Philosophy & Science Terms and Concepts

Epistemology: the study of knowledge – what is knowledge and HOW do we know?
In terms of nursing: WHAT can we know? HOW do we know what nursing is? How is knowledge acquired? How do we know what we know? are epistemologic questions.

Ontology: the study of being and meaning; Ontology answers the question, “What is it we believe exists (about nursing)”?
In terms of nursing: What IS nursing? is an ontological question.

Worldview: An individual's perspective of their reality that guides their thinking and being. Each theorist (nursing or otherwise) has their own perspective that has then shaped their beliefs, assumptions, and values and therefore their definitions of the paradigms/metaparadigms of their discipline. These views underlie their behaviors and decisions.

Constructivism/Constructionist: knowledge is "constructed;” learning is developmental – learners build on existing knowledge and interpret that knowledge in a personal way to construct new knowledge; knowledge is iterative and may change as new knowledge (and evidence) enters the picture

Empiricism: search for a single truth; positivist view of truth that uses scientific method, but includes actual experience – what we call Science today.
Empirical = experiential, experimental; knowledge is based on experience

Perceived view: Theories are neither right or wrong; observation leads to theory generation; observation is subjective, and value-laden, requires the use of the senses and mind; is accurate, but not necessarily precise; physical and mental; detailed, but not necessarily measurable; the researcher AS participant is part of the process; Seeking Understanding, not necessarily seeking truth

Received view: Theories are either right or wrong, developed theories must be formalized, theoretical propositions need to be tested, all sciences should be patterned after physics, clear separation between empirical and theoretical understandings. Scientific methods lead to THE answer (which is equated to THE truth)

Philosophy of Science: a perspective or worldview; the examination of the body of knowledge AND how the body of knowledge is studied (the approaches, the methods)

Personal Philosophy Concepts Specific to the Nursing Metaparadigms

Assumptions can be thought of “givens” or a notion or fact we take for granted, things we believe to be true, the ways things are without question. Examples: an assumption about person might be stated as “Persons are social beings.” Assumptions about Nursing might be “Nurses care about the well-being of their patients.” or “Nurses can reliably assess a patient.” To identify your metaparadigm assumptions:

It might help to say “I assume” X. For example, I assume that nurses … respect patients, are skilled clinicians…. I assume that persons … are truthful, can make decisions for themselves…. I assume health is …, I assume the environment is …. Take off the “I assume” part and make a declarative statement.

Beliefs are the succinct definition and broad description of each of the metaparadigm concepts. Examples: if you described the metaparadigm concept person as “a biopsychosocial being,” then you will need to expand on what constitutes the biological component, the psychological component, and the social component.

It might help to say “I believe” X. For example, “I believe that nurses/ persons are/should …. I believe that health/environment is …. Statement = Nurses are skilled in physical and psychological assessment.

Values are features or behaviors that are considered to be desirable or evaluated as good, worthy, or esteemed. Values guide and direct behavior, as well as decision-making. Examples: values related to person may be stated as, “Persons are worthy of respect.” “Clients should be treated with dignity” “People have a right to make decisions about their medical care.”

It might help to say nurses/ persons “should/ought to/it is good for” X. Nurses should/ought/it is good to respect patients… Patients should…Health is ….The environment should be …
Philosophy & Science

Philosophy (from philosophia: Greek): love of wisdom – the process of thinking for the sake of thinking! Also, the examination of ideas, the search for truth, the search for meaning; a process/method (i.e., critical inquiry and examination of meaning) and a product/outcome (i.e., a perspective, a set of beliefs, such as the Analytical or Continental schools of philosophy).

Your philosophy frames your behaviors and actions – what you see and what you don’t see, what you look for, how you interpret what you see, what you accept as true or false, how open-minded you are or not, what you believe, what you value, what you assume — the thought is if you believe in one perspective, that you would logically dismiss thoughts, beliefs, or values that do not mesh with yours.

Nursing and medical practice have been based on tradition and authority and doctrine for a long time. Evidence-based practice (EBP) is resisted by some because it challenges health care providers to give more than just their opinion, belief, or experience for the rationale behind what we do. EBP relies on the use of evidence (broadly defined) as a base for clinical decision-making, but it also includes the clinician’s experience and the patient’s preferences as “evidence” for their decisions.

Analytical Philosophy: Objective, reproducible truth;

Process: logic and rational discourse; deductive, linear thinking; scientific method to control and predict outcomes

Philosophies include: positivism, logical positivism, empiricism (knowledge is based on experience), instrumentalism, pragmatism, and rationalism (knowledge is based on reason and empirical evidence).

