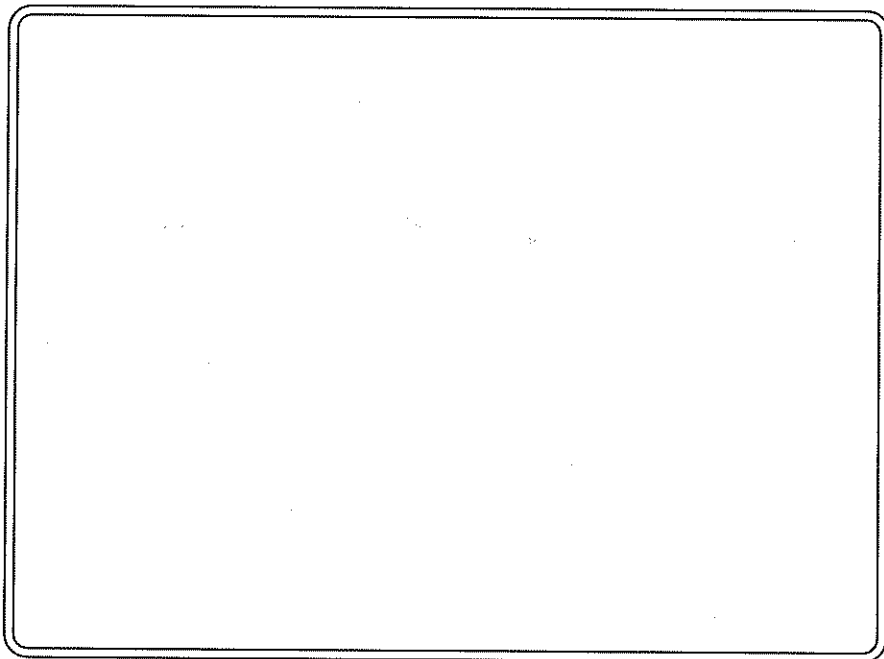


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Visions



Infinite Potentials

The Journal of Rogerian Nursing Science

Visions: The Journal of Rogerian Nursing Science

Volume 10 Number 1 2002

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VISIONS: THE JOURNAL OF ROGERIAN NURSING SCIENCE

Guidelines For Authors

1. Content must reflect some aspect of Rogers' Science of Unitary Human Beings (research, theoretical issues, etc.).
2. The manuscript must not be submitted elsewhere for consideration.
3. Manuscripts will not be returned.
4. Authors will follow the format of the *Publication Manual of the American Psychological Association* (5th. Ed.).
5. Once the manuscript has been accepted for publication, authors must submit a hard copy plus a copy prepared on a 3 1/2 inch disk in WordPerfect or Microsoft Word , prepared on an IBM or IBM compatible computer.
6. Upon final acceptance, an honorarium of \$50 will be sent to the author (or primary author if more than one).

Organization of manuscripts:

1. Identification page (name, address, phone number, affiliation and professional title, and running title) (Optional: e-mail address).
2. Title page (no author identification).
3. Abstract followed by 3-4 key words for indexing.
4. Text of 15-20 pages plus references.

Each manuscript will be reviewed by three members of the Review Panel. Final decision rests with the editors. Manuscripts are accepted for review at any time during the year. Deadlines for the next issues are December 1 and June 1. Submit 4 copies of the manuscript.

Columns:

1. There are six potential columns - Controversies, Imagination, Emerging Scholars, Book Review, Instrumentation/Methodology and Human-Environmental Field Patterning Practice - that will appear as submissions are received and accepted
2. Selections for columns are editorial decisions. Only 2 copies need to be submitted. Upon acceptance the author/authors must submit both a hard copy and a disk. No honorarium is paid to authors of columns.

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Back issues of the journal are available for \$15 a copy.

Editorial

We hope that you will enjoy this tenth issue of the journal and know that you will encounter some interesting and thought provoking ideas that might possible generate a response from some of you. Look closely at both the Controversies and the Imagination Columns, you may be inspired to contact the column editors with your thoughts.

Many years ago, a friend told me to enjoy my children when they were young because although the days seem very long, the years are very short. The same holds true for many experiences in life, including editing this journal. We've spent many long, frustrating days waiting for quality material that we could publish, and hoping that we would get enough to increase the issues to two or more a year. Suddenly, it is 2002 and 10 years have passed. Ten years ago, Dr. Rogers was alive and very enthusiastic about both SRS and the journal. At that time, SRS had about 300 members. Unfortunately, since her death membership in SRS has steadily declined and it has been more and more difficult to get enough material to publish in both the newsletter and the journal. Today, SRS has far less than the 200 members we need to mail the journal bulk mail. As a result we had to add names to the list to be able to mail the journal at the affordable bulk rate. If you have not paid your dues this year and are reading this, it means that your name was one of the ones we added. Please pay your dues to help the organization and the publications to remain viable.

This is the last issue we will edit. We are retiring as editors as soon as this issue is mailed. We would like to take this opportunity to thank all of the authors, the column editors and the reviewers for their help. It would not have been possible to publish even one issue a year without their cooperation.

As a new decade of the journal begins, we would like to wish the new editors well. We hope that all of you will help them, in whatever way possible, to ensure the continuation of the journal that we started so optimistically a decade ago.

LIVING IN THE HEART OF HELICY: AN INQUIRY INTO THE MEANING OF COMPASSION AND UNPREDICTABILITY WITHIN ROGERS' NURSING SCIENCE

Howard Karl Butcher, RN;PhD,APRN,BC

ABSTRACT

Rogers used the term "compassion" throughout her writings, however, there has been no inquiry into the meaning of compassion within a unitary perspective. In addition, while unpredictability is a core feature of helicy, there have been no inquires specifically into what it means to participate knowingly in a human-environmental mutual process characterized by unfolding patterns of unpredictability. The heart is both a symbol of compassion and a vortex of energy characterized by turbulence and unpredictability. The purpose of this paper is to explore the meaning of the metaphor "living in the heart of helicy" as a method to illuminate the meaning of compassion and unpredictability within Rogers' Science of Unitary Human Beings. To live in the heart of helicy is to participate compassionately and knowingly in unfolding patterns of unpredictability by: 1) cultivating creativity; 2) using butterfly power; 3) flowing with turbulence; 4) exploring integrality; 5) seeing the art and beauty of nursing; 6) living in pandimensionality; and 7) participating with the whole.

Metaphor is a way of conceiving one concept in terms of another, and a metaphor's primary function is understanding (Lakoff & Johnson, 1980). A metaphor is a "figure of speech in which a word or phrase that ordinarily designates one thing is used to designate another, thus making an implicit comparison" (*American Heritage Dictionary*, 2000, p. 1104). Metaphors communicate meaning. A metaphor offers a richer and different understanding by transforming the meaning of a phenomenon through associating it with new images (Smith, 1992). The intentional use of metaphor expedites communication and understanding (Chinn, 1994) and allows for a depth and breadth of

understanding and meaning through the linking of terms that describe the world-as-lived, all-at-once (Wendler, 1999). Thus, the intentional use of metaphor can be used as a creative tool for explicating, expanding, and deepening the understanding and meaning of concepts within theory.

In this inquiry, the metaphor "living in the heart of helicy" was intentionally created to illuminate the meaning of compassion and unpredictability within Rogers' science of unitary human beings. "Living in the heart of helicy" uniquely combines Rogers' idea of participating knowingly in mutual process (living), with compassion (heart), and unpredictability (helicy). The purpose of this paper is to explore the meaning of "living in the heart of helicy" as a approach to: a) uncover the role of compassion in Rogers' nursing science and practice; and b) deepen understanding of Rogers' principle of helicy by exploring ways to participate

Key Words Rogers' science of unitary human beings, helicy, compassion, unpredictability, metaphor, living in the heart
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knowingly and compassionately amidst a universe characterized by unpredictability.

Heart as Metaphor

The heart is humankind's most enduring, important, evocative, and provocative symbol. The heart is not only a "muscular or otherwise contractile organ which, by its dilation and contraction keeps up the circulation of blood" but heart also refers commonly to the "seat of life; the vital part"; "seat of courage"; "a term for compassion"; the source of "enthusiasm, or energy; and the "inner most or central part of anything;" and "vital, essential, or efficacious part; essence" (*Oxford English Dictionary*, 1989, Vol. VII, pp. 60-61). Gail Goodwin (2001) recently examined the meaning of heart in literature, myth, religion, philosophy, medicine, the fine arts, and personal stories throughout the history of human civilization. Some of the meanings associated with the heart included the heart as: a life giving center; the well-spring of human emotions; the source of energy, strength, and courage; the center of the will; the seat of spirit; the seat of wisdom and understanding; the crucible of one's essence; and symbol of love and compassion.

While the term "heart" is perhaps most commonly understood as a symbol of compassion, the heart is a powerful vortex of energy characterized by turbulence and unpredictability (Briggs & Peat, 1989). Vortexes are swirling-whirling nonlinear turbulent patterns of flowing energy. Complexity theory has shown that a "healthy" heart does not have a regular heartbeat, but rather exhibits a "strangeness" that involves endless chaotic variations, microjolts, and tiny fluctuations. This complex and unpredictable pattern gives the heart a range of behavior (degree of freedom) and flexibility that allows it adjust to changing conditions (Briggs & Peat, 1999).

Identifying Compassion as a Core Attribute in Rogerian Science

Rogers' Science of Unitary Human Beings is grounded in Rogers' views on humanism and embraced compassion as its core humanistic value. Compassion is a central value in the philosophy of humanitarianism. Wuthnow (1995, p. 66) explains, "more generally, humanitarianism combines a feeling of compassion or sympathy with a value that attaches importance to helping those toward whom one feels compassion." In Rogers' earliest writings, she identified nursing as a "humanistic" (Rogers, 1970, p. 87) and "humanitarian science" (Rogers, 1971, p. 220). Rogers' humanitarian values for nursing are also reflected in her repeated emphasis that the purpose of nursing practice is human betterment (Rogers, 1986; 1990a, 1992). Lamont (1957) explains that the central proposition in humanist philosophy are actions that contribute to the welfare of the community. Furthermore, Rogers frequently used the term "compassion" when describing the nature of nursing. Rogers' (1970, p. vii) classic definition of nursing as a "humanistic science dedicated to *compassionate* [italics added] concern for maintaining and promoting health, preventing illness, and caring for and rehabilitating the sick and disabled" includes reference to both humanism and compassion. Perhaps one of the most significant illustrations of Rogers use of the term compassion, as well as the heart metaphor, is a frequently reprinted statement about nursing published in *The Education Violet*, the New York University newspaper in 1966:

Nursing's story is a magnificent epic of service to mankind. It is about people, how they are born, and live and die; in health and in sickness; in joy and in sorrow. Its mission is the translation of knowl-

edge into human service. Nursing is *compassionate* [italics added] concern for human beings. It is the *heart* [italics added] that understands and the hand that soothes. It is the intellect that synthesizes many learnings into meaningful ministrations. . . . (Rogers, 1966/1994, p. 338)

Rogers continued to use the term compassion in later writings when she wrote "the future demands new visions, flexibility, curiosity, imagination, courage, risk-taking, *compassion* [italics added], and an excellent sense of humor" (Rogers, 1992, p. 32) and "the nature of the practice of nursing (the use of knowledge for human betterment) is rooted in what one knows and in the imagination, creativity, *compassion* [italics added], and skill one uses" (Rogers, 1990b, p. 112). Rogers' (1992, p. 34), in her last writings, also made reference to "unconditional love" as being worthy of exploring. Unconditional love is a manifestation of compassion. Zukav (1989) explains how "compassion is being moved to and by acts of the heart, to and by the energy of love" (p. 72).

Explorations of Concepts Related to Compassion

While there has been no inquiry into the meaning of compassion within Rogerian science, there have been a few Rogerian inquiries into concepts similar to compassion. Alligood's (1986) research on empathy as an empirical indicator of integrality comes closest to Rogers' notion of compassion, however, the term "empathy" has not been used by Rogers nor is empathy used in her descriptions of nursing or the Science of Unitary Human Beings. Furthermore, empathy does not have the same meaning as compassion. Empathy is the "identification with and understanding of another's situation, feelings, and motives" (*American Heritage Dictionary*, 2000, p.586) while compassion is a "deep awareness of the

suffering of another coupled with a wish to relieve it" (*American Heritage Dictionary*, 2000, p. 376). *The Oxford English Dictionary*, Vol. V (1989) defines empathy as "the power of projecting one's personality into (and so fully comprehending) the object of contemplation" (p. 184). Thus, empathy is contemplative and focuses on feelings. Compassion is a deeper experience focusing on suffering and is more than contemplative by including at least the desire to do something to relieve the suffering of another.

Smith (1999) explored the meaning of caring within Rogerian science using a rigorous process of concept clarification. She acknowledged that Rogers maintained that caring does not reflect the uniqueness of the knowledge or practice of nursing. In fact, Rogers did not use the term "caring" in her descriptions of nursing or the Science of Unitary Human Beings. Through her analysis, Smith revealed five constitutive meanings of caring from a unitary perspective: a) manifesting intentions; 2) appreciating pattern; 3) attending to dynamic flow; 4) experiencing the infinite; and 5) inviting creative emergence. Smith noted that other Rogerian scholars have used the term "caring" when describing aspects of Rogerian practice. Notably, Barrett (1994) used the term "caring partnerships" and Malinski (1994) described health patterning as "providing knowledgeable caring to assist clients in actualizing potentials for well-being through knowing participation in change" (p. 105). While the focus on unitary conceptualizations of caring have contributed to expanding Rogerian Science, Rogers (1992) maintained that caring "is simply a way of using knowledge" (p.33). In other words, what makes caring unique in nursing is the knowledge specific to nursing that is used to guide caring actions (Butcher, in press).

More significantly, caring does not hold the same meaning as compassion. McCance,

McKenna, and Boore's (1997) in-depth concept analysis revealed four critical attributes of caring: a) serious attention; b) concern; c) providing for, and d) getting to know the patient. The caring of one person of another may be an instance of compassion and may lead to the development of compassion, but compassion is a far fuller experience than caring (Fox, 1999). Etymologically, the term compassion means to feel or "experience with" (Reich, 1989). In other words, compassion means allowing oneself to experience with another what that person is experiencing by sharing in their experience and putting oneself in the place of another (Blum, 1980). A synthesis of 17 separate in-depth concept analyses on compassion using Wilson's method conducted by a class of honor students at Pacific Lutheran University (1998) revealed the following critical attributes of compassion: a) a deep concern for the suffering of another; b) the desire to relieve the suffering of another arising from a sense of shared humanity or shared life; c) imagining oneself in the situation of another whether or not one has had a similar experience; d) dependent upon a sense of interconnectedness of the persons involved such that they view each other as equals and e) is not simply a feeling or emotion, but motivates one toward action, sacrificing time and effort to alleviate the suffering of another. Because Rogers used the term compassion rather than caring when describing the nature of nursing, it is a worthy endeavor to explore the meaning of compassion within a unitary context.

Toward a Unitary Understanding of Compassion

The term compassion is receiving increasing attention in the Rogerian literature. In an ethical analysis of Rogers' life and work, Butcher (1999a) identified compassion as a core value in Rogerian science. More importantly, Butcher suggests that unitary pattern-based practice must include

making ethical values intrinsic to Rogers' life and writing, including compassion, intentionally, or purposefully part of the nurses' way of being present with clients during the voluntary mutual knowing/appreciation and deliberate mutual patterning processes. Butcher (1999b) has also placed some emphasis on compassion within a unitary perspective in his description of the "artfulness" of unitary pattern-based practice as "compassionate skillfulness" (p. 52).

Matthew Fox's (1999) description of compassion is particularly useful in deepening and expanding the understanding of compassion in a way congruent with Rogers' Nursing Science. Fox (1999) identified nine attributes defining compassion (see Table 1).

Table 1.

Matthew Fox's Attributes of Compassion

Compassion is not pity but celebration
Compassion is not sentiment but making justice and doing acts of mercy
Compassion is not private, egocentric, or narcissistic but public
Compassion is not about ascetic detachments or abstract contemplation but is passionate caring
Compassion is not anti-intellectual but seeks to understand the interconnectedness of all things
Compassion is not mere personalism but is cosmic in its scope and energies
Compassion is not religion but a way of life
Compassion is not a moral commandment but a flow and overflow of the fullest human and divine energies
Compassion is not altruism but self-love and other-love as one

Fox's conceptualization of compassion as a dynamic energy encompassing cosmic interconnectedness resonates with Rogers' notions of energy, pandimensionality, integrality, and knowing participation in change. Knowing participation in change is emphasized by Fox by including, passion, caring, justice making, and a search for understanding of the interconnectedness of all things as attributes of compassion. Fox views compassion as energy and defines it as creativity put to the service of justice and argues that we can achieve compassion for both humanity and the environment as we recognize the interconnectedness of all things. The emphasis on interconnectedness is consistent with Rogers' notion of integrality and the unitary nature of human and environmental fields. The root of the word compassion is from the words *cum patior* meaning to suffer with, to undergo with, and to share solidarity with (Fox, 1999). Empathy, on the other hand, does not specifically focus on one's painful experience suffering, but more generally on feelings. Compassion is not just knowing about the suffering and pain of another but "knowing that pain, entering into it, sharing it and tasting it in so far as that is possible" (Fox, 1999, p. 21). Compassion is passionate caring and "the way to learn passion and caring is by interaction with matter— a transformation of energy" (Fox, 1999, p. 21). As a cosmic or pandimensional energy, "compassion extends to the entire universe and all of creation" (Fox, 1999, p. 18). Furthermore, Fox states that "an experience of cosmic awareness is a basic ingredient for true compassion" (p. 18). Within Tibetan Buddhism, the compassionate wish termed *Bodhicitta* in Sanskrit means "the heart of our enlightened mind." In Rogerian terms, compassion is the heart of enlightened awareness. Compassion is the heart of enlightened activity and is the action of intentionally dedicating ourselves toward facilitating human better-

ment, soothing the dissonance of suffering, and embracing with loving kindness the oneness of all.

Fox's emphasis on justice creating is also consistent with Rogers. Rogers was a powerful social activist. She cried out against social inequities, inadequate housing, racial discrimination, and poor health care in underserved areas and populations (Butcher, 1999a). Rogers (1992) placed emphasis on respecting human rights and client decision making as "dimensions of the new science and art of nursing" (p. 34). According to Fox, compassion is a celebration of togetherness, in both rejoicing another's joy and grieving another's sorrow and pain. Compassion is about action, doing and relieving the pain of others. Compassion is not complete if it is not active (Fox, 1999; Rinpoche, 1993). Fox also explains how most religious traditions view works of mercy are actions taken to undo injustice. The Hebrew notion of *zedakah* which means "righteousness" or "justice" but is often translated as "charity." Justice in the Bible is charity (Tresmontant, 1960). Thomas Aquinas made the point that "compassion is not pure feeling but implies *electio* or moral decision-making and doing (Ramirez, 1973). Works of mercy include: feeding, sheltering, setting free, giving drink, visiting, burying, educating, counseling, admonishing, bearing wrongs, forgiving, comforting, and praying. Fox (1999) explains these acts of mercy "come from the heart and go to the heart, they are not restricted to sentiment or heartfelt emotions, however powerful" (p. 8). Works of compassion, mercy or charity may also be viewed as energetic *acts of love*. Rogers (1992) pointed to the relevance of unconditional love as a noninvasive therapeutic modality in nursing practice along with the use of imagery, meditation, humor, upbeat moods color, sound, and attitudes of hope.

