

# What is philosophy? (And why you should care)

## A Problem Solving Approach to Critical and Creative Thinking

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Two roads diverged in a wood, and I—

I took the one less traveled by,

And that has made all the difference.<sup>1</sup>

Robert Frost

### “What’s your philosophy?”

Life involves making choices. Choices have consequences. Many consequences are trivial, but some are important, for good or ill. Most consequences of any importance have a positive or negative effect instead of just being neutral. Therefore, decision-making plays a significant role, especially at important junctures on life’s journey.

One of the biggest choices one is faced with in life is whether to question tradition, conventional wisdom, and received knowledge. This is the difference between living a life that is examined and following the crowd. The majority of people choose to follow the crowd and conform to convention. A few choose to set their own compass and question authority. This is to take “the less traveled road.” When one makes this choice, life becomes an adventure.

Broadly speaking, inquiry into life’s fundamental questions is philosophy. Philosophy can assist in clarifying values, deliberating among alternatives, setting priorities based on worthwhile objectives, and making informed decisions based on sound reasoning about outcomes and their consequences. Philosophy is not merely an intellectual exercise. It finds practical use in decision-making, which is central to success in life.

Problem solving is important in life, too. Philosophy is concerned with approaching the grand problems in life, such as life purpose and mission. All of us find ourselves thrown here without an operating manual. It is up to us to figure it out as best we can. Philosophy assists us in doing so by applying intelligence to fundamental questions like, “What’s going on here anyway?”

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<sup>1</sup> Robert Frost. *Mountain Interval*. 1920. 1. “The Road Not Taken.” Public Domain URL= <http://www.bartleby.com/119/1.html>

In addition, everyone needs maps to navigate on life's journey, instead of just taking directions from others and following authority without questioning it. Philosophy helps us criticize received knowledge and conventional wisdom, consider options suited to us, and construct a map of reality called a worldview in order to navigate life's journey.

In short, philosophy can assist us in taking charge of our lives by becoming proactive rather than reactive — taking charge of life creatively and critically instead of just following the crowd and reacting to circumstances. It can also assist us in appreciating our inherent potential and actualizing as much of it as we possibly can in all key areas of life.

The goal of philosophy properly understood is *self-actualization*. Psychologist Abraham Maslow placed self-actualization at the top of his pyramid of needs that motivate us.<sup>2</sup> This pyramid defined the subject matter of humanistic psychology. Maslow later included *self-transcendence*, going beyond ego and its needs, as an essential need at the apex of the hierarchy of needs.<sup>3</sup> This led to the development of transpersonal psychology.

Philosophy as a way of life deals chiefly with *holistic living*, which requires self-actualization and self-transcendence in addition to subordinate needs.

In this sense, philosophy involves *the pursuit of excellence*. Excellence is actualization of full potential, not only as an individual but also as a human being. This aspect of philosophy can be conceived as the investigation of human potential and how best to achieve it. This is not merely an intellectual exercise, but requires full commitment.

There is a lot more to philosophy than most people realize, even if they have already taken some philosophy courses and think it is mostly logic. Philosophy is not just an abstruse academic field. It need be neither distant from ordinary living, nor hard to do for the average person. In fact, just about everyone does philosophy to some degree, owing to a need to figure out life.

A person's personal philosophy makes a difference in the quality of his or her life. For example, one's philosophy of life influences the degree of success that one achieves in unfolding one's potential. Philosophy can be done well or poorly. How one approaches one's philosophy of life has far-reaching consequences. It

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<sup>2</sup> A.H. Maslow, A Theory of Human Motivation, *Psychological Review* 50(4) (1943):370-96. A. H. Maslow. *The Farther Reaches of Human Nature*. New York: The Viking Press, 1971. Maslow's theory was expanded into a more empirical form in Alderfer, Clayton P., *Existence, Relatedness, and Growth; Human Needs in Organizational Settings*, New York: Free Press, 1972.