Received view or realism is embedded in analytical philosophy

Scientific methods: Quantitative

Continental Philosophy: Truth is known through human essence and experience; relationships between people, ideas, meaning, and historical connectedness (past and present) are important;

Process: phenomenon are embedded in the human experience; the experience of truth is from an individual perspective (i.e., subjective) and includes the scientist’s perspective; inductive; human science match

Philosophies include: phenomenology (the lived experience), hermeneutics (the meaning of the words we use – the interpretation and understanding of that meaning), grounded theory, case method, critical social theory, feminism, structuralism, post-structuralism (the study of relationships and contextual grounding), and post-modernism.

Perceived view or idealism (knowledge is inherent) or antirealism is embedded in continental philosophy

Scientific methods: Qualitative, primarily.

However whichever research method and process is appropriate to the specific question asked is the method to use. So quantitative or mixed methods may also be appropriate.
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Science (from scientia: Latin): knowledge; both a process (the scientific method) and a product (laws of nature [gravity, thermodynamics, energy, motion], observations);

Natural/Hard/Physical/Pure Sciences: physics, mathematics, chemistry use laws of nature and a physical, tangible, objective, reproducible notion of the world (the world can be touched, seen, and therefore can be measured consistently); knowledge can be discovered through a linear, value-free, systematic process

Pure = unique body of knowledge that is independent of human consciousness;

Aim: to develop knowledge for the sake of knowledge development and the search for TRUTH

Physical sciences in healthcare: biology, physiology, anatomy, pathophysiology, etc. = disease focus therefore: diagnosis, treatment, outcomes are important

Assumptions of the Hard Sciences:
- Reality is objective and reproducible, and reliable (constant, consistent)
- Science is value-free or value neutral.
- Explanations about the world are knowable (using a systematic process) because they are present in the natural or real world
- Humans can be objective and can accurately measure this reality
- Scientist’s life is irrelevant to his/her work.
- Evidence collected (the data) is supported by the propositions specific to the area being studied
- Knowledge about the real world is objective, discoverable, constant, consistent.
  Therefore, we can understand the explanations, they make sense, and the explanations are accurate.
- If one follows the same process, the same conclusions can be deduced.

Scientific methods: Quantitative research methods (rigor, reliability, validity, control, random sampling, statistical analysis); intersubjective testability, reliability, precision, coherence, comprehensiveness, and scope.

Soft Applied Sciences: sociology, psychology, anthropology; use unique, and related pure and extant, knowledge that is applied to meet a human need – not to produce knowledge just for knowledge’s sake.

So applied science uses pure science knowledge to further develop the soft sciences, but pure science does NOT use applied science knowledge to generate knowledge about the pure sciences.

Soft refers to the fact that the applied sciences do not say that the only way to know something is to see it or physically touch it. Objective methods and measures may be used but they are not rigidly applied.

Focus is human-centered → how science helps humans

Aim: application of knowledge for a specific purpose to improve a situation, solve a problem, or change the way a situation is viewed

Applied sciences in healthcare: social work, psychotherapy, counseling

Assumptions of the Soft Applied Sciences:
- Reality is not purely objective, but subjective
- Science is value-laden
- Humans are individuals with different experiences, beliefs, and values
- Humans create meaning from personal experiences, beliefs, and values therefore, that humans may interpret the same experience differently ... (continued)
Philosophy & Science

**Soft Applied Sciences:**

Assumptions of the Soft Applied Sciences: *(continued)*

Subjective experiences can be known and knowledge discovered through a variety of methods that are reproducible, though the outcomes these methods produce will be different. The scientist may or may not play a role/impact a situation with a subject: The scientist’s life may or may not be relevant to their work: The scientist and subject are not necessarily inseparable.

The discovery of knowledge is not linear.

Scientific methods:

- **Quantitative** research methods (rigor, reliability, validity, control, random sampling, statistical analysis);
- **Qualitative** research methods (contextual consistency, purposive sampling, semi-structured data collection, audit trail, content analysis, member checking)

**Chaos and Complexity Science:** uses both analytic (for seeking truth) and continental (for seeking understanding) philosophies,

Quantum physics of fluidity and dynamism concepts are incorporated;

**Complex, adaptive systems** are dynamic, irreproducibly whole (parts can only be looked at as interrelated and understood as patterns), connected to environments, influenced by past and present and future.

**Human Science:** defined when a scientist questioned how valuable scientific knowledge was if it was not grounded in the lived experiences of humans.

Focus: on individuals, families, and communities

**Aim:** to improve the quality of life, ensure dignified beginnings and ends to life, uncover meaning in everyday life, highlight the roles of individuals ... “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” (Polifroni, 2015, p. 7).

