

Philosophical issues in the Rogerian science of unitary human beings

In the Rogerian science of unitary human beings, the requirements for meaning and evidence are problematic. Four-dimensionality, a major building block, is postulated to be nonspatiotemporal, nonlinear, and not predictable through knowledge of the parts. A problem arises primarily because the Rogerian system also presents "verification of concepts" as the means of testing "fit" with the real world. Evidence usually understood in the criterion of verifiability in the logical empiricist tradition is specifiable through physicalistic terms under particular three-dimensional conditions. What are the consequences if integral (phenomenologic) evidence is taken as the criterion of meaning in the Rogerian conceptual system?

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THREE METAPHORS depict the function of philosophy as described by Socrates:¹ like the gadfly, philosophy emphasizes difficulties, removes complacency, and keeps the beast from being contented; like the bolt of lightning, it illuminates inconsistencies by logic and uncovers the holes in basic assumptions; and like the midwife, it identifies inconsistencies but also provides a way out of these difficulties and facilitates giving birth to new ideas.

The metaphor of the midwife is useful, first to talk about the problem of meaning and evidence as it relates to the science of unitary human beings and secondly to offer one alternative perspective to shift the contracted position on philosophy of science to a broader base from which to comprehend the multiplicity and diversity of unitary human beings.

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PHILOSOPHICAL ISSUES RELATED TO BASIC ROGERIAN ASSUMPTIONS

The problems surrounding meaning and evidence become increasingly pressing in questions about the testability of theories and conceptual systems of explanation. These problems are especially pressing for the conceptual system of Martha E. Rogers which postulates the four-dimensionality of unitary human beings.² What qualifies as the evidence of correlates of four-dimensionality?

A review of all of the published writings of Rogers since 1961 illuminates the circumstances and issues that led to the characterization of unitary human beings with four-dimensionality. Among them was the restrictive old mechanistic world view of physics, beginning with Galileo, Bacon, and Descartes and extending through Newton. It appears that Rogers's exceptions extend today to some of the central tenets of the present-day logical empiricists: Ayer, Hempel, Brodbeck, Cohen, and Nagel.³ Rogers's basic assumptions underwriting four-dimensionality are the integrality of human and environmental fields, including (1) noncausality, (2) non-spatial or nontemporal attributes, (3) non-linear domains, (4) nonrepetitive patterning, and (5) irreducibility to parts.^{4(pp3-4)}

Four-dimensionality is different from a three-dimensional view of the world and takes exception to five-sense data (sensory perceptible things) as an adequate means of gaining access to the nature of unitary human beings. Rogers's basic assumptions for four-dimensionality may reflect more clearly what it is not than what it is. However, Rogers gives further descriptors

of four-dimensionality in positive terms; they suggest a novel conception of unitary human beings. For example, the integral, four-dimensional nature of human and environmental fields is characterized by accelerating evolutionary mutual process in the direction of innovative complexity and diversity. Furthermore, the human field is the relative present of any given individual knowingly and unknowingly participating in the direction and multiplicity of change.^{5(p222)}

Other relevant characteristics of unitary human beings include negentropic energy fields identified by pattern, manifesting characteristics different from those of the parts and not predictable from knowledge of the parts. This is a negative descriptor, but it suggests a postulate that unitary human beings are identifiable by pattern manifestations of the whole. This is an expectation arising from an intellectual shift to the conceptual system of unitary human beings.

These characteristics of unitary human beings postulated as four-dimensional are, however, not accessible for investigation and testing through the logical empiricist three-dimensional criterion of meaning for science. Ayer, one English spokesperson of logical empiricism in the early 20th century (O. Wiggins, PhD, unpublished data, 1983) extending from the logical positivist original criterion of meaning (verification), asserts: "A statement is testable if it states the conditions under which to confirm, verify or falsify it (protocol sentence). It must have factual content or it is rendered meaningless." Factual refers to material objects or physical measuring instruments.

In addition, the statement must be made in behavioristic terms in reference to per-

sons. Furthermore, conditions are empirical here and refer to sense-perceptible things as determined by Carnap, a logical positivist of the Vienna Circle, in his classic writing "Psychology in Physical Language."⁶ Carnap's earlier criterion required the language of physics (the logic of calculus after *Principia Mathematica*).⁷

The later criterion required language of sensory experience (influenced by Wittgenstein's *Tractatus*),⁸ which marks the turn from logic to a narrow view of sensationalism, from the realm of being to the realm of appearance. Sense perception here refers primarily to the senses of sight and hearing and sometimes touch but rarely

science, is contradictory to the major premises of noncausality, nonspatiotemporality, and nonlinearity.