<sup>3</sup> Maslow, A., & Lowery, R., Editors. *Toward a Psychology of Being*. New York: Wiley & Sons, 3<sup>rd</sup> Edition, 1998.

not only affects one's purpose, goals, priorities, and boundaries, but also one's values and attitude.

Through our personal philosophies of life, we adapt to ourselves the prevailing cultural worldview that we use as a map of reality. Generally, we choose to associate with those with a similar philosophy of life, or at least a compatible one. So, asking at the outset, "What's your philosophy of life?" may be more relevant in the long run as a conversation starter than asking, "What's your sign?"

The word "philosophy" has a broad range of meaning. For example, philosophy can be conceived as:

- An academic discipline
- A body of knowledge that addresses fundamental problems
- The history of what great thinkers have expressed
- A method of investigation based on reasoning
- A worldview
- A justification for a lifestyle
- A way of life

Philosophy began in ancient times, before there were universities and academic fields. Some people thought and felt deeply about life and turned not only to poetry, art, sculpture, and drama for discovery and expression, and to religion for answers, but also to "philosophizing," or reasoning about fundamental questions.

Everyone philosophizes in some sense, because everyone seeks reasons. Moreover, everyone necessarily acquires a philosophy of life in the process of growing up and is guided by this worldview.

Philosophy in the broad sense of reasoning about fundamental questions and constructing a worldview is something that everyone does, often without realizing it. However, there is a significant difference between acquiring a worldview unconsciously and developing one consciously and intentionally.

According to the ancient Greek philosopher, Aristotle (384-322 BCE), all speculation arises out of wonder. This wondering about oneself, others, and one's surroundings begins very early in life. Every new parent learns quickly that small children love asking the question "why." This is the beginning of enquiry sparked by wonder, through which one acquires a worldview as a map of reality.

Human beings are defined as rational animals. "Rational" means being able to use reason as a specifically human form of intelligence. Humans are said to be different from other animals since humans use reason as their principal guide, while other animals chiefly depend on instinct.

“Reason” is actually an outmoded term, since the discovery that there are many different kinds of intelligence. Reason used to mean exclusively the application of intellectual intelligence. That concept must now be broadened to include other types of intelligence as well.

Other animals are intelligent rather than automatons, but their intelligence is different from human intelligence. Animal intelligence is said to be of a “lower order,” because animals use lower order generalization and logic.

Reason employs higher orders of generality and logical operations, and is capable of greater universality. For example, humans can conceive of the universe as a cosmos, that is, an ordered whole, in which conceptual forms are universal rather than particular, and where change exhibits regularity. As such, the cosmos as ordered and regulated by laws that are discoverable stands in contrast to chaos as randomness, where everything is indeterminate.

Mother Nature takes care of other animals for the most part, because their needs are simple. However, human beings have evolved a more complicated lifestyle and therefore must use reasoning to solve life’s problems. As civilization becomes more complex, problem solving ability becomes ever more central to meeting challenges successfully. Hence, reasoning with intelligence grows in importance.

What does it mean to reason intelligently? Human beings seek to understand themselves and their environment. Reasoning is based on perception, conception, understanding, and inference.

- *Perception* is sense experience of particular objects inked as facts and events.
- *Conception* classifies particular objects in terms of general categories of thought.
- *Understanding* attempts to comprehend the *particular* in terms of the *general* or *universal* by relating percepts and concepts through predication, resulting in descriptions, or statements of fact, such as assertions and denials, as well as general propositions.
- *Inference* relates propositions through logical implication, connecting the general and particular arrived at through perception, conception, and understanding in chains of reasoning, using induction and deduction.

Through sense experience, human beings *apprehend* the particular, as do other animals. Through human intelligence and reason, humans *comprehend* the particular in terms of the general, or universal, and communicate thoughts, or ideas using language.

