

Toward greater specificity in defining nursing's metaparadigm

The thesis presented is that nursing in its disciplinary context cannot appropriately be considered a concept in the metaparadigm of nursing science. Nursing as a discipline is guided by theories and prescriptions that emanate from puzzles solved in the domain of nursing science. Failure to distinguish between the science of nursing and its disciplinary aspects in building conceptual frameworks will retard the growth of science. The merits of three competing paradigms—normal science, historical facts, and social facts—are discussed. None of these paradigms is adequate for discovery in nursing science. Efforts to develop knowledge around the phenomena of *central concern* to nursing may advance more rapidly if theory building follows a set of rules, as yet undefined, that incorporates the methods of both normal science and historical tradition.

Mary E. Conway, RN, PhD, FAAN
Dean and Professor
School of Nursing
Medical College of Georgia
Augusta, Georgia

IN RECENT LITERATURE, attention has been focused on the present stage of theory development in nursing and the projected direction of its future evolution. The case has been made that nurse theorists have been moving away from an earlier adherence to the logical empiricist tradition and toward the holistic or historicist tradition.¹ This movement is understandable, given the concern of nursing with holism and the integrity of individuals, and given the fact that the holistic tradition in the philosophy of science accommodates these concerns.

Concomitant with the movement away from logical empiricism, a few scholars have asserted that nursing is at a preparadigm stage in the development of its science²; Fawcett³ recently claimed that nursing now has an identifiable metaparadigm. This judgment is made on evidence that a majority of nurse theorists, including conceptual model builders, explicitly recognize four concepts of central concern to

the discipline: man, environment, health, and nursing. These concepts have appeared consistently in the conceptual frameworks developed by nurses.

Whether nursing science has a metaparadigm is debatable, but an even more important issue is whether *nursing* is, or appropriately can be, considered to be a *central concern* of the discipline's science development. Nursing, by at least one definition, is a set of psychomotor and cognitive acts performed by an educated professional on behalf of another individual, toward goals of promoting health or helping the other to cope with illness. By another definition, nursing is the discipline within which scholars "build" science by efforts analogous to those of scientists such as molecular biologists, who theorize, solve puzzles, and experiment to add to knowledge in the subfield of molecular biology. Molecular biology *qua* biology is not a concept of central concern to biologists. Similarly, the acts of professionals who practice within the discipline of nursing are not of prime importance to those concerned with the discipline's science. "Concern with oneself as an actor is concern with something fundamentally different [than instrumental knowledge]."⁴ The question posed for this discussion is: Can nursing be properly considered a metaparadigm concept of nursing science?

THE SCIENCE VERSUS THE DISCIPLINE OF NURSING

There is a lack of consensus in the literature regarding what may be considered the present stage of development in nursing science. This is understandable because science is evolving, and its theories and

principles are always open to the possibility of disconfirmation by the discovery of new evidence.⁵ Competing views of nursing theory, definitions of its major concepts, and acceptable methods for developing and testing theory abound.^{3,6-8} As a science in a given discipline matures, there is a tendency toward more intersubjectivity among its scholars and one or more clearly distinguishable lines of inquiry. In "normal" science, the discoveries or solutions to puzzles made by one generation of researchers are built on by succeeding generations.

A widely accepted world view of a discipline that shapes the direction and methods of its researchers is often referred to as a paradigm.⁹ According to Kuhn, substitution of a new paradigm occurs only when the existing world and what is empirically known of it no longer is understandable in terms of extant scientific theories or when the existing paradigm "has ceased to function adequately in the exploration of an aspect of nature to which that paradigm itself had previously led the way."^{9(p92)} Kuhn calls this a scientific revolution. The science of nursing has not yet reached the paradigmatic stage; thus, the various lines of theory development and research pursued by its scholars may be considered to be preparadigmatic efforts.

However, Fawcett³ pointed out "some major and persistent themes" in the nursing literature that to some extent are guiding an increasing number of researchers. The serious student or neophyte researcher who reviews the literature explaining these concepts and themes will find as many questions raised as answered. A fundamental epistemological problem is the recurring use of the term *nursing* within a variety

of contexts and at varying levels of abstraction.

