

Visions

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see page 3

Infinite Potentials

The Journal of Rogerian Nursing Science

Visions: The Journal of Rogerian Nursing Science

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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* (4th. Ed.). References - see page 251. Although the APA manual states that the first line of each reference should be indented five to seven spaces as you would a paragraph, it also states that the typesetter will arrange the reference list in hanging indent format for publication. Since *Visions* is desk top published, we prefer that you submit the reference list with hanging indents.
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 5.1 or Microsoft Word 6, 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 to:

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Columns:

1. There are five potential columns - Controversies, Imagination, Emerging Scholars, Book Review, and Health Patterning Modalities - 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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Infinite Potentials

In the 1996 issue of *Visions: The Journal Of Rogerian Nursing Science*, we thanked Fran Biley, the Society of Rogerian Scholars' Region 9 coordinator (International Region), for starting the Nurse-Rogers ListServ. Thanks again are in order. Fran has now developed the Martha Rogers Homepage. Although the page is still under development, there is some interesting material already available.

Categories of information include the following:

A Biography of Martha E. Rogers

A Selection of Photographs

Listen to Martha's Voice

Details about internet discussion Groups

Related Links

Reference Lists

Information about the Society of Rogerian Scholars

Visions: The Journal of Rogerian Nursing Science

Research and Instrumentation

The homepage address is www.uwcm.ac.uk/uwcm/ns/martha/homepage.html

Editorial

We hope that you will enjoy the wide variety of articles represented in this, the sixth issue of *Visions*. Butcher continues to refine his exciting new research method developed for the Science of Unitary Human Beings. Smith and Reeder present a provocative discussion regarding the appropriateness of clinical outcomes research in this nursing science. Watson presents her innovative research exploring the manifestation of change known as beyond waking, based on her presentation at the last SRS conference in Richmond in 1997. Biley takes a radically new approach in exploring the Science of Unitary Human Beings, offering a novel glimpse into the social context of the Beat Generation as it might have stimulated Rogers in the 1940s and 1950s. He also reviews the latest of the Rogerian publications, *Patterns in Rogerian Knowing*, edited by Mary Madrid based on presentations from the 1994 and 1996 Rogerian conferences. Christenson reviews a book by the late Carl Sagan, and Butcher offers another stimulating Imagination Column.

We are pleased that a complementary copy of this journal will be sent to all NLN accredited doctoral programs in nursing. It should provide hours of thought-provoking reading for students and faculty alike. Hopefully this will lead to an increase in the library subscriptions to *Visions*.

Since its inception, *Visions* has been indexed in *CINAHL, Cumulative Index to Nursing and Allied Health Literature*. It is now possible to obtain reprints of articles that have appeared in *Visions* through CINAHL direct online service at www.cinahl.com, or at 1-800-959-7167. The cost is \$12.50 per article, and we receive royalties for each copy ordered. Although this service may seem costly, it is fast. They promise the hard copy within 24 hours. You can still order reprints from *Visions* directly at a lower cost (\$2.50 per article) if you are not in a hurry.

The big news: It looks like we are ready to offer two issues of the journal in 1999. In order to keep up this momentum, we need even more manuscripts and column submissions. It is up to you to make two issues every year a reality. For now, read, enjoy, and send us your responses to the thought-provoking content in this issue.

THE BEAT GENERATION AND BEYOND: POPULAR CULTURE AND THE DEVELOPMENT OF THE SCIENCE OF UNITARY HUMAN BEINGS

Francis C. Biley, PhD, MSc, BNurs, RMN, RGN, PGCE, FETCert

ABSTRACT

In the 1940s and 50s, Greenwich Village, and New York City in general, were places that were participating in great change. Beat Generation writers, pop artists, and contemporary musicians were re-defining their crafts. In the midst of all this lived Martha Rogers, who was re-defining her craft, nursing. This paper argues, in what could be defined as a beginning and informal hermeneutic analysis, that in order to fully understand the Science of Unitary Human Beings it is necessary to understand the social context in which the theoretical framework was developed. Implications that arise from the insights that emerge from this brief exploration of the social context in which the Science of Unitary Human Beings developed, which concentrates on the writing of the Beat Generation, are discussed.

It is widely recognised that Martha Rogers drew much inspiration for the development of the Science of Unitary Human Beings from the work of many individuals, mostly from the academic community. These sources are well documented in any or all of the general and even more specific textbooks on nursing theory. There should be no need to remind readers that in the first few pages of *An Introduction to the Theoretical Basis of Nursing* (Rogers, 1970) there is reference to Greek mythology, cosmology, archaeology, music, philosophy and prehistory. More specifically, there is reference to the work of Harvey, Priestley, Kepler, Galileo, Newton, Bacon and Descartes. Falco and Lobo (1985) stated that Martha's influences have "capitalised on the knowledge base

gained from anthropology, sociology, astronomy, religion, philosophy, history and mythology" (p. 216), with Daily *et al* (1994) adding that those influences included psychology, biology, physics, mathematics and literature. Meleis (1991) considered that science fiction and futurology played a part in the development of the Science of Unitary Human Beings. Falco and Lobo (1985) along with others have found explicit evidence of the influence of von Bertalanffy's open systems theory. Influences from the work of Nightingale, Einstein, Burr and Northrup (Daily *et al*, 1994), early Greek philosophers and also de Chardin, Polanyi and Lewin (Meleis, 1991) can be found. Many of these influences are critically and philosophically explored in the exemplary work *The Stream of Becoming: A Study of Martha Rogers's Theory* (Sarter, 1988).

However, it is unlikely that Martha Rogers developed the Science of Unitary Human Beings having only been influenced by these members of the academic commu-

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nity. Hektor (1989,p.65), in her paper "Martha E. Rogers: A Life History," characterised Martha Rogers as an avid reader, who loved books and "by fourth grade had read every book in the school library." Martha said, "I used to go to the public library before I was 6," adding that there were always loads of books in our home and in my grandparents homes. Books in the attic, in trunks, all kinds of books spilled all over - *Men of Mars*, Buck Rogers; the Greek alphabet I knew by the age of 10. By sixth grade I had read all 20 volumes of *The Child's Book of Knowledge* and was into the *Encyclopedia Britannica*. Also sets of Dickens and Mark Twain.

(Hektor, 1989, p.65. quoting Rogers)

Although this is talking about her childhood reading, it may also be a strong indication that Martha drew on a wider variety of sources for inspiration in developing the Science of Unitary Human Beings than has previously been identified. Despite being consistent with her own paradigm, this is rarely, if ever, identified or developed in the literature.

The more one reads about the Science of Unitary Human Beings, the more the pattern that seems to emerge is more than, different from, and greater than the sum of Polanyi, de Chardin and the other influential scholars. Patterns seem to emerge that suggest more than those explicit references in her work. When one visits art galleries or listens to music, one can begin to see reflections of the Science of Unitary Human Beings. For a Rogerian scholar or student, it is sometimes hardly possible to read a paragraph, see a picture or attend a conference without thinking or in some other way perceiving that sounded or looked Rogerian. As Barrett (1994) recently said, "on some days, it almost seems as if everything's coming up Rogers" (p.66).

Of course sometimes it is easier to see

emergent pattern congruence than others, but upon reading Kafka, Moorcock, Sartre, Asimov, Dostoyevsky or Ray Bradbury one may find it. Look at a picture by Monet, Jackson Pollock, Turner, Edward Hopper, Andy Warhol, or Chuck Close and the Science of Unitary Human Beings may become apparent. Listen to Bach, Philip Glass, the Velvet Underground, Mozart or John Cage and you may hear the Science of Unitary Human Beings. Watch Bergman, or *2001: A Space Odyssey*, or the films of Bunuel and you may see the Science of Unitary Human Beings. For that matter, you can look at the sky and the stars, wonder at the Grand Canyon and other great natural phenomena, or listen to the birds singing and you may feel the Science of Unitary Human Beings.

Marx said that it is not the consciousness of men [sic] that determines their existence but that it is actually their social existence that determines their consciousness (Glover & Strawbridge, 1985). However, search the literature for evidence that identifies aspects of Martha Rogers' social existence and context or that recognises any kind of artistic (that is, non-academic community) influence on the development of the Science of Unitary Human Beings and you may be disappointed. Moccia wrote, in 1994, perhaps the clearest indication that there might be an artistic basis or influence on Martha Rogers and the Science of Unitary Human Beings, in a chapter called "The Social Context Within Which Martha E. Rogers Developed Her Ideas" (Moccia, 1994). Moccia concludes that there must have been certain social events that shaped her ideas such as the world wars, Vietnam, the Depression; cultural phenomena such as the big bands and the Disney film industry; and intellectual arguments such as those surrounding post-modernism and existentialism. Dismissing linear time, Moccia creatively explored the literature in order to ask whether Martha could have found inspiration in Bernard Shaw's *The Doctor's Di-*

lemma, the lifestyle of the *Chumash* peoples of Southern California in the 1500's, the suffragette movement, Lenin and James Joyce, and *Ishtar* who

was worshipped as the queen of heaven and the goddess of the universe who out of chaos brought us harmony and from the chaos she has led us by the hand (Moccia, 1994; p. 312).

Similarly, Horvath (1994) used Wagner's opera, *Siegfried*, to suggest that it and countless other musical examples can act as wonderful musical metaphors "for the dynamic process of unitary patterning" (p.167). Recollections of Martha's niece, Katherine Lundy, that were reported by Malinski (1994), identified the important nature of books in Martha's life. Lundy stated that "there were the ubiquitous books - given [as gifts] to encourage nieces and nephews to read." She also indicated that it was Martha's aim to "read at least five books a week. And that was in addition to her Agatha Christies" (p.8).

Although a very speculative claim, it would seem to make sense that the creative arts and literature movement that began in New York during the 1940s and lasted through the 1950s and late 1960s, almost as a rebuke to intellectualism, could have also had a considerable impact on Martha and the development of the Science of Unitary Human Beings. This movement centred on the writings of Jack Kerouac and Allen Ginsberg but included many others (Norman Mailer, William Burroughs, Gregory Corso, Lawrence Ferlinghetti). At their central core were the writers who were christened by Jack Kerouac as the "Beat Generation" and on the art and other creative endeavours of Andy Warhol and the Pop Art movement. The work of Herman Hesse will also be included here, not because he was one of the Beat Generation crew, but because he was in many ways a similar author, (taking his inspiration from

some of the same philosophical perspectives as the Beat Generation, that is an interest in existentialism, an understanding of the self, and Eastern mysticism). Hesse illustrates particularly well the kind of writing from which Martha Rogers might have gained inspiration.

Martha graduated from Teacher's College, Columbia University in 1945, the same year that one of Columbia's most famous students, Allen Ginsberg, was suspended (Charters, 1995). However, Martha Rogers graduated several years after Jack Kerouac, another of Columbia's stars, who had left in mid-September, 1941. Throughout much of the 1940s, Jack Kerouac lived at various locations, including Ozone Park, Queens and 149 West 21st Street (Charters, 1995). Ginsberg, then a young man in his 20s, resided in Greenwich Village (when not a patient at Columbia Presbyterian Hospital). In December 1946, Neal Cassady, another key figure in the Beat movement, spent some time in New York (Charters, 1995). Earlier he had also been a student at Columbia (Cassady, 1991).

Imagine the culture, the feel, the energy. Andy Warhol's factory was on East 47th Street near 2nd Avenue, although it moved venues; from 1968 onwards it was at 33 Union Square West and at 860 Broadway from 1973. The Chelsea Hotel was, and still is, on 7th and 23rd and was home to Arthur Miller until 1966 and was where William Burroughs wrote his famous novel *The Naked Lunch*. "Happenings," such as the installation of Claus Oldenburg's *Shop*, and performance art productions were taking place everywhere. When Martha moved to New York she lived on Wooster Street (Hektor, 1989), almost next door to NYU and right in the middle of a cultural revolution. Later she moved a short distance to 50 East 8th Street. Literature, art and music and the culture of America were all being redefined and Martha was living right in the thick of it, in the catalytic environment

of Greenwich Village.

It has been said that "the Beat Generation is altogether too vigorous, too intent, too indefatigable, too curious to suit its elders...[it seemed] occupied with the feverish production of answers...to a single question: how are we to live?" (Holmes, 1960). Kerouac (1961) stated that "the word 'beat' originally meant poor, down and out, dead-beat...now...it is being made to stretch to include people who do not sleep in subways but have a new gesture, or attitude, which I can only describe as a new *more*." Sentiments were added to this by Corso (1961) who said that it has "a harsh unequal voice, a voice of divinity, a new voice, conqueror eater voice, parasite of the old dead voice." Read Martha Rogers work and this is perhaps exactly how she sounded at that very time (see for example Rogers, 1964).

The Beat Generation was a reaction to mid-century American anxiety and paranoia (Lee, 1996) and to the "middle-class values of the 'tranquillised' 50's" (Norwich, 1990; p. 39). Out of this feeling grew a reaction which prompted Kerouac to say "Woe unto those who don't realise that America must, will, is changing now" (1961) and prompted Ginsberg (1956) to add the question "are you going to let your emotional life be run by *Time* magazine?"

Out of this creative movement of the 1960's emerged arguably some of the greatest and potentially influential literature to be written, art that has been created, and music that has ever been made. Kerouac wrote *On the Road*, *Dharma Bums* and *Desolation Angels*. William Burroughs wrote *The Naked Lunch* and *The Soft Machine*. Aldous Huxley wrote *The Doors of Perception* and *Brave New World* (a book mentioned briefly by Rogers (1990) when it was used to illustrate potential ethical problems that might arise from genetic engineering). Andy Warhol was deeply involved in the creation of the pop art movement, turning out great works of art such as *Chairman*

Mao, and *Electric Chair*, and in 1962 he exhibited his famous Campbell soup tin paintings. Music was made by diverse composers such as Philip Glass, Lou Reed of the Velvet Underground and Steve Reich.

Explicit links between this writing and art movement (one manifestation of the social context of New York at this time) and the Science of Unitary Human Beings are hard to find. Immersion in the Beat and associated literature, in for example Kerouac, Huxley, Hesse, Burroughs and Tom Wolfe's *The Electric Kool-Aid Acid Test*, revealed little. However, if the culture of New York and beyond went through radical changes, then this must have had an impact on Martha Rogers. And of course, the more I searched for those explicit links, the more they seemed to disappear over a pandimensional horizon. I knew they were there - just read *On the Road* and you will see why and how. (Unfortunately, strict copyright controls limit the possibility of giving examples of congruency between the Science of Unitary Human Beings and *On the Road* here). I could feel that the links were there, but once I started down the road of reductionism or literal deconstruction it seemed as though an appreciation of the real pattern just disappeared. Perhaps the links were in the whole.

The reality of the Beat movement was described in Tom Wolfe's book *The Electric Kool-Aid Acid Test* (Wolfe, 1971). This is a retrospective study, if it can be called that, of a period in the life of Ken Kesey (the author of *One Flew Over the Cuckoo's Nest*) and the group that grew up around him called the Merry Pranksters and also various beat writers; it graphically illustrates the life of the Beatniks, hippies and life in the 1960s. But is it LSD or pattern appreciation that Wolfe was writing about when he said

...your perception is altered
enough that you find yourself looking out of completely strange eye-holes. All of us have a great deal of

our minds locked shut. (p.44)

Is it being one of the celebrated Merry Pranksters or being a member of the Society of Rogerian Scholars that Wolfe was talking about when he wrote

Craziness was not an absolute.

They had all voluntarily embarked upon a trip and a state of consciousness that was 'crazy' by ordinary standards (p.82).

adding the question that asked

How could they have known that this gem was merely a device to bridge DIMENSIONS. It was a means to enter the dread PURPLE DIMENSION (p.86; no emphasis

added).