Were the scientific milieu of logical-empiricism and its verificationist criteria interpreted in the 1970 publication as being compatible with the phenomenon of unitary human beings? Or does Rogers attempt to modify the prevailing criterion of meaning (verification) and bring this science of nursing into an acceptable, credible view while it remains unique as a science of nursing? This is the problem of what qualifies for evidence in the development and testing of the conceptual system of unitary human beings.

TEXTUAL ANALYSIS OF ROGERS'S CONCEPT OF EVALUATION

Rogers describes the verification of concepts as the way in which concepts and knowledge are to be evaluated in the conceptual system of unitary human beings.² The words verification and evidence are presented in a context of evaluating knowledge as opposed to the context of discovery. These words appear in the rhetoric associated with Hempel, Brodbeck, and Nagel, who are among the strongest contemporary spokespersons for the verificationist position in America.

Rogers asserts that "science is concerned with meanings rather than with facts."^{2(p83)} Science is also concerned with formulation of meaningful propositions as an organized system, which is a repository of experiential observations. Rogers states that "theories are abstractions" and that "testable hypotheses" may be supported or refuted and are derived from the system.^{2(p84)}

Verification, as commonly understood in science, is contradictory to the major premises of noncausality, nonspatiotemporality, and nonlinearity.

smell, taste, extrasensory perception, intuition, or other such faculties by which humans come to know the world and test knowledge. It seems crucial to address the problem of what qualifies as evidence if the science of unitary human beings is to provide a sound perspective from which knowledgeable, compassionate service to society can develop.

Rogers writes about verification of concepts,² which appears to be in contradiction to basic assumptions about the nature of unitary human beings as described in her conceptual system. Verification, as commonly understood in

The rhetoric of the following quote illustrates Rogers's affinity with Hempel's system of explanation in the verificationist position. Rogers says:

Revision and change occur as emerging empirical evidence points up inconsistencies and inadequacies in the proposed model. The theoretical nature of the model does not free it of the need to take into account the real world. Concomitantly, it is in the abstractness of the model that facts and observations are transcended and meaning emerges.^{2(p89)}

Furthermore, the correspondence between the "real" world and representations of it are among Carnap's later positions and is an assumption reflected in the following words of Rogers: "Principles are symbolic. They are representations of the real world and must be tested against actuality to verify their correctness."^{2(p95)}

Rogers also says: "Facts and ideas are synthesized to present a coherent pattern consistent with the known world."^{2(p96)} "Evidence of conditions under which these principles hold arises out of examination of the real world."^{2(p102)}

Rogers uses the term *operational definitions* and the phrase "testing them at the lowest level of generalization in the real world," which convey the rhetoric of the operationism of Bridgman.⁹ Operationism is a characteristic of the verificationists. The accumulation of positive evidence in "support of hypotheses" is commonly cited in the report of research studies by Rogers, within the conceptual system. Rogers asserts: "Nursing's conceptual system provides a frame of reference in which to lodge observations. The process of identifying meaningful relationships between knowledges becomes possible."^{2(p103)}

"Unexpected relationships" from "empirical evidence" are included in an effort to "support hypotheses" or to "raise new questions for further study."^{2(p109)}

In a recent interview, Rogers indicated that a different use of the word verification is meant, which is not necessarily associated with the verificationist philosophy of science following the logical empiricist criterion of meaning for testability (M. E. Rogers, personal communication, 1983). Scholars of the Rogerian conceptual system soon learn that definitions of terms are to be checked against the dictionary rather than against any particular school of thought.

CONTRASTING DEFINITIONS OF "VERIFICATION" AND CONCOMITANT PROBLEMS

Several dictionaries of the English language were consulted for the definitions of *verification*, *verify*, *verified*, *evidence*, and *in evidence*. The use of verification according to dictionary definition is one of validation or confirmation of truth claims by empirical evidence, sense-perceptible events, documents, formal assertions, actions, signs, indications, or objects: manifestations that are clearly visible or conspicuous.

Little distinction is made between the dictionary definitions and the criterion of meaning for testability defined by the verificationists. Empirical evidence is that which is commonly understood to be acquired through "five-sense perceptible things" and, as applied to other persons, is given in behavioristic terms (external manifestations through speech, action, or physical attributes).