Assumptions of Human Science:

Scientific knowledge is only useful if human beings and human experiences were incorporated into the database.

The scientist plays a role/impacts a situation, as much as a participant: The scientist’s life is relevant to their work: The scientist and subject cannot be separated from each other.

Scientific methods: **Qualitative** research methods (contextual consistency, purposive sampling, semi-structured data collection, audit trail, content analysis, member checking)

**Philosophy of Science in Nursing:** “examination of nursing concepts, theories, laws and aims as they relate to nursing practice.” Through such an understanding and deliberate thought, praxis evolves” (Polifroni & Welch, cited in Polifroni, 2015, p. 11). “Examines the meaning of truth, the meaning of evidence, and the meaning of life through praxis” (p. 11).
Theory Terms & Concepts

Concept: a word or phrase that captures the essence of something; definition or description of the concept is one proposition; the building blocks of theory; Image or symbolic representation of an abstract idea: for example: cup, chair, rain, intelligence, presence, caring, pain, weight, self-concept, self-esteem

In a research study, the concepts the researcher is interested in should be defined as to what the concept means to the researcher (conceptual definition) followed by how the concept will be measured in the study (operational definition).

Conceptual definition: general meaning based on the theory—similar to a dictionary definition. These are important so that you can compare the results of other studies of the same concept. If the definitions of the concept differs from study to study, there is no quantitative way to summarize the data regarding that concept.

Operational definition: defines the specific direction of how a concept is measured. How a concept is measured in the study may be indicated by the words as evidenced by or as measured by....

Examples of Conceptual and Operational Definitions

Chair: a piece of furniture for one person to sit on (meaning of the concept) as measured by seats with four legs and back support (how the researcher will measure the concept of chair)
Note that beanbag chairs, three- or four-legged stools, ottomans, certain ergonomic chairs, etc. would not be considered chairs according to this definition.

Postoperative pain: discomfort an individual experiences after a surgical procedure (meaning of the concept) as measured by numerical rating (1-10) on a pain scale (how the researcher will measure the concept of postoperative pain)

Social support: social groups or situations that buffer the effect of stress on a person’s health (meaning of the concept) as measured by the Social Support Questionnaire (how the researcher will measure the concept of social support)

Conceptual model: Very abstract and general works that lead to theory development and can guide research and practice; enable nurses to view the world from a unique perspective. Diagrams typically used to show theme and link concepts through symbols.

Construct: Refers to an abstract property that is neither directly or indirectly observed which is inferred from a proxy observation; for example, social support can’t be directly observed, but we can ask the patient to describe the amount of emotional and financial support received from family, friends, and colleagues. Other examples: intelligence, presence, caring, self-concept, self-esteem

Deliberate or Intentional Theory-Guided Practice: Understanding the theorist’s philosophy at a core level, so that it guides how you assess, document, plan, evaluate, communicate, and connect with the patient and family (and your co-workers) (Thompson, 2016). In my opinion, the goal of excellent nurses!

Praxis: “The planned, deliberate, and thoughtful creation of a plan of action to achieve a set goal” (Polifroni, 2015, p. 11). Practice, action, or practical application of theory

Proposition: Linkages that spell out how the concepts are related; A statement about one or more concepts:
A proposition about one concept = definition or description of the concept;
A proposition about two or more concepts states an association or relationship between the concepts.
Examples: “Functional status is related to mood.” Functional status is a concept; Mood is a concept.
A proposition is something which can be expressed by a declarative sentence, and which purports to describe a fact or a state of affairs, such as "Dogs are mammals," "2+2=7," "It is wrong to murder innocent people for fun." (Note that a proposition may be true or false; that is, it need not actually express a fact.) (Truncellito, n.d.)
**Theory Terms & Concepts**

**Theory:** A worldview; Representation of reality whose purpose is to describe, explain, and predict phenomena of interest; Set of interrelated constructs [concepts], definitions, and propositions which specifies the relationships; made up of concepts and propositions about a phenomenon of interest; Diverse works from a theorist’s point of view;

Theories range from “very abstract and general conceptual models to less abstract and general grand theories, to relatively concrete and specific middle-range theories, to very concrete and specific narrow-range, situation-specific theories” (Fawcett, 2013, p. 593). Theories are derived from conceptual models.

Theories are NEVER proved, only tested: Research only strengthens, refutes, or refines the theory tested.

**Types of middle-range theories:** Descriptive (describe a phenomenon, “information presenting”); Explanatory (specify how concepts are related to each other to explain the phenomenon of interest, “knowledge building”); Predictive (specify how one concept affects one or more other concepts, “knowledge confirming”); Prescriptive (“knowing utilization”). See Butts, chapter 5 and Fawcett, chapter 24 in Butts & Rich textbook for more info.