Herman Hesse's *Siddhartha* could easily have been another stimulus and source of inspiration to Martha. It outlines a search for wisdom and identity made by Siddhartha, a Brahmin's son, and could quite easily mirror Martha's search for a nursing identity (see Hesse, page 5). Setting out in search of wisdom, Siddhartha spent time with Gurus and Sages, but eventually found the answer and enlightenment after spending time at the side of a river with a simple ferryman. Quotes relevant to and reminiscent of the Science of Unitary Human Beings just leap off every page. For fear of breach of copyright, they are unable to be reproduced here; however, readers are urged to try the original.

William Burroughs, who was always on the edge of the Beat Generation movement, was another from whom Martha might have gained some inspiration. Anybody who has not read any of his novels should do so with some caution; explicit sexual references are frequent. However, they also contain what can be interpreted as patterns of Rogerian thought. For example, in *The Soft Machine*, the novel that followed *The Naked Lunch*, Burroughs explores issues of power, a concept that has also emerged as a significant aspect of Rogerian science (see for example

Barrett, 1986). Burroughs, using his non-linear cut-up and fold-in writing styles, seems to be able to create an almost-but-more-than *Finnigan's Wake*-type pandimensional feeling, absent in most other more formal writing structures.

A semantic analysis of Burroughs' work (Ingram, 1996), reveals Korzybuski's system of General Semantics as influencing it. The system "explores possible links between human language structures and the pathology of the human mind-body in society" (Ingram, 1996; p.95). Burroughs sought "to build a language in which certain falsifications inherent in all existing languages will be made incapable of formulation" (Burroughs, 1968) which he thought that he could achieve by eliminating certain linguistic-conceptual practices such as the use of "is", "the" and "either/or". In striking similarity to some of Dr. Rosemarie Parse's assertions (see for example Parse, 1995), and perhaps a needed consideration by Rogerians, Burroughs claimed that the "is" of identity "always carries the implication of that and nothing else, and...the assignment of permanent condition" (Ingram, 1996; p.95). Similarly, Burroughs asserted that the use of "the" as in "the" universe contains implications of one and only, denying another and that the use of "either/or" reduces phenomena to nothing more than binary opposition and should be replaced by "and."

It has been said of Aldous Huxley, an English writer who had a considerable influence on the Beat Generation (Bradshaw, 1994; p.ix), in a comment that could quite equally have been about Martha Rogers, that

All his life Huxley was driven by a need to understand the mystery of human consciousness, a quest that led him from Christian mysticism to the religions of the Far East and the pseudo-religions of California. Unusually for a literary intellectual, of his day or ours, Huxley was

intensely interested in science, and much more of his original work lies in the border zone between religion, art and science. (Ballard, 1994, p.1)

Huxley's book *The Doors of Perception*, written in 1954, describes the experiences of an afternoon in a Hollywood garden during which time he ingested mescaline, the active ingredient in the Mexican *peyote* cacti. He described the

hallucinatory realm that expanded before his eyes. The shutters around his mind at last fell away, revealing the wonders of existence to his self-centred and earth bound mind. (Ballard, 1994; p.2)

Although the use of hallucinogenics in Rogerian nursing practice should probably not be advocated, it does seem as though "becoming Rogerian" needs a similar kind of process to that described above, where one can achieve a sense of pattern appreciation (Cowling, 1993) that rejects the way that "our brains have been trained during the evolutionary millennia to screen out all those perceptions that do not directly aid us in our day to day struggle for existence" (Ballard, 1994; p.1).

Malinski (1994; p. 3) has stated that Although it is possible to examine the Science of Unitary Human Beings from a purely theoretical perspective, it helps immeasurably to gain an understanding of the person behind the ideas...science is not a value-neutral product of objective observation; rather, it is a process deeply marked by the values and thoughts of the person putting forth the ideas.

Conclusion

What started out as a simple question about the origins of Martha's thoughts and possible links with the Beat Generation and the social context of New York in the 1960s soon progresses to more complicated is-

ues. If there are such links, and the Science of Unitary Human Beings itself would support such a premise, why have those links not been mentioned in the theoretical literature before now? Could it be that, despite all of its outward appearance, the Science of Unitary Human Beings is actually or currently more restricting than it might be? Despite a detour into the philosophy of science literature and the sociology of knowledge literature in the preparation of this paper, there were no immediate or direct answers to the question about the impact of culture on the development of science, or in other words, the impact of the Beat Generation on the development of the Science of Unitary Human Beings.

Capra's book *The Tao of Physics* (1991) often supplies answers to the above such questions. He identified that "throughout history, it has been recognised that the human mind is capable of two kinds of knowledge..termed the rational and the intuitive" (p.26). In the West, rational knowledge is "derived from the experience we have with objects and events" (p. 27) and is regarded as scientific and of greater value than intuitive knowledge (p. 27). Despite frequent claims otherwise, could it be then that Rogerian commentators, researchers and scientists, but particularly the commentators, or even most nurses in general, have been paying most, if not all, attention to the rational influences that have formed the development of nursing and the Science of Unitary Human Beings, and have virtually ignored the intuitive? Going beyond the influences for the generation of the Science of Unitary Human Beings and towards the practicalities and further development, could it be that Rogerians as a whole have been and still are paying too much attention to the rational, to the empirical; too much attention to the development of, for example, measurement tools, a sign that nurses still remain firmly embedded in the logical-positivist or at least empiricist paradigm? Is this the

way to achieve true "scientific" respectability?

What has been attempted in this paper is a beginning exploration, which informally followed the hermeneutic tradition (see for example Thompson, 1981; DiCenso, 1990), of the societal, artistic and literal context, manifest primarily by the Beat Generation writers, in which the Science of Unitary Human Beings was developed. Some possible sources of inspiration have been identified. Issues that arise from this exploration include the very nature of the continuing development of the Science of Unitary Human Beings, the nature of science and scientific knowledge. It has identified, not only that there might have been very significant influences on the development of the Science of Unitary Human Beings, but also that these influences or potential influences have yet to be really acknowledged in the literature. It indicates that there is a need to perform a hermeneutic analysis of Rogerian and Rogerian commentator's, texts. Furthermore, as a by-product of this investigation, a creative way of exploring issues raised by the Science of Unitary Human Beings has been revealed. In a formal or informal education program, what could be more exciting than a visit to the local art gallery or a reading list that contained (perhaps only) the works of Huxley, Hesse, Kerouac and Burroughs.

Finally, I should like to quote just one more time from Wolfe (1971) who wrote something about Ken Kesey and the Beat Generation that could almost equally be applied to the Science of Unitary Human Beings:

When you've got something like we've got, you can't just sit on it. You've got to move off it. You can't just sit on it and possess it, you've got to move off it and give it to other people (p.174)

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CRYSTALLIZING THE PROCESSES OF THE UNITARY FIELD PATTERN PORTRAIT RESEARCH METHOD

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ABSTRACT

Research methods must be consistent with the Science of Unitary Human Beings if one is to study irreducible human beings in mutual process within a pandimensional universe. The Unitary Field Pattern Portrait (UFPP) research method was developed from the criteria of Rogerian inquiry and is a hermeneutic/phenomenological research method designed to create a unitary understanding of the dynamic kaleidoscopic and symphonic pattern manifestations emerging from the pandimensional human/environmental mutual process to enhance understanding of significant phenomena related to human well being. The development of the Unitary Field Pattern Portrait (UFPP) research method has been described in detail (Butcher, 1994a, 1994b). The purpose of this paper is to explain processes, add detail, and revise terminology as a means to add clarity and percision to the form and structure of the UFPP research method to assist potential investigators. In addition, this paper includes the details for ensuring scientific rigor when using the UFPP.

Many mature disciplines do not only have their own unique theoretical systems, but also their own unique methods of inquiry. For example, anthropology uses ethnographic inquiry as a means to generate knowledge specific to understanding culture. Phenomenological research methods arise from the discipline of psychology and focus on the study of human lived experiences. New research methods are emerging from nursing's unique theoretical systems. Leininger's (1985) ethn nursing, Parse's research method (1987, 1997), and Newman's (1994) research as praxis are examples of research methods developed consistent with the ontology and epistemology of each theorist's theoretical system. Likewise, new methods are emerging consistent with the ontology and epistemology of Rogerian Science. Carboni's (1995)

Rogerian inquiry, Butcher's (1994a, 1994b) unitary field pattern portrait, and Cowling's (1997) unitary pattern appreciation case study method are examples of research methods specific to Rogers' Science of Unitary Human Beings.

The development of the Unitary Field Pattern Portrait (UFPP) research method has been described in detail (Butcher, 1994a, 1994b). Crystallization is a process of giving definition, precision, and distinctiveness of form. Crystals are precise and clear forms that provide clarity to structure and design. This paper will focus on explaining processes, adding detail, and revising terms as a means to add clarity and percision to the form and structure of the UFPP research method to assist potential investigators in using the research method. In addition, this paper includes the details for ensuring scientific rigor when using the UFPP.

Assumptions of the Method

The key assumptions underpinning the UFPP research method are: (1) the researcher and researched-into are integral and engaged in mutual process; (2) human beings can describe their own experiences, percep-

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tions, and expressions in ways that uncover an understanding of a particular phenomenon; (3) experiences, perceptions, and expressions are unitary pattern manifestations emerging from the human/environmental energy field mutual process; and (4) the Unitary Field Pattern Portrait of an experience related to human betterment reflects the dynamic kaleidoscopic and symphonic human/environmental field mutual process. Kaleidoscopic signifies the unpredictable continuous emergence of evolving pattern manifestations. Symphonic signifies the continuous rhythmic cadences, the ups and downs, fast and slow, sometimes dissonant and sometimes harmonious pattern manifestations emerging from the human/environmental mutual process.

Purpose of the Method

The purpose of this research method is to create a *unitary understanding* of the dynamic kaleidoscopic and symphonic pattern manifestations emerging from the pandimensional human/environmental mutual process as a means to enhance understanding of *significant phenomena related to human well being*, and to integrate this knowledge with Rogers' Science of Unitary Human Beings. The focus of inquiry in the UFPP research method are irreducible human energy fields in mutual process with their environmental energy fields. Manifestations of patterning evolving from the kaleidoscopic and symphonic human/environmental field process are indicators of the unitary nature of change. The researcher first selects a significant human/environmental phenomenon in the life process associated with well being as the specific focus of inquiry.

Processes of the Method

Processes of the UFPP research method (see Table 1) are described below and include: initial engagement, *a priori* nursing science, immersion, pattern ap-

praisal, unitary field pattern profile construction, mutual unitary field pattern profile construction, unitary field pattern portrait construction, and theoretical unitary field pattern portrait construction. The phases of interpretation and portrait construction in the UFPP research method are illustrated in Figure 1.

Initial Engagement

In initial engagement, through intense interest and passionate searching, the investigator discovers a research question of central interest to understanding the well being of unitary human beings. The general research question is stated as: *What is the Unitary Field Pattern Portrait and Theoretical Unitary Field Pattern Portrait of [name of the phenomenon]?*

A Priori Nursing Science

All research flows from some theoretical perspective (Cull-Wilby & Pepin, 1987; DeGroot, 1988; Guba & Lincoln, 1989; Moccia, 1988; Phillips, 1988; Sandelowski, 1993; Thompson, 1985; Tinkle & Beaton, 1983). Sandelowski (1993) points out that qualitative methods, including phenomenology, are guided by prior commitments to "overarching worldviews" (p. 215). The Science of Unitary Human Beings (Rogers, 1992) serves as the researcher's *a priori* nursing science and articulates the study's theoretical perspective. Gadamer's (1990) hermeneutical-phenomenological perspective, which allows for a "fusion of horizons," (p. 306) provides a philosophical and methodological foundation for using an *a priori* nursing science in guiding all phases of the method. The horizon of meaning emerging from the descriptions of the experiences, perceptions, and expressions are interwoven and fused with the horizon of meaning emerging from Rogers' nursing science to provide a theoretical understanding of the phenomenon being investigated.

Immersion

The investigator immerses as fully

Table 1

Unitary Field Pattern Portrait Research Method

1. Initial Engagement-Formulation of a Research Question
 - A. Focus on a significant human-environmental phenomenon related to well-being
 2. *A Priori* Nursing Science
 - A. Rogers' Science of Unitary Human Beings
 3. Immersion
 - A. Intensity Sampling
 - B. Selection of Natural Setting
 4. Pattern Appraisal
 - A. In-Depth Interviews: appraisal of experiences, perceptions, and expressions
 - B. Field Notes: (Observational, Theoretical, Methodological)
 - C. Reflexive Journal
 5. Unitary Field Pattern *Profile* Construction
 - A. Creative Pattern Synthesis
 6. Mutual Unitary Field Pattern Profile Construction
 - A. Mutual Processing
 7. Unitary Field Pattern *Portrait* Construction
 - A. Immersion/Crystallization
 8. Theoretical Unitary Field Pattern Portrait Construction
 - A. Evolutionary Interpretation
-

as possible in the phenomenon of concern. In this phase, the researcher becomes steeped in the research topic. During immersion, the researcher is absorbed in literature, poetry, music, journal writings, dialogues with self and others, art work, or any host of processes that draws the researcher closer to the topic of inquiry to reveal its meanings. The notion of immersion is supported by Rogers' mutual process epistemology. The researcher and the researched-into are inseparable. Findings of the inquiry are created out of the mutual process between researcher and the researched. This intense immersion in mutual process allows one to encounter, examine, and fully participate in a rhythmic flow with the phenomenon in order to depict the experience in its many aspects, core themes, and essences. The researcher

follows the rhythm of the phenomenon investigated, becomes curious about it, alive in it, and absorbed by it. The researcher is open to, centers on, enters into, folds and unfolds with the experience being investigated. Immersion enhances pandimensional awareness by allowing the researcher to trust personal intuitive hunches and respond verbally and non-verbally with rhythmic synchrony while engaged in mutual process with participants.

Participant Selection

The UFPP research method uses intensity sampling. Patton (1990) states "an intensity sample consists of information-rich cases that manifest the phenomenon of interest intensely (but not extremely)"(p. 171). Following the logic of intensity sampling, the researcher seeks excellent or rich

examples of the phenomenon. Any person who identifies him/herself as experiencing the phenomenon is a potential participant.

Natural Setting

Human fields cannot be studied separate from their environment. Pattern appraisal takes place in the natural setting where the phenomenon naturally occurs. The natural setting may be a specific environmental setting or a particular life situation which provides a context for the focus of the study.

Pattern Appraisal

Pattern appraisal is the process of collecting data and identifying manifestations of pattern emerging from the human-environmental mutual field process (Barrett, 1988). The researcher obtains descriptions of the phenomenon through an in-depth interview conducted in a person-to-person encounter of researcher and participant. Pattern appraisal involves focusing on rhythm, movement, intensity, and configuration of human/environmental pattern manifestations. Human and environmental field pattern are appraised through manifestations of the pattern in the form of experiences, perceptions, and expressions (Cowling, 1990). The researcher enters into a dialogue with the participant, focusing on the expression of the participant's experiences and perceptions of the phenomenon of concern.

An important ingredient in the interview process involves efforts directed toward creating an atmosphere of trust and relaxation. In mutual process with the participant, the investigator actively listens, conveys unconditional acceptance, and remains fully open to the human/environmental field process. The researcher uses an informal conversational interview style that fosters spontaneous and emergent generation of questions and conversations. An informal conversational interview is consistent with the rhythm and flow of mutual process and aims toward encouraging ex-

pression, elucidation, and disclosure of the phenomenon. Furthermore, an open-ended approach allows participants the time and space to explore the topic in a manner that promotes discovery, depth, richness, and meaning. In addition, unstructured interviewing facilitates establishing rapport, in-depth self-disclosure, and genuineness for the flexibility and creativity necessary in apprehending an unpredictable unfolding reality. Throughout the pattern appraisal process, the researcher utilizes all forms of knowledge including tacit knowing, intuition, and pandimensional modes of awareness while engaged in mutual process with participants.