The Emergence of Unpredictability as Core Attribute of Helicy

The metaphor "living in the heart of helicy" also places emphasis on the nature of Rogers principle of helicy. Rogers (1970) originally defined helicy as a "function of continuous innovative change growing out of the mutual interaction of man and environment along a spiraling longitudinal axis bound in space-time" (p. 101). The principle of helicy encompassed the concepts of rhythmically, negentropic evolutionary emergence, and the unitary nature of the human-environment relationship. Much like a vortex, the helical or spiraling rhythms of life, depicted by Rogers as a Slinky®, are "inextricably woven into the rhythms of the universe" (Rogers, 1970, p. 100). The helical Slinky® connotes the ever rhythmically evolving emergence of the human-environmental field toward increasing innovation. The definition of helicy was first revised in 1980 to:

The nature and direction of human and environmental change is continuously innovative, probabilistic, and characterized by increasing diversity of human and environmental field pattern and organization emerging out of the continuous, mutual, simultaneous interaction between human and environmental fields and manifesting non-repeating rhythmicities (Rogers, 1980, p. 333).

There was essentially no change in meaning between the 1970 and 1980 definitions. Rather, the 1980 definition is a clarification of the original definition. The principle of complementarity, later renamed integrality, is explicitly incorporated into the 1980 definition of helicy to highlight the significance of mutual simultaneity to contradict the notion of causality. In 1986, Rogers simplified the definition of helicy by defining it as "the continuous,

innovative, probabilistic increasing diversity of human and environmental field patterns characterized by nonrepeating rhythmicities" (Rogers, 1986, p. 6). The final and most significant revision and subsequent change in meaning of the principle of helicy occurred when Rogers (1990a) substituted the term "unpredictable" for probabilistic and simplified the definition further by dropping the phrase "characterized by nonrepeating rhythmicities." Rogers' (1990a) last definition of helicy is the "continuous innovative, unpredictable, increasing diversity of human and environmental field pattern" (p. 8). Rogers (1990a) quotes Mallove's (1989) "The Solar System in Chaos" and Peterson's (1989) "Digging into the Sand" to provide rationale as to why unpredictability "transcends probability" (p. 7).

While Rogers may have been initially influenced by the emergence of chaos theory as support for the notion of unpredictability, she later clarified that chaos theory was embedded in an old world view still based on mathematical assumptions about reduction, determinism and causality (Butcher, 1997). Peat (1991) stated "indeed, chaos theory is essentially a deterministic theory of nature and raises the question, can a deterministic theory truly capture the essence of nature's chaos?" (p. 197). However, chaos theory and Rogers' principle of helicy are similar since both emphasize the inherent unpredictable nature of change.

Support for the notion of acausal unpredictability may be found in new emerging and even more radical views of the nature of reality. For example, Cahill and Klinger, two Australian physicists at Flinders University in Adelaide, Australia, propose a new understanding of the universe based on the randomness inherent in quantum theory. They propose, "if you could lift a corner of the veil that shrouds reality, what you would see beneath is nothing but randomness"

(Chown, 2000, p. 26). Space-time, and all that is, is no more than froth on a deep sea of randomness. Cahill states, "Far from being merely associated with quantum measurements, this randomness is the very heart of reality." Cahill goes on to say that this randomness generates everything . . . "it even creates the sensation of the present" (Chown, 2000, p. 26).

Unpredictability is a manifestation of randomness and a reflection of the nature of reality. In Stephen Wolfram's (2002) recent book *A New Kind of Science*, he convincingly argues and demonstrates that even the simplest systems generate random and unpredictable behavior. As the principle of helicy indicates, change is unpredictable. By embracing the notion of helicy, one can envision the world as a flux of patterns, with sudden turns, surprising relationships, hidden order and hidden meaning, paradoxes, increasing diversity, and uncertainty. Understanding helicy opens radical new ways of thinking and experiencing reality and challenges us to query our assumptions about our illusion of control and predictability.

Embracing the Unpredictable Nature of Change

As a means to further understanding of the meaning of "living in the heart of helicy," seven insights evolving from an analysis of nature of unpredictability are discussed below. The seven insights were derived by reformulating Briggs and Peat's (1999) original "seven lessons on chaos" (See Table 2) in a way that is more consistent with Rogers' science of unitary human beings. Briggs and Peat (1999) have described how chaos theory is evolving from a scientific theory into a cultural metaphor. They suggest that instead of resisting life's uncertainties, we should embrace the possibilities that uncertainty offers. The seven insights are not intended as prescriptions, but rather as provocations and as enduring

insights that serve to create a deeper understanding of nature of living in the unpredictable heart of helicy. Cultivating Creativity

Within Rogerian science, *the unpredictability inherent in helicy is a source of creativity*. Change is creative. In a pandimensional, nonlinear universe, anything can happen. The ideas of creativity and helicy have always been linked. The very definition of helicy incorporates creativity because helical change is always "innovative" (Rogers, 1992, p. 8). The notions of accelerating change, increasing diversity, and nonlinearity all are manifestations of a creative human-environmental mutual process.

The poet Keats spoke about how creators and visionaries cultivate the ability to live in what he called "doubts and uncertainties" long enough to permit something new to bloom (Briggs & Peat, 1999, p. 22). Krishnamurti (1948) also believed that a deep creative appreciation of life only comes when there is enormous uncertainty. In addition, numerous contemporary theories have described now unpredictability, randomness, and chaos are the source of creativity including Prigogine and Stengers' (1984) theory of dissipative structures, Bohm's (1980) generative order, Poincare's theories of chaos, and most recently, Wolfram's (2002) principle of computational equivalence. Furthermore, Chown (2000) explains that Cahill and Klinger believe that unpredictability and randomness are at the very heart of creation. As one enters the vital turbulence of life, everything is always new. Creativity includes the production of novelty. Thus, *living in the heart of helicy fuels creativity*.

Laura Sewall provides some insight into the creative process by explaining how imagination and creativity provide a bridge between ourselves and the world. Meaning is created by bridging or gluing ourselves

Table 2.

Seven Life Lessons of Chaos and Seven Insights on Living in the Heart of Helicy

Briggs & Peat's Seven Life Lessons of Chaos	Seven Insights on Living in the Heart of Helicy
Being creative	Cultivating creativity
Using butterfly power	Using butterfly power
Going with the flow	Flowing with turbulence
Exploring what's between	Exploring integrality
Seeing the art of the world	Seeing the beauty and art of nursing
Living within time	Living in pandimensionality
Rejoining the whole	Participating with the whole

with the things in the world through imagination (Sewall, 2000). Imagination brings the world into being. According to Sewall, to be visionary is to turn ourselves to the edges of known experience where experience becomes flavored with the unknown, where the imagination steps forward into the realm of possibility. The practice of the visionary is a perceptual act and there is an art to this. To quote Sewall . . .

It is the ability to free one's view from the conditioned and programmed worldview - - - an unpatterning of the assumed world— and then artfully stitching it back together through the power of a cultivated imagination. Cultivated in this sense means informed and shaped by the integrity and the wholeness displayed by the visible world, or imaginations created and filled by attending to the patterns of a world still intact (p. 23).

Researchers who have studied the cre-

ative process have found that creative people have a high tolerance for ambiguity, ambivalence, broad interests, attraction to complexity, intuition, sensitivity, and chaos (Briggs & Peat, 1999; Csikszentmihalyi, 1996; Oldham & Cummings, 1996). For over 30 years, an ethic of creativity and innovation has been promoted by nursing theorists (Gilmartin, 1999). Rogers (1992) defined the art of nursing as the creative and imaginative use of knowledge for the purpose of human betterment. Similarly, Levine (1973) described nursing as a poetical art, an art in which reason and imagination come together to create a new and unique human experience.

Nurses who cultivate creativity enhance the art of nursing. Rogers (1992) described the art of nursing as the creative use of knowledge in nursing practice. All nurses can enhance the use of creativity in practice by engaging in activities that cultivate creativity. Csikszentmihalyi (1996), in his study of creativity, suggests one can cultivate creativity by a) trying to be surprised by

something every day; b) trying to surprise a person every day; c) following what strikes a spark of interest; d) increasing the complexity of those activities you enjoy; e) making time for reflection and relaxation; f) creating living and working environments that facilitate creativity; g) examining problems from multiple viewpoints; h) using divergent thinking to generate as many ideas as possible; and i) becoming involved in activities that are most enjoyable and meaningful to you.

Using Butterfly Power

Living with unpredictability means recognizing that subtle actions when caring for patients have the potential to create the most meaning and change. Embedded in the notion of helicy are the resonating nonrepeating rhythms of an acausal human-universe life process. The helical change manifests through the mutual process of human and environmental fields. Integrality describes the oneness, unity, and inseparable nature of helical human environmental fields. A universe of deep connectedness and infinite sensitivity means small changes through nonlinear and nonlocal connections in a pandimensional reality potentially give rise to major transformations. Butterfly power involves the recognition and use of subtle energies. Subtle actions and gentle movements resonate and can amplify through nonrepeating rhythmicities creating major transformations (Peat, 1991). For example, weather systems are so sensitive the flapping wings of a butterfly can change tomorrow's weather (Gleick, 1987; Peat, 1991). Edward Lorenz, who studied nonlinear changes in the weather, referred to this as the "butterfly effect." While a butterfly seemingly has little power, in a universe of deep connectedness and infinite sensitivity, the fluttering wings of a butterfly can be felt on the other side of the world (Briggs, & Peat, 1989, p.69).

The power in the nurse's healing is often

hidden in the subtle compassionate actions such as spending extra time with a patient or a family in crisis or the subtle effect of compassionate and calming words and the gentle touch of soothing hands. Numerous research studies demonstrate that communication, the words one uses, can have a profound effect on healing. At the same time, the vital subtle caring actions can appear to make nurse's contributions to health and healing invisible. Suzanne Gordon (1997) points out that historically "nursing may be the oldest art, but in the contemporary world, it is also the most invisible . . . one of the most invisible arts, sciences, and certainly one of the most invisible parts of our health care system" (p. ix). Many nurses have experienced the feeling of being invisible. Nurses are invisible when decisions concerning health care are made without asking for nursing input. Nursing's experience of being invisible happens whether nurses are at the bedside, in educational settings, in the political arena, or in the media. For example, nursing's research contributions are not highlighted on CNN or the nightly news. However, butterfly power speaks to the influence nurses can have when efforts are unified.

The deep connectedness and infinite sensitivity of helicy means one individual, or one group can deeply transform the world. Acting collectively and as individuals, butterfly power provides the means by which nursing's voice and visibility can become commensurate with the size and importance of nursing in health care. In a pandimensional universe, one may not know the immediate outcome or if a specific action leads to a particular transformation, but one can act with intention compassion, and with awareness that the subtlest actions can potentiate major transformation. Through our collective efforts one can make the invisible subtlety of caring visible and educate the populace about the invaluable

contribution nurses make to the health of society.

Flowing with Turbulence

Rogers (1970) described the helical life process as "likened to cadences—sometimes harmonic, sometimes cacophonous, sometimes dissonant; rising and falling; now fast, now slow—ever changing in a universal orchestration of dynamic wave patterns" (p. 101). Turbulence is a common human experience in our life process. Turbulence is a dissonant commotion in the human-environmental field process characterized by chaotic and unpredictable change (Butcher, 1993). During the life process, persons experience unpredictable, traumatic, tempestuous, and sometimes chaotic life events. Living in the heart of helicity is enhanced when one flows with the turbulent change inherent in the life process. Csikszentmihalyi (1990) describes flow as a process of total involvement in optimal experiences which are rich, meaningful, happy, and pleasurable. Flow is characterized by feelings of enjoyment, concentration, and deep involvement and has the potential to transform turbulent experiences into a sense of meaning and harmony. Creativity, peak performance, talent development, increased productivity, increased self-esteem, and stress reduction are all possible beneficial consequences of experiencing flow (Csikszentmihalyi, 1993). Flow experiences also have the potential to transform turbulent experiences into opportunities of growth, self-actualization, creativity, and harmony.

In a reconceptualization of Csikszentmihalyi's theory of flow, Butcher (1993) defined it as "an intense harmonious involvement in the human-environmental field mutual process" (p. 190). Flowing with turbulence is a mutual creative expression of beauty and grace and is a way of enhancing perseverance through difficult times. Nurses can *compassionately* assist clients

in flowing with turbulent change by cultivating purpose, forging resolve, and recovering harmony (Butcher, 1993; 2001). Cultivating purpose involves assisting clients in identifying goals and developing an action system. The action system is comprised of patterning strategies designed to promote harmony amid adversity and facilitate the actualization of potentials for well being. In moments of turbulence, clients may need to increase their awareness using creative suspension to facilitate comprehension of the situation's complexity. Guided imagery is useful in creative suspension by assisting clients to enter a timeless suspension directed toward visualizing the whole situation and facilitating the creation of new strategies and solutions. Forging resolve is assisting the client in becoming involved and immersed in their action system. Since chaotic and turbulent systems are infinitely sensitive, actions are "gentle" or subtle in nature and distributed over the entire system involved in the change process. Entering chaotic systems with a "big splash" or trying to force a change in a particular direction will likely lead to increased turbulence (Butcher, 1993; 2001). Forging resolve involves incorporating flow experiences into the change process. Flow experiences promote harmonious human/environmental field patterns. There are a wide range of flow experiences that can be incorporated into daily activities: art, music, exercise, reading, gardening, meditation, dancing, sports, sailing, swimming, carpentry, sewing, yoga or any activity which is a source of enjoyment, concentration, and deep involvement. The incorporating of flow experiences into daily patterns facilitates recovering harmony. Recovering harmony is achieving a sense of courage, balance, calm, and resilience amid turbulent and threatening live events (Butcher, 1993, 2001).

Exploring Integrality

Edgar Mitchell (1996), the former astronaut and founder of the Institute of Noetic Sciences, calls exploration an "ineluctable impulse" (p. 213). To explore is to expand the horizons and imaginary boundaries. To fully appreciate the meaning of living in the heart of helicy, one needs an awareness and experience of the deep connectedness of the universe described by Rogers' principle of integrality. *Exploring integrality opens one up to discovering the mysteries of oneness and the mysteries of unpredictable manifestations arising from a non-linear universe of "deep connectedness."*

Integrality is defined as the "continuous mutual human field and environmental field process" (Rogers, 1992, p. 31). Integrality describes the oneness of human and environmental fields. Human and environmental fields co-evolve together in mutual process. The principle of helicy includes the integrality of human and environmental fields since both fields co-evolve together, continuously, innovatively, and unpredictably toward increasing diversity through mutual process.

Exploring integrality requires a deep awareness of the inseparability of persons with their universe. Interestingly, compassion and integrality are linked in that compassion is a "keen awareness of the interdependence of all living things" (Fox, 1999, p. 23). Exploring integrality is to live and act compassionately motivated by genuine love of all our relations and love for our shared interdependence. *Exploring integrality is seeing beyond the illusion of our separateness and fragmentation by uncovering and experiencing ways in which all is interconnected to reveal hidden patterns of oneness.* Csikszentmihalyi's (1990) description of flow experiences, Maslow's (1976) peak experiences, and the many descriptions of mystical experiences have long been ways humans explore and experience unity with the universe.

Exploring integrality increases one's awareness of non-local connections within a pandimensional universe and provides an understanding of paranormal events. Rogers (1980, 1986, 1992) postulated that a pandimensional reality, a nonlinear domain, provides a framework for understanding paranormal phenomena. In a nonlinear domain unconstrained by space and time, the integrality of infinite human and environmental energy fields provides an explanation of seemingly inexplicable events and processes. Rogers (1992) even asserted that within the Science of Unitary Human Beings, psychic phenomena become "normal" rather than "paranormal." Dean Radin, director of the Conscious Research Laboratory at the University of Nevada in Las Vegas, suggests that an understanding of nonlocal connections along with the relationship between awareness and quantum effects provides a framework for understanding paranormal phenomena (Radin, 1997). "Deep interconnectedness" demonstrated by Bell's Theorem embraces the interconnectedness of everything unbounded by space and time. In addition, the work of Dossey (2001), Nadeau and Kafatos (1999), Sheldrake (1988), and Talbot (1991) explicates the role of nonlocality in evolution, physics, cosmology, consciousness, paranormal phenomena, healing, and prayer.

Similarly, Rogers' principle of integrality postulates a "deep interconnectedness" of infinite pandimensional human and environmental fields. Within a nonlinear-nonlocal context, paranormal events are our experience of the deep nonlocal interconnections that bind the universe together. In the dyadic model, existence and knowing are locally and nonlocally linked through deep connections of awareness, intentionality, and interpretation. Pandimensionality embraces the infinite nature of the universe in all its dimensions and includes processes of being more aware of naturally occurring changing

energy patterns. Pandimensionality also includes intentionally participating in mutual process with a nonlinear-nonlocal *potential* of creating new energy patterns. Distance healing, the healing power of prayer, therapeutic touch, out of body experiences, phantom pain, precognition, déjà vu, intuition, tacit knowing, mystical experiences, clairvoyance, and telepathic experiences are a few of the energy field manifestations patients and nurses experience that can be better understood as natural events in a pandimensional universe characterized by nonlinear-nonlocal human-environmental field integrality prorogated by increased awareness and intentionality.

Seeing the Beauty and Art of Nursing

The beauty in all of nature is a manifestation of underlying non-linear dynamics. Natural fractal forms that are the manifestations of unfolding unpredictable non-linear processes, include the shape of clouds, mountains, coastlines, snowflakes, rocks, and the dendritic patterns of trees, rivers, and lungs (Briggs & Peat, 1999). All patterning is a manifestation of non-linear and unpredictable mutual human-environmental field mutual process. Viewing and appreciating the aesthetics inherent in all of nature leads to a deeper understanding of the transformational potential of art and beauty.

Nursing has long been recognized as an art. Nightingale (1868) wrote "Nursing is an art, and if it is to be made an art, it requires as extensive a devotion, as hard a preparation, as any painter's or sculptor's work"(p. 362). Stewart (1929) stated that the essence of nursing, as in any fine art, was in the creative imagination. Rogers (1992) defined the art of nursing as the creative use of nursing science for human betterment. Images of art and beauty are embedded throughout Rogers' writings. Rogers use of the kaleidoscope and symphony metaphors reveals a form of artistry

in Rogerian Science.