A small number of nurse scholars have recognized this lack of specificity in the usage of the word nursing and the problem this creates in attempts to arrive at a consensus, or paradigm, in enlarging the body of nursing science. Donaldson and Crowley have made a helpful contribution toward clarification of the term and have distinguished between two major contexts in which they say nursing ought to be viewed:

Failure to recognize the existence of the discipline as a body of knowledge that is separate from the activities of practitioners has contributed to the fact that nursing has been viewed as a vocation rather than a profession. In turn, this has led to confusion as to whether the *discipline* of nursing exists.^{10(p117)}

They argue that another important reason for keeping a clear distinction between the science and the discipline is that the discipline is defined by its social relevance and, thus, may need to be altered on the basis of societal needs. But this is not necessarily true for nursing *science*. It appears that Hardy² also conceives of a science of nursing as distinct from a *practice* of nursing. In explaining her concept of a "community of scientists," she wrote: "Such groups [scientists] work under a common cognitive umbrella or metaparadigm whether they be biologists, psychologists or physicists."^{2(p430)} She also stated: "Nurse-scientists are not yet at the point of seeing themselves as a community of scientists developing a body of knowledge that is distinct from other groups in the health field."^{2(p431)} The contextual use of the terms scientist, cognitive umbrella, and body of

knowledge leaves little doubt that she was describing a *science* and the endeavors of scientists, not clinicians.

The distinction between a science and the practice of a discipline has been attempted by other scholars. In a discourse tracing the evolution of theory development in nursing from a logical empiricist tradition to that of a holistic or historical tradition, Silva and Rothbart¹ repeatedly used the phrases "components of science," "phenomena within the discipline," and "metatheoretical formulations relevant to nursing." Because they do not refer to the acts of nurses or the practice of nursing, it can be concluded that their sole focus was the science of nursing.

PARADIGM AND METAPARADIGM

Arguments about whether nursing science is at a stage representative of a preparadigm, metaparadigm, or paradigm are unlikely to promote or impede the actual development of nursing as a body of science. It is relevant, however, to consider the extent to which nursing is evolving toward a paradigm, since a paradigm is generally considered the most highly evolved stage of a science. A paradigm provides a road map for scholars in a discipline and assists in the accumulation of knowledge about selected phenomena

It is relevant to consider the extent to which nursing is evolving toward a paradigm, since a paradigm is generally considered the most highly evolved stage of a science.

of concern to the discipline. It is a concept common to all science, but it does not have a common, universally interpreted definition. For example, Masterman¹¹ counted 21 different connotations in usage in Kuhn's original explanation of the concept of the paradigm in science.

After studying Kuhn's work, Masterman concluded that it is simpler to understand the notion of a paradigm by asking what it does rather than what it *is*. Based on a selection of statements from Kuhn,⁹ she wrote:

If we ask, however, what a paradigm does, it becomes clear at once (assuming always the existence of normal science) that the construct sense of 'paradigm,' and not the metaphysical sense or metaparadigm, is the fundamental one. For only with an artifact can you solve a puzzle. . . . It remains true that for any puzzle which is really a puzzle to be solved by using a paradigm, this paradigm must be a construct, an artifact, a system, or a tool together with the manual of instructions for doing it successfully and a method of interpretation of what it does.^{11(p70)}

From this description it can be deduced that the paradigm, according to Kuhn, is a more highly evolved stage of science and that puzzle solving is its essential feature.

The cumulative work of scholars in both the physical and biological sciences has been guided by the type of paradigm described by Kuhn. Some social scientists^{12,13} have challenged the Kuhnian paradigm as being too narrow to be applicable to the social sciences, especially sociology. Ritzer¹² asserted that a paradigm for the social sciences represents the broadest consensus of all scientists in the discipline; Friedrich¹³ contended that the most important dimension of the paradigm in the

social sciences is that it encompasses social scientists' image of themselves as scientific agents. The research of some nurse scholars is done within a broad social consensus rather than a true paradigm. As examples of this orientation, Hardy² cited the construct of grounded theory¹⁴ and the concept that a patient with a chronic illness takes on a *social identity*.¹⁵

Because of the variety of definitions of paradigm from which the working scientist may select, there is an additional dilemma. Which definition will nurse scientists accept? Nurses must eventually agree on a definition, since without such a consensual base, it is doubtful that agreement can be reached on the puzzles and phenomena central to nursing. Ritzer's¹² broader social definition of paradigm has appeal for a large number of scholars because of its apparent absence of fixed boundaries or rigid rules regarding the directions of research within a discipline. The social definition of a paradigm, however, fails to serve one of the important purposes of the paradigm: the demarcation of one discipline's body of knowledge from that of another.