Pattern appraisal is designed to gather rich, dense, and vivid descriptions and interpretations of the experiences, expressions, perceptions, feelings, thoughts, and meanings of the phenomenon of concern. Although depth and clarity are sought, the researcher does not probe if persons indicate that they do not wish to speak about some particular aspect of the phenomenon. Rather, the researcher takes the role of facilitator, clarifier, and evoker of depictions of the phenomenon. Seeking depth and clarity concerning the phenomenon facilitates a rhythm of exploration that uncovers pandimensional patterns of mutual process with the environment.

Although general questions may be formulated in advance, genuine dialogue cannot be planned. The unfolding of the field pattern portrait reflects an emergent design since the inquirer will not know in advance what pattern manifestations are likely to emerge, and thus not know which questions to ask subsequent participants. Some examples of general questions concerning the experience of the phenomenon being researched are, "Please talk to me about what it is like to experience . . . , Describe for me any feelings you may have had when feeling..., What is the feeling of being . . . like?, Now try to be more specific

about the thoughts and feelings you have when . . . , Can you relate what you have just said to feeling..." Each of these questions are meant to nurture mutual exploration and discussion of the phenomenon being studied. Examples of open-ended questions concerning the participant's perceptions may be: "Please talk to me about how you know when you are . . . , How do things change when you feel . . . ? , Can you tell me what helps you most when you are . . . ? , Do things around you look different when you are . . . ?"

When appraising participant's expressions, the researcher may ask: "What happens when you experience this? Also the researcher will search in mutual process for a metaphor that represents what the phenomenon is like, and/or find a way the participant could represent the phenomenon in a picture, or diagram or even draw a picture together. The researcher asks the participant to identify a single word or phrase that captures the essence of the research topic. In addition, the researcher can ask the participant to explore the following words in relation to the phenomenon: energy, flow, will, unity, family, continuous, harmony, movement, wholeness, change, flux, openness, process, rhythm, sharing, participating, power, imagination, and awareness. Other key words or metaphors may emerge during pattern appraisal that, subsequently, participants may be asked to explore and describe their meaning in relation to the research phenomenon.

To supplement interview data, the investigator may ask participants to explain any personal documents, diaries, journals, logs, notes, poetry, and art work they may have that offers additional understanding of the phenomenon. These artifacts may be collected, if the participant wishes, and would be used during unitary field pattern portrait construction.

The researcher remains focused on appraising as much as possible about the

experience in the person's own words while remaining sensitive and focused on the participant's experience. Pattern appraisal continues until the person reports that there is nothing further to say about the phenomenon. Each interview is taped and transcribed verbatim. In addition to pattern appraisal information, the researcher keeps Field Notes and maintains a Reflexive Journal to be used later for pattern synthesis.

Field Notes

Field notes are organized into three categories: Observational Notes, Theoretical Notes, and Methodological Notes. This organization provides a means of effectively reflecting on and processing the data as it occurs (on-going synthesis) and as it ultimately comes together in the final synthesis (unitary field pattern portrait and theoretical unitary field pattern portrait construction). Consistent with characteristics of Rogerian inquiry, the mutuality of the researcher and the participants is reflected in the content of the field notes.

Observational Notes include objective descriptions of what the researcher observed. Basic information, such as where the interview took place, what the environmental setting was like, what activities took place, and any observations of important nonverbal expressions or other manifestations of energy field patterning that occurred during pattern appraisal, are recorded in a separate notebook immediately after each interview.

Theoretical Notes include any interpretations of the phenomenon from the perspective of Rogers' Science of Unitary Human Beings. After each interview, the researcher ponders what has been perceived and experienced during pattern appraisal and may assign interpretations of meaning to these perceptions and experiences within the context of Rogers' postulates and principles.

Methodological Notes reflect instructions to the researcher and serve as remind-

ers or critiques of the researcher's own methodological tactics. They also reflect all methodological decisions made in accordance with the changing emergent design. The Observational, Theoretical, and Methodological Field Notes are recorded in separate notebooks and organized in order of each interview.

Reflexive Journal

Reflexivity is critical thinking that examines values, beliefs, and interests embedded in the researcher and seeks to understand and integrate them into the study (Lamb & Huttlinger, 1989). The researcher uses the Reflexive Journal to acknowledge personal experiences and values, values of participants, and other values inherent in the context of Rogers' unitary paradigm. Personal visionary insights, intuitions, inferences, mystical insights, feelings, ideas, and reflections are recorded in the Reflexive Journal. Coordinate with the Rogerian characteristics of inquiry, inclusion of a Reflexive Journal recognizes that inquiry is value-bound and allows values to participate in the interpretation of data.

Field Pattern Profile Construction

The Field Pattern Profile is a rich narrative description of the experiences, perceptions, and expressions of the phenomenon in the participant's language. Once the taped interview is transcribed, the researcher carefully reviews the text and identifies key meaningful segments of text. The field pattern profile is created by combining meaningful segments of the text using creative pattern synthesis.

Creative Pattern Synthesis

Data are processed within a unitary science using synthesis rather than analysis (Rogers, 1992, personal communication). Creative pattern synthesis describes the qualitative processing of data during pattern profile construction and is similar to the phenomenological data processing described by van Manen (1990). A selective or highlighting approach (van Manen, 1990) is used

to identify thematic statements. A qualitative computer program may be used to assist in managing the data. In the selective or highlighting reading approach, the researcher will ask, "what statements or phrases seem particularly essential or revealing about the phenomenon" (van Manen, 1990, p. 93). The researcher searches for meaningful segments, and then cuts, pastes, and rearranges the segments of text until a rich description of the phenomenon in the participant's language emerges. Thus, the Field Pattern Profile is created by synthesizing the thematic statements, meaningful segments, or phrases into a descriptive narrative which expresses the experiences, perceptions, and expressions for each individual participant. It is important to note that the field pattern profile is in the participant's language. Once the Field Pattern Profile is constructed, the researcher arranges for a short meeting with the participant to share the Field Pattern Profile for comment, revision, and validation.

Mutual Unitary Field Pattern Profile Construction

A unique feature of this methodology is construction of an emerging field pattern profile consisting of a synthesis of all previous Unitary Field Pattern Profiles using a process referred to as "mutual processing." Previously, the Mutual Unitary Field Pattern Profile Construction phase was referred to as the "Hermeneutic-Dialectic Circle" (Butcher, 1994a, 1994b, 1996; Barrett, Cowling, Carboni, & Butcher, 1997). While "mutual processing" is similar to Guba & Lincoln's (1989) original description of the hermeneutic-dialectic circle, the processing of data during mutual processing is distinctly different from Guba and Lincoln's (1989) constant comparative method. In addition, the term "mutual processing" is more consistent with Rogers' notions of integrality and mutual process. Mutual processing involves a) Field Pattern Profile construction with each new participant fol-

lowed by b) merging each new Field Pattern Profile into a Mutually Constructed Field Pattern Profile which is a synthesis of all previous Field Pattern Profiles and c) sharing of emerging Mutually Constructed Unitary Field Pattern Profile with participants.

After the first Field Pattern Profile is validated by the first participant, the researcher can then begin pattern appraisal with a second participant. The same process described above is repeated with the second participant except that at the end of the second interview, the second participant is asked to comment on the first participant's Field Pattern Profile. The comments of the second participant on the Pattern Profile are incorporated into the construction of the second participant's Field Pattern Profile.

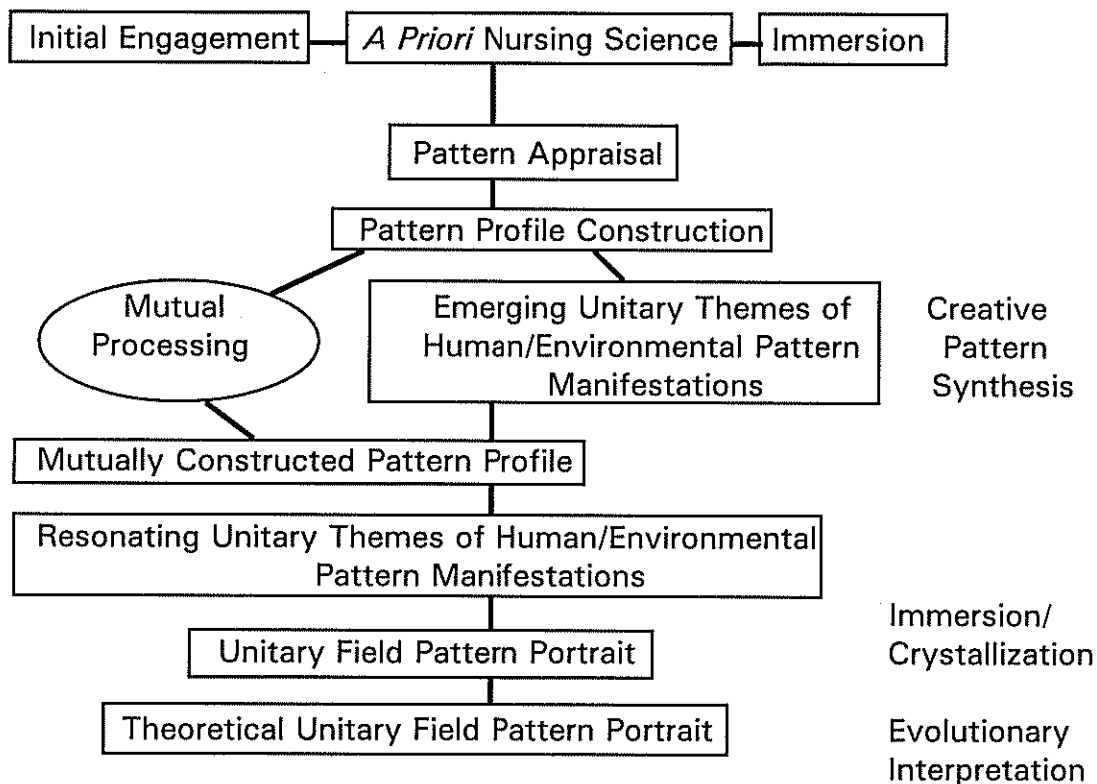
After validation of the second participant's Field Pattern Profile, the researcher synthesizes the two field pattern profiles into one unified mutually derived field pattern profile. The Mutually Constructed Field Pattern Profile is created by using a cut and paste editing style. The researcher eliminates repetitive statements and synthesizes together statements in which there is agreement. Thus a Mutual Constructed Unitary Field Pattern Profile is continuously emerging as each new participant's pattern information is synthesized into the previous Mutually Constructed Unitary Field Pattern Profile using the cut and paste editing style.

The process of pattern appraisal, unitary pattern profile construction, and mutual processing continues until pattern repetition occurs. Pattern repetition is reached when no further new themes or patterns emerge from a participant in comparison to previous participants; therefore, there is no new pattern information to be added to the Mutually Constructed Pattern Profile. In other words, pattern appraisal is complete when there is repetition of all pattern infor-

mation *across* the participants. While each person's Unitary Field Pattern Portrait is unique and increasingly diverse, universal or common themes concerning phenomena emerge across individual field patterns. The repetition of patterns or themes *across* participants is not inconsistent with the principle of helicy. At this time, data collection ends. The purpose of including mutual processing is to enhance the participatory nature of the inquiry as a means to be more consistent with Rogers' mutual process epistemology. Each participant can read, reflect on, and comment on the emerging Mutually Constructed Unitary Field Pattern Profile after they shared their own experiences, perceptions, and expressions of the specific phenomenon. While human fields are continuously manifesting evolving patterns of increasing diversity and each human field is unique, similar universal patterns concerning experiences are likely to emerge among the participants. The sharing of the emerging Mutually Constructed Unitary Field Pattern Profile with each participant enhances the participant's knowing participation in change. Reading the Mutually Constructed Unitary Pattern Profile may stimulate further dialogue and greater depth of reflections on the experience. At the end of pattern appraisal, the final Mutually Constructed Unitary Field Pattern should be shared with all the participants for their final comment and revision.

The method is open to other means for constructing a mutually derived field pattern profile. For example, gathering groups of participants together in a focus group which centers on pattern appraisal could be an alternative means for sharing the final Mutually Constructed Unitary Field Pattern Profile for comment, revision, and knowing participation in change. It may be possible to use groups of participants throughout the mutual processing phase. However, the depth and richness of individual unitary field

Figure 1. Unitary Field Pattern Portrait Research Method



pattern profiles may be lost in focus groups.

Unitary Field Pattern Portrait Construction

Unitary Field Pattern Portrait construction involves four steps: 1) identifying the emerging unitary themes in each pattern profile; 2) sorting the unitary themes into common categories; 3) creating the resonating themes using a process of immersion and crystallization; and 4) synthesizing the resonating themes into one descriptive portrait. First the researcher gathers all participant field pattern profiles, all Observational Field Notes, and any artifacts collected during the course of investigation. The researcher immerses into and dwells with each pattern profile and identifies key phrases, themes, and words. These themes are called *Emerging Unitary Themes of Human-Environmental Pattern Manifestations*. The Emerging Unitary Themes of Human-

Environmental Pattern Manifestations from each unitary field pattern profile are then sorted into common categories. The researcher interprets each category of emerging unitary themes using a process of immersion/crystallization.

Immersion/crystallization is a process of prolonged personal reflection using pandimensional modes of awareness in light of all the data. According to Miller and Crabtree (1994) an immersion/crystallization process of data synthesis is very open to editing (such as hermeneutics), fosters intimate contact with the text, and is most appropriate when the goal is exploration of a new concept in the absence of significant literature about the question. Immersion/crystallization is an extended period of intuition-rich immersion with the text (Miller & Crabtree, 1994; Moustakas, 1990). Emerg-

ing unitary themes of human-environmental pattern manifestations crystallized into common themes and are interpreted by the researcher using more abstract and descriptive words that illuminated the meaning of each common category of emerging unitary themes. The researcher uses imaginative, tacit, intuitive, and contemplative sources of knowledge and insight to discover the essence of the phenomenon and synthesize the emerging themes into rich descriptive patterns. Each statement or phrase (*Resonating Unitary Theme of Human-Environmental Pattern Manifestations*) reflects the rich descriptive essence of each category of common emerging themes. The researcher then dynamically compares the resonating unitary themes across all field pattern profiles to assure that each Resonating Unitary Theme of Human-Environmental Pattern Manifestations is present in each participant's pattern profile.

Finally, the resonating themes are combined and synthesized into one unified descriptive portrait (*Unitary Field Pattern Portrait*) which is grounded in the experiences, perceptions, and expressions in the field pattern profiles of all participants. The unitary field pattern portrait is grounded in the experiences of the participants since it accentuated the flow, spirit, and life inherent in the experiences, perceptions, and expressions emerging from pattern appraisal. The Unitary Field Pattern Portrait of the phenomenon is expressed in the form of an aesthetic rendition of universal patterns, qualities, features, and themes that embrace the phenomenon. The Unitary Field Pattern Portrait exemplifies the essence of the dynamic kaleidoscopic and symphonic nature of the phenomenon by providing a rich, dense, vivid, accurate, alive, thick, and clear description of its core features.

