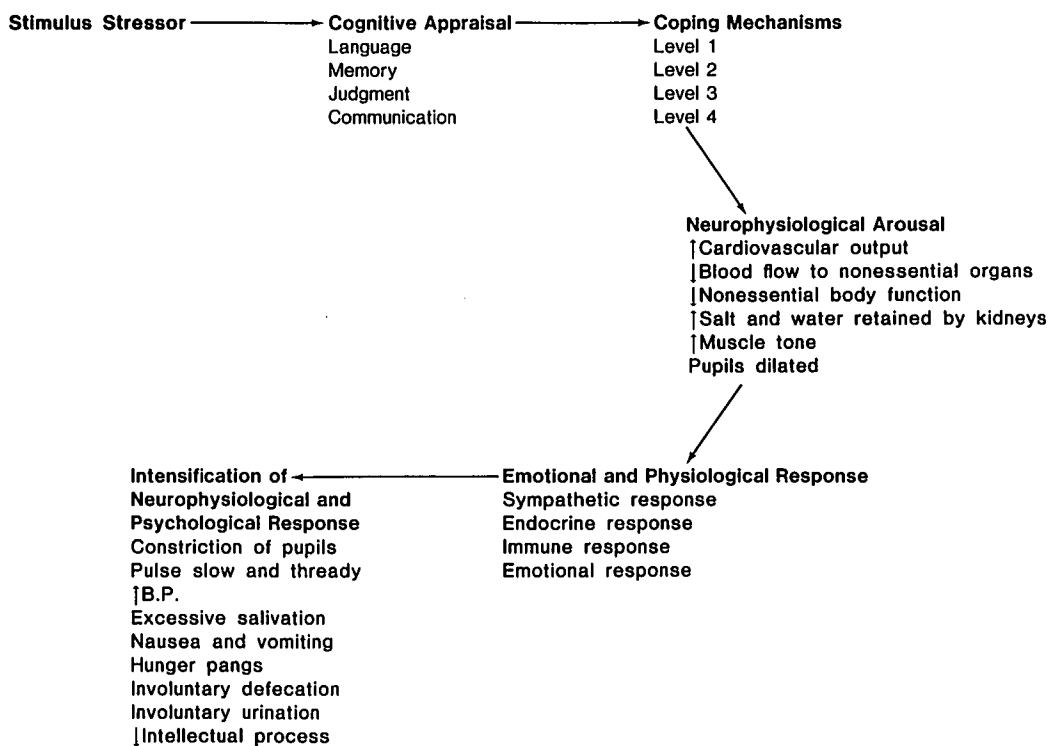
EMPIRICAL AND CLINICAL REFERENTS

Empirical and clinical referents, which are measurable and verifiable in reality for each phase, are identified in Figure 3. Through testing of the model it is anticipated that additions and/or deletions will be made to this beginning list of referents. Clinical referents which are indicative of sympathetic, endocrine, immune and emotional responses are listed in Table 1.

Failure of adaptation to occur at any of the five phases results in illness or maladaptation. Prior to a diagnosed illness, nonspecific signs and symptoms are detectable, which may indicate to the nurse that the client is in a state of maladaptation. These include complaints of pain, increased corticoids, increased hydrochloric acid in the stomach, increased eosinophils, allergic type responses such as sneezing and rhinorrhea, and decreased kidney function.

Diagnosed illnesses which are frequently classified as psychosomatic in origin include peptic ulcers, ulcerative colitis, asthma, dermatosis, angioneurotic edema, hay fever, arthritis, Raynaud's disease,

FIGURE 3. CLINICAL AND EMPIRICAL REFERENTS FOR THE PROCESS OF ADAPTATION



hypertension, hyperthyroidism, amenorrhea, enuresis, paroxysmal tachycardia, migraine, impotence, insomnia, alcoholism and cancer.^{19(p7),20}

TYPES OF RELATIONSHIPS BETWEEN THE CONCEPTS OF THE FEEDBACK PROCESS

In order to develop systematic explanations of phenomena, relationships between theoretical concepts and empirical referents should be investigated. Hardy declared that, "although the identification of causal relationships in the health sciences is the reason for considerable

success in disease prevention, relationships that are stochastic and relationships that are conditional are valuable in the prediction and control of disease-related events and hence should be identified rather than ignored."^{21(p102)} Adaptation and its referents, which have been shown in Figures 1 to 3, may be examined for their relationships using the types given by Hardy. These types are: symmetrical, asymmetrical, causal, probabilistic, time order, concurrent, sufficient, conditional and necessary.