Nursing may never achieve an uncontested body of knowledge it can claim as its own science. However, for both pragmatic and philosophical reasons, theorists and researchers must continue the quest. Without a clearly defined science as the basis for practice, there can be no claim by practitioners in the discipline to a societally protected professional role.

Conceptual models

A brief consideration of three nurse theorists' conceptual models provides the basis for a conclusion about nursing

science's stage of evolution in Kuhnian terms.

Rogers¹⁶ has explicated a highly abstract conceptualization of mankind/environment. Man is defined as a unitary being in continuous, mutual, simultaneous interaction with the environment. In a later development of theoretical thinking, Rogers⁶ named this definition the principle of complementarity. Three principles are integral to Rogers's conception of unitary man, the principles of homeodynamics: helicy, resonancy, and complementarity. Rogers notes that these principles "have validity only within the context of this conceptual system of unitary man."^{6(p333)} The principle of complementarity specifically excludes the idea of *causality*; that is, energy exchange across boundaries of the human-environmental field may bring about an alteration in the total system, but the addition of a variable does not *cause* a change in the human field.

This highly abstract conceptualization of man as a unitary being poses problems for nurse researchers because the usual methods of deductive research do not seem appropriate. Acceptable measures for rhythmicity, human field acceleration, and repatterning have yet to be developed.

Orem,¹⁷ like Rogers, views man as a unity, but here the similarity between the two conceptualizations ends. Orem stated that an individual is "a unity that can be viewed as functioning biologically, symbolically, and socially."^{17(p120)} And although Orem defined health as a state of wholeness or integrity, her conception of the individual as functioning in these three spheres suggests the prospect of analyzing the individual as a three-dimensional system rather than as an integrated whole.

Orem's model was constructed for a pragmatic purpose: to highlight the purpose of nursing, which is to provide appropriate assistance to individuals who have a self-care deficit in maintaining personal health. Orem conceptualizes a deficit relationship between the individual's "therapeutic self-care demand" and the self-care that can be marshalled. Three types of nursing systems are presumed to be available to persons with self-care deficits: (1) wholly compensatory, (2) partly compensatory, and (3) supportive-educative. Several concepts are not fully clarified in Orem's model. For example, it is unclear whether illness occurs when a self-care deficit is present; when parameters of the environment are not identified; or how a physical self-care deficit may be related or unrelated to a mental self-care deficit.³ Unlike Rogers's model, Orem's conceptual model contains elements of both nursing science and disciplinary practice.

Another model is that of Neuman, who postulated a wellness-illness model based on general systems theory in which an individual is defined as "an interacting open system in his total interface with his environment and is at all times either in a dynamic state of wellness or ill health in varying degrees."^{8(p9)} A line of defense, buffers, and stressors are key concepts. At first glance, this conceptualization of the person seems almost identical to that of Rogers. A key point of difference, however, is Neuman's acknowledgement that within the environment (client system), "variables *affect* man and man in turn affects the variables found in the environment."^{8(p8)} The word *affect* suggests a causal relationship between man and environment, but Rogers¹⁶ specifically excludes

causality in her conceptualization of unitary man. Nursing is also a central concept in Neuman's model, with nursing's concern being the response of the individual to all environmental stressors.

These conceptual models do not provide evidence of Kuhn's interpretation that the paradigm must provide a puzzle-solving key. However, they do exemplify an additional function of a paradigm: delineation of an important set of beliefs. These examples demonstrate the belief of nurse scientists in the integrity of the individual and the inseparability of the person and the environment for the purpose of nursing. These conceptual models differ one from another in at least three important aspects.

1. They are at differing levels of abstraction.
2. The concepts are differentially defined.
3. The linkages between and among the concepts are not universally specified.

Thus, a preparadigm exists to the extent that these models are representative of nursing science.