Theoretical Unitary Field Pattern Portrait Construction

The final phase is the construction of the Theoretical Unitary Field Pattern Por-

trait. To accomplish theoretical unitary field pattern portrait construction, the researcher gathers the Unitary Field Pattern Portrait, Theoretical Field Notes, and Reflexive Journal. The researcher immerses and dwells with the data in light of Rogers' Science of Unitary Human Beings using "evolutionary interpretation." Evolutionary interpretation links the patterns identified in the field pattern portrait to the interpretations guided by the researcher's *a priori* nursing science. Interpretation guided by Rogers' Science of Unitary Human Beings involves interpreting the field pattern portrait in light of Rogers' principles of resonancy, integrality and helicy, and the concepts of pandimensionality, pattern, openness, and energy fields to create a theoretical interpretation of the phenomenon. The term evolutionary interpretation signifies Rogers' emphasis on life process and the evolutionary movement toward greater diversity, continuous change, and emergence of unpredictable potentialities. Evolutionary interpretation is accomplished by having an extensive and in-depth understanding of the ontology and epistemology of Rogers' Science of Unitary Human beings. The Theoretical Unitary Field Pattern Portrait takes the form of theoretical statements/propositions that together describe the Unitary Field Pattern Portrait in the language of Rogerian science.

The purpose of the theoretical unitary field pattern portrait construction is to explicate the theoretical structure of the phenomenon by interpreting the unitary field pattern portrait from the perspective of Rogers' unitary nursing science. Theoretical construction also advances the evolution of nursing science by lifting the unitary field pattern portrait from description to the level of theory and is expressed in the language of Rogerian nursing science. Lastly, the theoretical unitary field pattern portrait moves the unitary field pattern portrait toward positing ideas for further research and nursing practice possibilities.

Unitary Field Pattern Report

The processes and conclusions of a study using the UFPP research method are presented in a format emphasizing the unitary and creative aspects of the inquiry. The *Unitary Field Pattern Report* is a dynamic and comprehensive account of the research and is presented as a complex tapestry in process, one that is open to new and emergent insights. The Unitary Field Pattern Report provides a vibrant image of the depth of the data in all its kaleidoscopic and symphonic complexities and will furnish the basis for assessment of the conclusions by the reader. Particular attention is paid toward describing the process of pattern synthesis by revealing the synthesis of pattern information from unitary manifestations to pattern profile construction; from pattern profiles to construction of the unitary field pattern; and from the unitary field pattern portrait to the theoretical unitary field pattern portrait. The Unitary Field Pattern Report includes:

1. A description of the natural setting in which the study took place.
2. A brief description of Rogerian nursing science emphasizing how it guided all processes of the investigation.
3. A thorough description of the methodological procedures and processes of the study as they unfolded.
4. Presentation of two or three exemplar Unitary Field Pattern Profiles
5. Presentation of the Mutually Constructed Unitary Field Pattern Profile.
6. A presentation of the Unitary Field Pattern Portrait.
7. Presentation of the Theoretical Unitary Field Pattern Portrait.
8. A discussion of the study's contribution to the evolution of

Rogers' nursing science, nursing practice, and nursing research.

9. An Appendix listing each resonating theme and the corresponding emerging themes

Scientific Rigor

The UFPP research method is a formal method research as described by Kaplan (1964) with specific assumptions and processes. Because of the high degree of congruence between the constructivist/phenomenological paradigm and Rogers' unitary paradigm, Guba and Lincoln's (1985) criteria for *trustworthiness* is used to examine the scientific rigor within the UFPP research method. Lincoln (1992) states there are two major criteria to assure rigor in research findings within the constructivist/phenomenological paradigm: trustworthiness and authenticity. Authenticity criteria were developed specific to inquiry within Rogers' Science of Unitary Human Beings.

Trustworthiness

Trustworthiness rests on the methodological decisions made throughout the process of pattern synthesis. Lincoln and Guba's (1985) trustworthiness criteria, which roughly parallel the conventional particulate-deterministic paradigm's criteria of scientific rigor, include criteria for judging credibility, confirmability, dependability, and transferability.

Credibility

Credibility or "truth value" of the study is the constructivist/phenomenological equivalent of the particulate-deterministic research criterion identified as internal validity and reflects an effort to establish confidence that the data has been accurately interpreted. From the perspective of Rogerian inquiry, Carboni (1992) defined credibility as the judged validity (truth) of the tapestry of understanding woven by the Rogerian researcher in providing a credible explanation of the mutual process of energy fields in such a way that the interpretation is judged to be

accurate. The credibility criterion is met through prolonged engagement, persistent observation, multiple sources of data, participant checks, and peer debriefing (Lincoln & Guba, 1985; Guba & Lincoln, 1989).

Prolonged Engagement is accomplished by researcher's immersion into the phenomenon through reading numerous vivid personal accounts of their experience and engaging with persons for extended periods in natural settings where the phenomenon exists. Prolonged engagement is also enhanced through the trust attained in the pattern appraisal process and extended immersion into all the data during pattern synthesis and evolutionary interpretation.

Persistent Observation is accomplished through the focusing on the appraisal of manifestations of field patterning during the pattern appraisal process. Persistent observation during all phases of pattern appraisal provides the depth necessary to establish credible knowledge.

Multiple Sources of Data In addition to interview data, the researcher's Field Notes and participants' descriptions of artifacts (notes, poetry, and art work from participants) that offered additional understanding of the phenomenon are included in the data synthesis. The inclusion of multiple sources of data enhances the credibility of the findings and interpretations.

Participant Checks occurs throughout pattern synthesis by sharing the Field Pattern Profile with each participant for validation and revision. The mutual shaping of the Mutually Constructed Pattern Profile through shared description and co-creation of shared understanding is inherent in the UFPP research method and serves to enhance the credibility of findings.

Peer Debriefing is used throughout the data synthesis by a peer review of the

Field Pattern Profile constructions, Mutually Constructed Field Pattern Profile, and Field Pattern Portrait construction. The researcher maintains a dynamic dialogue with peers and other researchers regularly during creative data synthesis and evolutionary interpretation of the data. At regular intervals throughout the pattern appraisal process, the researcher records any *a priori* constructions and expectations in the Reflexive Journal to assure that the investigator is not finding simply what is expected. A debriefer should monitor the researcher's own developing construction to assure this construction is not over-shadowing the participants constructions.

Confirmability

Confirmability assures that Pattern Profiles, Mutually Constructed Field Pattern Profile, and the Unitary Field Pattern Portrait are rooted in the pattern manifestations of participants and not in the imagination of the researcher. An audit trail is maintained so that all constructions can be traced to original sources and the processes of pattern synthesis can be confirmed. An audit trail is maintained by keeping records demonstrating the process of moving from the raw data (transcriptions) to field pattern profile construction and the synthesis of profiles to form the Mutually Constructed Field Pattern Profile. The audit trail also illustrates the process of synthesizing all the field pattern profiles with the Mutually Constructed Field Pattern Profile and any other data collected during pattern appraisal by keeping all notes and codified data. The codified data represents patterns and themes highlighted during creative pattern synthesis while the notes are kept to illustrate decisions made for synthesizing the pattern and themes together to create the narrative representing the Unitary Field Pattern Portrait. The Unitary Field Pattern Report includes examples of the steps of pattern synthesis so readers can trace the progres-

sion of data synthesis from participants descriptions to portrait construction.

Dependability

Dependability is parallel to the particulate-deterministic paradigm's criterion of reliability, and is concerned with the stability of data over time (Guba & Lincoln, 1989). However, within the UFPP research method, methodological changes and shifts are expected in the emergent design. Rather than threats to dependability, methodological changes are hallmarks of a maturing and successful inquiry. Changes in the emergent design are tracked and recorded in the Methodological Field Notes and reported in the Unitary Field Pattern Report so readers can judge decisions and understand factors and context which lead to changes in the emergent design.

Transferability

Transferability is thought of as parallel to external validity or generalizability. However, within the constructivist/phenomenological paradigm the burden of proof for transferability of findings is on the reader rather than researcher (Guba & Lincoln, 1989). The major technique for establishing a degree of transferability is "thick" description. A detailed description of the setting, sample, and rich, dense, thick, and vivid field pattern profiles facilitates transferability of judgments. The reader of the Unitary Field Pattern Report must determine if similarities in the sample, setting, and description of the phenomenon are sufficient to warrant transferability of results to assist in understanding the phenomenon in another environmental context.

Authenticity

Authenticity criteria for scientific rigor are grounded within the constructivist/phenomenological paradigm (Guba & Lincoln, 1989) and were modified specifically for the UFPP Method and included criteria for descriptive vividness and unitary integrity.

Descriptive Vividness

Descriptive vividness referred to the

degree to which the Unitary Field Pattern Portrait accentuates the flow, spirit, and life inherent in the participant's experiences, perceptions, and expressions.

1. Does the Unitary Field Pattern Portrait exemplify the essence of the dynamic kaleidoscopic and symphonic nature of the phenomenon by providing a rich, dense, vivid, accurate, alive, thick, and clear description of core features of the phenomenon?

2. Is the Unitary Field Pattern Portrait an aesthetic rendition of universal patterns, qualities, features, and themes that embrace the phenomenon?

Unitary Integrity

Unitary integrity or "reality-resonance" reflects an effort to establish confidence that the findings of the research reflect a unitary reality. Unitary integrity is the judged validity (truth) of the tapestry of understanding woven by the Rogerian researcher providing a credible explanation of the mutual process of energy fields in such a way that the findings reflect an unbroken wholeness and undivided flowing movement. Carboni (1992) proposed criterion for making the judgement of unitary integrity which were used in the study:

1. Does the audience (those Rogerian scholars making judgements of unitary integrity) view the findings as meaningful and applicable in terms of their own knowledge and experiences?

2. Do the findings of the study resonate with the data from which they are derived, and is the Theoretical Unitary Field Pattern Portrait logically coherent and consistent with Rogers' Science of Unitary Human Beings? The findings should be consonant with the manifestations of field patterning studied and reflect their multiple and dynamic potentials.

SUMMARY

The UFPP research method provides Rogerian researchers a rigorous process for developing theoretical structures of phe-

nomena within Rogers' nursing science that are grounded in the experiences, perceptions, and expressions of persons experiencing the phenomenon. The phases of the UFPP are like facets of a crystal. Crystals are resonant structures that process various types of energy. Crystals can magnify, amplify, and reflect energy into coherent and highly concentrated patterns. Like beams of light passed through a crystal, the kaleidoscopic and symphonic nature of significant phenomena related to human betterment is illuminated in all their unitary vividness when examined through the facets of the UFPP.

Rogers' Science of Unitary Human Beings, the researcher's *a priori* theoretical perspective, guides all phases and processes of the research method. Pattern appraisal is a process specific to Rogerian science which involves apprehending human-environmental manifestations of patterning concerning a participant's experiences, perceptions, and expressions of a significant common human-environmental phenomenon associated with well-being and human betterment.

Pandimensional modes of awareness are incorporated into all phases of the method including pattern appraisal, immersion, creative pattern synthesis, and immersion/crystallization. The research method accounts for the uniqueness of each person's human-environmental field pattern by creating pattern profiles unique to each participant's experience. Mutual process is incorporated into the methodology by including participants in the mutual shaping of the pattern profile. The sharing of the evolving mutually constructed pattern profile with each participant facilitates the participant's knowing participation in change. The emergent design allows for unfolding unpredictability as the investigation evolves.

Synthesis overrides analysis during all phases of processing the data. Individual pattern profiles are synthesized to form the Mutually Constructed Field Pattern Profile

and Resonating Unitary Themes of Human-Environmental Pattern Manifestations are synthesized to form the Unitary Field Pattern Portrait. Like a liquid crystal display, the Unitary Field Pattern Portrait is a dynamic and vivid portrayal of the phenomenon of concern. The Unitary Field Pattern Portrait is then synthesized with the postulates and principles of Rogers' Science of Unitary Human Beings to create the Theoretical Unitary Field Pattern Portrait. Furthermore, the construction of the Mutually Constructed Pattern Profile through mutual processing reflects increasing diversity as postulated by Rogers as the Mutually Constructed Pattern Profile becomes increasingly richer, more descriptive, innovative, and diverse. The theoretical structures developed using the UFPP research method enhance the understanding of the nature of phenomena related to well being and human betterment within a unitary perspective. Theoretical Unitary Field Pattern Portrait conceptualizes phenomena within a unique nursing science perspective and serves as a guide for the development of theoretical propositions. Thus far, one study (Butcher, 1996) has been completed using the UFPP research method. Rogerian scientists are challenged to use this method and further its evolution. The method's usefulness for generating unitary conceptualizations of phenomena integral to human betterment needs to be tested. Infinite possibilities abound.

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CLINICAL OUTCOMES RESEARCH AND ROGERIAN SCIENCE: STRANGE OR EMERGENT BEDFELLOWS?

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ABSTRACT

The purpose of this paper is to describe and reconcile conceptual inconsistencies between clinical outcomes research and the ontological assumptions of the SUHB. Specifically, the authors address a clinical trial examining outcomes of touch therapies framed within Rogerian science. They raise the question of whether the clinical trial is inherently incompatible with the SUHB, or if through reconceptualization, it can be an emergent way of interpreting and developing research methods within the conceptual system. The paper contains an overview of the study, the ontological and epistemological assumptions that underpin experimental design, conflicts between these assumptions and the assumptions of SUHB, perspectives within the literature on issues of ontological-methodological congruency within Rogerian Science, and paths to reconciliation of the conflicts presented. The discussion of reconciliation calls attention to the nature of scientific inquiry, developing knowledge within the Rogerian research tradition, Bohm's holographic theory, body-field relationships, linking theory to outcomes in the SUHB, complexity science, and reconceptualizing through metaphor.

Introduction and Background

The study of practice outcomes is receiving considerable emphasis in all of the health care professions. In this era of managed care and professional accountability, there is increasing pressure to document the differences that we make in the lives of patients. This emphasis on outcomes is a double-edged sword. On the one hand, there is danger that the value of a practice or a therapy may be determined by a discernible statistical difference on a variable identified by the dominant medical community as significant. For example, if we identify healing solely by variables that reflect curing within the bio-medical model, then perhaps significant outcomes related to quality of life

and subjective experience will be submerged or ignored. On the other hand, in resisting outcomes research because of these pitfalls, we may miss the opportunity to document the differences that nurses potentiate with our practices. Evaluating models of care and nursing therapeutics that are based in nursing science offers profound possibilities for advancing our discipline. And the public are seeking therapeutics that are consistent with nursing models and are asking for a way to discern their value. Even within nursing's scientific community, there are calls to identify nurse-sensitive outcomes as the focus of our research.

Qualitative methods have been used for evaluating models of care. They do provide us with rich and substantive descriptions about how patients, families and care providers perceive and experience certain processes or models of care, but they do not seek to answer the critical questions asked by many clients, payers and providers: What confidence can we have that the use of this therapy, process or practice

Key Words Rogers Science of Unitary Human Beings, clinical trials, nursing epistemology, touch therapies

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model can make a difference in a particular outcome? It is through the traditional scientific method that consumers and others in professional communities most frequently discern this confidence.

While seeking to study "outcomes" of touch therapies (Therapeutic Touch and massage) that were framed within the SUHB, we confronted a dilemma that grew from: 1) An awareness of the inconsistencies of the scientific method within the ontological assumptions of the SUHB; 2) a desire to engage in research that advanced the integration of nursing therapeutics framed within the SUHB into mainstream health care; and 3) a commitment to nursing science and the freedom of creative scientific inquiry. Out of this dilemma our struggle was born. Would the partnership of a clinical trial outcomes study framed within the ontological assumptions of the SUHB be "strange bedfellows," coexisting in an awkward and uncomfortable conceptual marriage? Or could they be "emergent bedfellows," unfamiliar partners that through conceptual reconciliation manifest a creative leap in our vision of the possibilities for understanding methods and practice within the SUHB?