Using the first two concepts in the feedback process of adaptation—perception of stimuli and cognitive appraisal—an

Table 1
Clinical Referents for Emotional
and Physiological Responses

Sympathetic Response	↑Respiration
Dilated pupils	↑Glucose
↓Gastrointestinal function	↑Electrolytes
Tight throat	↑Temperature
Cool-perspiring hands	
Locked diaphragm	Immune Response
Rigid pelvis	Corticosteroids
Numb genitals	Imbalance of immune factors
Tight anus	
↓Pulse	Emotional Response
Tense neck	Fear
Shallow respirations	Rage
Tense upper back	Hate
Flexor muscles in legs contracted	Euphoria
Extensor muscles in legs inhibited	Joy
	Relief
	Love
Endocrine Response	Passion
↑Blood pressure	Hunger
↑Heart rate	Sleep pattern alterations
↑B.M.R.	Eating pattern alterations

explanation of relationships is shown. A symmetrical relationship is found in the following statement: if perception of stimuli exists then cognitive appraisal of degree of threat exists; if cognitive appraisal of degree of threat then perception of stimuli. Another meaning identifies a causal relationship: if perception of stimuli then *always* cognitive appraisal of degree of threat. Stating this in another manner denotes a sufficient relationship: if perception of stimuli then cognitive appraisal of degree of threat *regardless of anything else*. A concurrent relationship exists between these two concepts: if perception of stimuli then *also* cognitive appraisal of degree of threat. Lastly, when the statement is altered to read in this manner the relationship is a necessary one: if perception of stimuli *and only if* perception of stimuli

then cognitive appraisal of degree of threat.

The following cases may help clarify the analysis of adaptation. The first case offers a model for adaptation. The second case is the same subject with a multitude of unresolved stressors depicting maladaptation.

Adaptive Case

The subject is a 25-year-old insurance adjuster who has been divorced for one year after a first marriage of four years. She has no children, has a bachelor of science degree in home economics, owns a car, and has hospitalization and medical coverage through her employer's plan. She is Caucasian and a Catholic. She has a boyfriend who is married but is planning to divorce within a short period of time.

Lifestyle Determinants: A wanted child, lived overseas when father in army. Has one living brother four years younger than she. Mother described as strong person. Father died of heart attack when she was ten. Mother remarried four years later. Physical growth and development normal. Family went to church regularly and seemed to be a happy group generally. Family lives across the country from subject.

Lifestyle: Within the next three months boyfriend will be divorced and he and subject will marry. Subject would like to have two children and keep her position with the insurance company. Believes she is smart, can be assertive and aggressive, and will be able to combine a career with marriage and motherhood. At the present time she is self-sufficient. Thinks the world is an O.K. place and says people generally

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can be trusted. Feels stealing is wrong unless food is needed and money is lacking; totally against child abuse; thinks adultery is probably wrong but has done it herself; feels people should work and support themselves.

Tasks: Believes work is very important and desires financial security. Likes sex and has sexual relationship with married boyfriend. Has close relationship with girlfriend, boyfriend and mother—they are her best friends. She is able to verbalize her ideas and beliefs with them. Discusses problems with the appropriate person, and these three persons assist her in decision making; she believes her relationship with each of them is a reciprocal one. She takes at least one class or course each year for personal and professional fulfillment and upgrading. Goes to church every Sunday because she believes it is the right thing to do. Votes in every election. Belongs to a Women's Club and is a member of a health club. She plays tennis fairly regularly.

Coping Mechanisms: Uses rationalization and denial to an acceptable degree. Plans for the future using short- and long-term goals. Is able to postpone immediate gratifications if necessary or desirable. Uses tennis and activities at health club to achieve a desired level of health and as recreation. Is able to discuss fears, worries, problems with those she respects.

Physical Assessment and Review of Systems: Is allergic to penicillin; weight is normal for height. Sleeping and eating patterns are regular and sufficient to her needs. Does not take medications other than birth control pills. Drinks alcoholic beverages very infrequently; does not

smoke and drinks very little coffee or tea, but does take one to two soft drinks each day. Wears glasses for reading. The review of systems is negative.

Mental Status Examination: Is carefully and appropriately dressed. Has good posture and appropriately expressive face and voice. Is logical, oriented, alert and above-average intelligence. Possesses insight and good judgment.

Maladaptive Case

The subject is a 25-year-old secretary-typist who has been divorced for one year after a first marriage of four years. She has no children, has a bachelor of science degree in home economics and owns a car. She is Caucasian and a Catholic. The subject has hospitalization and some medical coverage through her employer's plan, but does not have coverage for psychotherapy on outpatient basis.

Complaints: Feels tense, nervous, hassled. Has episodes of shakiness, tension, sweating, heart palpitations two to three times each week and feels overwhelmed. Has problems with work supervisors and boyfriend who is married and does not appear to be getting a divorce. She does not know what to do and has not tried anything to help herself, just cries. Is able to go to work and function.

Lifestyle: Does not know what to expect in next five to 15 years. Has no further educational goals but would like to get a better job. Does not like home economics field. Would like to get married and have a "couple of kids." Believes the best situation for her would be to be wealthy, happily married with two children and have a good job. Believes she is smart, can

be aggressive and is a selfish person. Says she is too heavy. Wants to become self-sufficient. Thinks the world is a neutral-hostile place and says people can never be trusted. Feels stealing is wrong unless food is needed and money is lacking; totally against child abuse; thinks adultery is probably wrong but has done it herself; feels people should work and support themselves.