Evidence in both sources is clearly three-dimensional and one-sidedly reduced to matter and material things. What problems does this present to the investigation and inquiry about four-dimensional realities such as human and environmental energy fields? What alternatives exist? One-sided evidence does not reflect the integral nature of human and environmental fields that are manifested in pattern and wave phenomena.

In the Rogerian conceptual system, unitary human beings are energy fields. Energy is known to be both particle and wave, thus requiring a "both/and" view. However, if the language is one-sidedly physicalistic, it seems that only the particles will be seen. Wave language is needed so that wave patterns can be seen.

Rogers suggests that parts and the whole cannot be seen at the same time; however, if the energy field is identifiable by pattern and energy and if energy is both wave and particle, the pattern does manifest both wave and particle. Pattern has not been adequately defined within the system, and the definition is being refined (M. E. Rogers, personal communication, 1983). However, for purposes here, pattern is that which persists throughout mutual process and is retrievable; it provides continuity in change.

VIEWS OF EVIDENCE BY CONTEMPORARY PHILOSOPHERS OF SCIENCE

Laudan, contemporary philosopher of science, observes that "extensive scholarship on meta-scientific evaluative criteria for assessing theories makes it vividly clear that the views of the scientific community

about how to test theories and about what counts as evidence have changed dramatically through history."^{3(p247)}

Evidential experience is data that are directly given. Kant uses the word *effaro* (intuitive) to express what is meant by evidential experience (O. Wiggins, PhD, unpublished data, 1983). Logical positivists, however, say there is only one kind of direct evidential experience: sensory experience (five-sense perceptible things).^{10(p39)} This requires the scientist to describe the sense perceptions by which statements are to be falsified or verified. Carnap⁶ does not concern himself with individual differences of perception between observers as long as the same language is used to describe the same object perceived; Carnap is less interested in perception than in verbal report. Later, Hempel and Brodbeck, in extending this view to the social sciences, required statements of fact to be "interpersonally" verifiable (O. Wiggins, PhD, unpublished data, 1983).

Physicalistic language is taken to be the universal language by logical positivists for the unity of all sciences. Carnap acknowledges other forms of knowledge by which people live, but these are not considered truth (religion, metaphysics, and ethics).⁶

In contrast, American pragmatists assert that evidence consists of vehicles of truth. Lewis, a conceptual pragmatist of Harvard University, comments: "Nothing could be more alien [to either James or Dewey] than recognition of physicalistic conceptions as the exclusively significant vehicles of truth."^{11(p11)}

The nature of evidence reflected in contemporary philosophy of science does vary from one philosophy to another (eg, positive cases, negative cases, and anomalies).

Indeed, it is commonly located by authors' subject under headings about systems of explanation or in probability statements and methods of evaluating knowledge. Evidence is characterized as "observation statements" derived from "theoretical statements" in a hypoductive system of explanation.

The system of explanation described by Popper¹² and developed by Hempel¹³ is a deductive system, which provides consistency but does not generate new knowledge. The observation statements are low-level generalizations describing the world in terms that, according to Ayer, Brodbeck, Nagel, and Cohen, must be given in testable language.^{3,14}

Furthermore, testable language turns out to be the physicalistic language of five-sense-perceptible things, patterned after Carnap's suggestions for the sciences.⁶ A unity of all sciences was the goal. Inherent in physicalistic language in the social sciences is a one-sided preference to the "body": a contemporary manifestation of a Cartesian dualism.¹⁵

During the last 20 years, philosophers of science, including Feyerabend, Popper, Laudan, Lakatos, and Medewar, have recognized that facts in the world are not simply "real" facts to be discovered but, rather "interpreted facts" determined by what the knower brings to the observation.^{3,14}

Facts are thus as theoretical as theoretical statements. Therefore, testing observational statements against the "real world" only allows conclusions based on the accepted theories (theory-laden facts). More significantly, if observation statements are given in physicalistic terms, potentially, the world will be seen and

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MICROPHYSICS POINTS TO THE NEED FOR A "NEW LANGUAGE" FOR PATTERN SEEING

Considering the position of contemporary microphysics, in which Einstein offered his famous $E = mc^2$, energy is both particle and wave.¹⁶ Three centuries of one-sided preference for the science of the particles (material) has given scientists the language and knowledge of matter. Now a new language is necessary so that wave patterns can be seen and phenomena can be described for a pattern-seeing generation.