Another piece of the picture surrounding our decision to pursue this study came from the barrage of criticism levied against the practice of Therapeutic Touch within the University of Colorado School of Nursing. In 1993 the Rocky Mountain Skeptics challenged practitioners and faculty at the University of Colorado School of Nursing. This watchdog group, with a mission of uncovering health care quackery, mistakenly contended that there was no scientific research supporting the practice of Therapeutic Touch. Because of this, they reasoned that state revenues should not support the teaching of this practice, nor should the practice be allowed within the definitions of the state Nurse Practice Act. The Chancellor of the Health Sciences Center at the University of Colorado appointed a panel to study this

question. Members were drawn from all the schools within the Health Sciences Center. Three nationally-recognized nurse researchers from outside the School of Nursing were appointed to review the evidence and contribute opinions to the panel. The panel received testimony and open hearings were held. The final decision supported by the research evidence and the tenets of academic freedom, upheld the faculty's right to teach and practice Therapeutic Touch (Clamen, 1994). While faculty had been engaged in phenomenological research related to Therapeutic Touch, a major recommendation related to research was delivered by the Panel. They stated that the faculty teaching and practicing Therapeutic Touch should be engaging in research regarding the outcomes of the practice.

While this provided some additional motivation for a research project on the outcomes of touch therapies, our purpose for pursuing the inquiry was founded on a commitment to nursing science-based practice, a valuing of the unitary world view and a sense of the potentiality of integrative therapies framed within the SUHB. Both Therapeutic Touch and massage have in common caring intention and rhythmic movement within the continuous mutual patterning process of nurse and client. This focused intent to care is communicated through the hands, potentiating changing field patterning. This foundation within the SUHB is important for the advancement of science-based practice.

The burgeoning interest in integrative healing modalities is encouraging. This groundswell of interest generated by the public, was reported in the now classic study by Eisenberg, et. al (1993) which revealed that about a third of Americans were already using integrative healing modalities; massage was one of the most sought-after among them. The establishment of the Office of Alternative Medicine with subsequent increases in funding of

research, creation of the several journals focusing on publishing research in integrative modalities, the establishment of educational programs specializing in teaching these modalities to practitioners, and the popularity of certain books such as Weil's (1983; 1995) *Health and Healing* and *Spontaneous Healing* and Moyers' (1993) *Healing and the Mind* were bellwether signs that the climate was prime for the acceptance of these modalities into mainstream health care.

One could argue that medicine's relatively recent embrace of integrative modalities has led to their new-found legitimacy. Some of these therapeutics had been an integral part of nursing practice for a century, and "nurses began developing literature in the holistic arena at the same time as their physician and lay counterparts in the late 1970s and early 1980s" (Dossey, 1988, p. 69). Touch therapies are examples. Massage, in the form of the backrub, was taught as a fundamental of nursing practice. Therapeutic Touch emerged within nursing science and practice, and along with other "holistic" modalities, has been framed within nursing's SUHB (Krieger, 1981; Quinn, 1984; Rogers, 1986). It is important to claim nursing's scientific heritage and future in these therapeutic practices. This can happen through the specification of how these integrative modalities are linked to nursing knowledge and practice.

So, with all this as a background to our process, we needed to reconcile the following questions: Does the movement of clinical outcomes research fit with the ontological assumptions of the SUHB? Can the clinical trial or experimental design be consistent with the assumptions of the SUHB? Can "physiological" measures be congruent outcome variables for research framed within the SUHB? Can healing, as we defined it, be manifest through these physiological indicators? Can we use both physiological indicators and subjective descriptions to arrive at a more complete understanding of pattern-

ing in the healing process? The purpose of this paper is to describe our current thinking on the reconciliation of conceptual inconsistencies between methodology, epistemology and ontology in the development of a clinical trial focusing on outcomes of touch therapies for patients during bone marrow transplant with the SUHB as the theoretical framework.

An Overview Of The Current Research Study As Context

While the issues discussed in this paper transcend any particular study, the study that we are currently conducting, "Clinical Outcomes of Touch Therapies during Bone Marrow Transplant" led to the exploration of these issues. For this reason, a brief overview of the study is provided. The purpose of the study is to discern differences in selected outcomes for patients undergoing bone marrow transplant (BMT) who receive massage, Therapeutic Touch, a placebo called a friendly visit, and routine care. The touch therapies are defined as approximately 30 minutes of massage and Therapeutic Touch using standard practice protocols. The friendly visit is 30 minutes of social conversation with a volunteer. The control group consists of a random sample of patients who had received routine care on the same BMT unit in the year prior to initiation of the study. The subjects are patients admitted to the BMT unit who agree to participate in the study, are English-speaking and between the ages of 18-65. The sample is stratified to include 75% autologous BMT recipients and 25% allogeneic BMT recipients. Outcomes selected for study are period (number of days) for engraftment, number and severity of complications, and patient satisfaction with care. Patients keep a log of their experiences throughout their stay on the BMT unit and practitioners log their reflections and observations. Patients are randomly assigned to one of the 3 treatment groups and will receive any of the touch or placebo treat-

ments every third day until engraftment occurs. Period of engraftment is defined as the number of days from transplant to three consecutive neutrophil counts over 500. A standard index of severity has been developed to categorize an array of complications related to bone marrow transplant. A patient satisfaction survey used on the unit has been modified for this study. Analysis will examine the differences between mean scores for each of the identified variables. A qualitative analysis of the patient logs will focus on the process of healing through examining experiences, thoughts, and perceptions of the patients during bone marrow transplant. Interpretive analysis will synthesize the findings from both sources of data.

This population and setting for the study were selected for several reasons. The outcomes identified for this study are related to healing in patients receiving BMT. The selection of these outcomes was related to their congruence with the theoretical framework and the nature of the environment of the BMT unit. In addition, the BMT unit incorporates highly technological and isolative procedures that beg for nursing therapeutics. Massage and Therapeutic Touch were already offered to patients on the unit who requested and paid for them. There was some anecdotal evidence that healing was enhanced through the use of these therapies. Finally, the controlled environment, systematic protocols on the unit, and the spirit of collaboration influenced our choice.

Within the process of theory building, the relational statements or propositions that illuminate the linkages between theory, nursing actions or therapeutics, and the selected outcome variables are clearly articulated at the level of the conceptual model, middle-range theory and empirical indicators (Fawcett & Downs, 1992). In this study, the outcome variables and the touch therapies of massage and Therapeutic Touch were framed within the SUHB. Ex-

amples of the propositions within the theoretical framework are:

1) Humans and environment are integral energy fields in continuous mutual process.

2) Any change in the environmental field may potentiate change in human-environmental field patterning.

3) Caring intention of the practitioner and rhythmic movement, essential processes of these touch therapies, are ways of participating in the dynamic flow of the human-environmental field patterning.

4) Healing is a process of human environmental field patterning toward "right relationship" (Quinn, 1990) or "symphonic integration" (Rogers, 1970) This may be reflected in multiple manifestations of patterning, from physical, even cellular changes to perceptions, images and shifts in awareness.

5) One manifestation of this coming into "right relationship" is the integration (or engraftment) of transplanted bone marrow cells. This coming together in engraftment is an index of healing in bone marrow transplant.

6) Therefore, if caring intention and rhythmic movement potentiate pattern change; and if this pattern change may be described as "synchronous" or coming into "right relationship"; and if this right relationship may be evident in multiple field manifestations, including at the cellular level; and if engraftment is a process that involves the coming into "right relationship" of newly-introduced cells to the whole; then engraftment may be enhanced through the touch therapies of massage and Therapeutic Touch during bone marrow transplant.

Ontological And Epistemological Assumptions Underpinning The Clinical Trial

Several ontological and epistemological assumptions underpin the clinical trial. The clinical trial is a true experiment used to test therapies or interventions for their ef-

fectiveness. The design calls for a control group and at least one experimental group. Subjects are assigned to these groups randomly. The clinical trial is a method emerging from the following assumptions (Suppe, 1977):

1) There is an objective reality existing independent of any observer. Science seeks to understand this objective reality. Truth in science is obtained through observation, or empirical testing, that seeks to isolate elements of this objective reality.

2) The observer's subjectivity is a source of bias which interferes with obtaining the knowledge of objective reality; therefore, all attempts are made to separate the researcher's biases from the process of observation. This may be accomplished through measurement and various controls that eliminate bias.

3) Causal relationships do exist. The goal of scientific knowledge is prediction and control. The scientific method seeks to isolate particular causes and show their effects. The clinical trial is the quintessential design to arrive at an understanding of causal relationships because it tests differences between the treatment and a control group and it seeks to remove the effects of any extraneous variables that might influence change in the dependent variable.

4) The whole can be known through reducing it to its parts. Reduction of a conceptual unit to an operational or measurable unit is a hallmark of the positivist scientific method.

5) Change is predictable and generalizable. Our system of statistical analysis is based on the assumption that changes seen in a sample may be generalized to a population, and that we can determine with what degree of certainty we can anticipate this change.

Conceptual Conflicts With Assumptions Of SUHB

Well-known conceptual conflicts exist between the assumptions presented and

the assumptions of the SUHB. These conflicts have appeared in the literature and are summarized as follows:

1) In a universe of open systems there is no causality. Open systems, by their nature are dynamic, flowing and in continuous, mutual process. Manifestations of this dynamic change are unpredictable. Causality implies a linear relationship of time and a locality of cause with effect which is inconsistent with the pandimensional nature of the universe.

2) Human-environment energy fields are integral. There is no separation between observer and observed, between a subjective and objective reality. The observer is a participant in the emergent patterning process.

3) The unitary nature of the human-environmental field cannot be captured through reductionistic constructs. The whole is inherently different than any of its parts.

4) In a universe of unpredictability, it is not possible to infer truth through application of probabilistic models designed to generalize. Patterning is continuous, creative and emergent.

The conceptual inconsistencies between design of the clinical trial and Rogers' SUHB can be summarized by the following dialectic pairs: *Separation-Integrality; Causality-Unpredictability; Linearity/Locality-Pandimensionality; Particularity-Patterning; and Generalizability-Creativity.*

Perspectives On Issues Of Ontological-Methodological Congruency Within Rogerian Science

Disciplined discussion related to conceptual inconsistencies between particular approaches to research and the SUHB has existed since the early 1980's. This discussion provides a valuable context for the ideas presented here. Rogers, herself, spoke of the limitations of the processes of the empirical-analytic paradigm of science in studying unitary phenomena. She encouraged the selection and development of in-

struments that might capture the manifestations of field patterning; however, she did not support one paradigm of science over another. "One needs to look at the phenomenon under study and determine the best ways to get at it..." (Rogers, 1994, p. 34) She was unwavering in her belief that those advancing the SUHB would do so through developing and/or testing theories that were derived from the conceptual system, and that the future scientists working within the system would discover and invent new ways of measuring, observing, experiencing, or uncovering unitary phenomena that would present closer ontological-methodological congruency. She was aware of the human science paradigm and the existence of qualitative research methods, but saw those as equally, not more promising, than quantitative methods for advancing the SUHB. Rogers anticipated an emerging sophistication in design, methods, measurement and analysis that had potential for increasing precision in understanding the human-environmental field patterning. "Certainly science is open-ended; it will never stop". (Rogers, 1994, p. 34).

Cowling's 1986 classic article of methodological issues in Rogerian science presented a clear and substantive summary of the state of ontological-methodological congruency at the time. He emphasized the importance of conceptual consistency between the variables selected for study and the Rogerian conceptual system, and questioned the value of true experimental designs for the purposes of research in the SUHB because of their inherent causal assumptions. He conceded that while experimental or quasi-experimental designs may be appropriate to monitor indices of human field pattern change in relation to introduced environmental change, caution must be taken regarding the use of such designs since they are most notably selected to reveal causal relationships. (Cowling, 1986, p. 73)

Phillips (1989) chronicled a history of

research based on Rogers' conceptual system. In it, he addressed the conceptual-methodological issues that emerged from changes in the model and refinement in thinking through critique. He discussed the need for careful evaluation of measures developed in other disciplines and the movement toward using statistical analytic methods such as canonical correlation to avoid the "causal assumptions trap." He describes the movement in the science toward developing pattern profiles. These profiles encompass both "quantitative changes and the novelty... inherent in qualitative changes in the patterning process" (p. 59). Phillips' creative conceptualizations of panoscopic vision point us to the frontiers of research in the SUHB. "Both qualitative and quantitative methods can be used..., but new methods and instruments must be created to uncover the wholeness of these field experiences of reality". (Phillips, 1991, p. 143).

Reeder (1986) examined the congruency between Rogers' SUHB and Husserlian phenomenology. Her work stimulated interest in the use of qualitative methods for studying the phenomena central to the SUHB. Others used qualitative methods in the study of phenomena from a Rogerian perspective. Cowling (1990), Carboni (1992), and Butcher (1996) have developed qualitative approaches to understanding patterning, the healing relationship, and human experiences within the SUHB.

Carboni (1992) was critical of much of the existing body of research in Rogerian science, and presents arguments against the use of quantitative measurement.

Although her model is one of the most frequently used for research in nursing, there has been an unfortunate reliance on particularistic conceptualizations and measurements. Presently there is evidence that this dependence on three-dimensional methodology is being replaced with more coherent

unitary thinking that acknowledges energy field patterns as the only reliable and valid indicators of the whole. (p. 134)

She criticizes quantitative measurement and calls for creative measurement, "a universal kind of knowing, a sense of ratio or proportion signifying wholeness or harmony..." (Carboni, 1992, p.135) In addition, she asserts that, "In order for any construct derived from the SUHB to be unitary in nature, it must address the system in its entirety, not a portion of it. Particularistic constructs that emerge from a three-dimensional, causal world view are not consonant with Rogers' holistic, indivisible view of reality because they do not reflect the coherence that she espouses." (Carboni, 1992, p. 136)

In 1996, Fawcett examined issues of incompatibility between the Rogerian world view and the research rules within the SUHB. She questions the compatibility of any quantitative designs or quantitative instruments within the Rogerian science, arguing that the use of components of variance models is a "reductionist analytic technique based on the mechanistic assumption that the whole is the sum of parts" (Fawcett, 1996, p. 9). Fawcett (1996) clearly articulates the quandary:

A seemingly simple solution to the incompatibility issue is to use only qualitative methodologies that are based on the assumption of unitary phenomena. That solution, however, raises other questions, such as how can the efficacy of SUHB-based therapeutic modalities such as imagery, Therapeutic Touch, and visualization be determined qualitatively? Furthermore, how can differences in the efficacy of therapeutic modalities be determined qualitatively?...Or are these questions of efficacy even relevant? (p. 9)

In 1996 Barrett summarized the differing points of views on the quantitative-qualitative debates within Rogerian science, stating that in one camp are those who believe that the ontology of the Rogerian conceptual system is inconsistent with quantitative methods, while others assert that the phenomenon being studied directs the selection of method. Barrett (1990) has been consistent in her assertion that the nature of the research question or purpose of the study suggests the research design. She has argued in favor of using both quantitative and qualitative approaches in Rogerian research, suggesting that numbers and text may be used separately in generating data that may then be combined to gain a picture of the whole. She pleads, "Let's keep the methodological doors wide open! Many undiscovered treasures may await inside as the unique Rogerian methods continue to be developed and refined. Methodology may go beyond what we now can only imagine." (Barrett, 1996, p. 51-52) Such diversity of thought points to a postmodern attitude that questions longstanding traditions of science in the face of competing worldviews.