The rational is often opposed to the “irrational,” meaning passion. The term “irrational” has the pejorative sense of being wrong, not just intellectually but

also morally. The idea is that mature human beings need to use reason to control passion.

However, cognitive science is showing that the distinction between reason and passion is intellectual and not factual. Research reveals that rather than there being a sharp distinction between reason and passion, many factors operate subliminally in coordination with each other. Trying to separate them is not possible. False distinctions lead to misperception of facts and faulty reasoning.

It would be more appropriate to distinguish the rational and non-rational, where “rational” means the logical operations of the mind, and “non-rational” signifies values, preferences and desires that motivate. These factors work in tandem in those whose personalities are integrated. Suppressing or exaggerating either results in abnormality.

Another way to looking at this is in terms of meaning. On one hand, particular terms denote objects, properties, relations, and functions. General terms denote classes, categories, or types. This is called denotation, or reference.

Terms have connotation in addition to denotation. Connotation includes the additional meaning that is associated with a term. Much connotation is non-rational, for example, involving value and feeling.

Denotation gives terms specificity, while connotation provides richness. Science is chiefly interested with denotation, or reference, while poetry is concerned primarily with connotation, or richness. This distinction is sometimes expressed in terms of a distinction between thought versus feeling, matter (what) versus manner (how), sense versus reference, logic versus rhetoric, and reasoning versus persuasion.

Denotation is mostly conscious and recognized, while connotation is largely unconscious, or subliminal. While connotation often remains hidden beneath the surface of awareness, it still influences the mind powerfully. While reason may appear to be independent of feeling, the nature of language connects meaning with feeling through connotation, thereby coloring denotation and generating a subjective bias.

Different branches of knowledge are distinguished by subject matter and method. Philosophy is one sort of rational activity among others, like science. Both emphasize rationality in the sense that their subject matter and methodology depend chiefly on applying logical operations to generalizations.

What distinguishes philosophizing from other types of problem solving is that philosophy is concerned with comprehending the whole of life and the universe, and what may lie beyond, in terms of key fundamentals. Therefore, philosophy must integrate the rational and non-rational if it is to be comprehensive.

William Blake (1757-1827) wrote and illustrated his famous poem, "The Marriage of Heaven and Hell," in part to counter the underlying presumption of Enlightenment philosophy about the centrality of reason, leading to a positive connotation for reason and a negative one for feeling, or passion.<sup>4</sup> Blake was also reacting against the prevailing religious ideology that condemned the passions as sinful.

Blake countered that life energy motivates and reason guides. The heart without the mind is wild, and the mind without the heart is dry. Therefore, a balance between head and heart is necessary. Reason is necessary to channel the passions in suitable directions, but the passions are the driving force in life, not reason.

The ancient Greeks expressed this symbolically in myth through the interplay of the Apollonian and the Dionysian, the Olympian and the Chthonic, that is, between order and primal energy. This interplay is dynamic and involves both conflict and cooperation, both individually and socially. Strong individuals and societies integrate order and energy successfully, while weak or rogue societies suppress one and exaggerate the other.

Since science seeks to explain how things stand in the world based on observation, scientific seeks to isolate the objective from subjective bias. Therefore, science does not seek to integrate the non-rational with the rational, but rather to use the rational to study the non-rational, for example, in psychology and the social sciences. Scientific thinking is only one mode of thinking and to take it as paradigmatic does violence to human integration.

Human beings use many modes of thinking. Cognitive science has discovered that the various modes of thinking are structured in brain functioning. Some modes of thinking can be called consciously and intentionally, but it is simply not possible to control the way the brain functions. The ideal of isolating one mode of thinking from the others is impossible to accomplish, either intentionally or through the imposition of methodological constraints, because they overlap in brain functioning.

Philosophy seeks to comprehend the whole in terms of what is fundamental. Because philosophy encompasses all possibilities, its subject matter is the most comprehensive of all, and its methodology is the most general. Philosophy uses many modes of thinking. The history of philosophy can be read as a "dialectic," or give and take among these various modes of thinking, much like the dialogue of a debate, instead of as a historical record of opposing views.

Even though philosophers use a variety of modes of thinking, philosophy is generally considered abstract owing to the generality of its subject matter and

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<sup>4</sup> William Blake. "The Marriage of Heaven and Hell."  
URL= <http://www.gailgastfield.com/mhh/mhh.html>.

approach. We generalize by abstracting what is common from the particular. Philosophy seeks to explain conceptually the particular in terms of the universal.

Conceptual generalization is an essential aspect of learning a language, and it comes almost effortlessly even to a small child. Human beings learn how to see what is common in order to classify objects and categorize knowledge. By comparing objects of experience to others against names of classes of objects, like “cup” and “chair,” the child learns to apply such classifications correctly.

Some of this classification involves particular objects or individuals, like “me,” “mummy,” and “daddy.” A great deal more involves classification of classes under which a great many similar objects fall. For example, the class denoted by “rye bread” includes all instance of bread made from rye flout. The class denoted by “bread” includes all types of bread. The class denoted by “food” includes bread and all other kinds of sustenance. These classes are of successively higher levels, or “orders.” Ordering is a powerful tool in conceptualization, and it enables nested layers of increasing greater degrees of generalization to be built on top of each other.

This to generalize ability is bound up with the ability to use language. In learning how to use language, a child learns to generalize through trial and error. The ability to generalize provides the foundation for communication through language by expressing ideas based on universal concepts.

Universal concepts encompass many particulars. The universal concept of a human being includes all possible men, women, and children. General propositions that sum up many particular ones are examples of abstracting from the particular to arrive at the general. For example, “All human beings are mortal,” is the summation of all “X is mortal,” where “X” denotes a particular human individual.

Examined from the logical point of view, a general concept is a “set,” or class of things having a common attribute or characteristic that defines membership in the set. For instance, all chairs are members of the set denoted by “chair.”

Not all categories are sets or classes whose members are objects. Actions and events are also categorized, as well as patterns of action and varieties of events. These involve higher degrees of abstraction than classification of objects, because no material object corresponds to an action or event. Moreover, higher orders of abstraction are possible by generalizing about generalities.

Quite obviously, generalization is involved in speaking of just about anything, and it enables sophisticated thinking, such as mathematics and the sciences. Generalization is a kind of shorthand that the mind uses to deal with a great deal of information simply, both in thinking and communication. Abstraction of the universal from the particular is a characteristic of reason as a highly developed level of intelligence.

Where, then, does philosophy come in? Philosophy deals with the most general and most basic. For example, the most abstract aspect of things is existence or being, and the correspondence of knowledge and being is truth. The term “being” covers everything that exists, and truth includes knowledge of anything whatsoever that accords with actuality.

Philosophy is the most general type of problem solving in that it is concerned with key fundamentals, that is, the most general level of explanation. All knowledge began with questions. Especially important were “why” questions about reasons and causes and “how” questions about methods.

This questioning led not only horizontally in the direction of acquiring more information, but also vertically in the direction of discovering fundamental reasons, or explanations. It also led to the development of different methodologies suitable for different purposes.

The various branches of knowledge developed from the explanations that such general questions elicited as different methods were found to suit different types of subject matter. Each branch sought to establish a solid foundation for knowledge by pushing back to fundamentals.

In the West, philosophizing began in ancient Greece. Those who enquired into fundamentals were called “philosophers,” meaning lovers of wisdom. The early philosophers initially sought to discover the first principle or principles of reality. Answers already existed in myth, such as the creation myths that all cultures developed in their infancy. However, these accounts were in the form of stories rather than reasons. Early philosophers sought explanations in the form of first principles and causes instead myths and symbols.

Greek philosophers did not abandon or reject myths and stories, but rather, they complemented them with explanations based on reasoning. Plato (c. 427-347 BCE), one of the greatest of the Greek philosophers, often used myths and set his *Dialogues* within narratives, usually featuring his famous teacher, Socrates (c. 469 BC–399 BCE). However, his work is primarily the quest for explanation based on reasons rather than on allegories, metaphors, or other poetic techniques.

Socrates is often considered preeminent among Greek thinkers, even though he wrote nothing. Since he was such an interesting and intriguing character, Socrates provided Plato with a convenient bridge for linking narrative and discourse. Aristotle, who was Plato’s most famous student and equaled his teacher in reputation, is said to have spent his final days absorbed in the ancient Greek myths.

Myth, story, poetry, drama, and song communicate more through the connotation inherent to symbolism, which relies more on a web of associated meaning than on precise reference. In contrast, to the richness of meaning that poetic means of communication provide at the expense of precise reference,

discursive means aim at maximizing precision in explanation. Hence, rational discourse prefers the exactitude characteristic of precise denotation to a broad but imprecise range of significance characteristic of rich connotation.

Prior to the flowering of rational discourse, symbolic means of explanation were common in all cultures, many of which had highly developed traditions of art, music, song, poetry, drama, and story-telling. At a certain point in time, however, a desire arose to be more precise in explaining humanity and nature in terms of first principles and fundamental causes. This quest explanatory exactitude led eventually to the development of scientific methodology, using exacting observation and mathematical precision, and eventually requiring the application of technical apparatus.

Symbolic means of communication and discursive ones are not mutually exclusive or necessarily in conflict. In fact, they are often complementary when they enable the same subject matter to be approached from different angles. Discourse was never meant to replace symbolism, and they have remained key means of human communication down to the present day. Because they have different capabilities, symbolic richness and conceptual exactitude are both required for meeting the challenges involved in fashioning accounts of nature and humanity using the entire spectrum of significance.

Symbolic richness has certain advantages over more precise discourse in certain cases, and vice versa. For example, the symbolic is better capable of communicating the subject and integrating subjective and objective, whereas the discursive is particularly suited to articulating the objective.

For example, the myths, stories, drama, and epics were particularly concerned with the human condition. They represented human beings confronting life's challenges and vicissitudes in paradigmatic ways before rational discourse was widely used. However, the richness of narrative and poetry often lacked specificity. Conclusions were left to the audience and often seemed ambiguous when people compared notes about their impressions.

The ancients were consumed with the purpose of human life and how one might live in such a way as to unfold one's maximum potential as a human being. Hence, the early philosophers' questioning arose from the desire to comprehend the human condition based rational principles in addition to the symbolism of myths and stories.

Philosophy signifies the love of wisdom. The Greek word *philos* means love, or friendship, and *sophia* signifies wisdom. Wisdom is concerned with such fundamental questions, not only because of wonder. Wisdom involves guiding one's life using reason instead of being led by one's desires and emotions. Moreover, wisdom is most practical, for wisdom involves not only gaining knowledge but also using knowledge to guide action.

For the ancients, philosophy was not an abstract activity. Rather, it was a way of life in accordance with reason, in order to unfold full human potential as both an individual and a citizen. A lot of thought went into this preceding the human potential movement in the Sixties.

In ancient Greece, the term “philosopher” meant something akin to what “seeker” signifies today. Philosophy involved a mindful quest for self-unfolding based on what is fundamental to life’s purpose, rather than mindlessly pursuing the trivial and peripheral.

The Greek philosophers of greatest influence were Plato and Aristotle, since they wrote a great deal and most of it was preserved. However, Socrates wrote nothing. Yet, Socrates was arguably the greatest philosopher of ancient Greece. He is considered the greatest because of what he was. More than any other person, Socrates was the paradigmatic seeker after wisdom whose quest established the Western intellectual tradition on the path it has followed since that time.

Socrates is considered the greatest philosopher of the Western world largely because he demonstrated through example what philosophy is and what it means to be a lover of wisdom, which is what “philosopher” means in Greek. A lover of wisdom relentlessly pursues truth, whose reward is abiding happiness, while others seek for worldly success through accumulation of fame, fortune, power, and pleasure, in a vain attempt to satisfy their desires.

Socrates is famous for his commitment to asking fundamental questions and acting on conclusions that he arrived at. Like Jesus, Buddha (6<sup>th</sup> century BCE), and many other great teachers and way-showers of humanity, Socrates never took pen in hand; yet, his example, which was recorded by others, was deep and far-reaching.

Most of what is known about Socrates is through narratives in the form of conversations, or dialogues, related by Plato. Like the gospels of the evangelists, Plato’s dialogues were meant to be teaching stories, not biography. Therefore, it is not possible to determine now what was added for dramatic and narrative effect, and how much as an emphasis of doctrine, or even an expansion of it.

Even though Socrates composed nothing other than his own life, he shaped Western culture in a formative way, providing the impetus of a rigorous approach to issues of fundamental significance for life through rational discourse. In the *Dialogues*, Plato presents Socrates as the prototypical seeker of wisdom, a person of exceptional intellectual, ethical, and esthetic sincerity willing to pursue truth regardless of the cost.

In the end, this pursuit did cost Socrates his life. He was condemned to death for impiety toward the gods and corrupting the youth of Athens by questioning authority. Since then, many people of principle followed the example that

Socrates set. The freedom of thought and expression that we now enjoy in the West was a hard-won right.

Above all, Socrates sought for truth by discriminating between truth and untruth. The example that Socrates provided through his quest made philosophy a fundamental human activity in the Occident.

Socrates broached almost all of the enduring questions that established the subject matter of philosophy as a discipline of enquiry and field of study:

- *Metaphysics* enquires into what is.
- *Physics* enquires into how things stand.
- *Epistemology* enquires into what we can know.
- *Ethics* and *political philosophy* enquire into what we ought do.
- *Esthetics* enquires into what we ought appreciate.

Notice that these questions are divided into questions about what *is* — the *real*, in contrast to what *ought* to be — the *normative*. The former deals with *facts*, or evidence, while the later deals with values, preferences, and priorities as *norms*, or rules.

The methodology involving questioning that Socrates developed is known as *dialectic*. The Socratic method is a search for wisdom through debate of issues, which begins with stating such issues as clearly, concisely, and precisely as possible in order to remove confusion.

The dialectical method that Socrates developed established the outlines of future philosophical pursuits as a quest for wisdom through both rational means such as logical argumentation based on evidence and extra-rational means like insight and intuition. Debate of such issues through give and take continues to this day. For example, it underlies the judicial process of trial by jury and the political process of electing representatives in a democracy, as well as the process of legislating.

## Doing philosophy

Broadly speaking, doing philosophy is a human activity that seeks to comprehend the whole, including nature and the human condition, as well as what may lie beyond them. This requires enquiry into the key fundamentals of totality, which encompasses both possibility and actuality.

Key fundamentals are concepts and principles that underlie the answers to basic questions, such as, what is the significance and purpose of life, and what does it mean to be human. In targeting these fundamentals, one must enquire into what a satisfactory answer to such a question might look like.

Questions of this sort arise in the earliest human records. Hence, we can assume that this process began in prehistoric times. The early works that survived began as an oral tradition that was recorded only much later.

The quest for answers to fundamental questions had already achieved a rather advanced level of development by the time the records we now have came into being, and many of the responses reflect a relatively high degree of sophistication, even though they are expressed symbolically in story, legend, and myth.

This process of asking fundamental questions is called “philosophizing.” Just as it began in the early history of humanity, this process begins in the early childhood of every individual. It is bound up with learning language.

All children begin learning about life by asking simple questions. During the first few years that a child is learning to talk, every parent is bombarded with “what,” “why,” and “how.” Through these incessant questions, the child attempts to make sense of its environment by using language to formulate and express thought. Through learning language, a child begins to acquire a worldview as a map of reality, shapes it, and tests it by using it in various circumstances, sharpening it by trial and error.

The questions that children ask are often considered silly because they have already been answered and everyone knows the answer. However, such questions were not trivial when they were originally asked. Asking and answering questions led to civilization and culture, and ultimately to science and technology.

Moreover, every parent realizes that not all the questions that small children ask are trivial. Some questions send them to the encyclopedia. Other questions simple enough to occur to a child still puzzle great minds. Questions like this many parents answer in exasperation, “Just because.”

Many non-trivial questions are still awaiting answers. Humanity is far from having answered all possible questions of significance. In fact, some of the most interesting and pressing questions remain without definitive answers. The search for knowledge goes on unabated, and even with increasing intensity. The Information Age is turning into information overload.

On one hand, those who are destined to become philosophers never stop asking fundamental questions even when they mature. Such people remain open, flexible, and intellectually curious. On the other, most people uncritically accept pat answers and eventually stop asking anymore. Their thinking crystallizes, becoming fixed, and their worldview becomes set and rigid.

One might object that scientists, artists, and others like them never stop asking fundamental questions either. How, then, are they different from philosophers?

Different fields are distinguished by their subject matter and methodology. Philosophy is deals with the most universal, hence broadest subject matter. Its methodology is grounded in reason informed by experience and insight. Through this methodology, philosophers attempt to subsume particulars under universals, thereby explaining them rationally.

There are several types of thinking:

1. *Critical thinking* is based on the application of reason, using evidence and logical argumentation. It is especially concerned with analysis and discrimination — breaking things down into their constituents and articulating the implicit. It also seeks to uncover logical missteps, language that does not make sense, and assertions that evidence contradicts, or which lack adequate substantiation. Critical thinking keeps human knowledge on track by reducing error and confusion.
2. *Creative thinking* goes beyond the application of reason and factual evidence gleaned through sense perception by using extra-rational means, such as insight, intuition, imagination, and analogy in order to transcend the ordinary and accepted. Creative thinking contributes to the expansion of human knowledge.
3. *Integral thinking* combines critical and creative thinking in order to integrate the rational and extra-rational. The specialty of integral thinking is synthesis — putting things together into systems and wholes. Such a set of relationships is a web that functions synergistically, that is, in terms of a system yielding comprehensive knowledge exceeding the sum of its elements or subsets taken independently of the whole. What is added is an understanding of structural relationships and functional roles that do not appear obvious when the elements are considered independently of the system in which they figure. Synergism accounts for a huge and important portion of human knowledge.

Reason deals with the universals that relate the particular in terms of the general. For example, all men and women are human beings, members of the species *Homo sapiens sapientis*. Rational argumentation uses universality to come to conclusions through the application of logic. For instance, if Socrates is a man, then Socrates is human, since all men are human beings.

Notice that it is not correct simply to assert that since all men are human beings, then all human beings are men, since “man” can signify a human male instead of a human being in general. Women are also “men” in one sense, since “man” can also signify human beings in general. Because “man” signifies both being human and a male human being, ambiguity and confusion can arise in the absence of qualification. While this example is obvious, many cases are not. Lack of qualification where there is ambiguity often leads to loose thinking that results in false conclusions.

False reasoning is due to logical fallacies. “Sophistry” is the name given to the intentional use of logical fallacies disguised through fancy rhetoric. Reason also deals with identifying logical fallacies. In practice, many fallacies are not obvious and take some skill to detect and expose. Philosophers and logicians are trained in this.

