

# NURSING: RECEDING AND EVOLVING PARADIGMS

## **(Editorial)**

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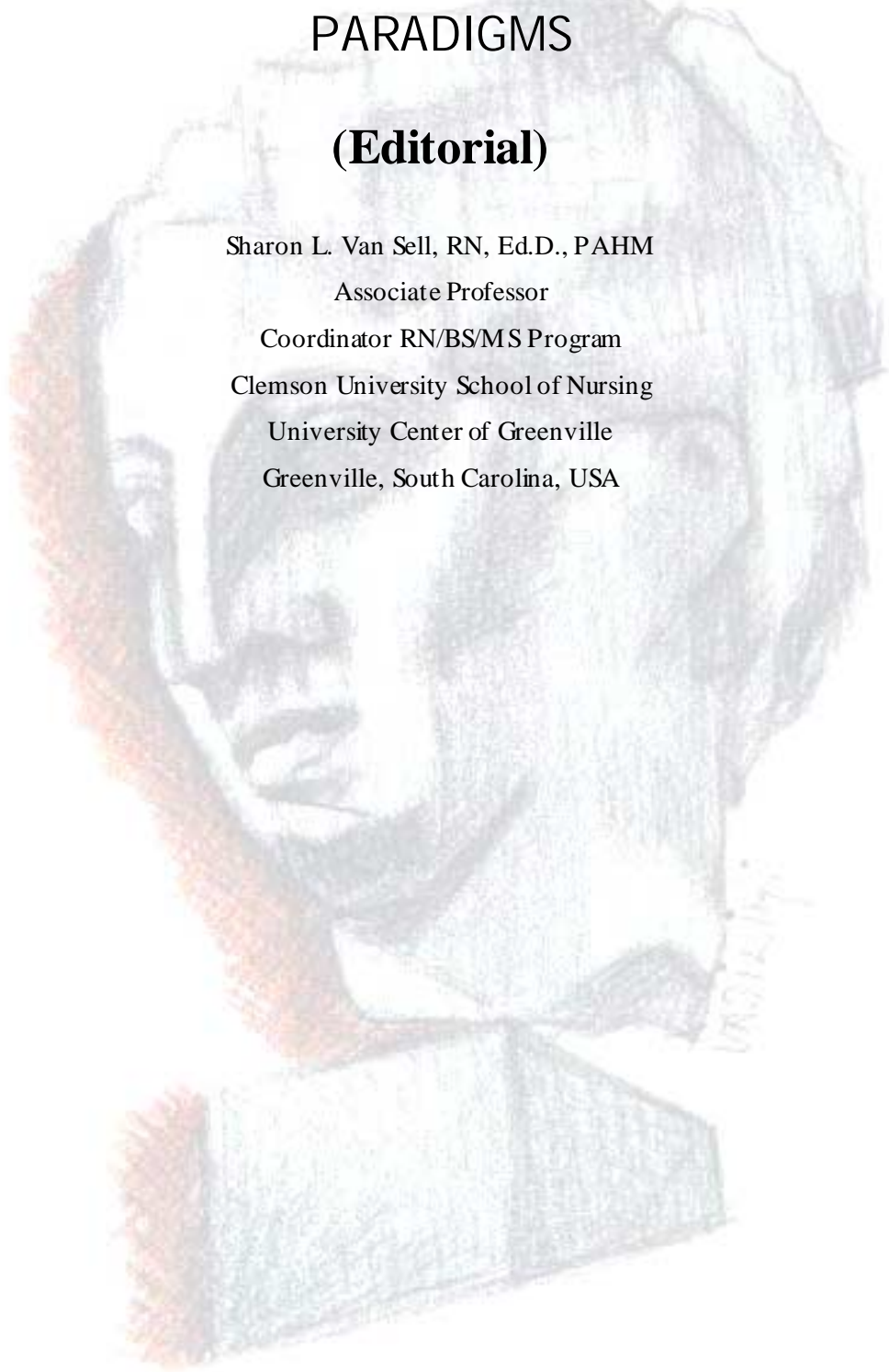
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Until one is committed there is hesitancy, the change to draw back, always ineffectiveness. Concerning all acts of initiative or creation there is one elementary truth, the ignorance of which kills countless ideas and splendid plans: that the moment one definitely commits oneself, then providence moves too.... Whatever you think you can do or believe you can do, begin it. Action has magic, grace and power in it.