**Nursing Theory:** “A relatively specific and concrete set of concepts and propositions that purports to account for or characterize phenomena of interest to the discipline of nursing” (Fawcett, 1989, p. 23). Usually focuses on healthcare experiences, conditions, or events;

**Theoretical Framework:** Provides a frame of reference for current practice and future study. Provides the rationale for the predictions of the relationships between the variables of interest and therefore provides a structure for research studies. The purpose of researching the propositions of a study is to determine if the predictions they hypothesize are valid, that is—does the theory hold true in the real world?

Theoretical frameworks can be thought of as Road Maps. Theoretical frameworks:
- Provide directions for how to practice nursing according to a philosophical bent, analytic or continental.
- Guide the design and conduct of research by helping the researcher make decisions about whom to sample, sample selection, data collection process and forms, how to analyze the data, etc. They help to make sense of meaning of the study (meaningful interpretation) to provide theory-based implications for practice.

**Borrowed or Shared Theoretical Frameworks:** theoretical frameworks from disciplines other than nursing used in the nursing domain. Nurses may use borrowed theories in conjunction with nursing theories to inform and guide practice (though theories should be examined for congruence with nursing ideals and situations). Borrowed theories have been used in nursing theory development.

Commonly “borrowed” theories include:
- Maslow’s Hierarchy of Needs
- Selye’s General Adaptation Theory (Stress Theory)
- Erik Erikson’s Psychosocial Model
- Lazarus & Folkman’s Theory of Stress and Coping
- Kohlberg’s Moral Reasoning Theory
- Bandura’s Social Learning Theory
- Azjen & Fishbein’s Theory of Reasoned Action and Theory of Planned Behavior
- Rogers’ Diffusion of Innovations Theory
- Freire’s Theory of Human Liberation
- Chaos and Complexity theories
- Von Bertalanffy’s General Systems Theory
- Lewin’s Change theory
- Physiologic frameworks, e.g., Germ theory, Infectious disease transmission, etc.
Metaparadigm Concepts

**Metaparadigms:** “a set of concepts and propositions that sets forth the phenomena with which a discipline is concerned. A metaparadigm is the most general statement of a discipline and functions as a framework in which the more restricted structures of conceptual models develop” (Miller-Keane Dictionary, 2003);

“The concepts that identify the phenomena of central interest to a discipline; the propositions that describe those concepts and their relationships to each other” (Farlex Dictionary, 2009).

The four phenomena of central interest that define nursing are identified as:

**NURSING, PERSON, HEALTH, AND ENVIRONMENT**

Think about these as the **elements of nursing**, the **key foci of patient care**: nursing actions (nursing) are administered to patients/families/communities (person) in a setting (institutional or home environment) for the purpose of attaining, recovering, or maintaining health or assuring a good death (health)

Each theorist defines the metaparadigms according to their worldview.

For example, Orem’s definition of the nursing metaparadigm is different than Martha Rogers’ or Sister Callista Roy’s definitions. Orem defines the Person metaparadigm as a “an integrated whole,” Martha Rogers as “an energy field,” and Roy as a “biopsychosocial being.”

The concepts and propositions in the metaparadigms form beliefs, assumptions, and values (BAVs).

BAVs may overlap.

For example, Nurses respect patients could be an assumption, belief, and a value for the Nursing metaparadigm. (I assume...I believe that...Nurses ought to...) The value: Persons should tell the truth could be stated as an assumption (Persons tell their health care providers the truth) and a belief (Persons are truthful).

How an individual nurse defines the metaparadigms, as when **developing their personal philosophy of nursing**, depends on the nurse’s identification of his/her BAVs. This is what YOU believe about the four metaparadigms — how YOU see your nursing world. Your personal philosophy may be unique or your views may reflect one or more specific theorists or philosophies.

General Definitions of the 4 Nursing Phenomena or Metaparadigms of Nursing

**Nursing metaparadigm:** the art and science of nursing; nursing actions or nursing interventions; **what nurses DO**. Includes applying professional knowledge, technical skills, “hands-on” care

**Person metaparadigm:** defined according to the patient (the person) and may include the patient’s family and friends and the community

**Health metaparadigm:** defined according to the patient’s perspective; Refers to the patient’s level of wellness (or illness to wellness continuum) and ability to access healthcare; health is a relative term; many aspects to health/wellness (physical, psychological, mental, intellectual, emotional, spiritual);

**Environment metaparadigm:** internal, external, and social factors that impact a patient’s health (genetics, culture, interpersonal relationships, economics, mental state, geographic location)
References and Sources

This Resource notes are an amalgamation from the following sources:


