

## Philosophical Problems in Medicine and Psychiatry, Part III

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This is the third in a 4-part series on philosophical problems in medicine and integrative medicine. The article reviews basic questions pertaining to the evidence base in science and medicine in general. Most conventional and non-conventional medical approaches are used without compelling evidence for their postulated mechanisms of action. I argue that it is not possible to construct a common philosophical framework unifying the basic metaphysical assumptions of biomedicine and non-conventional systems of medicine at a conceptual level. I show that metaphysical assumptions embedded in any particular system of medicine cannot be independently verified as more or less true, but only shown to have greater or lesser degrees of internal coherence with respect to the system of thought to which they belong.

In a practical vein, the evolution of a particular system of medicine toward greater integration with disparate healing traditions is determined by social, economic, and political issues; local factors that influence access to care; and patient preferences. Assumptions about causality determine perceived legitimate meanings of “assessment” and “treatment” from the perspectives of individual healing traditions, and different assumptions about causality in individual systems of medicine bias understandings of “evidence.”

### Disparate Systems of Medicine Have Different Meanings of Evidence

“Evidence-based medicine” has become a catchphrase in contemporary Western medicine. The term reflects a widely shared skepticism among conventionally trained physicians about the validity of modalities used in non-Western systems of medicine. This skepticism is based on the assumption that conventional biomedical approaches are a priori legitimate because they are evidence-based, in contrast to most non-conventional approaches, which presumably lack legitimacy because of the absence of good evidence.

Questions about evidence in medicine pose their own important philosophical and practical questions related to problems of deriving a methodology for determining which phenomena have existence (ontology) and establishing criteria for assigning phenomena to classes (epistemology). Disparate systems of medicine posit that illness and health phenomena are knowable using different kinds of information, ranging from conventional physiological descriptions to theorized “subtle” energies. These distinctions are often implicit in the languages and conventions of different healing traditions. Practitioners of all traditions assert that they can make accurate descriptions of symptoms based on a patient’s self-reported illness narrative, and that a skilled practitioner can correctly interpret the clinical significance of such symptoms. However, a practitioner trained in a specific healing tradition is seldom aware that all practitioners have been trained to “see” symptoms in ways that a priori exclude certain kinds of information while, at the same time, selectively reify other kinds of information assumed to correspond to phenomena permitted within their respective ontological frameworks.

The medical anthropology literature shows that clinicians from all traditions see symptoms and interpret findings according to the constraints of their unique traditions and training. Therefore, as noted in the first 2 articles in this series, there can be no objective “seeing” and no value-neutral “knowing” in science and medicine. Different ways of seeing and knowing are embodied in different philosophical assumptions about what kinds of phenomena are stated to have existence and are therefore subject to empirical observation. Assumptions about the ontological status of phenomena bias beliefs about information construed as pertinent to establishing claims of existence.

In medicine, assessment involves making inferences about the existence and relative causal significance of phenomena associated with illness. Clinicians are trained to see and assign appropriate degrees of significance to information reflecting phenomena that can have existence in the conceptual framework of their system of medicine. Information that does not correspond to “real” phenomena is dismissed as a spurious claim or explained in terms acceptable to the interpretive model of the parent system of medicine. A particular clinical approach is regarded as legitimate in the context of a particular system of medicine when the existence and characteristics of a postulated mechanism of action or claimed outcome are confirmed by information viewed as legitimate within that tradition. Thus, “validation” of clinical methods in disparate systems of medicine necessarily entails an analysis of information within the context of different presumed phenomenal worlds.

Established systems of medicine rest on methodologies that use observation, intuition, and technological approaches to obtain information believed to be relevant to confirming the existence of phenomena associated with objective signs or subjective symptoms of illness. Historically, disparate systems of medicine have assigned different meanings to the term “information,” resulting in a variety of empirical or intuitive ways to use evidence to verify claims of treatment outcomes. Using varying criteria to characterize information in different healing traditions has resulted in divergent meanings for the term “evidence.”

Contemporary Western science posits that all natural phenomena, including health and illness, can be adequately explained on the basis of a few irreducible entities and processes. Postulated fundamental entities and processes include basic properties of matter and energy and established relationships between matter and energy that can be described in empirical terms in the language of contemporary science. Western science a priori excludes postulated phenomena that cannot be reduced to empirically verifiable phenomena, because claims of their existence violate scientific assumptions about entities and processes that can have existence.

For example, science dismisses the idea that consciousness is a primary kind of phenomenal entity or process, and does not consider the possible existence of subtle energies that do not conform to the constraints of Newtonian space-time. In other words,

Western biomedicine rejects phenomena postulated by non-Western systems of medicine because ontological assumptions embedded in contemporary Western science do not permit the possibility of their existence. However, the list of postulated phenomena excluded by Western science has changed significantly in recent decades, following advances in technology. It is especially important to note that Western science is a dynamic and evolving paradigm open to novel theoretical models when technological advances permit verification of postulated phenomena.

Thus, some postulated phenomena are ultimately regarded as legitimate by Western science, and, by extension, Western biomedicine, when their existence is confirmed by emerging research methods. As a result, we have seen changes in the requirements of a methodology for establishing causal relationships between outcomes and phenomena postulated to underlie mechanisms of action that were heretofore non-verifiable. So what is regarded as good evidence of a causal relationship between a beneficial outcome and particular treatment effect will continue to change in the context of ongoing evolution in medical technology.

There is a snag, however. While Western science and biomedicine continue to evolve in both methodology and technological approaches used to diagnose and treat illness, traditional systems of medicine remain relatively static—resulting in a widening conceptual gap between conventional biomedicine and non-conventional healing traditions in terms of methods used to determine cause-and-effect relationships among treatment effects and outcomes. Thus in some cases Western medicine will evolve such that claims of certain non-Western systems of medicine are validated while claims of others are refuted, so evolution of science and medicine does not necessarily close the gap. In some instances it becomes much wider or irreconcilable (ie, where science claims to refute a postulated mechanism of action), while in other instances ambiguity will likely remain indefinitely (eg, energy medicine) because Western science lacks the concepts and tools to potentially confirm or refute claimed mechanisms.

A corollary of this is that Western science, like any theory of knowledge, is self-referential and self-reinforcing so that its theories and methodologies will likely continue to validate theories and findings that are consistent with its own ontology and epistemology. It has also led to a dilemma: Evidence gathered via empirical means can be interpreted to support conventional scientific theories about phenomena that can exist and, at the same time, can be used to invalidate claims of non-conventional treatment approaches. In philosophical terms, disparate systems of medicine are essentially self-reinforcing sets of ontological assumptions about illness phenomena that bias what kinds of information can serve as valid indicators of illness and health.

In sum, universal standards of evidence are not forthcoming, and, by extension, no impartial methodology to verify the existence or causes of illness phenomena can be constructed.

### **Disparate Systems of Medicine Rest on Different Metaphysical Assumptions**

As stated in the introduction, most conventional and non-conventional medical approaches are used in the absence of compelling evidence for existence of a postulated mechanism of action. Nevertheless, many people subscribe to pharmacological, surgical,

herbal, and other treatments simply because pervasive economic, social, and political factors influence the opinions and preferences of patients, physicians, non-conventional medical practitioners, and their respective institutions.

The philosophical framework of contemporary Western science and conventional biomedicine asserts that postulated causes of illness or improved health that cannot be empirically verified by established conventional methods cannot, by definition, comprise a valid explanatory model of illness and health. However, established non-conventional systems of medicine—including Chinese medicine, Ayurveda, and Tibetan medicine—rest on assumptions about causes of illness and health that radically depart from those of their Western counterparts. For example, *qi* in Chinese medicine and *prana* in Ayurveda posit the existence of an elemental energetic principle present in all living and non-living systems. This fundamental energetic principle cannot be directly observed or measured by conventional empirical methods, just inferred when illness phenomena interpreted by a skilled practitioner point to imbalances in the principle.