Art is a special beauty. Beauty is "a delightful quality associated with harmony of form or color, excellence of craftsmanship, truthfulness, originality, or other property" (*American Heritage Dictionary*, 2000, p. 158). A relevant question to ask here is how does one appreciate and create beauty? In the film "American Beauty" (Cohen, Jinks [Producers] & Mendes [Director], 1999) Ricky teaches us about beauty. In the film Ricky states:

It was one of those days a minute away from snowing. And there was this electricity in the air. You can almost hear it, right? And this bag was just dancing with me. Like a little kid begging me to play with it. For fifteen minutes. That's the day I realized that there was this entire life beyond things, this incredible benevolent force wanting me to know there is no reason to be afraid, ever. . . The video is a poor excuse, but it helps me remember. I need to remember. There is so much beauty in the world I feel I can't take it . . . and my heart is going to cave in" (Dreamworks, 1999).

One theme in this film is about how spiritual redemption begins with the experience of beauty and how beauty is found in unexpected places. Increasing awareness of the inherent beauty in the universe changes our relationship to the world and our ways of participating in the life process. Ricky videotapes to remember, capture the beauty, and to understand the mystery behind life.

Gadamer (1986) believes seeing the beauty in the world is an experience of connection and continuity with the everyday world thereby creating a transformational potential. Ricky is a catalyst for transformation and lives for beauty. He is a prophet of beauty and escapes into the bliss

of beauty to escape from a militaristic, pathological father who explodes and seeks to destroy what is beautiful. Beauty has driven out the fear in Ricky's world. Ricky sees God looking back at him through beauty in the faces of death and homelessness.

Nursing is a special beauty. "All true works of healing are works of beauty; beauty heals" (Watson, 1999, p. 193). Watson (1999) describes caring as an act of beauty "whereby the one-caring connects with and reflects the beauty of the soul to the one-cared-for, one to the other" (p. 194). Rogerian based nursing practice, the art of nursing, is a way in which nurses can create a special beauty. *Beauty emerges in Rogerian practice from appreciating the unpredictable kaleidoscope patterns and symphonic patterns that emerge from the human-environmental energy field mutual process.* Beauty is created in Rogerian practice by establishing a meaningful connection with clients, making meaning of a client's situation, participating knowingly in a client's change process, artfully engaging in voluntary mutual patterning strategies (Butcher, 1999b). In addition, creating beauty in Rogerian nursing practice involves the use of non-invasive healing arts to promote knowing participation in change, synchrony in human-environmental field patterning, and pattern transformation. Visual arts, drawing, painting, sculpting, story-telling, imagery, meditation, music, dance, theater, design, and architecture are just a few of the arts and acts of beauty nurses may use to promote healing, human betterment, and transformation through knowing participation in change (Chinn & Watson, 1994; Gaut & Boykin, 1994; Watson, 1999).

Living in Pandimensionality

The last insight was about living within a new space created by appreciating and creating beauty in the multiverse. This next insight, living in pandimensionality is also about space, but more about time. Rogers'

(1970) first definition of helicy included notions of space and time: Helicy is a "function of continuous innovative change growing out of the mutual interaction of man and environment along a spiraling longitudinal axis bound in space-time" (p. 101). Today, one would say bound in pandimensionality rather than bound in space-time. Helicy and pandimensionality are linked in the same way that all the postulates are integral to understanding each of the principles. *The innovativeness and unpredictability of helicy are functions of pandimensional reality* or "nonlinear domain without spatial or temporal attributes" (Rogers, 1992, p. 30). While pandimensionality is a condition of our existence, often we are not aware of pandimensionality's nature in everyday aspects of our lives.

What is it to live in pandimensionality? Certainly mystical experiences, flow experiences, peak experiences, and paranormal experiences such as déjà vu, clairvoyance, distance healing, prayer, precognition, distance viewing, and telepathy are glimpses of pandimensionality. Awareness is the perception of energy field patterns and intentionality is an active process of desiring or intending action. Intention manifests as the volitional propagation of energy. Action is a process of movement or transformation of energy. Pandimensional events, therefore, may be understood as natural events involving intentionality and increased awareness of a multiverse with deep nonlinear-nonlocal human-environmental field integrality (Butcher, 1998).

Experiences of pandimensionality can be accelerated. Murphy (1992) describes in detail evidence of research supporting his claims of how humans are evolving toward higher abilities for what he calls "extraordinary functioning" (p. 40). Murphy discusses over 100 of these abilities including opening books to the exact passage you are looking

for; feeling people in a house even though you cannot see them; hearing melodies that seem to reflect your physical condition; feeling what someone else is thinking; experiencing immense energy; changing the environment by mental intention like feeling you have invisible hands that touch another person after which that person responds as if they have been touched; apprehending events and situations before they happen; shedding pain by willing it away; seeing new beauty and possibilities for growth in someone of long acquaintance; and sensing extraordinary lightness while moving or at rest, or a sense of elevation from the ground.

Interestingly, Murphy (1992) also describes the potential of extraordinary love or compassion as an emerging "metanormal" human attribute (pp. 54-59). Examples of extraordinary love include experiencing of love that: a) allows one to feel a friend's suffering, deep intentions, or personal conflicts; b) removes all sense of personal boundaries as if you and the other are a single person; and c) elevates a person's self-esteem and well-being even through the love comes from another person who is at a distance. Similar to Rogers' (1988) manifestations of patterning, Murphy (1992) views extraordinary abilities as evolutionary emergent and further suggests extraordinary abilities can be developed. Extraordinary abilities are also all manifestations of a pandimensional reality . . . and are indicators of what it would mean to more fully live in pandimensionality.

Julian Barbour (1999) asserts that one of the implications of quantum cosmology is that time does not exist. There is only timelessness. Living in timelessness is not only a manifestation of increasing frequency patterning (Rogers, 1988) but also is an experience of a pandimensional reality. Barbour argues and explains how there is only timelessness, which consists of an infinite number of Nows, not linked in any

way to one another. Each now is a separate world unto itself. All Nows that ever were or will be are simultaneously happening. The appearance of linear time only arises because one concentrates intensely on each now. Only motion and change give the appearance that time is linear. Given this model of the multiverse, what would it mean if one lived without experiencing time as linear . . . but lived in timelessness? Barbour (1999) states that this "many instances" interpretation places a new understanding on causality. "The ability of each Now to 'resonate' with other Nows is what counts Our existence is determined by the way we relate to (or resonate) with everything else that can be" (Barbour, 1999, p. 325). Thus, living in the heart of helicy means shifting our awareness from the illusion of linear time and space toward a deeper awareness of pandimensionality, living with a sense of timelessness, increasing our awareness of nonlocal-nonlinear events, and nurturing our emerging extraordinary abilities.

Participating with the Whole

Finally, living in the heart of helicy means participating with the whole. Whether using butterfly power, flowing with turbulence, exploring integrality, or living in pandimensionality, each insight about living in the heart of helicy is based on the inseparable and irreducible nature of human-environmental fields engaged in mutual process. Briggs & Peat (1999) explain that participating with the whole is freeing ourselves from the habit of thinking that we are just disconnected fragments. In nursing practice, participating with the whole involves: a) moving from an emphasis on the isolated self, from the consciousness of what one knows individually, to the consciousness of what one knows together; b) moving from the old focus on individual heroic competition against the world to co-evolution, collaboration, and reverence; c) moving from seeing nature as

a collection of isolated objects to experiencing that one is an essential aspect of nature's pattern; d) involves the realization that the observer is integral to what he or she is observing; e) moving from an exclusive emphasis on logic, analysis, and objectivity to the ability to think aesthetically which includes analysis but recognizes its limits; and f) requires synthesis and unitary thinking. Unitary knowing requires recognizing events are: not linear or cyclical, but share mutual simultaneous shaping; all phenomena are connected but are distinguishable by pattern; and the continuous dynamic nature of pattern requires a focus on the experiences, processes, and meaning of change. *In nursing practice, participating with the whole means moving from obsessive focus on control and prediction to a sensitivity toward unpredictability, emergence, and change, and using our subtle actions to become participators in and facilitators of rather than managers of change.*

Summary

Rogers' Science of Unitary Human Beings offers more than a science that explicates nursing's unique knowledge base consonant with the most contemporary theories describing a universe of wholeness. Rogerian nursing science offers a way of living and practicing nursing. To fully embrace Rogerian science is to understand and participate in the universe in ways consistent with the Science of Unitary Human Beings. Compassion is a core value in Rogers' vision of nursing. Fully practicing Rogerian science includes living the values intrinsic to the theorist and her work. Thus, *to live in the heart of helicy is to participate knowingly and compassionately in unfolding patterns of unpredictability.*

In summary, to live in the heart of helicy is to compassionately participate knowingly in the vortex of continuous change. To live in the heart of helicy is to

flow compassionately in turbulent vortices. To participate knowingly in unpredictable change is to participate with awareness and intentionality, freely making choices while being involved in both one's own change process and in the change process of clients, and to do so compassionately. Within a Rogerian Science perspective, compassion is a pandimensional energetic manifestation that provides a way to fully participate knowingly and meaningfully in the human-environmental mutual field process that passionately celebrates the oneness of all by making nursing acts of concern, justice making, and unconditional love visible. In nursing practice, the actualization of the client's potentials that occur during the *compassionate* knowing participation in change process are not ascribed to particular causes, but rather the transformation of potentials to actualities unfolds acausally and unpredictably. To live in the heart of helicy is to embrace unpredictability by compassionately cultivating creativity, using butterfly power, flowing with turbulence, exploring integrality, seeing the beauty and art of nursing, living in pandimensionality, and participating with the whole.

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HOPE, POWER AND PERCEPTION OF SELF IN INDIVIDUALS RECOVERING FROM SCHIZOPHRENIA: A ROGERIAN PERSPECTIVE

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ABSTRACT

This study explored the relations among hope, power, and perception of self in individuals recovering from schizophrenia, from the perspective of the Science of Unitary Human Beings. An exploratory correlational design provided beginning information about the experience and awareness of human-environmental integrality in a sample of 107 individuals participating in community-based psychiatric rehabilitation programs. The study variables were measured by the following instruments: the Miller Hope Scale, the Power as Knowing Participation in Change Tool, Version II, and the Human Field Image Metaphor Scale.

Pearson-product moment correlations and hierarchical multiple regression were used to analyze the relations among hope, power, and perception of self. Statistically significant relations were found between the predictor variables, hope and power, and perception of self. Hope and power together, however, did not account for more variance of perception of self than hope accounted for alone. The role of hope in recovering from schizophrenia requires further study, as does the nature of the relation between hope and power. A major contribution of this study is the explication of a conceptual system, the Science of Unitary Human Beings, for understanding the experience of schizophrenia and recovery as expressions of the life process.

Schizophrenia, a serious disorder found in all cultures throughout the world, affects "the human properties considered most precious and distinguishing" (Carpenter & Buchanan, 1994, p. 681). Schizophrenia is traditionally viewed as a severe and persistent disorder with long-term consequences that have a negative impact on every aspect of a person's life. A substantial degree of the morbidity associated with the experience of schizophrenia involves functional disabilities, which impede an individual's ability to meet role expectations in one or more major areas of functioning (American Psychiatric Association, 2000). Over two million people

in the United States experience this severely disabling disorder, which has a worldwide prevalence rate of approximately 1% across diverse geographic, cultural, and socioeconomic groups (National Institute of Mental Health, 1999; Gershon & Rieder, 1992).

Despite evidence to the contrary, the assumption persists that the natural course of schizophrenia is a recurring pattern of acute exacerbations and remissions with increasing residual impairment after each episode (Harding, Zubin, & Strauss, 1992). Although recovering from schizophrenia is increasingly reported in personal testimony, theoretical articles, and qualitative studies (Anthony, Cohen, Farkas, & Gagne, 2002; Davidson & Strauss, 1992; Deegan, 1988; Jacobson, 2001; Williamson & Collins, 1999), the concept and process of recovering are not well understood (Estroff, 1994; Strauss, 1997). According to Ciompi (1987),

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lack of conceptual models that encompass the diverse manifestations presented by individuals experiencing schizophrenia preclude a true understanding of schizophrenia and recovery.

The Science of Unitary Human Beings (Rogers, 1970, 1990) embraces the diversity of all individuals, including those with a label of schizophrenia. Within Rogerian science, individuals are viewed as unitary human beings evolving in a dynamic, nonlinear process characterized by increasingly diverse field patterns. Understanding the factors related to recovering from schizophrenia is important if nurses and other clinicians are to assist individuals in finding new meaning and purpose that transcend the lived experience of schizophrenia and its associated disabilities. This study is concerned with the phenomenon of perception of self as manifested by individuals recovering from schizophrenia and its association with the pattern manifestations of hope and power. There are no reported empirical studies of the relations of these variables in individuals recovering from the experience of schizophrenia. The relevance of hope, power, and perception of self was suggested by testimony of individuals who are recovering (Deegan, 1988, 1997; Leete, 1989; Lovejoy, 1984), as well as a small number of qualitative studies (Byrne, et al., 1994; Davidson & Strauss, 1992; Jacobson, 2001; Young & Ensing, 1999; Williams & Collins, 1999).

Theoretical Framework

Within the Science of Unitary Human Beings (Rogers, 1970, 1990), recovering from the experience of schizophrenia is viewed as an expression of the life process. The meaning of the phenomena of schizophrenia and recovery is derived from an understanding of the life process of the individual in his/her totality. Through awareness of self as integral with the environment, individuals recovering from the experience

of schizophrenia knowingly participate in creating new meaning and purpose in their lives. The process of recovering requires active participation in changing one's attitudes, values, feelings, and goals (Deegan, 1988). While the common definition of the term recovering is inconsistent with the Science of Unitary Human Beings, the process of recovering from the experience of schizophrenia is not. The recovering process reflects an evolutionary emergence. Recovering is an ongoing, nonlinear process of discovery (Deegan, 1988), responsibility (Williams & Collins, 1999), and gaining a unitary awareness of who I am (Clay, 1994). Recovering is characterized by enlarging one's perceived boundaries of possibilities (Lynch, 1965), actualizing one's potential for a more functional life (Anthony, Cohen, Farkas, & Gagne, 2002), and gradually developing a unitary perception of oneself (Davidson & Strauss, 1992). Recovering from the experience of schizophrenia and associated disabilities is a transcendent, "truly unifying human experience" (Anthony, 1993, p. 15).

Perception of self, conceptualized within the Science of Unitary Human Beings as Human Field Image, is the unitary perception one has of one's self (Johnston, 1993, 1994). Phillips (1990), a Rogerian scholar, introduced the concept of Human Field Image, which he characterized as "an evolving manifestation of the human field pattern that synthesizes all past and future images into a [pandimensional] picture of human beings (pp. 13-14). Human Field Image provides a way of perceiving and understanding human field patterns such as the pattern manifestations of emerging human potentials of individuals recovering from the experience of schizophrenia. Human Field Image is defined as the individual's awareness of the infinite wholeness of the human field (Rogers, 1991) as it evolves within the human-environmental field process

(Johnston, 1993, p. 16). Recovery, within this framework, is viewed as actualizing one's potentials for well being and involves the individual's capacity to participate knowingly in change characterized by continuous patterning of the mutual human-environmental field (Barrett, 1983). Recovery does not imply cure nor does it mean that the person is symptom free (Anthony, 1993; Deegan, 1988). It is a way of living a satisfying, hopeful, and contributing life. Recovering, a life-long process, refers to the lived experiences of individuals as they meet the challenges of schizophrenia and its associated disabilities, and thereby gain a new and valued sense of self.

Hope is an intrinsic energizing life force (Fromm, 1968; Korner, 1970) characterized by a confident yet uncertain anticipation of a future good which is realistically possible and personally significant to the hoping person (Dufault & Martocchio, 1985; Miller, 1986). Although Rogers (1970) did not specifically address hope, she did identify feeling, used in its broadest sense, as an expression of unity, noting that feelings encompass the totality of the individual. Through a beginning awareness of the integrality of the human-environmental field, hope emerges as a pattern manifestation in the recovery process of individuals labeled with schizophrenia. Hope is associated with a sense of the possible and a commitment to change (Fromm, 1968). Wishing, which includes imagination, mutuality, passion, and the belief that desired changes are possible to achieve, is an antecedent to hope. It provides the initial source of energy necessary for hope to emerge (Averill, Catlin, & Chon, 1990; Lynch, 1965). The birth of hope occurs in integral process with other people who remain hopeful that the individual's recovery from the experience of schizophrenia is possible (Deegan, 1988; Lovejoy, 1984). A sense of hope emerges from despair (Marcel, 1978) when an indi-

vidual labeled with schizophrenia has "dawning awareness" (Davidson & Strauss, 1992, p. 135) of an aspect of oneself that holds promise for a more satisfying life. This dawning awareness offers the individual hope that recovery is possible. The awakening of hope, according to Strauss and Davidson, occurs throughout the recovery process, engendering an awareness of additional possibilities at crucial times.

Power, according to Barrett (1983, 1990) is the capacity to participate knowingly in the nature of change. Barrett's theory of power, derived from Rogerian science (1970), conceptualizes power as the way human beings share in the creation of reality by engaging in mutual process with their environment to actualize some potentials rather than others. The observation of Anthony, Cohen, and Farkas (1990) that individuals recovering from schizophrenia are active participants in their recovery process was supported by findings from a longitudinal study (Davidson and Strauss (1992). A series of semi-structured research interviews, conducted over a three year period with individuals ($N = 66$) diagnosed with schizophrenia and other serious long-term mental illnesses, revealed that the participants who were actively recovering identified and executed desired goal-directed activity. Williams and Collins (1999), using life-history interviews to explore the lived-experience of recovering with 15 individuals diagnosed with schizophrenia, found that the participants' subjective framework for recovering included moving from being a passive victim to being an active agent who participated knowingly in desired life changes.

Recovering from schizophrenia is experienced as gaining a perception of a functional self associated with a sense of hope, willingness to act, followed by responsible action (Davidson & Strauss, 1992; Deegan, 1988). This investigator theorized that hope

provides the motivating energizing life force that facilitates a greater awareness of possibilities, as well as the courage to participate knowingly in creating new meaning and purpose in life. Within the Science of Unitary Human Beings, it is hypothesized that the experience and awareness of human-environmental integrality, as manifested by hope and power, is associated with perception of self in individuals recovering from the experience of schizophrenia.

Method

An exploratory correlational study was designed to examine the relations among hope, power, and perception of self in individuals recovering from schizophrenia. This investigator selected quantitative methodology to examine the relations among the study variables. This decision was based on previously cited testimony of recovering individuals and qualitative studies that indicated that hope, power, and perception of self were integral to the process of recovering from the experience of schizophrenia. The availability of instruments that were developed within and/or are compatible with the Science of Unitary Human Beings further justified the use of a quantitative methodology.