Philosophers' view of facts as interpreted (theory-laden) concurs with the view of scientists in microphysics. The Copenhagen interpretation of quantum mechanics¹⁷ accepted it as a complete theory, "even though it gives no explanation of what the world is 'really like,' and even though it predicts probabilities and not actual events. They accepted quantum mechanics as a complete theory because quantum mechanics correctly correlates experience."^{18(p99)}

Zukav comments: "Quantum mechanics and, according to pragmatists, all science is

the study of correlates between experiences. De Broglie's equation, which merged the wave-particle paradox correctly correlates experience."^{18(p99)} Zukav further observes that "a wave function also is a mathematical concept which physicists have constructed to correlate their experiences."^{18(p108)} The correlation is with the scientists' "experience" not "experiments."

It seems that the problem of evidence is related most directly to (1) definition of experience by reference to five-sense experience and (2) differentiation between theoretical and observational statements within the hypoductive system of explanation. Both points are contemporary manifestations of Cartesian mind/body dualism. The definitions of evidence and meaning have become narrowed over time by virtue of the verificationist criterion of meaning for testability, and these criteria are the prevailing view. Are there other alternative criteria for testability?

ALTERNATIVE CRITERION

The phenomenology of Husserl provides a different validity through a phenomenological analysis, and its criterion sidesteps the problem of dualism between theoretical and observational statements.^{19,20} For Husserl, as for Kant, the knower is included in the critique of knowledge.²¹ However, Husserl, in contrast to Kant, holds that persons in the world are and can evidence themselves in experience in which there is no distinction between mind and body nor between consciousness and the world. Both are integral.

Phenomenological, evidential experi-

ence is not limited to sensory experience but includes multiple modes of awareness (possible as well as actual). The distinctions of mind and body in the natural sciences are abstractions, primarily because three centuries of focus on the body has developed a clear distinction of the body. However, this abstraction (mind-body split) presupposes that the person is known as a "mind-body neutral" (O. Wiggins, PhD, unpublished data, 1983). This means that, in experience, the person must first be known as unitary in a prescientific way.

In many of Rogers's early writings, particularly in the 1960s, evidential experience is of a broader nature than that acquired through five-sense experience.^{22,23} Citing Polanyi,²⁴ Rogers suggests that nursing science derives its meaning in reference to its prescientific knowledge.^{2(p41)}

Polanyi, an intuitionist, acknowledged in the writing of the scientific community since the 1960s, underwrites personal knowledge with a phenomenological approach.³ There are marked differences between the logical positivist and the phenomenological views of evidential experience. Figure 1 depicts the major differences. Bloom²⁵ describes affective, cognitive, and psychomotor domains as objective sensory evidence. This source is commonly used for curricular development in nursing and is representative of the logical positivist view. Figure 1 contrasts the prevailing view of evidence with the phenomenological view of evidence. Both are considered scientific by their disciplines. The circle on the left depicts the prevailing view in which logical positivists direct the observer to screen out all bias. All that is left for consideration are the

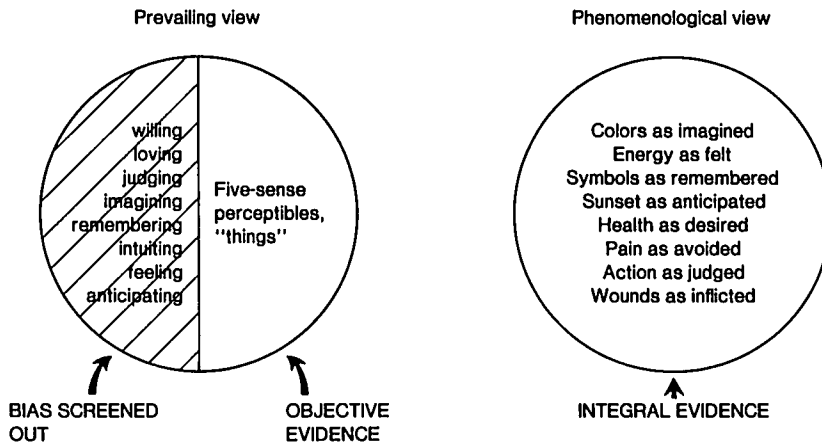


Fig 1. The nature of evidence: the prevailing and phenomenological views.