Paths To Reconciliation

And so we are confronted with reconciling apparent opposing world views and discerning for ourselves whether the nature of the clinical trial or experimental design using physiological indicators and qualitative description is inherently at odds with Rogerian science, or, if conceptualized as an emergent, it can be a way of capturing the complexity of the patterning process of healing in its full, rich dimensions. The summary of reflections on these issues follow:

The Nature Of Scientific Inquiry

Science is open-ended, and the creative imagination and freedom of the scientist in answering questions must be preserved. Therefore, any *a priori* limitations placed on that process by dogmatic stances related to the correct, appropriate, or right

methods should be viewed with caution if these limitations constrain the creative process of theory development within the conceptual model itself. This is not to say that "anything goes", for there is discipline and structure to scientific inquiry. Polanyi (1967) addresses this tension of originality and conformity within science. This tension is played out in the scientific community who judge the contributions of the individual scientist to science. The community's decisions of value are conferred based on criteria of: exactitude, systematic importance (correspondence with the structures in place), and intrinsic interest of its subject matter (Polanyi, 1967, p. 66). On the other hand, creative dissent is encouraged. "While science imposes an immense range of authoritative pronouncements, it not merely tolerates dissent..., but grants its highest encouragement to creative dissent. (Polanyi, 1967, p. 68). Science is advanced within the community through the interaction of tradition or authority with creativity. "They [scientists] trust the traditions fostered by this system of mutual control...and at the same time claim an independent position from which they may reinterpret and possibly revolutionize this tradition" (Polanyi, 1967, p. 73). From this perspective, if the vision of Rogerian science is honored and the theories are developed, ordered and tested from the assumptions and principles of the science, then the scientist can be free to seek answers to questions through varied approaches to inquiry within the research tradition. The community of scholars will evaluate the worth of the work after its completion, not before its inception.

Developing Knowledge Within The Rogerian Research Tradition

Each conceptual model or system has both middle-range theories, practice and research traditions related to them. (Smith, 1992). The research traditions are the designs, methods, data forms and analytic processes that best help the scientist develop

and test the middle-range theories emerging from the conceptual models. The research traditions are developed from a contextual web composed of three areas: 1) the phenomena to be explored within the model, 2) the foundational ontological and epistemological assumptions of the model, and 3) the research questions posed for the particular inquiry. The ontological and epistemological assumptions are one of the determinants, but not the only determinant of the design, methods, analytic processes and data forms in a study. Epistemologies, or philosophies about the nature of knowing and knowledge, do inform methodologies; however, the ontological paradigms within a discipline may be consistent with more than one epistemic paradigm. For example, Rogers' SUHB, Parse's theory of human becoming and Newman's theory of health as expanding consciousness all share some foundational ontologic perspectives that place them in the unitary-transformative (Newman, Sime, Corcoran-Perry, 1991), simultaneity (Parse, 1985) or simultaneous action paradigm (Fawcett, 1993), yet each have distinctions that are reflected by their unique research traditions. For example, in Parse's theory of human becoming, the phenomena central for study are health-related lived experiences. The research tradition, that is, the design, methods, data forms and analytic processes support the generation of qualitative descriptions of those lived experiences which are interpreted through the lens of the theory. Those scientists engaged in the exploration of Rogers' SUHB are studying the nature of human-environmental field patterning. The research tradition in Rogerian science has encompassed multiple designs, both existing and newly-developed instruments, data forms that are both qualitative and quantitative, and analytic processes that might best capture the complexities of the nature and quality of human-environmental field patterning and the research question.

The purpose of the experimental design may be framed as seeking to determine causal relationships within one ontological perspective. But, in the SUHB the purpose of this design may take on a different meaning as it is framed within the contextual web of the research tradition. The interpretation of the design and the measurements used are the product of the meanings ascribed within the conceptual system. Therefore, within the SUHB, the research tradition may encompass multiple designs, methods, data forms and analytic methods, many not yet invented to capture the nature of the pandimensional process of field patterning.

A View From The Holographic Universe

The view of reality posited by quantum, relativity and holographic models of reality can be helpful in the juxtaposition of seemingly opposite assumptions. This model reveals to us a universe characterized by: unbroken wholeness, uncertainty, and paradox. This notion of paradox is extremely important because much of our sensory experience and temporo-spatial ordering of life obscures our direct experience of unitary being-becoming. Our senses do not consistently and fully apprehend and appreciate the patterning of this pandimensional whole. Instead our senses collapse waves creating an experience of separateness and physicality.

Bohm's (1980) theory of the implicate-explicate order of reality helps us to understand this paradox. The implicate order is the ground of reality, its true nature of unbroken wholeness and patterns of energy, interconnected with all that is. We perceive the explicate order, that which is ordinarily accessible to our senses, as a reality with matter separate from energy; humans separate from environment. This seems inconsistent with the implicate order. This explicate order unfolds from the implicate in the dance of the holomovement. Through the explicate order we can get glimpses into the unitary reality. The glimpses

or manifestations are like tracks in the sand, providing us with a limited, ghost-like representation of the nature of patterning.

Let's refer again to the seeming paradoxes between the assumptions underpinning the design of this study and the tenets of the SUHB which we identified as: separation-integrality; causality-unpredictability, linearity/locality-pandimensionality, and particularity-patterning. Within a dialectical relationship it is possible to conceive of separation, causality, linearity/locality and particularity as representative of the three-dimensional world, the explicate order; while integrality, unpredictability, pandimensionality and patterning are qualities of the pandimensional implicate order. In the study that we are conducting, the indices of engraftment and complications are explicate manifestations of the implicate order. Subjects and nurses will log their feelings, experiences, images, dreams, sensations and perceptions, which may give us a different set of clues about the process of healing and reflect their (both patients and nurses) integral nature and pandimensional awareness. Then, through interpretation, the researchers engage in a synthesis of the dialectic. In and of themselves, the physiological indicators are reductionistic, but interpreted within the synthesis they may become reflections, manifestations, or portholes for us to see and understand more about the nature of this patterning called healing. This is consistent with Cowling's (1986) discussion of the potential of the dialectic for knowledge development within Rogerian research.

Body-Field Relationship

In Rogerian research, the unitary cannot be understood through particulate physiological measurement. Phillips (1991) asserts that in human field research, "the physical body cannot be studied as an entity unto itself, but must be conceptualized within the perspective of the manifestation of the human field pattern" (p. 142). He argues that "field pattern profiles give field

information better than physical measures" (p. 142). Our attempt with this research method is to synthesize a field pattern profile with the physical measures toward an understanding of their interrelationships in the field patterning of healing from a Rogerian perspective. In this way, data about complications or engraftment do not stand alone in defining healing, but are manifestations of the mosaic that compose the whole of the pattern profile.

Complexity Science

Complexity science is another avenue to explore these contradictions. Some complexologists assert that complexity manifests at "the edge of chaos." This refers to the idea that nothing novel can emerge from systems with high degrees of order and stability or high degrees of disorder. Complexity emerges at the borders between rigid order and randomness (Horgan, 1995, p. 106). The epistemology emerging from the science of complexity recognizes that the wholeness of the universe cannot be "known", but is always an understanding-in-process. (Harmon, 1991, p. 27). This understanding is informed through multiple perspectives on the phenomenon that may manifest on the edge of conceptual or intellectual inconsistencies. In complexity science, data from the measurement of cellular activity to the descriptions of spiritual enlightenment may be included in a "comprehension nexus" related to the phenomenon. All knowledge about phenomena, no matter what source, is limited and perspectival (Suppe, 1977). In this way, complexity scientists assert that science may become less "linear" and more "poetic" (Horgan, 1995, p. 107) in the future as sources of discrepant information are woven together through interpretation. In this study, the healing process is the phenomenon for understanding. Multiple sources are used and the researchers bring these sources together, interpreting them in the process of generating knowledge related to the phenomenon.

Reconceptualizing Through Metaphor

Metaphor is a figure of speech which is used to bring two things together that do not ordinarily fit "usual states of affair". They are context-related, and therefore, require interpretation. In this study the medical metaphors are readily recognized in the physiological measures of neutrophils, toxicity scores, and platelets. These metaphors are symbolic representations of something ordinarily hidden from the naked eye, yet considered "real" and worthy of being counted as evidence. Also, in this study are narrative metaphors that are recognizable in the verbal and written expressions recorded by the patients and practitioners. These metaphors are symbolic representations of something ordinarily hidden from casual observation by a third party, yet also considered "real" to the one expressing them. They, too, count as evidence of meaningful experiences. The SUHB sets the stage for metaphoric thinking to reconcile phenomena under study ordinarily categorized in quantitative or qualitative ends of the spectrum of accountability, usually regarded as having clear scientific boundaries. Metaphoric thinking describes synthesis as a preferred way of knowing within the SUHB. In addition, metaphoric thinking is central for pattern-seeing. Metaphoric conceptualization of the variables of this study, render them recognizable within pattern; they become dynamically interrelated, manifestations of patterning.

In conclusion, we share our thinking with you for the purposes of inviting dialogue as we refine and revise these ideas. When we analyze different paradigms, it is customary to reject an opposing paradigm because of its seeming inconsistencies with our own. The open process of sciencing is essential to our advancement, and to abandon an idea because it seems inconsistent truly reflects the binding chains of ideological thinking. Free exploration and paths to understanding through the paradoxes may

be possible. Emergent thinking occurs through unfettered exploration of the horizons within the landscape of the SUHB. This may happen through living with the tensions presented by seemingly opposing points of view. Through living with the tensions there is the possibility for the quantum leap!

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EXPLORING THE CONCEPT OF BEYOND WAKING EXPERIENCE

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ABSTRACT

Beyond waking experience has been a concept in Rogers' Science of Unitary Human Beings since at least the late 1970s, but she never defined it and gave only two examples of the experience--meditation and paranormal phenomena. In this paper, theoretical and empirical aspects of the concept are discussed, and a beginning definition of the concept is proposed. The reasoning for the idea that dreaming is a beyond waking experience is presented. Suggestions for other phenomena that may be beyond waking experiences are given, as are recommendations for future theory development and research.

Beyond waking experience has been a concept in Martha E. Rogers' Science of Unitary Human Beings (SUHB) for decades (Rogers, 1977, 1992). She never defined it, however, giving only examples such as meditation and paranormal experiences. This writer attempted to investigate the concept in her dissertation research (Watson, 1993, 1997c). Based upon the findings of the study--as well as those of several other researchers--a definition of beyond waking experience was proposed. The purpose of this paper is to share ideas about the concept and to propose areas for further investigation.

Sleeping, Waking, and Beyond Waking Experience

When developing the research proposal, this writer's primary concern was not the concept of beyond waking experience

(Watson, 1997b). Rather, the main area of research interest was studying sleep patterns in older adults using Rogers' (1970, 1992) Science of Unitary Human Beings. An initial review of Rogers' ideas about sleep in older adults had revealed some interesting statements that raised questions. Rogers (1980) stated that "the aged need less sleep" (p. 336). Yet one could walk about in almost any hospital or nursing home in the middle of the afternoon and observe many older adults sound asleep in their "geriatric" chairs.

After an extensive review of traditional (i.e., non-Rogerian) literature about sleep patterns in older adults, it was found, however, that Rogers was partially correct. Older people do have different sleep-wake patterns than younger adults, but the key word here is pattern, not duration. The amount of sleep taken by older adults in a 24-hour period can be more, less, or the same as that of younger adults, as repeatedly documented in traditional sleep research (Bliwise, 1993; Pressman & Fry, 1988). Upon reviewing Rogers' 1980 statement, it was noted that attention should be given to the assertion that "the patterned frequencies of sleep/wake are more diverse

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[in older adults]" (Rogers, 1980, p. 336). Changes in sleep-wake patterns in older adults occur commonly both in people who are healthy and in those who have health problems. The most consistent finding is increased awakening after sleep onset at night (Buysse, et al., 1991; Pressman & Fry). Daytime napping is increased in some individuals, although this is not true for all older adults (Bliwise, 1993).

Although several competing theories have been offered, it is interesting to note that no one has been able to fully explain why these sleep-wake pattern changes occur. This writer used Rogers' conceptual model as the framework for her study because it provided a theoretically more plausible view in explaining these sleep changes than offered by traditional explanations. Rogers' explanation for them in 1980 was that "aging is a continuously creative process directed toward growing diversity of field pattern and organization . . . it is not a running down" (Rogers, 1980, p. 336). She made a similar statement in 1992, when she said that "aging evolves from conception through the dying process. The aging of a unitary human field is not a running down. Rather, field patterns become increasingly diverse . . . and sleep-wake frequencies become more varied" (Rogers, 1992, p. 32).

In selecting the framework for the study, it was recognized that Rogers (1992) had included "longer sleeping/longer waking/beyond waking" in her "Manifestations of Field Patterning in Unitary Human Beings" (p. 31). It was thought that because Rogers had identified only a few other manifestations of patterning, this must be an important one. Further, it was determined by this writer that to be consistent with Rogers' model in the proposed study, the manifestation of sleep-waking patterning needed to be examined in its entirety. "In the Rogerian model, the sleep-wake manifestation of patterning is conceptualized as encompassing experiences beyond those traditionally seen

as sleep-wake behaviors . . . Human sleep-wake rhythms cannot be fully explored without consideration of beyond waking manifestations" (Watson, 1993, p. 2). The challenge was to find a way to address the concept of beyond waking experience in the study.

As noted, Rogers did not define the concept of beyond waking experience and gave only examples of it such as meditation and paranormal experiences. For example, in 1992 she wrote, "meditative modalities . . . bespeak 'beyond waking' manifestations" (Rogers, 1992, p. 32). As the proposal for the study was being developed, this writer asked Rogers (personal communication, March 15, 1985) if she could give a definition of beyond waking experience. Rogers' response was a smile and a challenge to develop one. It was received with some frustration. If she did not define her concepts, how could a novice researcher in Rogerian nursing science do so? A beginning definition, however, was proposed, but not until after the study was completed.

Dreaming as a Beyond Waking Experience

Initially, beyond waking experience was viewed from what now could be considered a very limited perspective. That is, in the study, dreaming was identified as a beyond waking experience (Watson, 1993, 1997c). The reasoning for this follows. In addition to citing meditation and paranormal experiences as beyond waking phenomena in her more recent writings (Rogers, 1992), in an earlier work, Rogers (1970) wrote that "dreams are often noted to be associated with paranormal phenomena . . . [and] provide a further means whereby integration and patterning of life occur" (p. 72). This writer, in reviewing Rogerian and non-Rogerian literature, noted that dreaming had been described as similar to or having characteristics of those experiences considered by Rogers to be beyond waking manifestations.

Miller (1984), in what is the only

study of the sleeping/waking/beyond waking manifestation of patterning in its entirety, defined beyond waking experience as "states of awareness . . . that transcend sleeping and waking" (p. 3), and cited peak or transcendental states and extrasensory states as examples. Maslow (1971) indicated that peak experiences transcend space and time. Similarly, Dement (1976) described dreaming as a "transcendent dimension . . . the wandering of an abstract being in the infinite reaches of time" (p. 53). Hartocollis (1980) also described the timeless aspects of dreams and suggested that dreams are closely related to mystical experiences. Finally, Namilov (1982) stated that dreams are "meditation in its natural form" (p. 121).

Both Chuman (1983) and Hobson and McCarley (1977) have suggested that the human sleep-wake rhythm be viewed in relation to three principal states: waking, sleeping, and dreaming. Sleeping and dreaming are not, however, mutually exclusive experiences. Dreaming occurs in all stages of sleep, and it has been asserted that "reportable mental activity is always present in the sleeping human" (Foulkes, 1962, p. 24).