The research questions were answered using Pearson product-moment correlations and hierarchical multiple regression analysis. Supplemental analyses were conducted to investigate the relations among the background variables and the main study variables, as well as the relations of the four dimensions of power and perception of self. An (α level of .05 was used for all statistical tests. The research questions were:

1. Is there a positive relation between hope and perception of self in individuals recovering from schizophrenia?
2. Is there a positive relation between power and perception of self in individuals recovering from schizophrenia?
3. Does the combination of hope and

power account for more variance of perception of self in individuals recovering from schizophrenia than either variable alone?

Sample

The population for this study was adult women and men who were active participants in community-based psychiatric rehabilitation programs certified by New York State Office of Mental Health. These programs operated in accordance with a statewide program model designed to provide a hope-filled, humanizing environment (Sheets, 1994) that invites individuals to participate in their recovery process. Thus, these community-based psychiatric rehabilitation programs provided an appropriate population from which to recruit individuals for this study. The program model explicitly addresses power and implicitly incorporates hope and provides opportunity for recovering individuals to develop a unitary perception of self (Sheets, Bucciferro & O'Brien, 1991).

The sampling unit consisted of 61 psychiatric rehabilitation programs that were certified at the time data collection was initiated. The sampling frame included 20 psychiatric rehabilitation programs randomly selected from programs throughout New York State. The selection of the 15 programs included in this study was in accordance with the order of response to the investigator's written request to meet with program representatives to explain the study purpose and data collection procedures, as well as to request assistance in identifying individuals who met the study inclusion criteria. The sample size was determined by the number of predictor variables in a single regression equation. As the study included up to five predictor variables in a single regression equation, a sample of at least 100 participants was required (Tabachnick & Fidell, 1989). Once the required sample size was reached no further meetings with program directors were scheduled. The

sample consisted of 107 volunteer participants who were diagnosed with schizophrenia, had a high school or general education diploma, and who could read and write English. The participants ranged in age from 19 to 63 years, with an average age of 38. Men represented slightly more than half of the sample (51%). Forty percent of the sample had either a high school or general equivalency diploma and 60% had attended college, with 33% earning a degree. The majority of participants were under age 30 when first diagnosed with schizophrenia and when first hospitalized for mental illness. Ten percent were never hospitalized for a psychiatric illness. Thirty five percent of the participants attended the psychiatric rehabilitation program for over 12 months and 23 % attended for less than three months. Nearly half the participants (45%) identified a family member as the person who provided them with the most support.

Data Collection Procedures

After receiving approval from a university institutional review board, a letter of introduction was sent to the directors of the 20 selected psychiatric rehabilitation programs. After the initial meeting with representatives at each program site, a formal application was sent to the agency review body. When approval to conduct the study was received, the program director distributed a flyer prepared by the investigator to potential participants who met the study inclusion criteria. The flyer invited potential participants to meet with the investigator at a specific date, time, and location to discuss the nature of the study. The investigator provided a written and verbal description of the study's purpose, significance, and data collection procedures during the meeting. The potential participants were assured of confidentiality. Of the 112 potential participants who attended the meetings, three individuals decided not to participate in the study. One woman said that she did not

want to think about her feelings at this time and another woman and a man provided no explanation for their decision not to participate. Two additional participants were eliminated from the study because they did not complete one of the instruments (Power as Knowing Participation in Change Tool, Version II) in accordance with the written instructions. Those individuals who voluntarily chose to participate signed a consent form, which was collected prior to distributing a booklet that contained three instruments and a background information form. The investigator remained in the room until the last participant completed the questionnaire booklet and placed it in a locked box.

Instruments

Perception of self, conceptualized within the Science of Unitary Human Beings as Human Field Image, is defined as the unitary perception one has of one's self (Johnston, 1993, 1994), manifested by an individual's awareness of the infinite wholeness of the human field (Rogers, 1991). Perception of self was measured by the Human Field Image Metaphor Scale (HFIMS) (Johnston, 1993, 1994). The 25-item, 5-point, Likert-type scale uses metaphor as a means of promoting unitary field expression. A higher score on the HFIMS represents expressions of a strong sense of integrality and an expanded perception of potential; whereas, a lower score represents a greater sense of isolation and a diminished perception of potential. Johnston established content validity by submitting a list of metaphors, identified from a review of literature and a concept analysis, to two groups of Rogerian experts for evaluation. The resultant list of metaphors was further evaluated for content relevancy, consistency with the theoretical framework, and clarity by three different groups of Rogerian experts. Construct validity was determined by loadings on factors, which supported Johnston's theoretically proposed structure of Human

Field Image. Construct validity was also supported by the correlation of scores ($r = .67, p = < .01$) of the HFIMS and the Index of Human Field Energy (Gueldner, 1993 as cited in Johnston, 1993, 1994). Johnston reported an internal consistency reliability coefficient of .91. Cronbach's alpha for the current study was .93.

Power is defined as "the capacity to participate knowingly in the nature of change characterizing the continuous patterning of the human and environmental fields as manifested by awareness, choices, freedom to act intentionally, and involvement in creating change" (Barrett, 1990, p. 108). Power was measured by the Power as Knowing Participation in Change Tool, Version II (PKPCT, VII) (Barrett, 1987, 1998). The 48-item tool uses a semantic differential format to rate the four dimensions of power (awareness, choices, freedom to act intentionally, and involvement in creating change). Higher scores on the PKPCT, VII indicate relatively greater power than lower scores. To establish initial content validity of the Power z Knowing Participation in Change Tool (PKPCT), Barrett (1983) submitted a list of concept-context items for evaluation to two panels of judges knowledgeable in Rogerian science and measurement. Construct validity was evidenced by loadings on factors, which supported Barrett's theoretically proposed construct of Power. Barrett reported reliabilities, ranging from .63 to .99, as variances of factor scores obtained for each of the four dimensions of power, awareness, choices, freedom to act intentionally, and involvement in creating change. Cronbach's alpha coefficient for the current sample was .97.

Hope is defined as an intrinsic energizing life force (Fromm, 1968; Korner, 1970) characterized by a confident yet uncertain anticipation of a future good, which is realistically possible and personally significant to the hoping person (Dufault & Martocchio,

1985; Miller, 1986). Hope was measured by the Miller Hope Scale (MHS) (Miller, 1986; Miller & Powers, 1988). A higher score on the MHS, which is a 40-item, 6-point Likert-type scale, represents a relatively higher level of perceived hope than a lower score. Miller identified eleven critical elements of hope from a comprehensive review of the literature and a qualitative study of 59 individuals who survived a life-threatening illness. The critical elements of hope, which include mutuality-affiliation, sense of the possible, avoidance of absolutizing, achieving goals, psychological well-being, purpose and meaning in life, freedom, reality surveillance, optimism, and mental activation, provided the framework for generating the items for the MHS. To evaluate for content validity, Miller submitted the items to a panel of four judges with expertise about hope. Construct validity was supported by loadings on factors that supported Miller's conceptualization of hope. Construct validity was further evidenced by the correlation of scores ($r = .82, p = < .01$) of the MHS and the Existential Well-Being Scale (Paloutzian & Ellison, 1982). Miller reported an internal consistency reliability coefficient of .95. Cronbach's alpha coefficient for the current study was .96.

Results

The zero-order correlation between the criterion variable, perception of self, and hope was $r = .73 (p = .000)$, which indicated a strong positive relation between these two variables in the sample of individuals recovering from schizophrenia. The zero-order correlations between perception of self and power was $r = .58 (p = .000)$, which indicated a moderately positive relation between perception of self and power in the sample of individuals recovering from schizophrenia.

The amount of variance of perception of self accounted for by a combination of hope and power was examined using hierarchical

multiple regression analysis. This type of regression analysis was selected so that the investigator could control the order of entry in the regression equation of the predictor variables, hope and power. From a review of the literature, which included testimony of individuals recovering from the experience of schizophrenia (Deegan, 1988; Leete, 1984), theoretical perspectives (Lynch, 1965; Marcel, 1978), and qualitative studies (Davidson & Strauss, 1992; Williams & Collins, 1999; Young & Ensing, 1999), it was suggested that the emergence of hope precedes power. Thus, hope was entered into the regression equation on the first step and accounted for 52.83% of the variance of perception of self, which was statistically significant ($F(1,105) = 117.61, p = .000$). On step two, power was entered into the regression equation, producing an R square change of .0036, which was not statistically significant ($p = .37$). With hope in the equation, the addition of power as a predictor variable did not produce a statically significant increase in the variance accounted for by perception of self in individuals recovering from schizophrenia. Thus, hope and power did not account statistically significantly for more variance of perception of self than was accounted for by hope alone.

Although the third research question was answered, the investigator did a second hierarchical analysis to assess the unique contribution of hope to the variance of perception of self. Power was entered on the first step of the regression equation, and contributed 33.08% of the variance of perception of self, which was statistically significant ($F(1,105) = 51.91, p = .000$). Hope was entered next on the second step of the analysis, producing a statistically significant R square change of .2011 ($p = .000$). As indicated by the R square change, hope uniquely contributed 20.11% of the variance of perception of self in individuals

recovering from schizophrenia after controlling for power.

The concept and process of recovering from schizophrenia is beginning to interest practitioners and researchers (Strauss, 1997; Whitehorn, Lazier, & Kopala, 1998; Williams & Collins, 1999). Descriptive characteristics of individuals and the experience of recovering from schizophrenia are beginning to appear in the literature. Analyses of descriptive information of the participants in this study in relation to the hope, power, and perception of self contribute to this nascent body of knowledge.

Analyses of background information variables and the study main variables, hope, power, and perception of self, were conducted using Pearson product moment correlations, t-tests, analyses of variance, and hierarchical multiple regression. Statistically significant correlations were found between hope, power, and perception of self and age when first diagnosed with mental illness and age when first hospitalized for mental illness. No evidence of a correlation was found between the main study variables and current age, gender, education, length of participation in the psychiatric rehabilitation program, or source of most support.

A statistically significant correlation was found between age when first diagnosed with mental illness and age when first hospitalized for mental illness ($r = .36, p = .000$). Differences in levels of hope, power, and perception of self between participants age 25 and older when first diagnosed with mental illness and those less than age 25 were examined by two-tailed t-tests. The participants who were age 25 or older had statistically significantly ($p < .05$) lower levels of hope, power, and perception of self than participants who were less than age 25 when first diagnosed with mental illness.

Differences in hope, power, and perception of self in participants who were

never hospitalized for mental illness, those who were age 25 or older when first hospitalized, and those who were less than age 25 when first hospitalized were examined by one-way analyses of variance. The level of hope was not statistically significantly different ($p > .05$) among the three groups. The levels of power and perception of self, however, were significantly different ($p = .05$). Those who were never hospitalized had statistically significantly higher levels of power and perception of self than participants who were age 25 or older when first hospitalized, but their levels of power and perception of self were not statistically significantly different from participants who were first hospitalized before age 25.

Supplementary analyses of the dimensions of power and perception of self were also conducted using Pearson product-moment correlations and hierarchical multiple regression analysis. Statistically significant strong relations were found between the four dimensions of power and perception of self. Hierarchical multiple regression analysis, however, indicated that of the four dimensions of power, only choices made a statistically significant contribution to the variance of perception of self ($r = .37$, $p = .000$). When hope was entered into the equation, however, choices contributed only a small additional amount (1.1%) to the variance of perception of self, which was statistically significant ($p = .05$).

Discussion of Findings

Support for a positive relation between hope and perception of self was demonstrated by the participants in this study. The concept of hope is characterized by a confident yet uncertain anticipation of a future good which is realistically possible and personally significant to the hoping person (Dufault & Martocchio, 1985; Miller, 1986; Miller & Powers, 1988). Hope, described as a multidimensional integral process of feeling, thought, and action, is a

commitment to becoming. This description of hope is congruent with Rogerian science (1970, 1992) as it reflects a hoping individual's experience and awareness of integrality with his/her environment.

Although no empirical studies have examined the relation of hope and perception of self, philosophical and theoretical literature, as well as qualitative studies and personal testimony refer to a strong association between these two concepts. Philosophers and theologians describe hope as a mystery, a special gift emerging from a time of trial, which allows an individual to transcend perceived limitations (Lain cited in Mermal, 1970; Marcel, 1978; Meissner, 1973). According to Lynch (1965), hope liberates individuals who are experiencing illness, not by denying the experience, but by enlarging their perception of who they are and who they can become.

The role of hope is self-evident in therapeutic interventions associated with a goal of increasing one's sense of self (Nunn, 1996). Rogers (1961), in defining the characteristics of a therapeutic relationship, emphasized the importance of meeting an individual as a person who is becoming. A therapist who can view a person from this perspective can help awaken hope and by so doing allow the individual to discover and "confirm or make real [his/her] potentialities" (Rogers, p. 55) "to be that self one truly is" (Kierkegaard, 1849/1983, p. 29).

Parse (1990, 1999) found a relation between hope and perception of self in two qualitative studies in which the lived experience of hope was examined. She concluded that hope is a universal experience of health that emerges as a way of becoming in the mutual integral process of the individual and his/her environment. Parse's conceptualization of hope is congruent with testimony of individuals recovering from schizophrenia (Deegan, 1988, 1997; Lovejoy, 1984), who acknowledge that an

emerging sense of hope is a cornerstone of becoming, i. e., developing a unitary perception of self through envisioning possibilities.

In a qualitative component of the Yale Longitudinal Study of Prolonged Psychiatric Disorders (Strauss, Harding, Hafez, & Lieberman, 1985), Davidson and Strauss (1992) explored the ways in which an individual's perception of self may be central to recovering from serious mental illness. The recovering participants ($n = 32$) described experiences of discovery of and development of a dynamic self in the midst of dysfunction. The researchers suggested that the process of recovering is initiated by dawning awareness of the possibility (hope) of a more functional self (a valued perception of "who I am") [Clay, 1994].

Support was provided for a positive relation between power and perception of self in individuals recovering from schizophrenia. Barrett (1983, 1990) described power, conceptualized as the synergistic relations of awareness, choice, freedom to act intentionally, and involvement in creating change, as the way human beings create reality in mutual process with their environment to actualize some potentials rather than others. According to Phillips (1997), "the openness of the human-environment [field] gives people the ability to participate knowingly in their becoming" (p. 25). Power is an inherent aspect of the life process by which individuals express their being in the world (May, 1972; Nietzsche, 1883-88/1968). May (1953) observed that awareness of self and freedom are correlated. The more self-awareness an individual has, the more freedom and range of choices increase. May further suggested that with each exercise of freedom, one's sense of self also increases. Writing from the perspective of an existentialist therapist, May observed that a human being becomes a self by actively participating in the process of becoming.

The experience of individuals recovering from schizophrenia also support a relationship between power and perception of self. Leete (1987) indicated that when she realized that she had the power to decide what her life would be like and who she could be, she began to participate knowingly in learning how to live with and beyond the experience of schizophrenia. Lovejoy (1984) wrote that with the help of staff members, she slowly began to take responsibility for herself by beginning to make choices and actively engage in learning new behaviors that changed her perception of who she was and who she could become.

In an exploration of the lived experience of individuals diagnosed with schizophrenia, Williams and Collins (1999) reported that a feeling of power made a difference in how recovering participants conceptualized their future possible selves. The participants indicated that for them to feel they were recovering, they needed to actively participate in creating changes related to their experience of schizophrenia, as well as to other important areas of their life.

Analysis of the narratives of the participants in Davidson and Strauss' (1992) qualitative study of individuals recovering from schizophrenia and other prolonged psychiatric conditions revealed the integral, nonlinear nature of developing a functional sense of self, which the researchers suggested is equated to recovering. Putting the self into action, a manifestation of power, is an activity which the participants emphasized they must initiate themselves if it is to be effective in helping them enhance their perception of a functional self.

Supplementary analyses were performed to examine more closely the four concepts of power, awareness, choices, freedom to act intentionally, and involvement in creating change and their relations to perception of self. Power, as described

by Barrett (1983), is a unitary concept, reflecting the synergistic field behaviors of awareness, choices, freedom to act intentionally, and involvement in creating change. These field behaviors, according to Barrett, can fluctuate in quality and quantity. In different situations or life experiences, one of the four dimensions of power may be primary. Of the four dimensions of power, only choices made a statistically significant contribution to the variance of perception of self among participants in this study. This finding may indicate that the study participants are more familiar with the dimension of choices than they are with the other three power concepts. The psychiatric rehabilitation program in which the participants were enrolled explicitly focuses on choices as a key component of the recovery process (Lamberti, Melburg, & Madi, 1998). Choices may also be the power dimension most valued by individuals with a label of schizophrenia. Once an individual is diagnosed with schizophrenia, being allowed to make choices associated with activities of daily living, treatment options, or preferred life goals is an uncommon experience (Deegan, 1988; Dzurec, 1986; Leete, 1989).

Hope and power together did not statistically significantly contribute to more of the variance of perception of self than hope alone in this sample of individuals recovering from the experience of schizophrenia. Although there was a strong correlation between hope and power ($r = .74$, $p = .000$), a review of the theoretical framework for the study indicated that these variables represented different concepts. In reviewing the conceptualizations of hope (Miller, 1986) and power (Barrett, 1983, 1990), this investigator observed considerable overlap between these two multidimensional concepts. Differences between hope and power, however were also identified. Two of the eleven dimensions of hope, mutuality-affiliation and an-

icipation, are not explicitly included in the power construct. Although Barrett described power as a field manifestation emerging out of the mutual process of the human-environmental field, the Power as Knowing Participation in Change Tool, VII (Barrett, 1987, 1998) does not reflect mutuality-affiliation as defined by Miller. Neither is anticipation mentioned in Barrett's conceptual definition of power nor is it reflected in the power tool. The Miller Hope Scale (Miller, 1986; Miller & Powers, 1988), on the other hand, has four items reflecting mutuality-affiliation and six items related to anticipation. Thus, it may be that 20% of the variance in perception of self among participants in this study, which was uniquely accounted for by hope after controlling for power, is attributable to the dimensions of mutuality-affiliation and anticipation.

Positive correlations among hope, power, and perception of self may indicate that these pattern manifestations, which emerge from the continuous mutual process of human and environmental fields, are integrative experiences for individuals who are recovering. Hope, which is manifested by dawning awareness of possibilities, may provide the initial energy and courage for recovering individuals to participate knowingly in creating new meaning and purpose in life that transcend the label of schizophrenia and its associated disabilities.

Age when first diagnosed with mental illness and age when first hospitalized for mental illness, however were found to have statistically significant low negative relations with hope, power, and perception of self. Participants who were first diagnosed with schizophrenia at a younger age (under 25 years old) showed statistically significantly higher levels of hope, power, and perception of self than those who were older when first diagnosed. This investigator considered whether time since first diagnosis and first hospitalization might help to

explain these differences. There was nearly an age difference of 20 years between participants who had first been diagnosed with mental illness less than six years ago and those who were first diagnosed with mental illness over 20 years ago. The age difference was similar for participants in relation to age when first hospitalized for mental illness.

Being diagnosed with serious mental illness and being hospitalized for the first time are transitional events that present a strong challenge to an individual's perception of self (Lally, 1989). Previously learned and culturally shaped negative beliefs about mental illness and individuals who are labeled mentally ill become personally applicable when an individual formally enters this stigmatized class (Goffman, 1963). Awareness of stigmatization was illustrated by Fisher (cited in Reidy, 1994) when he commented that once you are labeled with schizophrenia, "you just can't get rid of it, from your records or from your heart" (p. 7). Lally contends that individuals diagnosed with schizophrenia are not passive recipients of the label of mental patient. They can either accept the label by increasingly organizing their self-image around the role of mental patient or they can resist internalizing the label by integrating and transcending the experience of schizophrenia within their evolving perception of self. As the life process evolves, individuals who are recovering begin to define their experience of schizophrenia in a way that constructs and maintains a competent perception of who they truly are (Davidson & Strauss, 1992; Deegan, 1988; Jacobson, 2001, Williams & Collins, 1999).

Implications for Further Research and Practice

The findings from this study suggest possibilities for further research on recovering from schizophrenia. A major contribution of this study is the explication of a

paradigm for understanding the experience of schizophrenia and recovery as expressions of the life process. Within this paradigm, recovering from the experience of schizophrenia is viewed as gaining a unitary perception of self, which allows the individual to live a satisfying, contributing, and valued life. This lifelong process occurs by recognizing possibilities for a more positive life and active involvement in knowingly creating changes with the goal of finding new purpose and meaning within and beyond schizophrenia and associated disabilities. Recovery viewed from this perspective has implications for nursing research and practice.

The role of hope in recovering from schizophrenia requires further study. Specifically, the role of others in awakening hope needs to be examined. Understanding how hope for a more positive life is awakened and sustained over time is particularly important as the recovery potential of many individuals labeled with schizophrenia is currently unrecognized (Anthony, 1993; Keith, Regier, & Rae, 1991).

The nature of the relation between hope and power also requires further study. Understanding the nature of the relation between these two variables can contribute to the knowledge required to assist individuals experiencing schizophrenia in identifying and actualizing their potentials to achieve maximum well-being, which is unique for each individual.

Specific suggestions for further research include replication of this study with consideration for certain conceptual and methodological issues:

1. Assess changes in the levels of hope, power, and perception of self at different times during the life process of individuals recovering from the experience of schizophrenia and associated disabilities.
2. Replicate this study with individu-

als experiencing schizophrenia who are participating in different types of treatment and peer support programs, as well as those who are not currently participating in any therapeutic or social programs.

3. Qualitatively explore the role of supportive relationships in facilitating the recovery process in this population.

4. Examine stigma in relation to hope, power, perception of self, and time since first identified as a mental patient.

With supporting data from future research, it may be appropriate to consider the implications of this study for nursing practice, as well as the clinical practice of other mental health disciplines. In developing trusting, supportive therapeutic relationships, nurses and other clinicians may be able to help individuals labeled with schizophrenia become aware of possibilities for developing new meaning and purpose, which may provide them with the strength and courage to become actively involved in creating desired changes in their life, and thereby, gaining a unitary perception of who I am and who I want to become.

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CHANGING PARADIGMS IN EPIDEMIOLOGY: CATCHING UP WITH MARTHA ROGERS

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ABSTRACT

A graduate nursing course in epidemiology led to questions about the relevance of the course to nursing and population-focused public health nursing practice. The search for an answer revealed issues with changing paradigms in epidemiology, and the need for that discipline to develop a theoretical base that is neither reductionist nor burdened with the biomedical model. This led to a review of the work of Martha Rogers, who began her nursing career as a public health nurse. A comparison of Rogers' works with the trends in epidemiology revealed parallels demonstrating that Rogers knew decades ago what epidemiology, as a discipline, is just beginning to appreciate.

The basic ideas for this paper were developed when I was enrolled in an epidemiology course as part of a post-Master's certificate program in Community-Based Nursing. The textbook for the course was written by a physician (Gordis, 2000). After a few weeks of (a) learning about what epidemiologists do, (b) calculating incidence, prevalence, and death rates of disease, and (c) solving a seemingly endless number of 2 by 2 contingency tables used by epidemiologists to explore the occurrence of disease, I began to wonder what relevance all this had to nursing. Although epidemiology courses are recommended for graduate curricula for public health nursing majors (Josten, Aroskar, Reckinger, & Shannon, 1996), it seemed to me that current ideas in

epidemiology were antithetical to basic principles of nursing such as holism, as well as to the idea of public health nursing as population-focused practice.

Searching for an Answer and Finding Martha Rogers

In order to find an answer to the question of the relevance of epidemiology to nursing, I read basic community health nursing textbooks. In the course of doing so, I found mention of changing paradigms in epidemiology (McKeown & Weinrich, 2000). Having completed my PhD at NYU (and having taken the course, "Science of Man," under Martha Rogers) the idea of changing paradigms sounded fondly familiar. I explored the epidemiologic literature to learn how that discipline's paradigms had changed. The more I read, the more I thought to myself: "Martha Rogers was right! She knew all of this decades ago!" I saw the history of nursing's struggle to become an autonomous discipline also being played out

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in the epidemiologic literature. The ideas of using a holistic approach and throwing off the yoke of dominance by the medical profession might be new to epidemiology, but they are not new to nursing—and certainly not to Rogers. I imagined what a stimulating conversation I could have with Martha about what I had found in the epidemiologic literature.

Martha Rogers was a public health nurse. She worked as a staff nurse in rural Michigan, as both a staff nurse and an acting Director of Education in Hartford, CT, and as the founder and Executive Director of the first Visiting Nurse Service in Phoenix, AZ (Hektor, 1989/1994, p. 15). She had earned her MPH and Doctor of Science degrees in the School of Public Health at Johns Hopkins University (Hector, p. 18). She must have taken a course in epidemiology in her studies at Hopkins. Her familiarity with epidemiologic approaches can be seen in her 1970 statement: "Statistical data provide demonstrable evidence that the United States is by no means the healthiest nation on this planet. Maternal and infant death rates in the United States exceed those of a number of other countries" (Rogers, 1970/1994, p. 92). Almost two decades later she wrote: "Incidence statistics concerning [AIDS] are open to many questions" (Rogers, 1988, p. 101).

Rogers completed her studies at Hopkins during the transition in epidemiology from the Infectious Disease Era to the Chronic Disease Era (Susser & Susser, 1996a). I wondered what she would think of the current debates in the epidemiologic literature. I couldn't help smiling as I thought of Martha saying something like: "Been there! Done that!" This paper is, therefore, lovingly dedicated to Martha Rogers, a visionary leader who, decades ago, saw the problems addressed in contemporary epidemiologic literature. Moreover, with respect to nursing, she did not just see the problems, but she did something about them that forever

changed nursing science and the nursing profession. The purposes of this paper are to review the changing paradigms in epidemiology and to relate this information to Martha Rogers' ideas about professions, nursing education, and the Science of Unitary Human Beings.

The Current Dilemma in Epidemiology

Recently, much has been written in the epidemiologic literature about changing paradigms in the discipline, and the need for theory development in epidemiology that permits a return to the basic purpose of epidemiology—explaining "what shapes population patterns of disease rather than what makes an individual ill" (Krieger & Zierler, 1996, p. 107). Shy (1997) wrote:

The standard textbook definition of epidemiology is: "the study of the distribution and determinants of disease in populations." The phrase "disease in populations" is critical to distinguish between epidemiology as a public health science and epidemiology as a biomedical science concerned with the etiology of disease in individuals. (p. 480)

There have been repeated calls for epidemiologists to think upstream and move from a reductionist, biomedical view of diseases in individuals to a whole population health perspective (Krieger, 1994, 1999; Pearce, 1996; Pearce & McKinlay, 1998; Shy, 1997; Susser & Susser, 1996a, 1996b). Further, McKinlay and Marceau (2000) asserted that "to realize its potential in the new millennium, public health must be released from the asphyxiating orthodoxy of medicine" (p. 28).

Krieger (1994) stated that epidemiology has moved away from one of its basic purposes—"improving population patterns of health, disease, and well-being" (p. 899). Graduate students in epidemiology are more likely to be taught research methodology and data analysis than how to develop

"epidemiologic hypotheses about societal dynamics of health and disease" (Krieger, 1994, p. 887). While not denying the importance of learning about methodologic aspects of epidemiology, Krieger stated that the point of epidemiologic research is "analyzing and improving the public's health" (p. 888). Susser and Susser (1996a) noted that "a widely used modern text endorses a pithy definition of epidemiology as the study of disease occurrence, implicitly setting aside public health ends" (p. 672). Similarly, Shy (1997) asserted that recent epidemiologic "research on disease in populations is divorced from a societal context . . . [and] provides no clues as to what organized efforts society should undertake to promote health and prevent disease" (p. 481). He also stated that academic epidemiology has failed to study the underlying societal factors . . . that can be the object of public health interventions" (Shy, p. 481). According to Pearce and McKinlay (1998), "epidemiology should rediscover its original population perspective, and develop new appropriate methods to evaluate the major determinants of health at the population level" (p. 644).

Rogers' Ideas and the Current Dilemma

Anyone familiar with Martha Rogers' work will find the themes above to be consistent with her views. Four decades ago, in a paper presented at the School of Nursing, Medical College of Georgia, Rogers (1962/1994) mentioned "the wholeness of man and the universe" (p. 57). In 1969, she wrote: "The phenomenon at the center of nursing's purpose is a unified whole" (Rogers, 1969, p. 23). Two decades later, Rogers (1990b) said: "My own work focuses on developing a holistic world view by proposing a science of unitary, irreducible human beings that is coordinate with a world view that includes outer space" (pp. 106-107). In the same article, she stated: "Nursing is inseparable from the new world

view and the process of change. Holistic trends are on the way to becoming a massive torrent" (p. 108). In 1992, Rogers noted "the recognition of people as distinct from their parts has characterized nursing from the time of Florence Nightingale to the present" (p. 28).

Rogers probably would have had a lot to say about the problems of releasing the discipline of epidemiology from medical dominance and returning it to its social purposes. Rogers (1968/1994) wrote: "A profession exists for social ends. Its direct responsibility is to the people it purports to serve. . . . It does not exist to serve the needs of another profession" (p. 109). Less than a decade later, Rogers (1975) stated that the medical establishment was "struggling to discontinue all health services except those pared to the scope of medicine" (p. 6) and asserted that "no one professional field is capable of directing or supervising the judgments and decisions of another professional field" (p. 6).

Rogers (1969) wrote about the public's need for health promotion services—and in particular the services of professional nurses. She stated:

A nation's first line of defense in building a healthy people lies in maintenance and promotion of health. . . . There is a critical need for a concept of community 'health services' to transcend the all too common concept of 'sick services.' This is not to suggest that care of the sick is unimportant. Rather the sick reflect our failures in promoting and maintaining health. (p. 23)

She later added that maintenance and promotion of health were "areas of concern initiated by nursing and integral to nursing's purposes" (Rogers, 1971/1994, p. 222). She also stated that "society is demanding a wide range of health services that requires [sic] the knowledge and skills of a variety of

professional fields and which are beyond the ken of medical doctors and hospitals" (Rogers, 1975, p. 4). In 1982, Rogers wrote: "Nursing in the year 2001 A.D. carries a major responsibility for determining the nature of services directed toward achieving human well-being" (p. 2). For Rogers (1987), "a science of unitary human beings identifies nursing's uniqueness and signifies the potential of nurses to fulfill their social responsibility in human service" (p. 123).

Let the Paradigm Fit the Time

Epidemiologic paradigms have evolved over time in relation to what was known about the causes and transmission of diseases in populations. These paradigmatic eras include: (a) the Sanitary Movement, with its paradigm of the miasma theory of disease; (b) the Infectious Disease Era with its paradigm of the germ theory of disease; (c) the Chronic Disease Era, with its paradigms of the Black Box, multifactorial causation, Host-Agent-Environment interactions, the Web of Causation, and Risk Factor epidemiology; and (d) the current Microlevel Epidemiology, with its paradigm of biophysical reductionism, in which theories of disease causation are focused on genetic, hormonal, viral and microbial etiologies (Kreiger, 1994, 1999; Pearce, 1996; Susser & Susser, 1996a, 1996b).

The Sanitary Movement

The Sanitary Movement is generally associated with epidemiologic activities during the first three-quarters of the 19th Century (Susser & Susser, 1996a). The prevailing paradigm during this era was the miasma theory of disease, "which had been inherited from the ancient Greeks" (Dossey, 2000, p. 26). According to this theory, diseases were caused by poisoning from "foul emanations from the soil, water, and environing air" (Susser & Susser, p. 669). This was the prevailing theory of disease causation when Florence Nightingale instituted her sanitary reforms during the Crimean

War (Dossey, 2000).

The miasma theory was not a new paradigm that suddenly appeared on the scene. Rather, it became the predominant paradigm because it fit the health and social needs of the time. The industrial revolution in Europe and the United States had given rise to slums, poor working conditions, and a "rapidly changing profile of mortality and morbidity [that] fundamentally changed both the nature and perception of health problems" (Susser, 1998, p. 609). The changing patterns of disease "seemed rooted in a horrendous environment of urban misery" (Susser & Susser, 1996a, p. 669). The miasma theory was focused on environmental causes of disease (Susser; Susser & Susser). Disease prevention measures were, therefore, focused on sanitation measures such as closed drainage and sewage systems, and on promoting cleanliness in homes and hospitals. In addition, there were arguments about disease as the cause of poverty versus poverty as the cause of disease. More important, the overall concern was "with the public health and its social distribution" (Susser & Susser, p. 668). "Appropriate [disease prevention] measures thus had to be applied across society" (Susser & Susser, p. 669).

It was during the Sanitary Era that "modern epidemiology took shape and then burst into activity" (Susser & Susser, 1996a, p. 668). Data were collected about morbidity and mortality rates, and statistics became an important aspect of epidemiologic study.

Indeed, Nightingale worked with William Farr, a founding figure of epidemiology (Susser & Susser) and a leading medical statistician (Dossey, 2000) on data she had gathered during the Crimean War, as well as from civilian hospitals that had adopted some of her reforms following the war (Dossey). Rogers (1994) noted that Nightingale "was the first woman to ever be admit-

ted to membership in the British Statistical Association" (p. 33). Epidemiologists during this period collected morbidity and mortality data "in relation to housing, infant mortality, and specific diseases" (Susser & Susser, p. 669). Occupational and industrial hazards were studied, as well as problems pertaining to food contamination. The emphasis of this work was on "prevention of disease in populations . . . and the health needs of the population as a whole" (Pearce, 1996, p. 679).

As modern epidemiology was taking shape during the Sanitary Era, modern nursing also was emerging. In a statement about nursing that reflects the epidemiologic perspective of the Sanitary Era, Rogers (1970) wrote that "maintenance and promotion of health [and] prevention of disease . . . encompass the scope of nursing's goals. . . The arenas of nursing's services extend into all areas where there are people" (p. 86). Rogers (1980/1994) also stated: "For more than a hundred years, nursing has encompassed broad concern for the health of people" (p. 277). Rogers (1990a) noted that "nurses' long established concern with people and the world they live in is a natural forerunner of an organized abstract system encompassing people and their environments" (p. 6). In 1992, Rogers wrote: "Traditionally nursing's goals have encompassed both the sick and the well, and consideration of environmental factors has also been integral to nursing's efforts (p. 28).

Rogers described her initial experiences as a public health nurse in the late 1930s (Hektor, 1989/1994). She said: "What I did was straight public health which involved a lot of case finding. . . . My days were almost entirely home visits. . . . What I liked was seeing people where they were in their homes, and the promotion of health" (p. 15). Notable in this last statement is the absence of any mention of *disease prevention*. Rogers (1986/1994) stated: "The goal of health

workers and of the public focuses properly on the promotion of health. In a dynamic, continuously innovative world, one does not, for example, prevent disease" (p. 295). In 1992, Rogers asserted that "education and practice in nursing have been directed toward promotion of health" (p. 28). Fitzpatrick (1994) wrote that "we have been stretched by Rogers to consider maximum health promotion in lieu of disease prevention" (p. 325). In a paper written during her last year of life on this earth, Rogers (1994) stated: "And if [nursing's] primary purpose is promotion of health, well-being is a much better term because the term health is very ambiguous" (p. 34). According to Parse (2000), Rogers set forth a unitary view of health as a value, well-being, and potentials in contrast to the particulate view of the predominate medical model of health" (p. 30).

Competing with the miasma theory of the the Sanitary Era was the contagion theory (Winkelstein, 1996). Whereas the miasma theory focused on disease transmission through exposure to a "cloud that clung low to the earth" (Gordis, 2000, p. 11), the contagion theory "held that direct personal contact was the cause of infection. However, no one had any idea exactly what substance passed between persons" (Dossey, 2000, p. 235). Methods of disease prevention advocated by proponents of the contagion theory were to quarantine seaports, arriving ships, and cities when outbreaks of disease occurred (Dossey). Such measures did not sit well with the economic and political leaders of the time. "Cleaning up the town in line with the miasma theory was much more palatable and feasible" (Dossey, 2000, p. 236). Thus, the miasma theory and the Sanitary Era prevailed until there was scientific evidence that microorganisms were the causative agents of disease.

Infectious Disease Era

The Infectious Disease Era, with its paradigm of the germ theory of disease, represented a major change in epidemiology. Although this era is said to have begun "in the late 1870s with Koch's precise scientific exploration of specific and diverse bacteria and their relation to disease" (Dossey, 2000, p. 237), ideas that disease was caused by microorganisms that could be spread by human contact had been published several decades earlier. More important than the specific date is the magnitude of change the germ theory of disease caused in epidemiology and public health science. Rather than looking at overall environmental causes of disease, the focus was now narrowed to looking for specific, single-agent causes (Susser & Susser, 1996a). Moreover, "the appropriate responses [to disease] were to limit transmission by vaccines, to isolate those affected, and, ultimately, to cure with chemotherapy and antibiotics" (Susser & Susser, p. 670). "The social causes of disease that had flowed from the miasma theory went into decline" (Susser & Susser, p. 670).

The germ theory of disease dominated public health science until the middle of the 20th century, to the point that "the search for other than microbial causes of disease [nearly ceased]" (Susser & Susser, 1996a, p. 670). When Joseph Goldberger identified that nutritional deficiency caused pellagra, for example, his work "ran against the tide of belief [about disease causation]" (Susser & Susser, p. 670). Some writers argue that the germ theory continues to be the dominant paradigm in epidemiology, as researchers continue to seek specific viral and genetic causes of disease (Kreiger, 1994; McKinlay & Marceau, 2000).