Holistic/humanitarian approach

Watson's work¹⁸ is representative of the previously noted shift among nursing's theorists toward adoption of a holistic/humanitarian approach in developing theory. Watson contends that there is a *science of caring* and that this science is central to nursing. She has set forth seven basic assumptions and ten *carative factors* as the basis for a science of caring. The notion of a nursing core organized to encompass the carative factors is central to this concept. "The term core refers to those aspects of nursing that are intrinsic to the actual

nurse-patient/client process that produces therapeutic results in the person being served. I refer to this basic core of nursing as comprising the philosophy and science of caring."^{18(pxxv)}

Watson has argued strongly for a humanistic perspective in developing knowledge to support a science of caring; for example, the first carative factor calls for "the formation of a humanistic-altruistic system of values."^{18(p9)} Despite this strong insistence on the humanistic approach to a science of caring, she is ambivalent about whether the scientific (normal science) method or some other method is more appropriate in studying the science of caring. "Just because the existence of something [caring] cannot be validated scientifically does not mean that it does not exist. . . . The scientific problem solving method is necessary for the science of caring to study, guide, direct and research knowledge and practice."^{18(p56)}

Apparently, Watson resolved the conflict by concluding that the scientific method is appropriate for nursing science, "as long as scientists use the basic assumptions and criteria for determining the nature of reality."^{18(p58)} Presumably, the assumptions and criteria are those delineated earlier as carative factors.

How is Watson's conceptualization of a science of caring related to the *persistent themes* previously alluded to in the conceptual frameworks of a large number of theorists? Does the construct of a "science of caring" compete with a science of nursing? Caring, as a construct, is central to the practice of nursing, but conceiving of it as a science promotes the undesirable blurring of the distinction between the science of nursing and its discipline. Car-

ing, as it relates to the more highly abstract conceptual models of nursing, is a derived construct or instrumentality that is the aggregate of the therapeutic acts performed by nurses. In this disciplinary context, it represents a value central to the practice of nursing.

If the examples of nursing science's prevalent themes and concepts considered here are representative of the present status

If these examples of nursing science's prevalent themes and concepts are representative of the present status of knowledge development, this evolutionary phase of nursing's science conforms closely to Hardy's definition of the preparadigm.

of knowledge development, this evolutionary phase of nursing's science conforms closely to Hardy's² definition of the preparadigm. There are divergent schools of thought, concern for the same range of phenomena, and no single set of rules to direct further theory building.

LINKING NURSING'S TWO DOMAINS

The solving of nursing's puzzles is a joint enterprise of theorists, researchers, and practitioners. However, the way in which this responsibility is carried out must differ, given the primary responsibility inherent in each of the three roles. Practitioners need not take on the burdens that properly belong to theorists and researchers, but the important end is that "the discipline of nursing should be governing clinical practice rather than being defined *by* it."^{10(p118)}

In an attempt to clarify the relationship between the domain of theory and the domain of practice, Kim¹⁹ has asserted that conceptual systems are important to both domains. She holds that ways of acting in the world of nursing action must be determined by scientific explanations or prescriptions.

In other words, our need to understand and explain scientific problems that reside in the domain of client and environment are for this ultimate purpose [prescriptions] as well. More specifically, only those theoretical postulates and empirical questions that have ultimate significance for the contents of nursing action can be considered to be within the nursing frame of reference, and require scientific answers for the nursing angle of vision. The starting point, then, for a scientific study of nursing is in thinking of nursing activities as "purposive."^{19(p118)}

Initially, Kim¹⁹ seems to separate scientific explanation from the "world of nursing action." However, the concluding assertion in this excerpt raises a question as to its exact meaning. If actions are prescribed on the basis of findings from scientific study, how can the *starting point* for a scientific study of nursing logically be in "thinking of nursing actions as purposive?" Kim assumes two loci of action: the client-nurse system and the nurse system. Kim points out that observation cannot be used to infer the nurse's perceptions in regard to the client. She believes that the majority of nursing actions outside the client-nurse system belong *in the nurse system* at the conceptual level. Thus, she states: "I believe that such behaviors can be explained and predicted within the theoretical constructs for the nurse system phenomena."^{19(pp120-121)}

Another conceptualization of the relationship between the domain of theory and that of practice is a system's schema, in which *knowledge* is conceived as the output variable.²⁰ Two antecedent conditions are postulated: the existence of a body of theorists and a body of practitioners. In this model, the word *discipline* encompasses both. Theorists set forth theories and postulates (inputs). Throughputs in the model consist of the testing of hypotheses, their reformulation, and in collaboration with practitioners, the systematic application of findings in the practice domain. Both theorist and practitioner are represented in the practice domain as sharing responsibility for evaluating the outcomes of prescriptions derived from research findings and applied to the care of clients. This model would have appeal only for theorists and researchers who adhere to the logical-empirical tradition, since it does not take into account various "ways of seeing" or unique perceptions of "nursing's reality."¹⁸

• • •

It appears that the realization of a paradigm to guide both theory and research efforts lies in the future. There will have to be some intellectual accommodation between adherents of the logical-deductive method of science and adherents of the philosophy of science, since present evidence indicates that both perspectives offer important insights on nursing's central concerns. To the extent that both

perspectives can aid in the discovery of nursing knowledge, both should be used.

