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Nursing Values and Science: Toward a Science Philosophy

Susan R. Gortner

Several premises are proposed for nursing science philosophy in contrast to nursing practice philosophy. These include human understanding, a critical tradition that views science as public knowledge, and use of observation, rationality, explanation, and prediction as a guide to therapy. No argument is made for or against a particular philosophy of science (e.g., positivist, relativist, critical theorist). The debates on the fit of philosophic paradigms with research strategies may soon run their course on the North American continent, as they appear to have done in Scandinavia.

The search for meaning in the universe is the subject matter of philosophy. It is not surprising, therefore, that philosophical discussions now characterize those disciplinary fields examining their purpose, significance, and identity. Nursing in the United States, Canada, Great Britain and elsewhere has publicized formally its purpose and obligation to society through statements on standards for practice (American Nurses Association [ANA], 1973; Canada Nurses Association [CNA], 1980; Royal College of Nursing [RCN], 1987), codes for practice (ANA, 1976; International Council of Nurses, 1987; RCN, 1987) and social policy statements (ANA, 1980; RCN, 1987). Common themes that might be said to represent nursing philosophy and values commitment are reflected in these statements.

The purpose of this paper is to illustrate how nursing values and philosophy influence thinking about nursing science and research in the United States, Great Britain, and parts of Scandinavia. The position is taken that nursing philosophy represents the belief system of the profession and that it provides perspectives for practice, for scholarship, and for research. This paper will contrast statements of nursing philosophy in the United States and elsewhere and will attempt to show that nursing philosophy can be differentiated from science philosophy. Further, science philosophy can be reframed according to the needs of a discipline for relevant knowledge, empirically and conceptually derived, using a variety of systematic techniques. A philosophic framework for nursing science will be proposed.

Nursing Values

Nursing values portray the concepts of equity, respect for persons and caring (RCN, 1987), health promotion and illness prevention (ANA, 1980; National Center for Nursing Research, 1988), professional competence, and ethical conduct. Fry (1981), who examined the American standards and codes for practice and research, concluded that the concept of nursing embodies the scientific (competence) values of technological skills, scientific inquiry, and knowledge gained by scientific study, as well as humanistic (moral) values of caring and promotion of individual welfare and rights. (p. 5)

Fry suggests that assumptions underlying American statements emphasize (a) the systematic approach to nursing practice (the nursing process) as the means to provide high quality care, (b) the promotion, maintenance and restoration of health as desirable outcomes of nursing action based on the nursing process (i.e., desired goals or ends), and (c) client participation in the health care plan designed to achieve these outcomes.

The British standards have as their underlying assumptions (a) accountability for practice of a high quality, safety,

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and effectiveness; (b) client participation in the contractual caring relationship; and (c) personalized, warm, understanding caring as the core of service. According to the RCN (1987),

The nursing system must acknowledge the centrality of care in the overall delivery of its service...it is the skill and art of caring for another person that transforms the action from a technique to a nursing intervention. (p. 11-12)

Other statements in this recent British document emphasize the commitment to a humanistic philosophy and a patient or client advocacy model. Further, there is virtually no mention of obligation to extend knowledge of practice through research as there is in the American statements or of the "phenomena of concern" as in the American social policy statement (ANA, 1980). Stated differently, this most recent British document does not address scientific accountability in practice (Gortner, 1974), nor does it reflect the consensus reached by American nurses in the 1970s that scientific inquiry was the means by which outcomes of nursing action could be identified.

Although the Scandinavian countries are in the process of developing their standards, the publication by the Nordic Nurses Federation (NNF, 1987) of ethical guidelines for nursing research in the Nordic countries acknowledges the nurses' responsibility to "promote health, to prevent illness, to restore health, to prevent death, and to assist to a comfortable death." Further, there is a clear expectation for renewing personal knowledge and skills: "Such an obligation to improve nursing theory and skills implies research in nursing and health care services" (p. 7).

The ICN recently revised its position statement on nursing research. The statement reflects interest in the phenomena of concern stated in the ANA’s 1980 social policy statement: individual, family, and group responses to actual and potential health problems. "The future of nursing practice and ultimately the future of health care depends on nursing research designed to constantly generate an up-to-date organized body of nursing knowledge" (p. 1)

It appears that the term “nursing research” in the Nordic and ICN statements is used to describe what in America has come to be called "nursing science" (Gortner, 1980). The United States' usage of nursing science has grown out of a period in our history in which the nature of nursing science was discussed by academic leaders concerned with the preparation of the nurse scientist. In this respect, science, the body of knowledge about the universe, and its manifestations, was distinguished from research, the tool of science (Batey, 1971; Gortner, 1980). This differential terminology now is prevailing in the nursing science institutes at the Universities of Oslo and Bergen as well as at several Finnish universities (Gortner & Lorensen, 1989).

The United States has had an advantage as yet not realized elsewhere in the world of having had government support in the way of grants for nurse scientist training in major universities during the decade 1962 to 1972 (Gortner & Nahm, 1977). The periodic forums that brought together the program directors and faculty members from these grantee institutions produced some of the most thoughtful among early statements on nursing science and the nurse's becoming scientist. Of these was Ellis' essay on values and vicissitudes of the scientist nurse, in which scientific research was viewed as the effective tool of the humanist nurse (Ellis, 1970). Batey's (1972) reflections on values relative to research and to science in nursing, as a result of her own nurse scientist training in sociology, recognized (as did Ellis) the tension between science and humanism but argued for the scientific values of organized skepticism, disinterested, and communality. Fry (1981) gives a foundational place to humanistic values in her analysis, arguing that it is the humanistic value scheme, not the scientific one, that guides humane therapy. A further argument is based on the claim made by Fry that scientific values have no moral content in themselves.

The present author, 15 years ago, urged greater scientific accountability for nursing based on self-reflection and thoughtful analysis of practice but cautioned against a loss of humanistic values while taking on the scientific (Gortner, 1974). That both science and humanism could be accommodated in nursing without loss of purpose and meaning was noted then and is believed to be possible today: What well may be foundational in humanistic philosophy (concern for person and meaning) can remain as philosophy; it need not be translated into scientific strategies (i.e., interpretive designs) and used to the exclusion of other options. Further, the practice of science and the scientific method, the search for explanations, regularities, and predictions about the human state should not be viewed as being incompatible with professional beliefs about practice and societal and personal worth.

Is Science in Nursing Compatible with Humanism?

For the past two decades, nursing scholars have examined the meaning of nursing through philosophical analysis (Ellis, 1983; Gadow, 1980; Lamara, 1982; Patterson & Zderad, 1976; Vaillot, 1962). Lamara recalled the heritage of classical Greek medicine as a healing art, as part of nursing’s caring obligation. Nursing as a profession and as a science of caring has been proposed by several American authors (Benner & Wrubel, 1989; Leininger, 1988; Watson, 1985). These proposals have in common a commitment to personhood, holism, and humanistic attention. Further, there is now considerable literature on the need for scientific approaches that will reflect these commitments (Allen, Benner & Dieckmann, 1986; Cull-Wilby & Pepin, 1987; Gortner & Schultz, 1988; Schultz, 1987; Silva & Rothbart, 1984; Stevenson & Woods, 1986; Thompson, 1985).