There are both psychologically- and physiologically-based theories of dreaming, but these are not consistent with Rogers' model as they offer reductionist views of human experience. A more consistent theory of dreaming is Tart's (1989) position that dreaming represents an altered state of awareness that is different from waking. Similarly, Globus (1987) asserts that "we are sentient in our dreams and perceive a sometimes fantastic yet authentic life world" (p. 61). According to Tart, in dreams, the individual draws upon knowledge from other states of awareness. Underlying this position is the notion that there is "some aspect . . . of our basic awareness that transcends any particular state we are in at the time (Tart, 1989, p.198). Tart asserts that dreams that occur during sleep may be the gateway

to other states of awareness, and in particular, to lucid dreaming. In lucid dreams, individuals know they are dreaming. The experience is more like the waking state, but lucid dreams may provide for experiences not possible in ordinary waking (Gackenbach & LaBerge, 1988; Tart, 1989). In lucid dreams, one may hold conversations with the characters met, including people known to have died. According to Tart, almost everyone has lucid dreams at one time or another.

Based primarily on the writings of Tart (1989) and Globus (1987), this writer concluded that dreaming may be said to represent a different reality. According to Rogers (1992), "all reality is postulated to be pandimensional" (p. 31). Pandimensionality provides for an infinite domain without conventional spatial or temporal attributes (Rogers, 1986, 1992), and that synthesizes the past, present, and future (Phillips, 1990). "The present as a point in time is not relevant to a [pandimensional] model. Rather, the [pandimensional] human field is the 'relative present' for any individual" (Rogers, 1980, p. 332).

In discussing paranormal phenomena, Phillips (1990) stated:

it is reasonable to assume that one person's relative present encompasses the future of another person or one's own future. It is a person's perception of the [integralness of] here and there, the past, present, and future manifests in what we call paranormal. (p. 17)

Such perspectives are consistent with Barrett's (1990) description of a client whose precognitive paranormal experience occurred within a dream.

This writer posited, therefore, that dreaming, as a beyond waking experience, represents a manifestation of human field pattern. It was also noted that Cowling (1990) stated that "pattern appraisal includes . . . visualizations or images described by the person" (p. 53). The case

being made for dreaming to be construed as a beyond waking experience, this writer developed an instrument to measure dream experience within the context of the Science of Unitary Human Beings (Watson, 1993, 1998; Watson, Barrett, Hastings-Tolsma, Johnston, & Gueldner, 1997), and the study was undertaken. The concept of beyond waking experience, however, still had not been defined.

In the study, the variables of main theoretical interest were sleep-wake rhythm and dream experience. The independent variables were time experience and human field motion. It was expected that correlations among these variables would be found. Cowling (1983) stated that the manifestations of patterning are postulated "to evolve consonantly with one another in unitary human development" (p. 2). Similarly, Phillips (1989) said that "as change occurs in one part of the [human] field, change takes place in the whole field" (p. 58) and is evidenced in pattern manifestations of human and environmental fields.

Admittedly, seeking correlations among the variables was a linear approach. Based on Phillips' (1989, 1997) more recent ideas that the manifestations of patterning should not be viewed as "three separate columns" (Phillips, 1989, p. 59), this may not have been the best thing to do. Interestingly, a significant positive correlation was found between sleep-wake rhythm and dream experience ($r = .2945$, $p < .05$). This finding gave support to the idea that dreaming is a beyond waking experience and that it is consistent with Rogers' model to explore dreaming in studies involving the sleeping/waking/beyond waking manifestation of patterning. The shared variance between sleep-wake rhythm and dream experience was, however, only 8.73%. This finding led to consideration of other variables that may be indicators of the sleeping/waking/beyond waking manifestation of patterning, as well as to consideration of how beyond waking

experience should be defined.

Definition of Beyond Waking Experience

Miller's (1984) definition of beyond waking experience as "states of awareness that transcend sleeping and waking; examples include peak or transcendental states and extrasensory states" (p. 3) has been noted. Indeed, meditation and paranormal experiences occur during waking hours, whereas dreaming occurs during sleep. Building on this, and on the ideas about pandimensional reality in the Science of Unitary Human Beings, this writer proposed the following definition of beyond waking experiences: "Beyond waking experiences are complex human field phenomena that occur during periods of waking and sleeping, yet transcend both, and involve the perception of pandimensional realities in 'an infinite domain without limit' (Rogers, 1992, p. 31)" (Watson, 1993, p. 132).

Examples of Beyond Waking Experience

Within this context, a variety of experiences in addition to those already identified could be viewed as beyond waking experience. Daydreaming, for example, may be a beyond waking experience that is similar to dreaming but occurs when one is awake. As Starker (1974) has stated, "dreams and daydreams share common properties" (p. 55). Butcher and Parker (1988) studied the experience of guided imagery in relation to time experience and human field motion within Rogers' (1970, 1986) framework, using a two-group, pre-test/post-test design with 60 participants. Although they did not identify guided imagery as a beyond waking experience, they described it as having characteristics associated with daydreaming or meditative experiences. Their findings revealed that participants in the experimental group ($N = 30$) had significantly lower ($F = 4.348$, $p < .05$) scores on the Time Metaphor Test, indicating a sense of timelessness, after listening to a pleasant guided imagery tape.

Lucid dreams (Gackenbach & LaBerge,

1988; LaBerge, 1985; Tart, 1989), that occur during sleep but have characteristics associated with being awake, also may constitute beyond waking experiences. As mentioned, in lucid dreams, individuals "know while dreaming that they are dreaming, they feel much more in control of their mental functioning, and they are able to exercise more control over subsequent dream events" (Tart, 1989, p. 3).

Out-of-Body and near-death experiences could be considered beyond waking experiences which occur during the dying process. Rogers (1986) stated that "unitary human and environmental rhythms find expression in the rhythmicity of the living-dying process" (p. 8), and she noted that phenomena associated with dying such as near-death experiences would be appropriate areas for investigation within her model. Tart (1989) has attempted to link theoretically lucid dreaming with out-of-body experiences. His descriptions of out-of-body experiences are similar to the descriptions of near-death experiences reported by Moody (1976) and Morse (1990).

Spirituality, which has been defined as "a way of being and experiencing that comes through awareness of a transcendent dimension characterized by certain identifiable values in regard to self, others, nature, life, and whatever one considers to be the Ultimate" (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988, p. 10), could constitute a beyond waking experience that transcends usual waking and sleeping experiences, as well as the dying process. Smith (1992) studied this concept using Rogers' (1992) model. In her investigation, she compared spirituality and power in polio survivors ($N = 301$). Power was defined as the capacity to participate knowingly in the process of change (Barrett, 1983; Rogers, 1990). Smith elicited a significant positive correlation ($r = .34$, $p < .005$) between power and spirituality for the total sample. She also found that spirituality was greater

in polio survivors than in people who had not had polio ($t = 3.79$, $df = 250$, $p < .001$). In discussing her findings, Smith (1992) posulated that practices associated with greater spirituality such as meditation and prayer are related to "states which are timeless and beyond waking, enhance awareness of a transcendent dimension . . . [and] are congruent with Rogers' nursing model" (p. 79).

Although there is continuing debate about whether the concept of spirituality is appropriate to Rogers' model, both Malinski (1994) and Smith (1994) have presented compelling discussions as to why the concept can indeed be seen as consistent with the Science of Unitary Human Beings. More recently, Butcher (1997) noted that "spirituality can be understood as a pandimensional awareness of increasingly diverse and creative higher frequency patterning in the continuous mutual process of the human and environmental fields" (p. 16).

In discussing her research findings, Smith (1992) stated:

As people manifest greater power, they also manifest greater spirituality. As individuals become more aware of being pandimensional energy field integral with the environmental field, they tend to make different choices. Involvement in creating change becomes the process of actualizing one's choices toward greater creativity and diversity, developing the unseen dimension of oneself as a human field. (p.68)

This suggests that the concept of power as knowing participation in change also may have some link with lucid dreaming, in which people participate knowingly in their dreams and report being able to change the nature of their dream experience.

Further, during a discussion of beyond waking experience at a recent Rogerian conference (Watson, 1997b), members of

the audience suggested several other comments that could be subsumed within the idea of beyond waking experience. These included: centering and intentionality, the mutual process that occurs each year at the Rogerian Dialogues, hallucinations, psychedelic experiences, and prayer. It is noted that Donahue (1997) posited that prayer is a "manifestation of our non-local reality" (p. 33).

Conclusions and Recommendations

The variety of phenomena that could be viewed as beyond waking experiences illustrates the complex nature of the sleeping/waking/beyond waking manifestation of human field patterning. Looking only at dreaming, paranormal phenomena, or meditation as beyond waking experiences is too limited. We need to explore in greater depth what the concept of beyond waking experience means. We also need to identify the kinds of experiences that can be linked to the concept. Both qualitative and quantitative studies should be conducted to further explore the nature and meaning of beyond waking experience within the content of the Science of Unitary Human Beings. Although debate continues on research methods that are consistent with Rogerian science (Butcher, 1997; Cowling, 1997; Parse, 1997, Watson, 1997a), Rogers (1994) stated that both quantitative and qualitative methods work in Rogerian science. In this writer's opinion, a set of measures may be needed to more fully explore the concept of beyond waking experience. Perhaps an instrument could be developed that incorporates most or all of the known experiences linked theoretically to it.

In addition to identifying indicators of beyond waking experience, perhaps the concept itself needs a new name. Phillips and Bramlett (1994), for example, proposed the concept of "integrated awareness." They explained this concept as involving "the creation of a matrix in which one is cognizant of a heightened transcendence of self

and environment, including living and non living entities as well as the potential for mutual process to occur" (p. 22). They also stated that "this potential exists for all human beings . . . [and that] integrated awareness represents a dynamic, non-linear domain which is always present (p. 22). This description is somewhat similar to the definition of beyond waking experience proposed by this writer. Moreover, Phillips and Bramlett discussed a number of concepts that they asserted are related to integrated awareness. These include: field motion, power, mystical/paranormal experiences, empathy, human field image, and time experience. Although in this writer's study, time experience and human field motion were not found to be statistically related to dream experience and sleep-wake rhythm, the results were thought to be due to problems with instrumentation, not with the postulated theoretical relationships. Perhaps we are addressing the same concept without realizing it, as the term "beyond waking experience" tends to be associated--at first glance--with sleep-wake phenomena.

It is fascinating to speculate about what Rogers meant when she first included the concept of beyond waking experience in her model. Was it simply part of a continuum of sleep and waking experiences? If this is so, where does this continuum lead? Or is the idea of a continuum too linear for Rogers' model? Phillips (1997) has suggested "[placing] all the manifestations in one column in random order to get rid of what appears to be linearity" (p. 19). If this is to be done, however, we must endeavor to more thoroughly elucidate what each individual manifestation of patterning represents. This is certainly true of beyond waking experience, and further elaboration of this concept could be fertile soil for both theory development and future research.

Perhaps more questions have been raised than answered in this paper. It remains for us to continue our explorations of

Rogerian concepts--both those originated by her and those identified by newer Rogerian theorists--and synthesize them into a coherent whole within the framework of the Science of Unitary Human Beings.

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BOOK REVIEW COLUMN

Pat Christensen, RN, PhD

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

A REVIEW OF *BILLIONS AND BILLIONS*

This is Carl Sagan's last book, written during his final illness. He had been suffering from myelodysplasia but had undergone an apparently successful bone marrow transplant. He had been given an "all clear" from the primary dysplasia but succumbed to a subsequent mysterious lung dysfunction that defied all treatment. To the end, Sagan tackled the tough questions and in this book, he confronted the toughest questions of all in the shadow of illness and death.

Sagan (1997) presented his thoughts on life and death at the brink of the 21st century in a collection of essays. In *Billions and Billions* Sagan applied principles of science and mathematics to everyday life. The scope of this work is amazing; the essays ranged from football to the abortion debate. In this latest work, Sagan used many examples and metaphors to illustrate science in everyday life. For example, the dripping bathtub faucet was used to explain light. As the drop falls, it creates waves and spreads out in a perfect circle. More drops create further waves which create a frequency of the waves, which to the person in the bathtub is how often the crests of the wavelets pass that person's vantage point. He expanded the two-dimensional water droplet to three-dimensional sound waves and then the complexity of light waves.

True to his strong empiricist worldview, Sagan shunned easy answers and examined the modern world with the strict methods of traditional Western sci-

ence. Sagan believed in the value of the scientific method to explain life and make it better. "We make our world significant by the courage of our questions and by the depth of our answers" (Sagan, 1997, p.i).

At the core of the empiricist method, the only approach that Sagan (1997) could countenance was "real, repeatable, verifiable observations" (p. 52). According to this view, the natural laws of physics most likely would prevail on this planet and throughout the universe. Thus, observations of all phenomena are reducible and quantifiable. There is a chapter in this book devoted to numbers and quantification. Sagan (1997) illustrated the power of numbers through examples of very large numbers and the ability to quantify all types of phenomena.

Although Rogers was a product of the same scientific educational system as Sagan, she asserted that the pursuit of science may require more than one method (Rogers, 1987). Scholars have struggled with a methodology with which to conduct research in Rogerian science. Many of the unitary concepts--energy fields, perceptions of time, and conscious energy have been difficult using reductionistic methods. Researchers in the Rogerian framework have attempted to develop other measurements such as patterns of emergence, perceptions and field energy.

The phenomenon of the evolutionary emergence of humans is a point of comparison between Sagan's traditional science and Rogerian science. Sagan took a somewhat pessimistic tone in his cautionary tales of humans' impact on the environment of this planet and the destructive tendencies of aggressive humans. He discussed global warming and depletion of ozone as examples of impending doom. He believed, however, in the ability of humans to allay these disasters with reasoning and logical means of restraint. He wrote optimistically about the status of humans on the brink of the 21st century. Sagan saw the advent of

space travel as a vast achievement in human history. Likewise, Rogers considered space travel among the most transforming of all human experiences and a sign of evolutionary transcendence. Rogers was resolutely optimistic in her view of human evolution, "...there is the development of outer space communities and multiple other evidences of men's [sic] developmental potentials in the process of actualization" (Rogers, 1986, p. 2).

Sagan (1997) saw no evidence of a spiritual domain. He wrote that science had provided many insights into the universe and that more would be learned that would challenge traditional spiritual beliefs. Sagan did not think that religion could explain a universe of "a magnificence, and an intricate, elegant order far beyond anything our ancestors imagined" (1997, p. 213). He summarized his beliefs as follows: "My own view is that it is far better to understand the Universe as it really is than to pretend to a universe as we might wish it to be" (1997, p. 213).

Although Rogers did not address spirituality in her Science of Unitary Human Beings, some researchers have conceptualized a theory of spirituality evolving from Rogers' framework. Malinski (1994) proposed that spirituality is "intrinsic to Rogerian nursing science as a pattern manifestation of the human/environment mutual process" (p.12). Malinski proposed that the pattern manifestation of spirituality reflects all three principles of Rogerian science, integrality, resonancy, and helicy. Malinski called for challenges to her conceptualization of spirituality.

In this final work we see a more personal and vulnerable Sagan, a man strug-

gling with a perplexing illness that started with a seemingly trivial symptom of a bruise that would not heal. He wrote of learning about a disease he had never heard of and how he was astounded to learn that, untreated, the myleodysplasia would kill him. He longed to grow old with his dearly loved wife, Annie and to witness his children growing into productive citizens. Sagan, a man who had no belief in an afterlife, valiantly faced the end of his cherished life with clarity and grace. Especially moving in the afterward to *Billions and Billions* is the glowing account of Sagan's last days and his legacy recounted by his wife, Ann Druyan. The many inspiring letters and tributes which came after Sagan's death, "...lift me up from out of my heartache. They allow me to feel, without resorting to the supernatural, that Carl lives" (Druyan, 1997, p.237).

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GUEST BOOK REVIEW COLUMN

Francis C. Biley, RN;PhD

Title: *Patterns of Rogerian Knowing*

Author: Mary Madrid

Pub: National League for Nursing

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PP: Paperback, 290 pages.