Some researchers say nursing has a unique perspective that guides the formulation of its research questions in the absence of specified criteria for judging what a nursing question²¹ is. This begs the all-important issue of whether the majority of the questions researched in the past represent the *real* puzzles of nursing science. In most instances, nursing research reflects the researcher's view of an important question, which presumably is justified by searching the literature to determine questions that have not been answered by previous research.

Fawcett³ has demonstrated substantial evidence for the existence of themes and concepts central to nursing's concerns in the conceptual frameworks of nurse theorists. But there is no consensus or world view regarding directions for the further development of nursing science. To move toward such a consensus, a clarification of nursing's preparadigm should be attempted so that a road map leading to the metaparadigm can be drawn. A series of questions designed to distinguish between nursing's central concerns on the basis of whether each is a disciplinary concern or a science concern might be a useful step in narrowing the preparadigm. If nursing is ultimately to acquire a body of theoretical knowledge having discernible boundaries and the potential for governing practice, it is essential that the appropriate distinction is maintained between the science of nursing and its discipline.

REFERENCES

1. Silva MC, Rothbart D: An analysis of changing trends in philosophies of science on nursing theory

development and testing. *Adv Nurs Sci* 1984;6(2): 1-13.

2. Hardy M: Metaparadigms and theory development, in Chaska NL (ed): *The Nursing Profession: A Time to Speak*. New York, McGraw-Hill, 1983, pp 427-437.
3. Fawcett J: The metaparadigm of nursing: Present status and future refinements. *Image* 1984;16:84-87.
4. Eckberg DL, Hill L: The paradigm concept and sociology: A critical review. *Am Sociol Rev* 1979;44:925-937.
5. Popper K: *The Logic of Scientific Discovery*. New York, Basic Books, 1959.
6. Rogers ME: A science of unitary man, in Riehl J, Roy C (eds): *Conceptual Models for Nursing Practice*. New York, Appleton-Century-Crofts, 1980, pp 329-337.
7. Jacox A: Theory construction in nursing: An overview. *Nurs Res* 1974;23:4-13.
8. Neuman B: *The Neuman Systems Model*. Norwalk, Conn, Appleton-Century-Crofts, 1982.
9. Kuhn TS: *The Nature of Scientific Revolutions*, ed 2. Chicago, University of Chicago Press, 1970.
10. Donaldson S, Crowley D: The discipline of nursing. *Nurs Outlook* 1978;26:113-120.
11. Masterman M: The nature of a paradigm, in Lakatos I, Musgrave A (eds): *Criticism and the Growth of Knowledge*. Cambridge, England, Cambridge Univ. Press, 1970, pp 59-89.
12. Ritzer G: *Sociology: A Multiple Paradigm Science*. Boston, Allyn & Bacon, 1975.
13. Friedrichs RW: *A Sociology of Sociology*. New York, Free Press, 1970.
14. Glaser R, Strauss A: *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, Aldine, 1967.
15. Quint J: *Becoming a Diabetic: A Study of Emerging Identity*, dissertation. University of California, San Francisco, 1969.
16. Rogers ME: *An Introduction to the Theoretical Basis of Nursing*. Philadelphia, F.A. Davis Co, 1970.
17. Orem DE: *Nursing: Concept of Practice*, ed 2. New York, McGraw-Hill, 1980.
18. Watson J: *The Philosophy and Science of Caring*. Boston, Little, Brown, 1979.
19. Kim HS: *The Nature of Theoretical Thinking in Nursing*. New York, Appleton-Century-Crofts, 1983.
20. Conway M: Knowledge generation and transmission: A role for the nurse administrator. *Nurs Administration Q* 1979;3(4):29-41.
21. Gorenberg B: The research tradition of nursing: An emerging issue. *Nurs Res* 1983;32:347-349.