In all but a few of these essays, science is cast against humanism and hermeneutics; the latter is seen as providing true meaning for all human endeavor including scientific work on humans and by humans. Interestingly, European nurses do not support this dialectic; it appears to be peculiarly American, in part because science does not have the certitude, the gewissenshaft, that it has in the United States. In Norway viemskap is the term used for science; it has a broader meaning and tradition beyond that of natural science, incorporating many sources of knowledge—unlike those described by Schultz and Meleis (1988) in a recent account of nursing epistemology. These authors note that valuation of empirical knowledge will require evaluative criteria that are different from either conceptually derived or clinically derived knowledge. There is a refreshing attempt
to further understanding values and beliefs about multiple sources of knowledge for a practice field such as nursing. Changing scientific and philosophical opinions about science in the past two decades have brought about considerable commentary about scientific inquiry and outcome. Science now is viewed as a part of society and not value-free; as such, it is a part of the sociopolitical structure and thus is open to scrutiny. There has been a renewed interest in the history of science, a result of scientists’ turning to study their own disciplinary histories as well as philosophy. Kuhn’s Structure of Scientific Revolutions was first published in the United States in 1962; Winch’s Idea of a Social Science appeared in Europe about the same time as Kuhn’s, according to Phillips (1987). Also influential around this time was Herbert Marcuse’s One-Dimensional Man (1964). According to Fjelland (personal communication, July 1989), the writings of Marcuse, who emigrated to the United States, as well as others associated with the Frankfurt school of critical social philosophy, particularly Habermas (1971), fit well with the student reaction against the American and Northern European “establishment,” in which science and objectivity were perceived as being overvalued to the detriment of person and humanity. This reaction also was displayed against positivism, or the received view in philosophy of science. In Scandinavian and northern European universities in the 1970s, Marx as humanitarian rather than as political economist was reexamined along with Hegel and other of the German Idealists (Randi Nord & Eli Haugen Bunch, personal communication, February 4, 1988).

Modern version(s) of nineteenth century continental philosophy have emerged to influence the science discussions in some disciplinary fields deeply concerned with the human state. Phenomenology, as articulated by Heidegger (1962), Sarte (1963), and Merleau-Ponty (1962), calls for the appreciation of the human being as supreme being and for self-reflection and understanding as the basis of knowing and acting. Cohen (1987) provided an historical account of the phenomenological movement, differentiating these key leaders. Not addressed in her review is the influence of Heidegger on contemporary interpretive philosophy, namely hermeneutics. Leonard (1989) rectified this situation for nursing readers in a recent essay.

According to Bernstein’s (1986) most recent analysis, the issue is less the substitution of hermeneutics for the scientific method as it is acceptance of “the ontological primacy of hermeneutics and its universality” (p. 96). Hermeneutical understanding can enlighten the human state, a state that has become objectified by scientific advances and technology. Intuition and practical reasoning may well underlie all forms of reasoning including scientific reasoning and the production of scientific knowledge. The foundational nature of hermeneutics for Scandinavian nurse scholars engaged in substantive research programs is a given (Astrid Norberg, personal communication, March 6, 1988). Interestingly, hermeneutics as philosophy has not been transformed there to hermeneutics as method, as it appears to have been transformed in the United States. American scholars might consider this point in reconciling philosophy with modes of inquiry.

The legacy of philosophical positivism continues to guide our beliefs in the scientific method and in careful research strategies and in the conduct of investigations can provide worthwhile and substantial benefits for humankind. The renewed interest in humanism and history has infused us with an appreciation for and sensitivity to the human condition, in the links between objective measures of reality and personal and subjective ones. These links have significant implications for human sciences, among them the health fields.