"things" in the world that can be known solely through five-sense perception. The circle on the right depicts integral evidence of the phenomenological view which accepts the knower's multiple modes of awareness of the known. This is also referred to by phenomenologist Husserl as the "principle of intentionality" or as "consciousing the world." The evidence of knower and known are not separate but integral.

The benefit of integral evidential experience has the potential to yield new knowledge, in contrast to the prevailing focus in science, through physicalistic language. Phenomenologists concur that an object can be perceived in isolation from the knower (object simpliciter) or as "intended" (integral nature of the knower and the known through reflection).¹⁹ Persons intended are ever changing, never static, transcendent as well as immanent, and potential as well as actual; as such, they require a wave-seeing rather than a particle-seeing preference of the world.

The potential of this criterion of meaning being acknowledged widely in the scientific community is perhaps greater than ever before, as one philosopher of science asserted: "For the first time in history American and Continental philosophers of science are communicating with each other because in one way or another they are all Neo-Kantian" (O. Wiggins, PhD, unpublished data, 1983). The common denominator is that the knower is recognized as crucial in the critique of knowledge.

It appears that the issue of adequate evidence in the science of unitary human beings can be addressed and also benefit from a phenomenological philosophy of science as one alternative. Consciousing the world from this perspective gains access to integral evidence, which preserves an integral relationship between human and environmental energy fields and thus holds promise for the development of pattern seeing of wave phenomena.

SUMMARY AND FORECASTED BENEFITS

If human and environmental fields are integral and are identifiable by patterns in mutual process, why is it necessary to ask the question: Is this an observation statement or a theoretical statement? Both are abstractions, remnants of the Cartesian, dualistic view of humans and nature, in which thought (mind/soul) was one entity and all else was "extended things in nature,"²¹ which were observable and described by observation statements. True knowledge came only through science, the study of these physicalistic things.

In the last 20 years, however, historians of science like Kuhn and Feyerabend have uncovered remarkable evidence of how science developed over the last three centuries. It was not by induction as often as it was through conceptual differences and the social and political pressures of the times.³ Nor were the systems of logic (inductive, deductive, and abductive) adhered to rigorously in the development of scientific discoveries. Feyerabend, a contemporary philosopher of science, suggests, as did early logical empiricists before him (Ernst Mach), that the rules and assumptions of science itself should be scrutinized and not taken as the only source of truth.³

It seems that the social sciences, in their concern about objectivity (avoiding bias in studying other persons), reflect "scientism" more than the basis sciences, including microphysics.

Today, the science of unitary human beings could benefit from multiple perspectives on the same phenomena, if the integral nature of human experience in the

world is accepted. Evidential experience as manifested through multiple modes of awareness, instead of experience delimited to sensory experience, promises to gain access to the four-dimensional nature of wave phenomena and pattern seeing. Focus on and belief in the novel and complex nature of unitary human beings, supported by integral evidence, hold promise of directing compassion and healing energy to others in ways that refrain from categorizing and dehumanizing any individual for any purpose not integral with social responsibility and human freedom.

The ongoing testing of the Rogerian conceptual system cannot be done through the logical empiricist criterion of meaning, testing the hypoductive system for consistency, and then testing correspondence to the world (mind/body dualism). But rather, the system can be continuously tested through the manifestation of the integral evidence of human and environmental fields and through the relationships between phenomena, which arise from integral evidence. Pattern seeing would then be the focus and goal of basic research in nursing science.

Research extending nursing science into multiple situations would then be investigating the manifold, diverse, and multiple patterns of knowledgeable, compassionate service and would be directed from a perspective of learned pattern seeing.

The criterion of meaning would be that of consciousness of the world as phenomenologically experienced by each nurse scientist; centering (bracketing but conventional ways of thinking) and epoché (refraining from premature judgment until essential patterns persist and are retrievable) would be required before and during investiga-

tion. Client perspectives, furthermore, would be integral to the knowledge and understanding acquired.

Nursing science would be practiced from a centered perspective; it is only from such a view that integral evidence and pattern seeing can continuously emerge from the mutual human and environmental

energy field process. Knowledgeable, compassionate service to the public would be the ultimate purpose of the unitary human science of nursing. Art, wisdom, and compassion, underwritten by transcendent imaginative conceptual skill, index the ways of knowing that are integral to this unique science of nursing.

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