According to Rogers (1988) "causality and cure are feeble claims. . . . History is replete with comings and goings of epidemics of many kinds. Such events have a

beginning and an end of their own" (p. 101). She stated that "a multiplicity of drugs are avidly searching for a new disease to conquer" (Rogers, 1980/1994, p. 276). She later asked: "Is it possible that massive use, misuse, and abuse of antibiotics and various chemicals, with growing numbers of individuals allergic to such drugs, is a significant variable associated with the emergence of AIDS?" (Rogers, 1988, p. 101). Rogers (1990b) also stated that "infectious diseases are not new to this planet. Hope, attitude, mood, and laughter are reported to be as effective in strengthening the autoimmune system as drugs and vaccines" (p. 107). Rogers (1994) cautioned nurses "about the pharmaceutical houses and the things that are coming out of them. Nurses must be careful about the phenomenon that can be called "drug pushing" (p. 34).

Although, many communicable diseases were brought under control during the Infectious Disease Era, Susser and Susser (1996a) posited that this may have been due as much to improved living conditions and nutrition, economic development, and social change, as to immunizations and limiting transmission. They also noted that few people foresaw the resurgence of "communicable diseases and global epidemics" (Susser & Susser, p. 670) that began in the latter part of the 20th century and remain with us in the new millennium. Nevertheless, as the major communicable diseases appeared to be under control, another paradigmatic change in epidemiology occurred.

The Chronic Disease Era

"In the mid-20th century, . . . chronic disorders increasingly displaced acute infection as the main force of mortality" (Susser, 1998, p. 609), and the Chronic Disease Era in epidemiologic thought began. Although several new paradigms of disease transmission emerged during this period, the "underlying idea [was] multiple causes for a single disorder" (Susser, p.

609), with epidemiologists attempting to solve the mystery of new epidemics of chronic disease" (Susser, p. 609). In addition to multifactorial causation, dominant paradigms of this era were (a) the Black Box, (b) Host-Agent-Environment interactions, (c) the Web of Causation, and (d) Risk Factor epidemiology.

The Black Box paradigm was exemplified in epidemiologic studies of peptic ulcer disease, coronary artery disease, and lung cancer in middle-aged men. These problems had been recognized as chronic disease epidemics and were those that "most visibly threatened the public health" (Susser & Susser, 1996a, p. 670). The Black Box was "the general metaphor for a self-contained unit whose inner processes are hidden from the viewer. This paradigm related exposure to outcome without any necessary obligation to interpolate either intervening factors or even pathogenesis" (Susser & Susser, p. 670). An example of the black box paradigm in action can be seen in studies about lung cancer. The link between smoking and lung cancer was supported by the finding "that tars applied to the skin of mice were carcinogenic" (Susser & Susser, p. 671). The actual "pathogenesis [of lung cancer] was by-passed" (Susser & Susser, p. 671).

Rogers (1970) wrote: "The Black Box theory assumes an encased whole within which the internal mechanisms are not open to examination. This theory . . . directs attention to the properties of the system and not its contents" (pp. 63-64). Rogers' ideas about the human field pattern are reflected in the Black Box theory. "The properties of the living system have their meaning in the patterning and organization of the system and not in the particulars of the system" (Rogers, 1970, p. 64). In 1988, she wrote: "Pattern is an abstraction that gives identity to human and environmental fields. One perceives manifestations of field pattern,

but one does not perceive the field pattern itself (Rogers, 1988, p. 100).

As the complexities of chronic disease became more apparent, epidemiologists began to recognize the multi-causal nature of chronic health problems, and additional paradigms associated with this era emerged. One of the first of these was the Host-Agent-Environment epidemiologic triangle (McKeown & Weinrich, 2000). It depicts the "complex relations among causal agents, susceptible persons, and environmental factors. . . . Changes in one of the elements of the triangle can influence the occurrence of disease" (McKeown & Weinrich, p. 231).

As epidemiologists continued to study the complex nature of chronic disease, they found that "causal relationships are often more complex than the epidemiologic triangle conveys" (McKeown & Weinrich, 2000, p. 232). Thus, in 1960, McMahan, Pugh, and Ipsen (as cited in Krieger, 1994) introduced the idea of the Web of Causation.

Expressed through the notion of "multifactorial etiology" and embedded in the statistical techniques of "multivariate analysis," the belief that population patterns of health and disease can be explained by a complex web of numerous interconnected risk and protective factors has become one of [epidemiology's] central concepts. (Kreiger, 1994, p. 887)

This paradigm encouraged epidemiologists "to embrace a more sophisticated view of causality" (Kreiger, p. 890). "It emphasized the need to consider, simultaneously, how diverse aspects of the host, agent and environment were implicated in the multifactorial etiology of disease" (Kreiger, p. 892).

Kreiger's (1994) critique of the Web of Causation, noted the lack of a spider in the web. For her, the spider represented "the

origins—as opposed to the interactions—of the multiple causes” (Kreiger, p. 893). Kreiger also stated that the Web of Causation “does not differentiate between determinants of disease in individuals and in populations” (p. 891). She cited the work of Rose, a British epidemiologist, who noted that there is a difference between the causes of cases and the causes of incidence. For the former, the question might be “why do some individuals have hypertension?” (Rose, as cited in Kreiger, p. 892). For the latter, the question might be “why do some populations have hypertension, whilst in others it is rare?” (Rose as cited in Kreiger, p. 892). Similarly, Shy (1997) noted that “the preponderance of current published articles in epidemiologic journals deals with risk factor and disease associations at the individual level rather than at the population level of understanding” (p. 480).

Notable in Shy’s statement is the word, association, and the absence of the word, causality. Rogers’ views on causality have been noted. Rogers (1992) wrote that “association does not mean causality” (p. 30). She also noted that “a new world view is necessary for a more productive approach to studying AIDS. Cancer, cardiac conditions, and a multiplicity of less frequent conditions need to be re-examined from a new reality” (Rogers, 1988, p. 101).

Risk Factor epidemiology is problematic in that many risk factors can be associated with a single disease. McKinlay and Marceau (2000) identified 36 risk factors for prostate cancer in their Massachusetts Male Aging Study. Statistically, their 36 factors contributed only 18% to the full explanation for the disease. They stated that some researchers have identified as many as 60 factors for it and estimated that 60 factors might provide only two-thirds of the explanation. They also asserted that “risk factorology” explains the occurrence of disease at only the individual level—not at

the population level—regardless of the number of risk factors identified.

Shy (1997) stated that “it is one thing to identify risk factors for lung cancer in individuals and another to understand what changes occurred in society to result in an epidemic of lung cancer in the 20th century” (p. 480). Pearce and McKinlay (1998) posited that “the rise of ‘risk factor epidemiology’ has been a mixed blessing, and that the new paradigm has major shortcomings both in terms of its contribution to public health and also in scientific terms” (p. 643). They also asserted: “Improved measurement techniques and predictivity are no cure for the wasting condition now afflicting downstream epidemiology” (p. 643).

Once again, Rogers was ahead of epidemiology in her thinking. She changed her Science of Unitary Human Beings by replacing probability with unpredictability (Rogers, 1990a). She stated: “The literature now points up that unpredictability transcends probability” (Rogers, p. 7). She further asserted that “complexity of investigatory methodology is not a substitute for substantive content in any field” (Rogers, p. 6).

Microlevel Epidemiology

The seemingly endless search for risk factors has led to the current era in epidemiology, Microlevel Epidemiology (Susser, 1998). As biomedical technology improved, the role of viruses and genetics played an increasingly important role in the search for causes of disease. Krieger (1994) noted that some epidemiologists have “strongly argued that the future of epidemiology lies in the fast moving search for genetic markers” (p. 893). In her opinion, this represents a return to the type of thinking characteristic of the Infectious Disease Era with its paradigm of germ theory and the ideas of single-factor causality.

More important, many epidemiologists have criticized Microlevel Epidemiology as moving epidemiology away from the study

of disease in populations (Shy, 1997). In describing the epidemiologic process, Pearce (1996) stated that "it is debatable whether the bottom-up approach is an effective and efficient long-term strategy to gain knowledge or prevent disease at the population level" (p. 681). In addressing the need for epidemiology to move away from reductionism and adopt a whole population perspective, Pearce offered the following analogy: "No one would attempt to predict the weather or the motion of planets from measurement of individual molecules" (p. 681).

Rogers made similar statements when describing unitary human beings. "A description of biological man, or psychological man no more describes MAN than a description of hydrogen describes water" (Rogers, 1969, p. 23). In 1980, she asserted that "unitary man cannot be understood by knowledge of his parts anymore than table salt can be predicted by a knowledge of sodium and chlorine" (p. 330). In 1992, she wrote: "What may be quite valid in describing biological phenomena does not describe unitary human beings, anymore than describing a molecule tells you about laughter" (p. 30).

McKinlay and Marceau (2000) stated that "conventional epidemiology is limited by . . . biophysical reductionism [and] absorption by biomedicine . . . [and] has moved away from its origins in public health and its status as an independent discipline" (pp. 25-26). They also noted the lack of theory development in epidemiology, and stated that because of this lack, the discipline of epidemiology has become lost in a "maze of risk factors with no opening or exit in sight" (p. 26).

As early as 1968, Rogers (1968/1994) commented that "a body of abstract knowledge, the science of nursing, is indispensable to nursing's evolution and to society's safety" (p. 109). She also noted

that the lack of a nursing conceptual system and related theories "produced a multiplying number of trivial and mediocre papers parading as research" (p. 110). In 1970, Rogers wrote that "though single causation has given way to a concept of multiple variables associated with human development and disease states, this too falls short of recognizing that man interacts as an integrated whole with the totality of the environment" (p. 50). Rogers (1994) also noted that "it is the phenomenon of concern that identifies any science. This signifies an organized abstract system" (p. 33). In the same article she wrote that "theory is derived from an organized abstract system" (p. 33), and that "research is done in relation to theories" (p. 34).

Susser (1998) asserted that epidemiologic investigations have become too narrow in focus, "inducing neglect of the objective of improving the public health" (p. 608). McMichael (1995) stated that "modern epidemiology is thus oriented to explaining and quantifying the bobbing of corks on the surface waters, while largely disregarding the stronger undercurrents that determine where, on average, the cluster of corks ends up along the shoreline of risk" (p. 634). With these criticisms in mind, various ideas about the future of epidemiology—and the need to return to a population perspective—have been presented in the epidemiologic literature.

Future Paradigms in Epidemiology

Koopman (1996) stated that "epidemiology is in a transition from a science that identifies risk factors for disease to one that analyzes the systems that generate disease in populations" (p. 630). Similarly, McKinlay and Marceau (2000) noted that "the impending 21st-century health threats presented by global environmental change, dangers to ecosystems, and planetary overload will affect whole populations, not just selected individuals" (p. 27). Shy (1997)

stated that current epidemiologic research "emphasizes the immediate biological determinants of disease, and thus serves the medical model, but provides no clues as to what organized efforts society should take to promote health and prevent disease" (p. 481). McDermott (1998) asserted that the "biomedical approach to disease theory, including large investments in genetic research [has resulted in a] relative neglect of inquiry into social determinants of chronic disease and public health inaction" (p. 1194). Rogers (1990b) stated: "Traditional world views are increasingly untenable and fail to explain contemporary events. Today's health care system is dangerously deficient and cannot be cured simply by adding more dollars or by other simplistic proposals" (p. 107).

Susser and Susser (1996b) have proposed that the discipline of epidemiology adopt a multi-level approach to the study of disease causation which they term Chinese Boxes. "We draw on. . . an earlier formulation of agent and host esconced in an environment that comprises systems at multiple levels" (Susser & Susser, p. 675). Each system can be viewed as an entity unto itself, yet related to other systems. "Systems . . . do not exist in isolation. A metaphor may serve to illuminate this ecological perspective. We liken it to Chinese boxes—a conjurer's nest of boxes, each containing a succession of smaller ones" (Susser & Susser, p. 675). McKinley and Marceau (2000) support this approach: "We view multilevel work as a response to the call for an upstream focus on the real or underlying determinants of the social patterning of disease" (p. 29).

Rogers (1970) introduced what came to be known as the Science of Unitary Human Beings in her book, *An Introduction to the Theoretical Basis of Nursing*. She devoted an entire chapter to systems theory. "The capacity of man and his surroundings

to engage in a continuous interaction process rests on the fact that both are demonstrably open systems (p. 49). It is noted that Rogers included the term interaction in her Principle of Helicy as late as 1980, but by 1986 she had changed it to process. Her basic ideas about human and environmental fields, however, remained largely unchanged and sound somewhat like the idea of Chinese Boxes that was posited by Susser and Susser (1996b) many years later. In 1992, in explaining the Science of Unitary Human Beings, Rogers wrote: "Two energy fields are identified: the human field and the environmental field. . . . Human and environmental fields have their own identity (Rogers, 1992, p. 30). "A science of unitary human beings is equally as applicable to groups as it is to individuals. . . . The group field is irreducible and indivisible. The group field is integral with its own environmental field" (Rogers, p. 30).

In a statement that is similar to Rogers' ideas, Kreiger and Zierler (1996) stated that is is "epidemiologic theory, and not [research] methodology that distinguishes our discipline from other population-based sciences. . . . Epidemiologic theory also distinguishes our field from other biomedical disciplines because their focus is solely on biological processes" (p. 109). There are calls for public health and epidemiology to move away from the medical model, adopt a more holistic approach, and use qualitative research methods (McKinlay & Marceau, 2000; Pearce, 1996; Shy, 1997). In a statement that is strongly reminiscent of nursing's history, Susser and Susser (1996b) noted:

Epidemiology and public health face ambiguities of role and status. . . . The historic origins of epidemiology are predominately if not exclusively in medicine. . . . In this century, epidemiology and public health have often withered in a medical environment that almost inevitably

must give primacy to the individual care of the sick persons who solicit care. It follows that autonomous schools of public health . . . can have a crucial role in socialization. (p. 677)

Nursing as a profession has fought a long battle to have all schools of nursing placed within collegiate settings, away from the yoke of hospital administrators, physicians, and the medical model of providing solely illness care. Martha Rogers was at the forefront of this battle. Moreover, Smith (1989) stated that "public health nurses will need to define their territory in the social service/human service configurations" (p. 75).

Answering the Question

Rogers' (1970, 1992) *Science of Unitary Human Beings* distinguishes nursing as a discipline from other health care disciplines. Hanchett and Clarke (1988) noted a "lack of fit between nursing's focus . . . and that of the traditional public health model, as reflected in the concepts of the epidemiologic model [host, agent, and environment]" (p. 2). They stated that nursing "focuses on human health, considered as well being, optimal functioning, and continuing development" (Hanchett & Clarke, p. 3). In contrast, "public health and epidemiology focus on illness and its prevention" (Hanchett & Clarke, 1988, p. 3). Rogers (1975) asserted: "The scope of nursing is markedly larger than that of medicine" (p. 6).

McKinlay and Marceau (2000), identified the need for public health and epidemiology to (a) adopt a holistic view of health, (b) move away from the medical model of disease, and (c) include population-level considerations in their work of improving the health of the public. They offered two conceptualizations of public health activities. One depicts public health activities when they are "subsumed within the field of medicine" (McKinlay & Marceau, p. 28).

Public health nursing is not included as a distinct entity in this conceptualization. The other depicts public health as an entity that stands alone at the top of the structure. Epidemiology is indicated as being on the same level as public health, much the same as when a staff position is indicated on an administrative organizational chart. Public health nursing is indicated as being a key component of public health, along with (a) public health engineering; (b) public health dentistry; (c) community, social, and preventive medicine; (d) health education, and (e) health administration. McKinlay and Marceau noted that in the second conceptualization, medicine [is considered] to be a subdivision of public health" (p. 28). Indeed, "medical care" is listed as a service under the level that includes public health nursing. It is interesting to note that 30 years ago, Rogers (1972) stated:

The 'ideal' [community health] team proposed 40 years ago included a public health nurse, a physician, a sanitary engineer, and a secretary. But when communities lacked the financial resources to engage in a full-scale health program, the public health nurse was identified as the single most important person best equipped to initiate and implement a program of community health. (p. 44).

While epidemiologists argue about the path their discipline needs to take in the future, the discipline of nursing can take some comfort in knowing that we have taken great strides toward defining ours. This has been accomplished, however, only through decades of debate about the nature of nursing, conceptual models of nursing, theories in nursing, the types of nursing research that our theories dictate, and the true focus of nursing research, education, and practice. Martha Rogers was at the forefront of these debates. One needs only

to read Malinski and Barrett's (1994) book, *Martha E. Rogers: Her Life and Her Work*, to gain a better picture of just how much of an activist for nursing she was. As epidemiologists debate their paradigms and carve out their role, nursing—thanks to Martha Rogers—has moved ahead in seeking solutions to improve the health of the public at both population and individual levels. Certainly nurses will use some of the data provided by epidemiologists to plan and implement health programs for the public, but most of the knowledge will need to be generated by nurses themselves, using a conceptual system such as Rogers' (1970, 1992) Science of Unitary Human Beings.

In the meantime, epidemiologists have a lot of catching up to do; Martha Rogers was way ahead of them. She was also way ahead of most nurses during her time on earth, but her ideas will continue to be used in the future as the discipline of nursing catches up with her as well. Using Rogers' ideas about promoting well-being, within the context of human and environmental fields, will help nursing to remain at the forefront of health care. The future of nursing in promoting the well-being of the public can best be summed up in a series of statements by Rogers (1994). "As we move into the future, we are going to have to look at what it is that people need and where is the role and knowledge of nursing in providing it" (p. 35). "The public, interestingly enough, wants alternatives [to traditional medicine]. Things are changing in the delivery of health care" (p. 34). "The science of unitary human beings provides the knowledge for imaginative and creative promotion of the well-being of all people" (p. 35). "To focus on "promoting [well-being] puts nursing at the center of the health care delivery system" (p. 34).

As many of us who knew Martha realized, she was ahead of her time. She transcended the conceptual, theoretical

challenges in the field of epidemiology, as well as nursing, when she developed the Science of Unitary Human Begins. The comparison presented in this paper clearly highlights the relevance of Rogers' ideas for the well-being of individuals and society in this new millennium.

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BOOK REVIEW COLUMN

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FROM FLATLAND TO CYBERSPACE: REFLECTIONS ON ROGERIAN SCIENCE AND CONTEMPORARY MEDIA

A Review of Stephen Hawking's *The Universe in a Nutshell*

Stephen Hawking is the Lucasian Professor of Mathematics at the University of Cambridge and is regarded by some as the Einstein of this time. His previous book, *A Brief History of Time*, which explored quantum mechanics, black holes and other cosmic phenomena, was a surprise best seller. His ability to articulate complicated theoretical physics with wit and insights has made him a media star. The clarity and accessibility of his language allows the non-scientist to understand, at least partially, the leading theories of the day. In *The Universe in a Nutshell*, Hawking takes the reader through what is known and not known in cosmology since *Brief History of Time*. Unlike *Brief History*, which presented a linear review of science that required the reader to understand the preceding chapters in order to proceed, this book contains chapters which can stand alone. The first two chapters dealing with relativity and time are the bases for all the following chapters. Hawking describes them as the trunk of the tree (or basis for the book) and the following chapters as the branches.