This book, as Joanne Griffin has suggested in the Forward, is a "treasure chest," an aspect of the legacy or pattern manifestation of Martha E. Rogers that continues to "prod, provoke, stimulate, and challenge" nurses and scholars.

As I have come to expect from any new Rogerian publication, the range of subjects covered in the 25 chapters and nearly 300 pages is vast and diverse. There is little if any costume jewelery in this treasure chest, but there are gems and precious objects galour!

The volume opens with two illuminating 'keynote' chapters. The first, by Margaret Newman, juxtaposes the work of David Bohm and Rogerian science, and magically took me right back to the time when the paper was first presented at the Sixth Rogerian conference in 1996. The second chapter by John Phillips achieved, for me, the task of vividly yet pragmatically clarifying some of the more complex issues related to the SUHB, primarily that of the central (but still thorny?) issue of linearity.

The four subsequent sections of the book explore Rogerian science from research methodology and measurement, theory and research, theory in practice and Rogerian science and mysticism perspectives. Although these decontextualized headings sound dull, they should not put off the reader of this review. These paraphrased headings do not justify the individual chapters which are sparkling gems.

To mention a few of these chapters individually would be unfair to those that aren't mentioned. To mention all of the

chapters would put me way over the word limit. The solution, therefore, must lay in the overall impressions gained from the book.

Following on, as it does in a sense, as the third in the NLN/Rogerian science 'series,' I was firstly, and really quite selfishly, disappointed that *Patterns of Rogerian Knowing* is only about three quarters of the length of *Visions of Rogers' Science-Based Nursing* (Barrett, 1990) and *Rogers' Scientific Art of Nursing Practice* (Madrid and Barrett, 1994). (You know the feeling...when you have something that is so good you want it to go on for ever!), Secondly, although the cover graphics are fine, I don't think that I will ever be able to recover from the fact that the cover is not mauve (and I'm not - really-joking!). Those minor points aside, Mary Madrid, the editor of this volume, and all of the contributors have done a marvelous job of maintaining a strong Rogerian 'feel' to the book, constructing a valuable contribution to the development of Rogerian science, nursing science as a whole and this wonderful profession of ours.

But what about the overall impression that I promised? Well, as I read and re-read the text I started to feel a tension, albeit a creative and promising one. A manifestation of that tension could be expressed as those involved in either the practical or research-based exploration of the subject of the SUHB seemed to be confident in what they were doing, while those taking a more theoretical approach still seemed to be looking for answers, answers that will, perhaps, never come. This tension may be just my own interpretation of the unfolding pattern and, of course, is not meant to be a negative criticism; the tension doesn't feel negative. As Mary Madrid reminds us in the Preface to the book, Martha asked that "we should continue to discover new ways to perceive human beings and their environment and contribute to the evolutionary process of growth and change..." (page xii). Therefore, the tension is just a manifestation of that

process of change and development.

Reviewing this volume for *Visions* has been more difficult than I imagined. Knowing that readers of this journal are likely to be contributors to the book, and also knowing that it is already likely to be on the bookshelves of most subscribers to this journal, it is difficult to decide for whom I should be writing this review. But, if you are not a contributor to the book and don't normally read *Visions*, then I would advise that the text is glorious but specialized. As it represents the very finest in the developments in nursing science and particularly Rogerian science, contextualize it and read it only

after having read its progenitors.

Overall, the book? It's compulsive (should that read compulsory?) reading. Joanne Griffin was right, it's a veritable treasure chest.

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IMAGINATION COLUMN

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WEAVING A THEORETICAL TAPESTRY SUPPORTING PANDIMENSIONALITY: DEEP CONNECTEDNESS IN THE MULTIVERSE

All science begins in the imagination

Pandimensionality may be the most elusive postulate in Rogerian science. Perhaps our full understanding of pandimensionality is limited because it may be difficult to imagine or visualize a "nonlinear domain without spacial or temporal attributes" (Rogers, 1992, p.29). Humans often find it difficult to imagine "domains" beyond their own three-dimensional experience. Furthermore, language may also limit one in fully comprehending and expressing pandimensional experiences or describing a pandimensional universe. Some students of Rogerian science have found it useful to read Abbott's (1984) *Flatland: A Romance of Many Dimensions* and Dionys Berger's (1983) *Sphereland* as way of better understanding the experiencing of a pandimensional universe.

The root meaning of the preface "pan" refers to "all"; "involving all of or the union of;" and "whole" (American Heritage Dictionary, 1992, p. 1306). Pandimensionality suggests an infinite domain that spans and is a union of all dimensions which characterizes the human and environmental field. Thus, all reality is postulated to be pandimensional. The purpose of this paper is to explore the most recent scientific theories that may shed new light on understanding pandimensionality. Most recently there has been a proliferation of new theories describing multiple and parallel universes (Deutsch, 1997; Hawking, 1993; Linde, 1998; Rees, 1997; Smolin, 1997) and paranormal phenomena (Mitchell, 1996;

Radin, 1997). Taken together, these major works begin to form a tapestry providing support for Rogers' notion of pandimensionality.

Quantum Cosmology and the Multiverse

Stephen Hawking is one of the founders of a new scientific discipline referred to as quantum cosmology. Quantum cosmology is a synthesis of quantum mechanics (the study of the very small) with cosmology (the study of the universe as a whole). Quantum cosmologists believe that questions concerning cosmology can only be answered by quantum theory. Hawking's (1993) insight is to view the universe as a quantum particle. Since a particle has a wave function, the universe starts off as a wave function. According to quantum cosmology, the wave function of the universe spreads over all possible universes. In other words, there is an infinite number of possible universes co-existing with our universe. Furthermore, Hawking's quantum cosmology proposes that the infinite number of parallel or "baby universes" are connected to each other by an infinite series of wormholes. Particles that fall into blackholes fall off into "baby universes that branch off from our universe (Hawking, 1993).

Russian quantum cosmologist, Andrei Linde, has proposed a new model of what he refers to as the "multiverse." Our universe is one of an infinite number of "inflationary bubbles" each of which continuously sprouts other inflationary bubbles (Linde, 1998). The embryo of new universes can form within existing ones (Rees, 1997). The total volume of all these domains will grow without end. In essence, the multiverse is an eternally self-reproducing universe. Thus, the multiverse contains innumerable bubbles, like our own universe, and other regions even larger than our own universe. These universes or inflationary bubbles may remain connected by intercosmic umbilical openings or wormholes. Our universe may not be the most complex. Others may have

a richer structure beyond anything we can imagine, and each universe may have its own unique structure, fundamental forces, particles, and physical laws (Rees, 1997).

Lee Smolin is a Professor of Physics at the Center of Gravitational Physics and Geometry at Pennsylvania State University and earned his PhD at Harvard University. In his recent book, *The Life of the Cosmos*, Smolin argues that the laws of black holes indicate that they spawn new universes.

A collapsing star forms a black hole, within which it is compressed to a very dense state. The universe began in a similarly very dense state from which it expands. Is it possible that these are one in the same dense state? That is, is it possible that what is beyond the horizon of a black hole is the beginning of another universe? (Smolin, 1997, p. 87-88)

There are an enormous number of black holes in our universe, each creating new universes. A universe such as ours may have as many as 10^{18} black holes. In this way, the universes can perpetually keep reproducing themselves. Thus, all of "reality" consists of a vast number of universes.

David Deutsch (1997) of Oxford University, an authority on the theory of parallel universes, also proposes that the whole of reality contains a vast number of parallel universes. Deutsch speculates the interpretation of the "double slit" experiment as evidence that photons are both particles and waves is incorrect. Rather, photons are prevented from landing on parts of the film because they are being interfered with by invisible "shadow" photons from a parallel universe.

Furthermore, Deutsch states that time does not flow because "*nothing* moves from one moment to another . . . to exist at all in a particular moment means to exist there for ever" (p. 263). Humans experience the differences between present perceptions and

present memories of past perceptions and experience these differences as changes over time. However, we misinterpret the differences as a movement through time. Each present moment or snapshot is a parallel universe with its own spacetime. The "multiverse" or the whole of co-existing parallel spacetimes is a collection of interacting parallel universes. We exist in multiple versions, in universes called 'moments,' and each version of us is not directly aware of the others, but has evidence of their existence because physical laws of cause and effect link the contents of different universes (Deutsch, 1997). So which one of the infinite number of copies are you? Deutsch explains that you are *all of them all at once*. An important distinction to make is Rogers' notion of pandimensionality is comparable with the idea of infinite universes but rejects the notion of causality. However, Deutsch (1997, p. 286) states that there is nothing in his definition of causality or view of the multiverse that requires causes to necessarily precede their effects.

The notion that we are integral to an infinite and eternal multiverse within which new and infinite domains continuously and creatively sprout into new universes resonates with Rogers' postulate of pandimensionality. Pandimensionality, like the infinite multiverse, refers to a union of infinite domains beyond temporal and spacial attributes. Each universe may have its own set of unique scientific laws and constants characterized by different notions of time and dimensions.

Quantum Nonlocality and the Paranormal

Rogers (1980, 1986, 1992) postulated that a pandimensional reality, a nonlinear domain, provides a framework for understanding paranormal phenomena. In a nonlinear domain beyond the constraints of space and time, the integrality of infinite human and environmental energy fields provides an explanation of seemingly unexplainable events and processes. Rogers

(1992) even asserted that within the Science of Unitary Human Beings, psychic phenomena become "normal" rather than "paranormal." Emerging quantum theories incorporating the idea of nonlocality provide a deeper understanding of Rogers' postulate of pandimensionality.

In an attempt to demonstrate that Bohr's interpretation of quantum theory was inconsistent, Einstein proposed a thought experiment that is known as the Einstein-Podolsky-Rosen (EPR) experiment. Thirty years later John Bell derived a theorem (Bell's Theorem) proving the existence of local hidden variables is inconsistent with statistical predictions of quantum mechanics (Capra, 1982). The results of the theorem were not demonstrated by decisive experimental evidence until 1982 when physicist Alain Aspect led a team that demonstrated that particles (polarized photons) in Princeton and Bangkok were interconnected nonlocally. Changing the spin of a particle in one location will instantly change the spin direction of the paired particle even though its thousands of miles away. Thus the multiverse must be an interconnected web of nonlocal connections.

In his scholarly book *The Conscious Universe: The Scientific Truth of Psychic Phenomena*, Radin (1997) reviews the amassed, irrefutable scientific evidence of psi phenomena such as telepathy, clairvoyance, psychokinesis, and precognition. Radin is the director of the Consciousness Research Laboratory at the University of Nevada in Las Vegas, and he suggests that an understanding of nonlocal connections along with the relationship between awareness and quantum effects provides a framework for understanding paranormal phenomena. "Deep interconnectedness" demonstrated by Bell's Theorem embraces the interconnectedness of everything unbounded by space and time. 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.

Mitchell (1996) provides a more complete framework for understanding paranormal phenomena consistent with Rogers' Science of Unitary Human Beings. Mitchell's "dyadic model" of reality unites existence (matter or physicality) with knowing (consciousness or mentality). Like Rogers, Mitchell recognizes that everything in the universe, including mind and matter, are inseparable aspects of a single evolving reality. Energy is the foundation of all matter and information is the foundation of all knowing. However, according to Mitchell (1996), existence and knowing (matter and information) are coupled or inextricably related because they both have their origins and owe their existence to the field of energy that underlies everything in the universe.

Moreover, existence and knowing are linked locally and nonlocally through the processes of awareness, intentionality, and interpretation. Nonlocal processes and perceptions are beyond the limitations of space and time. Mitchell (1996, p. 155) prefers the terms "awareness" and "intentionality," because both are "irreducible" concepts. Typically, the terms mentality and consciousness are often reduced to brain function. Awareness is the perception of energy and intentionality is an active process of desiring or intending an action. Intention is the volitional propagation of energy (Mitchell, 1996). Action is a process of movement or transformation of energy. Patterns of energy provide information. Information is stored in the universe in various ways yet to be discovered and requires interpretation or evaluation to give it meaning. The universe exists as patterns of energy and is known by its patterns of energy. Interpreting the meaning of information is a function of the aware-

ness and intentionality of the interpreter and the existing information base.

Within Mitchell's (1996) dyadic model, paranormal events are naturally occurring processes that are perceived or intended by gifted and/or well trained persons who are more aware of energy patterns. ESP, telepathy, and clairvoyance are everyday functions of awareness and intentionality.

For example Mitchell (1996, p. 205) describes precognition as a function of intentionality in the following manner:

Because time moves only forward and all life processes are nonlinear and include choice, the future is not fixed and therefore not knowable. But it can be influenced or even created to a certain extent. Accurate prophecy is more often self-fulfilled prophecy. What is knowable through nonlocal intuition and expanded awareness is an expanded sense of now, not a sense of the future.

Gifted persons have a greater range of actions and can intentionally become more aware or change nonlocal patterns of energy. Mitchell's dyadic model departs from the Science of Unitary Human Beings by including notions of causality although Mitchell does state that nonlocality, relativity theory, and quantum theory call causality into question. The context of intentionality within a Rogerian Science perspective is mutual process. While unitary human beings participate knowingly and intentionally in the process of change, the changes are mutual and unpredictable. Both the human and environmental field patterns are changed through intentionality. In addition, the dyadic model does not address multiple dimensions or universes. However, Mitchell does speculate about their existence and states they are not readily accessible through any experiential or physical knowing processes.

On the other hand, Rogerian science acknowledges the multiverse which may be knowable through pandimensional awareness and experiences.

A theoretical tapestry supporting pandimensionality can be constructed by weaving together models of the multiverse with the dyadic model of reality. 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 multiverse 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.

The strength of a conceptual system is its ability to provide scientific explanations. The postulate of pandimensionality provides a means for better understanding the processes associated with a wide range of common phenomena in human-environment-health experiences. Distance healing, the healing power of prayer, Therapeutic Touch, out of body experiences, phantom pain, precognition, *deja vu*, intuition, tacit knowing, mystical experiences, clairvoyance, and telepathic experiences are a few of the energy field manifestations that can be better understood as natural events in a pandimensional universe involving increased awareness and intentionality in an infinite multiverse with deep nonlinear-nonlocal human-environmental field integrality.

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ROGERIANS IN THE NEWS

Howard K. Butcher

Howard K. Butcher, RN;PhD,CS has accepted a position as an Assistant Professor at the University of Iowa College of Nursing in Iowa City.

His wife, Janette Y. Taylor, RNC;PhD just completed her doctoral studies at the University of Washington School of Nursing and has accepted an initial Post Doctoral Fellowship at the University of Iowa. On completion of her fellowship, she will also join the College of Nursing faculty of the University of Iowa.

Bela Horvath

Bela Horvath received his PhD from New York University in May, 1998. The title of his dissertation is *The Relation of the Clinical Application of Music on Mood in Persons Receiving Treatment for Alcoholism*. He used music as an intervention in an otherwise musically sterile environment, finding a significant improvement in mood in the experimental group as compared to the control group after three applications of music over the course of a week.

Bela has a background in music as well as in nursing and has discovered that music and the Science of Unitary Human Beings go hand in hand. He felt this intuitively even before doing the study. His study is the first of its kind in the area of chemical dependency nursing.

Vidette Todaro-Franceschi

Vidette Todaro-Franceschi received her PhD from New York University in January, 1998. Her research entitled *The Enigma of Energy: A Philosophical Inquiry*, explores the idea(s) of energy across disciplines. She is currently revising her work for a trade book publication by Crossroad Publishing Company. A summary of her work was selected as one of five finalists for the ninth annual jointly sponsored Common Boundary/Institute of Noetic Sciences Dissertation

Award. Vidette was the recipient of the Martha E. Rogers Graduate Student Award from the Division of Nursing at New York University in May 1998 and the Doctoral Student Achievement Award from the New York University Nursing Alumni Association in June 1998.

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