Goethe

**T**he nursing profession is in the throes of revolutionary change, a time when nursing leaders are frantically preoccupied with change itself. However, change is not always a welcomed guest in the nursing profession. Change is real, accelerating, and driven by rapid technological innovation, the globalization of the health care industry, and not the least of it, the arrival of the Internet and the new domain of Internet Healthcare Information. In addition, the nursing profession is involved in receding, shifting and evolving paradigms.

The practicing nurse at the bedside is focused on providing the best possible

nursing care in an environment of increased patient acuity, advanced technology, aging population, decreased resources, and a shortage of professional nurses. While the bedside nurse is focused on her patient, new concepts in physics have results in a profound change in our worldview; from the mechanistic worldview of Descartes and Newton to a holistic and evolving ecological view. The paradigms for the nursing profession are receding, shifting and evolving without commitment from the nurses who are at the bedside.

Thomas Kuhn introduced the concept of scientific “paradigm,” defined as “a constellation of achievements---concept,

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values, techniques, etc. --shared by a scientific community and used by that community to define legitimate problems and solutions.” Additionally, Kuhn reported changes in paradigms occur in discontinuous, revolutionary breaks called “paradigm shifts” (Kuhn, 1962). The physicist Capra acknowledged the paradigm shift in quantum physics as an integral part of a much larger cultural transformation (Capra, 1982) and generalized Kuhn’s definition of a scientific paradigm to that of a social paradigm defined as “a constellation of concepts, values, perceptions, and practices shared by a community, which forms a particular vision of reality that is the basis of the way the community organizes itself” (Capra, 1986).

Three visions of reality are expressed in the three paradigms in existence within the nursing profession including the mechanical paradigm, the holistic paradigm, and the deep ecological paradigm. The mechanical paradigm is explained by Capra (1982) as consisting of

a number of entrenched ideas and values, including the view of the universe as a mechanical system composed of elementary building blocks, the view of the human body as a machine, the view of life in society as a competitive struggle for existence, the belief in unlimited material progress to be achieved through economic and technological growth and a belief that a society in which the female is everywhere subsumed under the male is one that follows a basic law of nature. The mechanical paradigm emerged when the newly perfected microscope lead to many distinguished advances in biology.

The mechanical paradigm is based on the concept of “reductionism.” Libster stated reductionism in medicine is the concept that all illness, including all of its cultural, social, physical, and emotional components, can be reduced, or explained by the biological problem. Hence the concept that the human body is like a machine (Libster, 2001). The mechanical paradigm according to Watson is comprised of mechanism, materialism, and

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physical medicine, which emphasized the body and the disease as functions of an objective world. The body and the state of the body became the focus for medical treatment and cure, from the outside in, while nursing focused on functional tasks, skills and “doing” the role of nursing (Watson, 1999). The mechanical paradigm dominated our culture for several hundred years, but is now receding. Many communities of nurses in various areas of the world still practice with a view of the human body as a machine.

A paradigm shift occurred when the mechanical paradigm gave way to the holistic paradigm. The largest number of nurses, especially in the United States, practice within a holistic paradigm, which views the world as an integrated whole rather than a dissociated collection of parts. According to Twinaime and Boyd the holistic view indicated “health results from a balance and harmony with nature....If the balance is disrupted, the result is illness” (Twinaime & Boyd, 1999).

Watson expanded the health concept indicating: “health refers to unity and harmony within the mind, body, and soul. Health is also associated with the degree of congruence between the self as perceived and the self as experienced. Such a view of health focuses on the entire nature of the individual in his or her physical, social, aesthetic, and moral realms--instead of just certain aspects of human behaviour and physiology. Such a view is referred to as an *euda imonistic* model of health (Watson, 1999). Utilizing the holistic viewpoint, nurses focus on helping the patient or client reach a higher degree of harmony within the mind, the body and the soul and on providing “patient-centered” nursing practice.