This book belongs in the library of all Rogerian scholars. It can serve to deepen the understanding of the basic cosmic tenets of Rogerian science. Pandimensionality, integrality, and energy without boundaries are all derived from cosmology and well described in this work. The lavish, full color illustrations of Hawking's book make under-

standing the concepts *easier* but make no mistake, this is not an easy book to read. The complexity of the theories explored in this work requires careful attention and mental alertness. This is no commonsense view of the universe; this is structured and disciplined science.

As explained by Hawking (2001) the Holy Grail of science is the so-called Theory of Everything (TOE). That is the all-encompassing theory beyond relativity that will unlock the secrets of the universe. According to Kaku (1994) the very elegance and usefulness of the theory to unify all physical phenomena in a simple framework will be the height of achievement for humankind. This unifying theory was the lifelong quest of Einstein and is the goal of his successors, including Hawking. Hawking admits in the early chapters that this theory has remained elusive. While the unifying theory has not emerged, there is much that has been learned about the universe since Einstein's time. Concepts such as multiple dimensions, time travel, hyperinflation, imaginary time, and string theory are explored with clarity and wit. One example includes Hawking's description of the universe in imaginary time. "The history of the universe in real time determines its history in imaginary time, and vice versa, but the two kinds of history can be very different. In particular, the universe need have no beginning or end in imaginary time. Thus, the histories of the universe in imaginary time can be thought of as curved surfaces, like a ball, a plane, or a saddle shape but with four dimensions instead of two" (pp. 82-83). In one of the illustrations of the concept of imaginary time, Hawking is seen falling off the earth, wheelchair and all, with the caption, "The surface of the Earth doesn't have any boundaries or edges. Reports of people falling off are thought to be exaggerations" (p. 85).

This book includes a glossary with brief, clear definitions of concepts ranging from

absolute time ("the idea that there can be a universal clock. Einstein's theory of relativity showed that there could be no such concept" [p. 202]) to Yang-Mills theory ("An extension to Maxwell's field theory that describes interactions between the weak and the strong force" [p. 208]). Throughout the book, Hawking allows the reader to be a part of the exclusive group of theoretical scientists such as Feynman, Penrose, and Townsend who are in the vanguard of science. He humanizes them through stories of their jokes, their bets, and their musings. It's a rare inside view of scientific giants.

Hawking has considerable exuberance about science, and his enthusiasm is contagious. He paints science as both a wonder and a mystery. This is essential reading for those who want to understand their universe and the times in which they live.

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GUEST BOOK REVIEW

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***EVOLUTIONARY HEALING* BY BARBARA SARTER**

I looked forward to reading Sarter's *Evolutionary Healing*, published by Jones and Bartlett in 2002, anticipating that it would make a major contribution to theoretical perspectives on healing within a simultaneity worldview (Parse, 1998). I was surprised by the slimness of the volume when it actually came, only 76 pages including postscript, references, and index. After reading it, I was left feeling that what I had read was a draft for the proposed book rather than a complete work.

In her introduction, Sarter describes the book as the culmination of her life, integrating ancient and modern philosophies with modern science into a framework for her view of the healing process as one of evolutionary healing: "the evolution of one's consciousness through health and disease" (p. viii). She identifies her philosophical sources as Aurobindo Ghosh, Swami Ramananda, Prince Kumar, and Pierre Teilhard de Chardin; her scientific sources as Stuart Kauffman, Rupert Sheldrake, and Fritjof Capra, among others. Although she acknowledges Martha Rogers as a source of inspiration, she does not reference Rogerian nursing science in the actual presentation of her ideas. Nor does she acknowledge Newman's Theory of Health as Expanding Consciousness at any point. After reading the introduction, I realized that this was not, after all, meant to be a view of healing within the unitary framework.

Sarter's book consists of five chapters: "The Evolving Universe," "Health," "An Evolutionary View of Illness," "Death,"

and "Healing." Throughout the book, she often makes statements that lack the necessary context and development that would allow the reader to follow her line of reasoning and understand how she reached many of the conclusions she did. She skims over important ideas, leaving me wishing for a fuller discussion including current controversies and differing viewpoints.

In the first chapter, Sarter presents her synthesis of philosophical and scientific ideas. She identifies four laws of evolution and discusses reincarnation and karma as the mechanisms of continuing evolution. At one point she mentions the controversy over whether increasing complexity and diversity exist together, citing Stephen Jay Gould as a prominent biologist who maintained that there is a trend toward diversity but not increasing complexity. In two brief sentences she questions how there could be increasing diversity without complexity and then makes the statement that "The reality of increasing complexity in evolution is undeniable" (p. 7), seemingly dismissing those who argue otherwise. She then goes on to use the example of the 100th monkey phenomenon without acknowledging that the accuracy of the incident described has been challenged numerous times.

In the second chapter, Sarter describes three dimensions of health, physical, mental, and emotional. She presents the human energy system from the Indian perspective of the chakras, including different vibrational frequencies of physical, organic, emotional, mental, and spiritual levels of consciousness. She maintains that "Good health depends upon a continual reestablishment of equilibrium among these centers, as they are constantly evolving at varying speeds" (p. 23). She then discusses ways to develop healthy physical, mental, emotional, and spiritual habits in the belief that "If we put order and balance into life and

establish a routine, we will find freedom to blossom into our true selves" (p. 29). One sentence in this chapter that I read and re-read within the context of the discussion in the corresponding section is, "The truth is that all human relationships end at the moment of death" (p. 27). This statement seems like an oxymoron in the context of a discussion of the interconnectedness of all people and of people with nature. In the physical, yes, but the physical is not all there is, which is the point I thought she was making, and which she does make in the chapter on death.

In the third chapter, Sarter presents her views on illness, including the idea that karma governs health and disease. Illness may have its source in a previous life. From an evolutionary view, illness offers important lessons to be learned, thus carrying the seeds of healing. She offers a beginning taxonomy of acute and chronic problems within and among the physical, organic, emotional, mental, and spiritual levels of consciousness. Her brief discussion of prayer and action at a distance assumes that both have been scientifically demonstrated to everyone's satisfaction, ignoring the controversy that exists in this area.

In the fourth chapter Sarter describes her perspective on death, returning to reincarnation and finding support for the persistence of consciousness outside the physical body after death in descriptions of near-death experiences. Two sections, "Witnessing Death" and "The Art of Dying," were moving but all too brief, two and a half pages total.

In the final chapter, Sarter discusses reincarnation, karma, and the laws of evolution presented in the first chapter in relationship to healing. For example, the law of integration tells us that high-level health will emerge as the person becomes integrated and balanced in all dimensions. She goes on to describe specific therapies for physical,

organic, emotional, mental, and spiritual healing. Again, this is done very quickly, a little over 14 pages in length, and is more summary rather than detailed discussion.

I expected and wanted to enjoy this book, so I was disappointed when I finished it. As I look back over the notations I made, I see a number of question marks. Where is the support for this statement? How does this follow given the discussion? What about the work of a particular scholar known to have published in this area? I believe the problem lies in the brevity of the book, not in Sarter's scholarship. This is an overly ambitious undertaking for a total of 65 pages of text.

I hope that Sarter will revise the book at some point to offer a broader, more complete discussion of her perspective on evolutionary healing. If so, I hope she will include at least one chapter comparing and contrasting nursing theoretical perspectives with the view she presents.

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CONTROVERSIES COLUMN

Setting the Direction for the Nature and Direction of Change: A Request for Responses from Our Readers

Roberta G. S. Hills, R.N; Ph.D.,
and Effie S. Hanchett, R.N; Ph.D.

Helicy, resonancy, integrality. These strange sounding terms describe the nature and direction of change in human and enviironmental fields. Rogers stated that fields "change continuously, mutually and creatively" (1986, p.5). These few words are powerful ideas. They reflect a worldview which is both simple and profound. Understanding is hampered by the causal language and structures of the traditional western world view. However, the idea of simultaneous interacting aspects of the universe as a whole presents no problem for many physicists, astronauts or aboriginal peoples.

These are difficult times for nursing theory, whether in academe or in service. Within nursing, outcomes, costs, and funding for funding's sake seem to glean greater support than do curiosity and the development of knowledge for knowledge's sake. Other disciplines, such as astronomy, do see the value of knowledge for knowledge's sake, and they amaze us with their glorious photographs of nebula from the distant toddler stages of the universe. Of course, knowledge for its own sake does eventually make immense contributions to pragmatic matters as well as profound alterations in worldviews.

We have briefly presented here what we see as current challenges to Rogerian perspectives in nursing education, practice, and research. We have also developed questions related to these issues. We ask the readers of *Visions* to address these issues

and submit their ideas to the journal. It is our intent to stimulate the thinking and debate that are necessary for the conscious choices that are so important to growth and change.

Nursing Education

The Rogerian faculty in many Colleges of Nursing are struggling with the changing values regarding the role of nursing theory in the curriculum. The focus continues to shift from what we, as a profession, know to what we can do. Sociological and other theories are more and more welcome in the curriculum while, increasingly, nursing theories are not. Accreditation standards are often of little or no help.

Questions

From a Rogerian perspective, what are the meanings of this change?

Should we seek to alter the content and direction of this change?

What do you envision as possible ways to do so?

Nursing Practice

Many, if not most, nurses in practice situations, do not readily see the usefulness of nursing theory in general, or Rogers' Science of Unitary Human Beings (SUHB) in particular, to their practice. Rogers' non-invasive practice model might be seen as incongruent or conflicting with the role of nurse practitioner. Similarly, the SUHB is sometimes seen as a science related more to alternative therapies than to Western science. Rogerian nurses continue their work in private practice, hospitals and other settings, often with little recognition for the significance of their contributions.

Questions

From a Rogerian perspective, what are the meanings of these trends?

What do you see as ways to influence the nature and direction of change in the use of Rogerian methodologies within practice settings?

What is the role of accrediting bodies in the use of nursing theory within practice settings?

Nursing Research

Funding agencies often place little value, at best, in the significance of theory in research. It may be disadvantageous to include theory in a research proposal. From the funders' perspective, it is immediate, cost effective outcomes that are of value. Faculty doing research from a Rogerian perspective continue their work with little or no funding. Students often find it difficult to identify faculty to serve on dissertation committees for theory-based research. The close relationships of theory and methods may not seem worth the effort to faculty or students.

Questions

From a Rogerian perspective, what do these trends tell us about the current process of change in the development of knowledge within Rogerian Science?

What ways do you see to influence the nature and direction of change in research activities conducted by Rogerian scholars?

What is the value of the findings of research related to the SUHB?

Other

Is the apathy in the use of the theory related to the loss of the theorist? How do you keep the spirit going?

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IMAGINATION COLUMN

Howard Karl Butcher, RN; PhD

ON FIREFLIES AND STARS: ENVISIONING LUMINESCENT BEACONS FOR ADVANCING NURSING AND ROGERIAN SCIENCE

"We are light made solid."

Anonymous

It is May in Iowa. Manifestations of summer are emerging. The rolling countryside hills of deep dark earth are being tilled, transforming winter's corn stubble into gardenlike rows and rows of corn. The thick stands of oak, red elm, hickory, and cottonwoods are spreading leaves turning the grey of winter into the sparkling green of spring. The calls of goldfinches, cardinals, warblers, blue jays, and sparrows break the hush of leaves blowing in the breeze. The first spring rains transform the yellow grass into a carpet of glowing deep green. Native prairie grasses begin their ascent and soon fields will be shimmering with the purple coneflowers, blooming butterfly weed, shooting stars, little bluestem grass, blue-eyed grass, blazing stars, lavender spikes, white balls of rattlesnake master, golden rays of black-eyed Susan, and Pasque flowers waving and hissing in the summer winds.

Fire Dance

In the early evenings between middle May and August, just as the sunset makes its final exit, just as darkness descends, and a pleasant coolness settles in, the fireflies rise up from the tall prairie grass and begin their skydance, lighting up the dark velvet sky with their momentary flashes of brilliance. Hundreds, now thousands, rising and then falling, shouting with their glowing light, "Can you see me?" and "Do you really see me?"

Fireflies, also known as lightening bugs, are nocturnal, luminous insects of the beetle family Lampyridae. Luminescence, the process of transforming invisible forms of energy into visible light, is responsible for the fireflies' glow-in-the-dark phenomenon. Luminescence is characterized by electrons undergoing transitions from excited quantum states. More specifically, the flickering signals of the firefly results from a substance called luciferin, which in the presence of oxygen and ATP, is catalyzed by an enzyme called luciferase, thereby releasing the extra energy as radiated light (*Encyclopedia Britannica*. bioluminescence. Retrieved May 16, 2002 from <http://www.search.eb.com/eb/article/eu=81408>; White, 1983).

Fire flies are like living jewels (Beckmann, 2001). The purpose of the firefly's luminescence is propagation and survival. The most common male firefly emits a 0.3 second flash of light every 5 to 6 seconds. The females watch from the ground in the high grass and await a male flash. Upon seeing a flash, the female flashes in response to a certain male after a two second interval. Females choose males based on their flash pattern. Interestingly, when the speed of flashing increases from a selected pair of fireflies, other males not involved with the courtship will flash in rhythm with the leaders. The mass synchronization occurs with the whole colony flashing in harmony. However, the fire dance is short lived. Fireflies have a life span of about two months (*Encyclopedia Britannica*. bioluminescence. Retrieved May 16, 2002 from <http://www.search.eb.com/eb/article/eu=81408>; White, 1983).

Can the firefly's dance of survival serve as a metaphor for the survival of nursing and Rogerian science? Is Rogerian science a mere momentary flash of brilliance soon to lose its luster among the dominance of biomedical nursing practice? What wisdom

does the plight of the firefly hold for us? How can we assure the survival of Rogerian pattern-based practice?

The End of a Season?

A number of nursing scholars (Cody, 1997; Fawcett, 1999; Levine, 1995; Mitchell, 1997; Rawnsley, 1999; Reed, 1998) have pointed out a decreasing emphasis on the application of unique nursing knowledge in nursing education and practice. Interest in Rogerian science and nursing theory in general seemed to have reached its peak in the 1980s. Recently, DeKeyser and Medoff-Cooper (2002) commented that "over the decade of the 90s nursing theory seemed to take an increasingly smaller role in the content of schools of nursing" (p. 330) and "practicing nurses are continuing with their daily routines and are often unaware that the world of nursing theory is changing" (p. 329). The vast majority of published nursing research continues to be conceptualized from theories borrowed from other disciplines. More importantly, few nurses in practice use a nursing conceptual framework or nursing theory as the theoretical foundation for conceptualizing and guiding their work.

Of greatest concern is an entire generation of nursing students who are being educated with minimal exposure to the value of nursing-theory guided education, research, and practice. Few students even learn about Rogers' nursing science of unitary human beings, and worse, if nursing theory is taught at all, it is taught as having only historical value or taught in one isolated nursing theory course. In addition, confining nursing theory to graduate studies, which is the custom in many schools of nursing, conveys the false notion that theory is too esoteric and underestimates intelligence and abilities of undergraduate students in learning how to engage in theory-guided practice (Butcher, in press).

The lack of education grounded in

nursing's distinctive knowledge base may be a significant reason why there is a decreasing interest in Rogerian scholarship. With no tradition of educating the next generation of nurses in the traditions of nursing's distinctive body of knowledge, the interest and flow of students into specific schools of nursing theory will become a mere trickle. There are strong indicators of decreasing Rogerian scholarship. There is evidence of declining submissions to *Visions: The Journal of Rogerian Nursing Science*, declining membership in the Society of Rogerian Scholars, fewer doctoral dissertations guided by Rogerian science, decreasing attendance at the national Rogerian conferences, and decreasing submissions to the Rogerian newsletter. Without catalysts to transform new energy into Rogerian scholarship, like the firefly, the season of Rogerian science-based nursing is at risk of coming to an end.

Midnight Sky

Far from the obscuring city lights and long after the fireflies have ended their dance, complete darkness envelopes the landscape. But the moonless night is not dark at all. Like sparkling pinholes in a black canopy, the midnight sky is awash with thousands of glittering lights. Stars are the main repositories of illuminating bright matter in the universe. Like raindrops from a thundercloud, stars are immense concentrations of energy and condensates of the Big Bang. Families of red dwarfs, white dwarfs, giants, super giants, and red giants live among others in clusters forming patterns and constellations.

Like the firefly, stars shine because they transform energy from one form to another. In the core of stars, hydrogen is transformed into helium in a process known as nuclear fusion. Nuclear fusion generates the heat that provides the pressure holding a star up and prevents it from collapsing under its own weight. As blazing power-

houses, stars will stay in this state for a long time, burning and radiating light into space (Hawking, 2001; Gribbin, 2001). Luminosity is the intrinsic or absolute brightness of a star or other celestial body, equal to the total energy radiated per second from the body (Illingworth & Clark, 2000). Unlike fireflies, the life of stars can last tens of billions of years. How can we assure that in this world, the science of unitary human beings will continue to shine, as do stars, long past the seasons of fireflies?

Sustaining the Vision

Assuring the survival of Rogers' vision requires a concerted effort of all Rogerian scholars toward living the values inherent in Rogerian science while making Rogers' science and vision of nursing visible to all. Like the mass synchronization of fireflies and the sustaining energy of stars, it is incumbent on all Rogerians to make the science of unitary human being visible in all realms of nursing and in the public in general. The survival of Rogers' vision requires effort directed toward creating fundamental change, transformation, and new direction.

Kotter (1996) outlined processes for creating major changes. First is the establishment of a sense of urgency. The decreasing emphasis on nursing theory-based education and practice is beyond urgency. It is a crisis. The very survival of nursing as an independent academic discipline rests solely on the development and use of a distinctive knowledge base.

Secondly, Kotter states that a coalition of persons acting together like a team needs to be created to lead the change. This column is a call to action, a call for synchronization of energy of those devoted to theory based practice and those devoted more specifically to advancing Rogerian science.

Third, Kotter explains one needs to develop a vision and strategy to guide and direct the change effort. Visions are about possibilities, about desired futures. Visions

are ideals, standards of excellence, expressions of optimism and hope. Visions communicate what makes us singular and unequalled and ideally reveal our higher order value preferences. Visions give focus to human energy (Kouzes & Posner, 1997).

Kotter's fourth process of creating change is communicating the change vision. Below are a number of visions or "*luminescent beacons*" to provide direction in sustaining and advancing Rogers' vision of nursing. While a number of visions address nursing theory-based practice more generally, *any vision that is designed to enhance the establishment of nursing theory-based practice as foundational to nursing will help actualize the vision of sustaining and advancing Rogerian nursing science*. A beacon is usually a light used as a "signaling or guiding device" (*American Heritage Dictionary*, 2000, p. 155). Thus, each vision is offered as a beacon of light signaling a fundamental change, transformation, and new direction guiding the advancement of nursing theory-based practice more generally and in many instances, Rogerian science specifically.