What seems now to be at stake is whether or not understanding and explanation of the human state can take various forms and whether or not self-understandings and self-theories will be accepted as warranted evidence and thus as measures of “truth.” Gergen (1980) suggests that a primary function of such understandings is the capacity to challenge assumptions of the culture, to raise questions about life and to suggest alternative actions: to serve as “generative theory.” According to Ziman’s (1980) definition, science is public knowledge; if self-defined meanings could be made public and scrutinized, they could be informative, critical, generalizable, and potentially nomothetic. Will such scrutiny distort the faithful interpretation from description that hermeneutical studies aim to present? Probably not, because some excellent public examples now exist in the science literature (Michels & Murdagh, 1987). How reproducible and rigorous are the narratives, the data, from such investigations? Herein lies a major debatable question since interpretive studies tend to be idiosyncratic and particularistic, despite cultural and linguistic commonalities. Further, there is no causal requirement for hermeneutical explanation. The explanation is said to lie within the particular history or situation, not in some external human pattern or regularity or “law” that might govern or account for the situation. This lack of causality has serious implications for the human sciences in general and the health sciences in particular. There is loss of generalizability, loss of correspondence with extant theory and diminished power to make “ampliative inferences” that can extend research and therapy. For a practice discipline that needs prescriptive action guides the logic of scientific explanation needs to be coupled with the meaning derived from hermeneutical explanation.

Because hermeneutics can make clear practical wisdom, knowledge, and experience, it has great attraction for the clinician and for the art of clinical diagnosis and treatment. It need not be the sole strategy for inquiry, although it may become a key strategy for practice. This leads to the final question: How should research be conducted in the human enterprise called nursing? More specifically, how might a philosophy of nursing science be framed?

Toward a Nursing Science Philosophy

Human understanding is proposed as a premise of nursing science, in keeping with humanistic traditions in ancient and modern philosophy and in nursing philosophy. If accepted as a basic premise, then nursing research would necessarily incorporate means for determining interpretation of the phenomena of concern from the perspective of the client, patient, or care recipient. These interpretations might be subjected to hermeneutic analysis for their meaning, followed by intersubjective consensual validation by participants. To being the interpretations to intersubjective consensus among scholars requires that they be raised to a level of public information and knowledge, subject to scrutiny, criticism, and further demonstration and empirical testing in other patient-client situations. This strategy might
allow for nomothetic explanations as well as idiosyncratic ones.

What is proposed here is what anthropologists would call an emic perspective (Tripp-Reimer, 1984) for most of nursing research. Even if the goal of research is etic, outside the given participant group, one would still argue for consensual validation in the hermeneutic sense (Gortner & Schultz, 1988). But this consensus also has to be brought to the level of public scrutiny, where public this time means other scholar-scientists in addition to the client or subject or informant.

The public nature of human science knowledge, representing rational, informed opinion about the human state, is proposed as a continued premise of nursing science philosophy, in keeping with traditional and modern views of science (Ziman, 1980). Such knowledge generally is obtained through systematic inquiry, with features of theory/observation compatibility, logic, precision, clarity and reproducibility as is characteristic of “good science” (Gortner, 1987). Such knowledge thrives on criticism and attempts to falsify or substantiate its truth claims. Note here that there is no specification of how this knowledge looks: for purposes of nursing science development, it may represent itself in language or numbers or combinations thereof. What is important is that it is publicized, criticized and tried out. Otherwise it becomes ideology.

Observation as a basic, if not foundational, element of knowledge development in nursing science is proposed as another premise. By this is meant the foundational nature of “observables” of the human state; to be observable means that measurement is possible. What if these are feelings, intuitions, preunderstandings? Can these be “observable”? Indeed yes, and in fact this characteristic or capacity may be a unique feature of nursing science as a form of human science. Nursing’s skill in capturing the human situation at a given point of time in the health-illness continuum arises from a tradition of intimate, compassionate, caring, and attentive service. Such intimacy promotes sensitivity to cues in the situation that enlarge understanding and guide action. The means is yet to be developed to reframe these feelings and intuitions in a way that they are “observable” and thus believable by others. The American Academy of Nursing’s (1986) scientific sessions recommended the use of triangulation (mulimethods) and pattern-seeking approaches to capture nursing phenomena; these approaches might accommodate investigators of differing interpretive/analytic philosophies. A “particularistic, pragmatic” plan for holistic nursing inquiry has been detailed by Schultz (1987). Here the whole (meaning and experiences) is assembled with parts (physiological processes or nursing acts) into a single text, in which the investigator reflectively engages with the data, reasons through dialogue, discovers patterns, and uses these dialectically to construct new understandings and meanings. The conclusion or knowledge claims are then assessed for warrantability using Chisholm’s (1982) epistemic principles.