The deep ecology paradigm evolved from the holistic paradigm. The worldview of deep ecology was initiated by Arne Naess, a Norwegian philosopher (Devall & Sessions, 1985). The deep ecology paradigm recognizes the fundamental interdependence of all phenomena and the fact that as individuals and societies,

everyone is embedded in (and ultimately dependent on) the cyclical process of nature. The essence of deep ecology is characterized as asking deeper questions. Discoveries in mathematics such as the Mathematics of Complexity have provided a new mathematical tool to model the non-linear interconnectedness and characteristic networks of ecological systems. Therefore, living systems as self-organizing networks can be formulated through detailed models. Modelling of relationship and patterns resulted in a shift of emphases that is characteristic of system's thinking ---from quantity to quality and from substance to patterns. The availability of high-speed supercomputers such as the Cray supercomputer<sup>1</sup> played a crucial role in the mastery of complexity. Now with the help of applied mathematicians, nurses are able to solve complex equations previously intractable and to trace out the solutions as curves in a graph. The emerging ecological paradigm suggests:

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<sup>1</sup> Development of the Theory of Nursing Knowledge and Nursing Practice was supported by research grants to Dr. Sharon Van Sell from Cray Research, Inc. (Meintz, 1995).

- Integrative thinking being intuitive, synthesis, holistic and nonlinear;
- Integrative values of conservation, cooperation, quality, and partnership; social organizations as networks;
- Ethics as exocentric (earth-centered) values thus resulting in scientists being responsible for their research not only intellectually, but also morally; and
- A shift from physics as the center of science to life being at the center with emphases on the life science (Capra, 1996).

Thus, the ecological paradigm demonstrates an evolution from the holistic view to the deep ecology view. Capra explained the difference by using the bicycle as an example and stating: "...the holistic view means to see a bicycle as a functional whole and to understand the interdependence of its parts accordingly. An ecological view of the bicycle includes that, but it adds to it the perception of how the bicycle is embedded in its natural and social environment--- where the raw materials that went into it came from, how it was manufactured, how

its use affects the natural environment and the community by which it is used, and so on.” (Capra, 1996, p.6). The difference is even greater when considering humans or living systems for which a connectness to the environment is vital.



*“Holistic view means to see the bicycle as a functional whole and to understand the interdependence of its parts accordingly.”*



*“Deep Ecological view means seeing the bicycle not only as a functional whole and to understand the interdependence of its parts accordingly but also the perception of how the bicycle is embedded in its natural and social environment---where the raw materials that went into the bicycle came from, how it was manufactured, how its use affects the natural environment and the community by which it is used and so on.”*

In January 2000 Stephen Hawkins, author of *A Brief History of Time* and holder of the chair of mathematics at the University

of Cambridge once occupied by Isaac Newton, declared that the twenty-first century “will be the century of complexity.” A new language for understanding the complex, highly integrative systems of life has emerged. Difference scientists call it by different names---“dynamical systems theory,” “the theory of complexity,” “nonlinear dynamics,” “network dynamics,” and so on. Chaotic attractors, fractals, dissipative structures, self-organization, and autopoietic networks are some of its key concepts.

Nurses are experiencing a paradigm shift from the holistic paradigm to the deep ecology paradigm, are asking deeper questions, and recognize the fundamental interdependence of all phenomena. Furthermore, deep ecology can be found as a construct in the Evolving Essence of the Science of Nursing: A Complexity Integration Nursing Theory (Van Sell & Kalofissudis, 2001). The practicing nurse plays an important role in the evolving paradigm shift from holistic to deep

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ecology, and as Goethe said, the moment one definitely commits oneself, then providence moves too. The time is now for the global nursing community to recognize and commit to the deep ecology paradigm.

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