



**Philosophies
and Theories
for Advanced
Nursing Practice**

Janie B. Butts AND Karen L. Rich

Philosophies and Theories for Advanced Nursing Practice

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Preface

Philosophies and Theories for Advanced Nursing Practice, by Janie B. Butts and Karen L. Rich (editors), is an essential resource for advanced practice nurses and for students in graduate nursing programs, both DNP and master's-level programs. The authors who contributed to this text are distinguished nursing and interdisciplinary scholars with expertise in theory.

ARRANGEMENT OF THE BOOK

There are 25 chapters that are presented in 5 parts:

- Part I: Foundations of Nursing Science
- Part II: The Structure and Function of Theory
- Part III: Interdisciplinary Philosophies and Theories
- Part IV: Select Nursing Models and Theories
- Part V: Tools for Integrating and Disseminating Knowledge in Advanced Nursing Practice

The chapters in Parts I and II provide the foundation for philosophy of science, the development of nursing knowledge, and theory. Advanced practice nurses and nursing students can use Parts I and II as sequential building blocks for the information in Part V—theory evaluation, testing, and integrating, translating, and disseminating evidence-based findings from research to practice.

Part III focuses on a selection of interdisciplinary philosophies and theories relevant for advanced practice. Part IV is a focus on select conceptual models, grand theories, and middle-range theories of nursing. Conceptual nursing models and grand nursing theories both bring advanced practice nurses a certain reality of conceptual arrangements, theoretical variables, and propositions

used for deriving middle-range theory. Middle-range nursing theories derived from conceptual models and grand theories of nursing translate theory and research findings directly into practice.

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PART I

**Foundations of
Nursing Science**

Philosophy of Science: An Introduction

E. Carol Polifroni

INTRODUCTION

Philosophy of science is a perspective, a lens, a way one views the world, and, in the case of advanced practice nurses, the viewpoint the nurse utilizes in every encounter with a patient, family, or group. A person's philosophy of science creates the frame on a picture—a message, which becomes a paradigm and a point of reference. Each individual's own philosophy of science will permit some things to be seen and others blocked. It allows people to be open to some thoughts and potentially closed to others. A philosophy will deem some ideas as correct, others as inconsistent, and some as simply wrong. While philosophy of science is not meant to be viewed as a black or white proposition, it does provide perspectives that include some ideas and thoughts and, therefore, must necessarily exclude others. The important key is to ensure that the ideas and thoughts remain consistent with one another, rather than being in opposition.

Discussions of science, philosophy, and philosophy of science could all fill books unto themselves. Although the aim of this chapter is to introduce readers to these topics, it is constructed on the form of a survey, which is designed to launch inquiry in myriad ways. The purpose is to encourage nurses to think in ways that they may not yet have discovered and to examine their assumptions and actions in their role as advanced practice nurses. If nurses leave this chapter without questioning their assumptions, the author has not done her job! One must appreciate the personal assumptions used in everyday professional life. Nurses, for example, must question their assumptions and reaffirm (appreciate and understand) what it is that they believe.

SCIENCE

Before philosophy of science is examined in greater depth and particular philosophies of science are specifically explored, it is important to begin by developing an appreciation of the meaning of science and philosophy. *Science*, which comes from the Latin word *scientia*, meaning “knowledge,” traditionally refers to both a process and the outcomes of processes, such as general laws and observations. General laws are considered to be the laws of nature that guide physical life, such as the laws of gravity, energy, and motion. Generators of science utilize these laws in a systematic way to create a body of knowledge about a specific topic. The culmination of using the scientific method (systematic process) provides a set of data (evidence) supported by propositions about an area of study (Boyd, Gasper, & Trout, 1991).

Natural Hard Sciences

As an outcome, science is a body of knowledge. Physics, mathematics, and chemistry are three examples of scientific disciplines composed of unique bodies of knowledge. These sciences are often classified as natural sciences because they employ the general laws of nature and begin with the physical notion of the world. These natural sciences (which are sometimes referred to as the physical sciences) are also known as pure sciences. “Pure,” in this context, means a unique body of knowledge. A pure science is independent of others; it is able to stand alone, and it may be developed and furthered for the abstract cause of the knowledge itself. Pure science is not pursued for its utility or value.

Natural and pure sciences are based on the assumption that reality is objective, rather than subjective. As a result of this objectivity, natural science is consistent—in other words, it is reproducible and reliable. Natural science further encompasses the assumption that human beings have the capacity to be accurate in their objectivity.

Lastly, natural scientists believe that explanations (using the method described later in this chapter) are present within the natural or real world. As a consequence, explanations are reasonable, constant and consistent, accurate, objective, discoverable, and understandable. Owing to its basis in objectivity, natural science is predicated on the belief that there is an external world structure independent of self that is grounded in reliability.

Natural physical sciences are referred to as “hard science.” In recent years, quantum physicists have begun to integrate the role of the observer into their discipline, which is still categorized as a hard science. This conundrum will be addressed as part of the discussion of complexity science found at the end of this chapter.

Examples of the physical sciences present in health care include the biophysical and biochemical processes related to diabetes, cardiovascular disease, and cancer. Using the physical sciences in health care involves assuming a disease focus, rather than a person focus. The science is about diagnosis, treatment, and outcomes of treatment. It is about side effects and it is about pathology.

Soft Applied Sciences

Sociology, psychology, and anthropology are three examples of applied sciences. Applied sciences have their own unique body of knowledge, albeit a different one than is found in the natural sciences category. They are known as applied sciences because the focus is on the application of the related knowledge, usually to meet some type of human need (and not to generate knowledge for the sake of knowledge). Additionally, the term “applied” is used to convey the understanding that, in the development of their own knowledge, applied scientists use the knowledge from the pure sciences. Sociologists, who study people and behavior, rely on and use the natural sciences and their inherent assumptions to further their work. Thus sociology is an applied science. Mathematicians and physicists do not use psychology or sociology to add knowledge to their scientific disciplines, because mathematics and physics are pure sciences, whereas psychology and sociology are applied sciences.

Although applied scientists use what they deem accurate and appropriate from the natural sciences, they do not subscribe to the rigid belief of objectivity and reliability. In applied science, the focus is on human beings and the utility of the science to them and for them. Consequently, objectivity, observation, and reproducibility are diminished or perhaps not present at all. Therefore, the applied sciences are sometimes referred to as “soft science.”

Inherent in the distinction between hard and soft science are certain assumptions and beliefs. Hard scientists assume objectivity, whereas soft scientists do not. Hard scientists operate on a belief in an external world structure independent of self, whereas soft scientists do not. The hard sciences are grounded in a worldview of reliability and consistency as contrasted with the soft sciences, which allow for individuality and originality. These distinctions are not minor semantics, but rather indicators of major differences in philosophy and perspective.

Examples of using soft applied sciences in health care can be found in social work, the work of a psychotherapist, and the examination of healthcare disparities between people of color, those of wealth, and fragile elders. Some state practice acts define nursing as specialized knowledge integrating both

physical and social sciences. In these instances, the acts combine the concepts of hard, soft, pure, and applied sciences.

Human Science

In addition to the categories of science discussed previously, human science is an important type of science. Few scholars would choose to classify human science as either hard or soft, but rather might prefer to classify it as something totally different. Human science is not a new term. It was introduced by Dilthey in the late 1800s (Ermarth, 1978). As a German philosopher, Dilthey was concerned about the focus on objectivity and value-free science, which left the person out of the process. He expressed concern about a science and a subsequent knowledge base that did not include the everyday lived reality of individuals. Along the way, Dilthey created the discipline of human science, which captures human beings and their experiences as *the* source for knowledge.

With this understanding of human science, the scientist becomes as much a part of the experience as does the participant. This view is in direct opposition to the neutral or value-free experience of the physical scientist, whose *life* is irrelevant to his or her work. Thus the nature and focus of the science and the process and role of the scientist are different when the subject area is viewed as a human science. In the physical sciences, the scientist and the subject are not one. In the applied sciences, the science and the scientist are not necessarily one. In contrast, in human science, they are one; they cannot be separated from each other.

Is nursing a human science? Is the work of the advanced practice nurse inextricably interwoven with the population served? When nurses speak of patients and families in one breath, is this a function of a human science view or of something else? For nursing to be a human science, nurses must recognize themselves as scientists. The work they do in the provision of care to individuals, families, and communities may be viewed from a lens of science that is simultaneously physical (hard), applied (soft), and human.

SCIENTIFIC METHOD FOR THE PHYSICAL SCIENCES (TRADITIONAL)

As an approach or a method, traditional physical science uses a process of linear steps to solve a problem. Most nurses are familiar with the term *scientific method*, but few appreciate the assumptions inherent within the method itself. An assumption is a position about what one believes to be true and right. The scientific method is based on the assumptions that observation is universal, that laws of nature guide every action, and that the outcome of an

experiment will be useful in predicting and, therefore, controlling the object of the experiment. Being *universal*, as the term is used in relation to the scientific method and science, means that all essences are the same and that individuality does not apply. The laws of nature are those that are connected to the physical world structure independent of human consciousness, such as the laws of thermodynamics and gravity. Control through prediction is the ultimate aim of the scientific method. Control occurs through the accurate and reproducible predication of events.

The scientific method is more than a linear process to conduct an experiment. Although hard scientists would say that it is value neutral, the scientific method is an interwoven and value-laden approach to the solution to a problem. Objectivity is a key factor that is used to validate the scientific method, yet what the scientist considers to be part of the process is a value-laden decision, regardless of whether objectivity is used later. Arguments about science being value neutral versus value laden color the aims of the two categories of science: pure and applied.

Aim of Science

The pure hard sciences have a single aim of knowledge development for the sake of knowledge development and the search for truth. To the hard scientist, a single truth exists that can be discovered once human beings have the physical capacity to make the necessary discovery. This “single truth” approach is based on a belief that an objective world exists independent of human consciousness. Traditional science aims to describe and to explain this external world structure. Another aim of the physical, pure sciences is to control phenomena through an empirical approach to scientific inquiry. Control is achieved as a result of the accurate prediction of universal descriptions of outcomes. When it is known, the world can be controlled.

The aim of the applied sciences, by comparison, is the application of knowledge for a specific purpose, thereby yielding utility. Applied science is not focused on generating knowledge for the sake of having knowledge, but for the development of applications that can better a situation, improve a process, or change the way that situations are viewed.

In human science, the aims are all about individuals, families, and communities. Aims of human science may be to improve quality of life, assure dignified beginnings and ends to life, uncover meaning in everyday life, and highlight the roles of individuals within this examination. The aims of human science may be simply stated as *to know and understand what works for people to maximize their ability to be fully functioning individuals, families, and communities at whatever level they are able to function.*

Scientific Methods in Human Science

Human science requires different methods. While the scientific method may be applied in the abstract, the end for the human scientist is greater than the sum of the parts. Thus varied methods are needed. In human science, the scientists and the subject (content area) being studied are treated as parts of the same whole. Therefore, the methods used can be neither linear nor constant. Instead, the methods need to be dynamic, while still meeting the same expectation of rigor found in the hard sciences. Rigor—a notion usually associated with randomized control studies, reliability, and validity in the hard sciences—is not the goal in human science. Rather, contextual consistency, purposive sampling within the population experiencing the essence to be described, validity of questions, a detailed audit trail of data collection and data analysis, and a return to the participants for validation of the message sent and received are emphasized.

Criteria for Science

An important distinction to address is the difference between science and non-science. This discussion has been going on for centuries. Some scholars may look at human science as non-science. Pseudoscience—comprising scientific theories that are not falsifiable—is the bane of existence for the hard physical scientist, even though it clearly has popular appeal. Therefore, it is important for the hard physical sciences to demarcate themselves from pseudoscience and, perhaps, applied and human sciences. Five criteria are used for this purpose: intersubjective testability, reliability, definiteness and precision, coherence, and comprehensiveness and scope (Feigl, 1988).

Intersubjective testability is based on a belief in the value of corroboration and on the idea that two people who view the same entity in the same manner should obtain the same results; if this criterion is met, the method is objective. Using the word “objective” as a synonym for intersubjectivity means that “the belief is not based on hallucination or deception and it is not a state of mind but truly exists . . . the belief is neither private nor unique. It can be and must be verified . . . and be empirically tested” (Polifroni & Welch, 1999, pp. 3–4).

Reliability, the second criterion, means that researchers achieve the same result time and again when the circumstances of their study have not changed. If findings demonstrate reliability, then the same outcomes are achieved with repeated tests, thereby confirming the beliefs and premises set forth by the scientist. Reliability is the basis for prediction and subsequent control.

Definiteness and precision, which collectively constitute the third criterion, are words used to convey exactness and rigid adherence to objectivity. Precision is not about approximates, but rather exactness; it is about specifics, not generalities. If experimentation meets the criterion of definiteness and

precision, creating the same circumstances for repeated experimentation leads to a reasonable expectation that the same results will be achieved. Definiteness and precision are not about inclusion of the researcher or fluidity of ideas; indeed, they focus on the opposite goal.

Coherence or systematic character, the fourth criterion, addresses connectedness and wholeness. How do the parts relate to one another to form a unique body of knowledge? The connectedness (the sense of a whole with integrated parts, not disparate ideas) is the coherence required in science that is not necessarily present in pseudoscience. It is important to distinguish the wholeness of coherence from holism in human science. In coherence, the focus is on the parts and their relation to one another. In contrast, holism in human science focuses on the whole from the outset, and not the parts.

The fifth criterion, comprehensiveness and scope, encompasses the ability of the science to be used for something other than its intended purpose. Comprehensiveness and scope define the application based on that which was not the planned study and achieving the expected outcome through appropriate utilization. “The thrust of this criterion is the maximum explanatory power of the science and its related theories. . . . a science is not a science if it does not explain and address events and related concerns beyond the issue under study at the present time” (Polifroni & Welch, 1999, p. 4).

QUESTIONS FOR THE PRACTITIONER

The five criteria—intersubjective testability, reliability, definiteness and precision, coherence, and comprehensiveness and scope—serve to separate science and pseudoscience, as well as common sense. It is important for advanced practice nurses to ask, “Is nursing a science?” Is nursing work that of pure science or applied science? Is the care provided to patients, families, and communities done for the purpose of prediction and control? Are there universals within patient care provision? Is there an external world independent of human consciousness that colors the care delivered? Does nursing as a science satisfy the five demarcation criteria? Is nursing practice objective?

PHILOSOPHY

Whereas science is about knowledge, *philosophy* (originally from the Greek word *philosophia*) means “love of wisdom.” Enjoyment of the thought process, the notion of thinking for the sake of thinking (how often have you said, “If I only had time to think. . .”), the examination of ideas, and the

Box 1–1 Questions for Advanced Practice Nurses

1. Is nursing a science?
2. Does your practice “fit” with the five criteria of a science?
3. How do you use universals in your care and make it individualized?

search for truth are all part of philosophy. Philosophy also involves a search for meaning; it represents a perspective, and it is a set of beliefs. Philosophy, like science, is both a process and an outcome. The process of philosophy is the critical inquiry and examination of meaning and the method one undertakes when beliefs are examined, ideas are proposed, and assumptions are challenged.

Philosophy encompasses more than rhetoric; it is the guide by which situations are approached, the viewpoint used to *see* what is before one, and the method by which one searches for truth, as well as an understanding of what truth is. Philosophy is contextually grounded; it relies on the present but is embedded in the historical past. Philosophy is dynamic, it evolves, and it is subtle while simultaneously being overt.

Philosophy captures the essence of a human being, such as the essence of what it means to be a provider in a caring profession. The deliberate use of the word “caring” here indicates a philosophical belief based on the author’s experience, gender, and role as a scientist. Philosophy is more than just a belief—it is the *application* of that belief to situations known and unknown. Philosophy is epistemology *and* ontology, the knowledge of and the belief about something. Epistemology is the study of knowing, of determining what knowledge is and how that knowledge is relevant and related to extant knowledge. Ontology is the study of being and of meaning.

All schools of philosophical thought cannot possibly be explored in a single chapter. One way to undertake a large survey of philosophical thought is to examine the various perspectives in terms of two major schools of philosophical thought: analytic and continental. Analytic philosophers originally were those primarily located outside of Europe, whereas advocates of continental philosophy originally emanated from Europe. While the two schools are often discussed in opposition to each other, their discordant viewpoints are actually a matter of the philosophers using a different lens, differing approaches, and

Box 1–2 Essential Terminology in Philosophy

Analytic philosophy
 Antirealism
 A priori
 Chaos
 Complexity science
 Continental philosophy
 Empiricism
 Epistemology
 Essence
 Experience
 Hermeneutics
 Idealism
 Logical positivism
 Ontology
 Phenomenology
 Positivism
 Post-structuralism
 Pragmatism
 Priori
 Realism
 Truth