Concepts like *qi* and *prana* differ radically from explanatory models endorsed by conventional biomedicine. Methods for verifying existence of phenomena that is implicit in the thought-worlds of these 2 non-Western systems of medicine rest on metaphysical assumptions that are incongruent with philosophical foundations of Western science and, by extension, conventional biomedicine.

Thus, clinical methods employed in dissimilar systems of medicine represent alternate ways of interpreting the significance of phenomena thought to be associated with illness or health. Different ways of interpreting phenomena necessarily rest on divergent assumptions about the existence or properties of phenomena in space and time. Sundry ways of seeing and assigning significance to phenomena are derived from—and lead to—important ontological and epistemological differences between conventional biomedicine and non-conventional systems of medicine. As a consequence, a common philosophical framework unifying the basic metaphysical assumptions of biomedicine and non-conventional systems of medicine cannot be constructed. In other words, there can be no universal methodology shared by all systems of medicine for purposes of identifying or qualifying phenomena associated with illness or health, or for verifying postulated causal relationships between effects of treatments and observed outcomes. However, in the absence of a unifying philosophical framework, it is possible to derive a methodology for constructing integrative strategies on strictly empirical grounds.

As previously explained, assumptions embedded in any system of thought, including all systems of medicine, ultimately stand alone as unverifiable propositions that rest on metaphysical assumptions, social conventions, or both. Different assumptions constitute the philosophical framework of disparate systems of medicine. Assumptions underlying a particular system of medicine possess internal coherence and explanatory power for causes of illness or health *only* in the context of that particular healing tradition. However, assumptions underlying any particular system of medicine are essentially metaphysical propositions about the nature of phenomena regarded as real and, by extension, relationships that exist between phenomena, including causes of symptoms and effects of treatments.

By definition, metaphysical assumptions embedded in any particular system of medicine cannot be independently verified as more

or less true, but rather shown to have only a greater or lesser degree of internal coherence with respect to the system of thought to which they belong. It follows that a strong philosophical argument cannot be made in favor of claims of greater or lesser legitimacy of any particular system of medicine from the perspective of any other system of medicine. According to this relativist point of view, the only available recourse is to analyze assumptions in order to clarify differences among core ontological or epistemological propositions rooted in disparate healing traditions.

### Philosophical Problems Are Related to 3 Models of Causality in Medicine

Assumptions about causality are often implicit in a particular system of medicine and determine how researchers and clinicians interpret phenomena related to illness and health. Assumptions about the nature of causality determine perceived legitimate meanings of “assessment” and “treatment” from the perspectives of disparate systems of medicine. It follows that practical clinical assessment and treatment methods are ultimately constrained by metaphysical assumptions about the *meaning* of causality and the phenomenal nature of those causes believed to operate in illness and health.

It is important to examine causality in medicine because of the relationships between causality and evidence in disparate systems of medicine. For example, if a particular system of medicine assumes that treatments and outcomes are related in ways that cannot be described in terms of linear causality, an empirical methodology for verifying a direct causal relationship between treatment and outcome cannot be achieved. For this reason, conventional empirical methodologies used in biomedical research do not provide an adequate approach for verifying claims of treatment outcomes in systems of medicine in which linear causality is not assumed to operate. In other words, analytical methodologies in medicine are believed to provide relevant information only in cases in which linear causality is assumed to operate. For this reason many established world systems of medicine have not developed rigorous analytical methodologies for inferring causality.

In fact, all the disparate systems of medicine embody only 3 unique models of causality. The first model describes classically accepted understandings of linear causal relationships among 2 or more phenomena. The second model takes into account co-occurring symptoms, treatments, or outcomes that are assumed to be related but that cannot be simply described according to linear causality. For example, in some cases, complex nonlinear relationships may operate in the background, even when phenomena appear to be related in a simple linear fashion. In other cases, relationships among symptoms, causes, treatments, and outcomes are probably “a-causal” in the classical sense. The third model takes into account cases involving 2 or more symptoms or signs, outcomes, or treatments that are related in *both* causal and a-causal ways, according to the above criteria.

Relationships among phenomena associated with 2 or more symptoms or outcomes can probably be described using 1 or more of the above models. For example, the first model (linear causality) can be used to conceptualize illnesses in which findings point to the co-occurrence of 2 or more symptoms, and for which it is reasonable to infer dysregulation at a common biological, energetic, or informational level. When 2 or more symptoms occur close to one another in time, their relationship can shift from linear (direct) or nonlinear

(indirect) causality to a-causality, depending on changes in factors associated with the respective symptoms. In any particular system of medicine, assumptions about causal relationships among 2 or more co-occurring symptoms bias the practitioner’s approach to assessing, classifying, and treating illness.

For example, when 2 or more symptoms are presumed to be related in a simple linear-causal way, the practitioner typically interprets the symptoms as a discrete symptom pattern or disorder. In contrast, when 2 or more symptoms are presumed to be only weakly or indirectly related based on postulated nonlinear relationships, or when they occur together but are presumed *not* to be causally related, the disparate symptoms are generally interpreted as representing independent entities, not parts of a discrete disorder. In a case like the latter, the meaning of “evidence” of efficacy (with respect to verification of treatment outcomes) differs substantially from contemporary biomedical understandings of evidence. In sum, different assumptions about causality in disparate systems of medicine bias models of evidence, and subsequently influence conceptual methodologies and practical clinical methods used to verify the significance of treatment outcomes.

Assumptions about causality determine how relationships among illness and health phenomena are interpreted, and bias understandings of evidence in disparate systems of medicine in various ways. The kind of evidence used to support a belief that a particular clinical approach is effective, or based on verifiable claims of mechanism of action, is related to assumptions about causality that are embedded in the system of medicine from which the clinical method is derived. In other words, the classification of medical approaches according to the verifiability of a postulated mechanism of action or the claimed effectiveness of a particular treatment rests on assumptions about evidence, and therefore, the nature of causality, that are embedded within the parent system of medicine.

When direct linear, causal links are assumed to exist between phenomena postulated to be associated with illness or health, investigators develop formal empirical methodologies to identify and analyze those presumed links. In this case, assessment entails the use of clinical methods to verify links among discrete, observable phenomena. In contrast, in healing traditions in which linear, causal relationships are not assumed to exist—or are assumed to *not* exist—identifying and examining possible links among phenomena has little relevance, and thus formal methodologies are typically not adduced.

Assessment is based on empirical methods establishing evidence that postulated causal relationships exist among 2 or more phenomena. Phenomena are systematically “reduced” until primary causes are established. According to this reductionistic approach, categories of illness are defined based on inferences about similar causal patterns of origin. In the second case—that is, when linear causality is either not assumed or assumed not to take place—assessment is based on empirical or intuitive methods that do not rely on assigning inferred causes. Thus, there is no agreed-upon, perceived reasonable need to establish causality. In systems of medicine in which linear causality is not inferred, categories of illness are frequently defined based on phenomenological similarities that do not rely on conventional Western models of causality. In such a case, practitioners use a conceptual model to match information obtained through assessment with a suitable treatment.

In contrast, a treatment approach is accepted as legitimate in conventional biomedicine when consensus exists on a postulated mechanism of action that influences illness-related phenomena in beneficial ways. In this model, an empirically verifiable relationship exists between the mechanism of action underlying a particular treatment and the described cause(s) of the illness or target symptom. In contrast, when causality is not assumed to operate, the concept of treatment has more to do with intuitive or other non-rational ways of addressing phenomena postulated to be associated with illness. For cases in which classical linear causality is not assumed, targeting interventions at discrete causes of illness does not make sense, is not meaningful, and therefore is seldom undertaken. In such cases, the legitimacy of a particular treatment approach and practical considerations of treatment selection follow from intuitions and beliefs of the medical practitioner who observes or experiences the manifestations of illness of each patient as a uniquely subjective set of circumstances in the context of his or her training. In other words, across disparate systems of medicine there can be no philosophically neutral methodology that “reduces” illness phenomena to empirically verifiable causes and effects. For this reason, unlike conventional biomedicine, many non-Western systems of medicine do not use empirical methods to adduce and validate a standard or best assessment or treatment approach for a particular illness.

### **Diverse Approaches Are Used to Validate Clinical Approaches in Medicine**

Causal inference in contemporary Western science rests on induction, the process of formulating a presumed law of nature based on repeated observation. Induction is broadly accepted as the fundamental, logical basis of contemporary scientific method. By extension, induction is the cornerstone of Western biomedical research methodology.

Expert consensus is another empirical methodology for validating assessment and treatment approaches that is widely used in science and biomedicine. This approach favors reasonable causal inferences based on shared opinions of acknowledged experts. The National Institutes of Health, American Psychiatric Association, and other professional medical associations rely on this methodology to develop consensus statements about clinical methods in medicine. Inferring the validity of a particular clinical approach based on expert consensus is inherently limited, however, because criteria used to select experts are generally both limited and biased. Furthermore, experts’ opinions are often influenced by financial or academic interests. Objective tests of the validity of consensus-based conclusions are seldom performed, and expert consensus statements made during any particular historical period are often at wide variance depending on perspectives and agendas of the individuals who propound them. Finally, clinical approaches in medicine based on expert consensus recommendations generally undergo radical revisions over relatively short periods of time, calling into question the usefulness of previously proposed guidelines as well as the criteria used to formulate them. (A well-known example of this issue in Western medicine is frequent major revisions in the *Diagnostic and Statistical Manual of Mental Disorders*, which results in unresolved ambiguity and debate over the validity of Western psychiatric classifications and diagnoses.) For these reasons, inferences about valid

clinical approaches based on expert consensus are often flawed, incomplete, biased, and unreliable.

### **Some Systems of Medicine are More Open to Integration Than Others**

Any particular system of medicine is “open” to integration with another system of medicine at a conceptual level, to the extent that core ontological and epistemological propositions of each system accommodate those of the other system of medicine. The state of being philosophically or conceptually open to integration thus reflects the capacity of core propositions to evolve into different propositions. Disparate systems of medicine are potential candidates for integration with a particular healing tradition when core assumptions of the respective systems of medicine are congruent. The degree of congruence between core assumptions will then determine the potential degree of integration of 2 or more disparate systems of medicine at a conceptual level. It will also provide clues about issues involved when considering integrating disparate approaches on a practical clinical level.

### **Closing Thoughts on Part III**

The evolution of a particular system of medicine toward greater conceptual or practical integration with any other system of medicine is affected by general social, economic, and political issues; local factors affecting access to care; and patient preferences. These issues will ultimately determine the extent to which a conceptual model of integrative medicine emerges as a clinically useful methodology for developing real-world integrative medical practices. An example of this evolutionary process is the increasing dialog between conventional biomedicine and Chinese medicine in Asia and industrialized Western countries and growth in cross-referrals between conventionally trained Western physicians and Chinese medical practitioners.

In this piece I have tried to clarify important unresolved problems pertaining to evidence and causality in medicine and integrative medicine. Philosophical analysis shows that a shared philosophical framework for Western biomedicine and non-Western systems of medicine is not forthcoming because core metaphysical assumptions of disparate systems of medicine are not verifiable by other leading traditions. Because of this, universal standards of evidence for claims of outcomes and, therefore, a value-neutral methodology for verifying postulated causes of illness or effects of treatments cannot be achieved. In spite of these problems, in a practical vein, the evolution of a particular system of medicine toward greater integration with other systems of medicine can take place when practitioners are open to new ways of seeing and treating illness in contexts where patient preferences and local social, economic, and political issues favor change.

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