Tasks: Believes work is very important; desires financial security. Likes sex and has sexual relationship with married boyfriend. Married because she was pregnant, then miscarried at two and one-half months. Has close relations with girlfriend, boyfriend and mother—they are her only friends. Her girlfriend told her to go to a clinic for help and she did go. Subject believes her boyfriend is the cause of all her problems; she cannot tell him how she feels and does not know where she stands with him. Does not do anything with her spare time except wait for boyfriend to call or may do something with girlfriend who is also divorced. Has not gone to church in past three months, but went regularly before that because it was the right thing to do. Did not vote in last election.

Coping Mechanisms: If she gets "upset" she sits and cries or gets depressed. Recently dreamt her boyfriend left her. Feels way to improve current situation is to "have more control over my life."

Physical Assessment and Review of Systems: Had gallbladder attack one year ago; put on bland diet but no medications. Had abortion (illegal) at age 18 and miscarriage at age 20. Had spinal meningitis at three years. Is allergic to penicillin. Is currently sleeping poorly. Has difficulty

getting to sleep; wakes early and cannot get back to sleep. This occurs one to three times each week. Has seen M.D. and is on Etrafon-Forte (4-25) i h.s. Takes aspirin for tension headaches and takes birth control pills. Has smoked marijuana on occasion. Drinks on weekends when she goes to bars with boyfriend. Drinks very little coffee or tea; normally takes one or two soft drinks each day. "Heart pounds" when anxious. Has cough (smokes two packs of cigarettes each day); has frequent URI. Has anorexia alternating with excessive appetite; has irregular eating habits and has had "nervous stomach for years." Wears glasses for reading.

Mental Status Examination: Is carefully dressed, wears heavy eye make-up and has very long polished finger nails. Has slightly slouched posture. Is tearful at intervals, cooperative. Facial expression is apprehensive, voice expressive. Has labile affective state. Verbal content reveals sadness, fear. Mood fluctuates between depression and anxiety each day. Has logical sentences and organized ideas. Is oriented and has good memory. Is alert and has average or above-average intelligence. Insight—has some knowledge of what problems are, usually faulty judgment and pattern of poor decisions in past. Perception—is uncertain about what she is really like; knows she wants to have more control of her life. Is uncertain as to how others really see her.

TESTING

The value and efficacy of the feedback process of adaptation can be clarified through clinical nursing practice and nurs-

Historical studies to determine the process of adaptation through selected eras of our society would provide some insight into the evolution of current conditions in the environment and the adaptive patterns which individuals used to meet the existing challenge.

ing research. The three major methods of research—historical, descriptive and experimental—can each be employed to test the model. Historical studies to determine the process of adaptation through selected eras of our society would provide some insight into the evolution of current conditions in the environment and the adaptive patterns which individuals used to meet the existing challenge. Within the descriptive method, an exploratory, phenomeno-

logical approach could be used in answering the following types of questions. What are the common elements in the daily experiences of adaptation? When neurophysiological arousal occurs within the feedback process of adaptation, how frequently does adaptation occur? The experimental method may be directed at identifying response patterns to stimuli controlled for type, amount and frequency. The stimuli could be directed toward samples varied by age, sex and race.

The ability to adapt to the ever-changing environment is requisite to life, but the degree to which individuals are able to incorporate change into the maturation process and day-to-day living varies. Knowledge of adaptability will provide nurses with data to evaluate clients' status of adaptability, or their health status.

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Appendix

Definitions of Terms

Following are definitions for key words used in the concept analysis of adaptation. Other words or terms which are not defined will maintain the common usage as interpreted by the reader.

Adaptation—those constant, positive alterations which individuals make in their patterns of interaction to stimuli within the environment. These alterations perpetuate the survival of the individual and increase the individual's utility, performance and pleasure within the chosen environment.

Maladaptation—alterations that the individual makes to internal and external stimuli; these alterations result in illness or a state of disharmony for the individual and the environment.

Stimuli—factors, events or variables arising inside and/or outside the body which constitute a change from the usual, thus necessitating some degree of response from the individual.

Stressor—a stress-producing factor determined as such by the cerebral cortex during the analysis of stimuli.

Stress—the nonspecific responses of the body to any demands made upon it; these responses can be associated with pleasant or unpleasant experiences.^{8(p39)}

Holistic—the inextricable interaction be-

tween the person and the psychosocial environment. Mind and body function as an integrated unit including physical, psychological and spiritual components.^{19(p11)}

Health—a purposeful, adaptative response (physically, mentally, emotionally and socially) to internal and external stimuli in order to maintain stability and comfort.^{10(p7)}

Illness—a disturbed adaptive response to internal and external stimuli resulting in disequilibrium and inability to use the usual health-promoting resources.^{10(p7)}

External Variables—changes or alterations that occur outside the body and may be physical, biological, social or cultural in nature.

Internal Variables—include personal structural characteristics, psychological processes, physical growth and development, body repair mechanisms and resulting behavior.

Cognitive Appraisal—knowledge from personal views or experiences which provides a basis for estimating value.

Coping Mechanisms—conscious or unconscious methods used by the individual to eliminate, minimize or incorporate a stimulus or event.