Rationality also is a foundational element in nursing science philosophy. Schultz and Meleis (1988) spoke of conceptual knowledge. Nursing conceptual frameworks and theories can be employed deliberately in investigations to determine their empirical relevance. New theories of the generative sort proposed by Gergen (1980) can be inferred from the data coming from personal histories and clinical ethnographies and from the rationality demanded by critical social theory and feminist scholarship. Rational schemes to describe the relationships supposedly seen in the phenomena of interest also might be proposed through the technique now known as causal modeling. Here, data are examined with regard to previously specified models, through multivariate analytic techniques, and attempts are made to test or generate theories. Here, the “observables,” the data, would need transformation from language form to integer form.

Rational philosophies of particular interest to nursing are those employing both critical theory and feminist perspectives. Both are special cases of rationality that apply to situations of social interaction involving authority and power, and both challenge major claims to science based on empirical evidence alone. The arguments for the critical and feminist perspectives have been empirically displayed in research endeavors as well as rationally and ideologically argued by Allen (1985) and Chinn and Wheeler (1985). McLain’s (1985) doctoral dissertation and Holter’s (1987) theoretical critique are examples of critical theory applications in nursing. An important feminist illustration is Keller’s (1985) account of Barbara McClintock’s Nobel winning discovery of hybrid corn. The same claims of knowing through intimate attending are made here as have been made by nursing authors in studies of expert caring (Benner & Wrubel, 1989). These claims challenge our contention that scientific knowledge is public knowledge.

Explanatory power is proposed as another premise of philosophy of science in nursing. Human science activities cannot rest only with increased understanding; nor can that understanding be taken as the sole criterion for explanation, as Benner (1985) has proposed. Human patterns and regularities and perhaps even “laws” characterize the human state and undergird the whole enterprise of society and human life. Perhaps concern with the mechanistic philosophy of science has prompted the reaction against explication of patterns. But it is argued here that explication is a necessary requirement of nursing science as a clinical and human science, and that eventually such explanations will guide nursing action as therapy. Even if not brought to the prescriptive level, such explanation enhances knowledge about fundamental processes and thus may inform other disciplinary fields.

To understand aids explanation; certainly understanding informs explanation, but explanation in the sense that is being proposed here must suggest what might occur the next time the event or phenomenon occurs. Thus temporality and predictability are assumed in scientific explanations that are within the definition of explanatory power. Whether control of human phenomena is possible or even desirable are both an ethical and scientific question.

To explain means that some causal process or interaction is involved. Here lies one of the greatest areas of disagreement among nurse scholars including our major theorists. It probably will not be resolved in our lifetimes, just as it has

1 A special plea to scholars interested in theory generation and concept discovery is made. Please identify and specify the conditions under which the concept or phenomenon was found. These conditions represent the limits of the abstraction with reality, increasing the likelihood that the abstraction may be found again. Otherwise who is to know that it is not a fleeting piece of imagination?
not been resolved through the centuries. Explanation in nursing science philosophy can take a variety of forms, some of which have been illustrated in other essays (Gorntor, 1983, 1984). Increasingly, statistical inference and the results of cohort studies and clinical trials can enhance the probability of prediction. To sort out pseudoexplanations, these forms of explanation remain logical rather than intuitive, employing the notion of a contrast class, a causal process, a set of clinically and statistically relevant factors (Salmon, 1978). Although forms of explanation may differ, causal inference must remain a key ingredient.

A final premise of science philosophy is that the knowledge generated must also allow for prescriptions that will guide practice. Whether these are clinically or empirically derived, there is the obligation to act or intervene, in keeping with other helping professions. Basic science has no such mandate for application or therapy.

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