Luminescent Beacons for Advancing Nursing and Rogerian Science

1) *ANA standards of nursing practice accurately reflect the scope and diversity of nursing practice*. We must make it clear to the standard writers at ANA that nursing practice is not only guided by the nursing process, but the nursing process is guided by extant conceptual framework. More importantly, the standard need to acknowledge that nursing practice is guided by specific practice methodologies other than the nursing process that are derived from conceptual frameworks. For example, the Rogerian practice methodology of pattern manifestation knowing/appreciation and voluntary mutual patterning is an established way of practicing nursing derived from Rogers' science of unitary human beings that needs to

be encompassed within any set of standards for nursing practice.

2) *Accrediting organizations of schools and colleges of nursing (AACN and NLN) make it clear that content on nursing philosophy, metaparadigm concepts, conceptual frameworks of both the simultaneity and totality paradigms, and practice methodologies derived from extant nursing theories are taught at all levels of the nursing curriculum.* Most scholars agree that a unique body of knowledge is an essential quality of a profession (Styles, 1982). The use of nursing knowledge is a *hallmark* of nursing practice (Fawcett & Carino, 1989), distinguishes nursing as an autonomous health profession, and represents nursing's unique contribution to the health care system (Parse, 1995). Nursing's distinctive knowledge base is expressed in nursing's metaparadigm concepts, philosophy, patterns of knowing, paradigms, conceptual frameworks and theories specific to nursing, and practice models (Butcher, in press). A unique body of knowledge is a foundation for attaining the respect, recognition, and power granted by society to a fully developed profession and scientific discipline. Furthermore, the autonomy of a profession rests most firmly on the uniqueness, recognition, and recognized validity of the discipline's theoretical knowledge (Butcher, in press).

Undergraduate nursing students expect to become knowledgeable, competent, ethical, and caring professionals who provide nursing care for promoting health and well-being. To meet this goal, it is essential that nurses acquire the knowledge, skills, values, meanings, and experiences that are specific to nursing. Accrediting organizations have a tremendous impact on establishing what is considered "essential" content for the preparation of nurses. AACN and NLN need to explicitly identify nursing conceptual frameworks as the foundation of nursing education and make the integra-

tion of extant nursing frameworks a criterion for accreditation.

3) *Extant nursing theories and their distinct practice and methods of inquiry form the core for organizing and structuring knowledge taught in nursing education at all levels.* Nursing theory is *integrated* in all nursing courses. Specific nursing theories/models, including Rogers' science of human beings, serve as a way of conceptualizing and organizing content in nursing courses. Nurse educators in the clinical setting need to teach, role model, and practice from a nursing theory base so that students can experience *how* nursing theory guides practice. Students are evaluated on their ability to conceptualize and base their practice on extant nursing theories/models.

4) *Colleges of nursing recruit and retain faculty who are not only diverse in research interests but are diverse in terms of their paradigmatic and theoretical nursing perspectives.* Balanced and healthy colleges of nursing not only have identified areas of excellence in scholarship but also have faculty with diverse educational, methodological, and theoretical expertise. In order for nurses to be educated within and across nursing paradigms, schools of nursing will need a faculty that *embrace* paradigmatic diversity as well as nurse scholars/educators/researchers who have *expertise* in a variety of nursing theories and research traditions, including the Science of Unitary Human Beings. Students have most to gain when they are exposed to multiple theoretical perspectives.

5) *All nursing students graduate with knowledge grounded in extant nursing frameworks, including Rogers' Science of Unitary Human Beings.* Students who major in any discipline graduate with a wealth of knowledge about the application of using theories and conceptual frameworks specific to their discipline. For example, psychology students graduate with knowledge of psycho-

logical theories that describe the nature of the mind, development, and personality. Should not all nursing students be educated in the knowledge specific to nursing? Knowledgeable nursing students graduate grounded in the application extant nursing theories, practice methodologies, and modes of inquiry in both the totality and simultaneity paradigms. Nursing students are prepared for professional nursing practice when they are able to apply a variety of nursing theories to guide patient care in any given nursing situation.

6) *NCLEX exams and certification exams for specialty and advanced nursing practice incorporate competency in the understanding and application of a variety of nursing theories.* It's time that licensing exams accurately incorporate and make nurses and nurse educators accountable for learning and teaching knowledge that is specific to nursing, including extant nursing conceptual frameworks, which are the essence of all nursing knowledge. Nurses can no longer afford to ignore this unique scientific knowledge base. Only when nurses everywhere use knowledge specific to nursing will the nursing discipline achieve parity with other scholarly disciplines. Members of a discipline have the obligation to concern themselves with the knowledge base of their discipline, participate in its development, guide its use, and evaluate the work of their colleagues on the basis of the work's relation to the extant theory base of the specific discipline (Cody, 1994). Once nurses base their practice, education, and research on nursing theory, nursing's unique contribution to human well-being will become visible in the world of science, health care, and society. Incorporating nursing knowledge on licensing and certification exams would assure nursing content is taught and learned.

7) *Major nursing textbooks integrate a variety of nursing theories.* Major textbooks

must move beyond including a chapter on nursing theories, which rarely addresses how the theory can be used in practice, toward integrating knowledge about the application of nursing theories. Just as frequently as nursing textbooks include knowledge about nursing diagnosis and the nursing process, alternative nursing practice methodologies need to be included and integrated throughout textbooks in order to present a more balanced perspective on the diversity of conceptualizing nursing phenomena.

8) *JCAHO criteria for accrediting hospitals indicate the nursing practice must be guided by extant nursing theories.* When hospitals realize quality care is grounded in theory-based practice, they will invest in implementing information systems, data collection tools, and documentation instruments that support nursing theory-based practice. All practicing nurses are expected to and are able to practice nursing from a nursing theory base. When interviewing for a position at a hospital, nurses are routinely asked what frameworks they use in practice and employee evaluation criteria include the ability to effectively use nursing theory-based practice.

9) *National Institute of Nursing Research funds nurse researchers who conceptualize research within nursing's extant theoretical frameworks.* Currently, the mass majority of funded and published nursing research is conceptualized from theories borrowed from other disciplines. Having a unique body of knowledge is the very essence of a discipline. Donaldson and Crowley (1978) pointed out in their classic article, "a discipline is not global; it is characterized by a unique perspective, a distinct way of viewing all phenomena, which ultimately defines the limits and nature of its inquiry" (p. 113). Similarly, Meleis (1997) pointed out "a discipline provides a unique way of considering the phenomena that are of inter-

est to its members" (p. 42). When conducting research there is nothing wrong with conceptualizing the research problem within a theory from another discipline. However, research conceptualized using non-nursing theories or borrowed theories from other disciplines does not advance nursing science nor does it advance the development of a unique body of disciplinary knowledge (Parse, 1994).

10) *Independent nurse owned and managed centers abound and are places of excellence where nurses practice independently guided by extant nursing theories.* Advanced practice nurses need to provide an alternative service promoting health and well-being that is complementary and not a substitute or surrogate for medical care. Extant conceptual frameworks provide the scientific foundation for providing unitary and holistic nursing care and are the foundation of independent advanced practice nursing.

A Call for Responsibility

John Wheeler, who along with Steven Hawking is one of the most eminent physicists of our time, believes that we are not simply bystanders on a cosmic scale; rather we are shapers and creators living in a participatory universe (Folger, 2002). In being informed of the work by Pierre Teilhard de Chardin, Henri Bergson, and Alfred North Whitehead, it is not surprising Rogers' nursing science is evolutionary, participatory, and process in nature. The notion of participation is integral to Rogers' Science of Unitary Human Beings. Specifically, integrality, mutual process, and knowing participation in change all speak to Rogers' *participatory epistemology* (Butcher, 1994, 1997). Participation is an implicit aspect of a unitary ontology. Skolimowski (1994) explains that one cannot truly conceive of the nature of wholeness unless one grants that the meaning of wholeness implies that one must participate in it. Participation is the

core of life, the song of joy in experience, the source of meaningfulness, the profound catalyst of an evolving universe, and the vehicle of transforming visions into actualities. Furthermore, Skolimowski (1994) *asserts meaningful knowing participation in change includes responsibility for change.* Understanding integrality, or unity of the living and non-living, knowing that everything is inseparable, implies we must take responsibility.

Those invested in the endurance and advancement of Rogerian nursing science all have a responsibility to participate in transforming visions into actualities. Laszlo (2001) reminds us that visions of "the future cannot be predicted; they must be created . . . the world we create in reality depends on us" (pp. 210-211). Responsibility is an intrinsic value in Rogerian-ethics (Butcher, 1999). Rogers frequently linked the science of human beings to the fulfillment of nursing's social responsibility for enhancing well-being and human betterment. Knowing participation in change includes responsibility. Like the transformation of energy creating the light that emanates from fireflies and stars, nurses devoted to advancing nursing and Rogerian science have a responsibility to collectively direct their energy to make the vision real.

We Are All Stars

High in the heavens, in the northern Iowa night sky, one can easily distinguish the pattern of stars that form the constellation Ursa Major. Ursa Major, or "The Great Bear," is unmistakably visible because the well-known "Big Dipper" forms the bear's tail section. Ursa Major, the third largest constellation, is also distinctive because seven bright, second magnitude and third magnitude stars form the Big Dipper (Kerrod, 1993). In addition, the nearby constellation Ursa Minor (Lesser Bear) includes the North Star (Polaris) (Croswell, 2001). The North Star marks the celestial North

Pole. Therefore, it does not move in the sky; rather all stars rotate around the North Star. The North Star is a great beacon of light giving direction to lost navigators and lost souls. In Ursa Major, there is also a star (RA 9h 33m 56s D 48o 9') named after Martha E. Rogers. This star serves as an *enduring* symbol of the luminous glow of her life and contribution to nursing.

Thinking about the celestial star named after Martha Rogers leads to a deeper insight: we are all star stuff. "The cosmos is a unity. To understand ourselves we must understand the stars" (Rees, 1997, p. 17). All matter is born in stars. The atoms in every cell of one's body have their origin in the birth of the universe some 10 billion years ago. Carbon and other building blocks of life, such as iron and oxygen, are forged inside the core of massive stars. Nucleosynthesis is the process that transmutes hydrogen into heavier chemical elements, and as the star collapses from its own mass, the star explodes in a supernova that throws the carbon and other heavier elements into space. Without supernova, there would have been no heavy elements, and likely no life (Russell, 1992). "We are stardust—the ashes of long dead stars" (Rees, 1997, p. 17). Furthermore, Einstein's equation $e=mc^2$ means mass is a form of energy or light. In other words, human beings, like all mass, may be thought of as crystallized light (Russell, 1992).

The recording artist Moby's recent song "We are all Made of Stars" on the album 18, also reminds us that we are "star-stuff." Moby's compositions are more like celestial modern symphonies than pop tunes. Looking up at the Iowa night sky, the melody of Moby's arrangement starts sparingly and blossoms, growing richer and brighter with each repeating rhythmicity with the repeating the words "people come together, people they fall apart, no one can stop us now, cause we are all made of

stars" (Moby, 2002).

Being and Becoming a Beacon of Light

Each of us devoted to advancing Rogerian and nursing science has a part to play. We all have a part to play in the fire dance. We are all stars, and each of us has the capacity and *responsibility* to burn brightly. Meaningful, deliberate, knowing participation in change is the way in which humans bring forth a new world (Butcher, 1997).

1) *Live the values of Rogers' Science.* Sustaining the vision of Rogerian science involves living the values inherent in Rogers' life and her work. In an earlier work, Butcher (1999) identified a constellation of values inherent in Rogers' life and her works. Living the values of courage, commitment, transformation, responsibility, optimism, and wisdom have particular relevance in devoting energy toward advancing Rogerian science. Living the values of Rogerian science can be a continual source of inspiration and energy.

2) *Attain positions of responsibility and facilitate transformation.* Kotter (1996) explains that in order for change to occur, broad-based action is needed. Obstacles such as systems or structures that undermine the change vision need to be overcome. Becoming a dean of a college of nursing; chairing curriculum committees; sitting on the boards of hospitals, state boards of nursing, and nursing organizations; being a hospital administrator or unit administrator; or sitting on a NINR review board that funds "nursing research" are some examples where Rogerian scholars can work in assuring the *voice and value* of nursing theory-based education, research, and practice is *heard and advanced*. In becoming members on boards of organizations such as ANA, NLN, AACN, NINR research review boards, and State Boards of Nursing, we can move nursing toward formally recognizing nursing's distinctive

knowledge base in educational and practice settings.

3) *Nurse educators must create ways to incorporate nursing theory and specifically the science of unitary human beings in every course you teach.* It is an educator's ethical responsibility to teach nursing's substantive knowledge. The survival of any theoretical system depends on the investment of this generation of nurse educators to pass on the ideas, values, concepts, principles, research findings, and practice methods of the discipline's theoretical systems and research traditions to the next generation. Any aspect of teaching nursing knowledge can be connected to and integrated with postulates and principles in Rogerian science.

4) *Nurse researchers must conceptualize their research in ways that serve to advance Rogerian science.* Only a few Rogerian scholars have developed a program of research or a series of studies that build one on another. Until NINR becomes more receptive to Rogerian science, a couple of strategies can be used to further Rogerian research. For example, using theoretical triangulation, funded studies can be reconceptualized from a variety of theoretical perspectives. In addition, a Rogerian research study can "spin-off" of a larger, funded grant or use secondary analysis by taking some aspect of the data and re-examining it through the lens of Rogerian science. In addition, new concepts and tools need to be developed, old concepts reconceptualized, and Rogerian research methods tested and developed. Studies need to be replicated and expanded. Viable conceptual systems and research traditions need to have an active and growing community of scholars who are committed to advancing the science by conducting research and mentoring the next generation of research scientists.

5) *Nurse administrators must lead*

their staff in implementing theory-based nursing practice. Nurse administrators informed about Rogerian science can teach, role model, and formally implement the Rogerian practice methodology in their practice setting. There are numerous examples in the Rogerian science literature, and in the literature of other conceptual systems particularly Roy's Adaptation Model, Parse's theory of human becoming, Orem's self-care deficit theory, and Neuman systems model, that describe successful implementations in various practice settings. The processes of implementation described in this literature can be useful in guiding the process of integration of Rogerian science in practice settings.

6) *Support the advancement of Rogerian science by being actively involved in the Society of Rogerian Scholars.* In laying the foundations for nursing, Nightingale (1893) declared, "no system can endure that does not march" (p. 198). Rogerian science has endured so far; however, the *march* toward the fulfillment of Rogers' vision remains unfulfilled. A major catalyst in the movement of any science toward achieving wider recognition is the collective participation of its members in professional organizations. Freidson (1986) points out that the professional association is the major "formal means by which the interests of its members are pressed collectively and focused politically" (p. 185). Professional organizations are the vehicle that serves to create a *collective* identity, political entity, and a voice for the profession (Beletz, 1990). A major limitation in moving Rogerian science forward is the low participation of nurses in the Society of Rogerian Scholars. Without the active involvement of each member in the professional society, Rogerian science may languish in the shadows. The Society of Rogerian Scholars is a major vehicle educating others about the science and promoting the advancement of Rogerian

scholarship. The Rogerian Society acts as a resource for emerging Rogerian scholars. To *march* also means "proceed directly and purposely . . . to walk steadily and rhythmically forward in step with others" (*American Heritage Dictionary*, 2000, p. 1068). Through collective actions of its members, the Rogerian Society needs to expand recruitment and energize its membership to actively participate in the organization. The only limit to the force of collective action is the number of members working together to effect change.

7) *Support the Society of Rogerian Scholars Newsletter and Visions: The Journal of Rogerian Nursing Science by submitting work for publication.* As the common statement in academia goes, "publish or perish"; the same can be said about the survival of a scientific system. Unless new work is being generated and published, the science will perish. Rogerians have two excellent vehicles for disseminating their work: the newsletter and the journal. Yet, as of late, both have struggled with not having enough submissions for publication. At the same time, Rogerian scholars need to publish work in other prestigious, refereed journals so that a wider audience can become familiar with Rogerian science.

8) *Seize opportunities to tell stories to the public, health care professionals, and other nurses of how nursing is distinct from medical science when guided by extant nursing conceptual frameworks.* Buresh and Gordon (2000) explain in some detail how nurses can inform the public about the true nature of nursing by telling stories that illuminate the value of nursing's contribution to health and human betterment. Similarly, Rogerian nurses can engage with and educate the public by telling stories that illuminate how Rogerian science makes a difference in everyday health situations.

9) *Rogersians must devote serious scholarship and effort toward making sure Rogers'*

original work remains easily accessible to educators, students, researchers, administrators, other health care professionals, and the public. New in-print or on-line primary sources are needed and must be made accessible to the next generation of Rogerian scholars. Most of the primary sources of Rogers' work are no longer in print. Those teaching and those students interested in learning about Rogerian science are finding it increasingly difficult to access the classic and current Rogerian literature. In addition, a new comprehensive text based on Rogers' post-1970 revisions that explicate Rogerian research and practice methodologies is needed. Every three to four years, Roy, Orem, Neuman, Leininger, and Parse publish new editions of their theories/models assuring that their science remains accessible and endures. In addition, a number of classic nursing theory texts have been reprinted in their original form. For example, Peplau and Henderson's original books have both been reprinted and made accessible for students.

Finding Energy in the Apparent Void

The summer night thunderstorm rattles all from their sleep, reminding us that we are enveloped in creative energy. Torrents of lightning shatter the apparent void. The Midwest nighttime thunderstorms strike with sudden force and then recede quickly, revealing a night sky inky black. Crickets are chirping and fireflies flashing again. Stars are blazing overhead.

Between December 18-25, the Hubble telescope's keepers focused on an area of "least activity," an apparently empty quadrant in the vicinity of Ursa Major's tail no larger than a dime seen at 75 feet (Benson, 2002, p. 105). The sampled image, the deepest image at the time ever taken of the heavens, collected beams of light from this tiny speck of sky for 10 consecutive days using 342 exposures. When the exposures were cleaned up, processed, and digitally

fused this area of apparent darkness and emptiness housed about 1,500 pinwheel galaxies and other galactic forms. Since that deep field image was assembled 7 years ago, astronomers have concluded that no matter what seemingly empty speck of space deep cameras focus on, there are an abundance of glinting powerhouses (Benson, 2002). Even where there is apparent darkness, there is light. Even where there is apparent emptiness, there is a fullness of energy.

Now is the time for all to rise up; rise up above the tall obscuring grass and join the dance of energy; burn brightly, and illuminate the void in nursing. Now is the time to make Rogerian science visible to all.

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