Anyone pursuing universality instead of focusing on narrow self-interest is a philosopher in some sense of the term. Great art endures because of its universal appeal, and great literature is similarly enduring because it captures something of the universality of the human condition. Science can also be considered a branch of philosophy. Modern science is actually a child of philosophy, the branch that used to be called “natural philosophy” as an explanation of natural phenomena based on reason. That was before the invention of scientific methodology clarified such issues by testing hypothetical predictions against experimental evidence in order to formulate generalized descriptions.

Aristotle wrote in great depth for his time on physics, biology, and psychology, establishing the fundamentals of these fields based on reasoning from observation. The rudiments that Aristotle set forth persisted for centuries, until mathematical modeling was wedded to empirical testing of hypotheses to create modern scientific methodology. Many of the original contributions to science and mathematics are extremely ancient, and they arose in the early civilizations of the Asia (India and China), Middle East (Mesopotamia), and Africa (Egypt) rather than Europe, which was a late bloomer.

Broadly speaking, then, philosophy may be considered as a rational activity that asks fundamental questions about the whole. Typically, these questions involve the human condition, that is, the complex circumstances into which all humans find that they are thrown as soon as they are mature enough to be aware of what is going on around them.

Therefore, everyone is called to be a philosopher, since a significant aspect of the process of attaining maturity involves asking fundamental questions. At a certain point in one’s life, one must reflect for oneself, instead of resting satisfied with the answers that one’s education and environment provides.

Broadly speaking, seeking answers to fundamental questions about life is “philosophizing.” Everyone philosophizes in some fashion, since everyone needs to use a model of reality in order to navigate life. Whether one does this consciously and explicitly, using sound methodology, or unconsciously and implicitly, through cultural absorption, makes a great difference to the quality of life that one lives. Some people are *proactive* and others, *reactive*.

On one hand, immature people attempt to avoid asking the deep questions through various means, such as escape and denial. They react to circumstances instead of taking charge of creating their future.

On the other hand, those who are mature rise to the challenge of reflecting intelligently on the human condition and seek meaning in their lives. They are proactive in the sense that they seize the bull by the horns rather than letting themselves be gored by circumstance, or trusting in fate to save them. They identify opportunities, deliberate options, use their freedom of choice to make intelligent and informed decisions, and assume responsibility for outcomes.

Reactive people are content to stumble along, buffeted by circumstance, or to follow the lead of others uncritically. They neither examine themselves nor question received authority. Instead, they become enculturated without being conscious of it. Many flinch from self-examination, and instead either resist what they do not like about life or seek to escape it through either stimulation or withdrawal, or else they remain in denial of that which they do not like and cannot accept.

Those who do not question received authority and the conventional wisdom of their time are reactive rather than proactive. Not being original thinkers, they find themselves at the whim of circumstances that do not fit the normal pattern. Moreover, they find themselves at a loss when conditions change. The majority simply follows the crowd, even if it is over the cliff.

Proactive people examine themselves by consciously and intentionally questioning received authority and conventional wisdom. Many undertake the task with intellectual curiosity, creativity, and due diligence. They build on what others have discovered and invented and shape this input to their own circumstances and requirements.

Proactive people are able to take up challenges creatively, as well as to create opportunity. Reactive people are continually struggling with problems, many of which are of their own making.

Those who do question received authority and conventional wisdom become proactive instead of reactive. They take charge of their lives and create the kind of life they deem will enable them to express maximum potential.

Being flexible, those who are proactive instead of reactive can adapt to shifting circumstances and rise to fresh challenges. They are “the creative types,” the adventurers, and the entrepreneurs. They are also the philosophers and seekers. In Robert Frost’s famous metaphor, they choose the less traveled path and that makes all the difference.

Those who are proactive learn to use critical, creative, and integral thinking to assess challenges and opportunities, and creatively solve problems in terms of “the big picture.” The big picture is the whole with which philosophy is concerned, and which a comprehensive worldview is designed to represent.

Creative problem solving involves:

- Perceiving the situation
- Defining the problem
- Designing a solution,
- Implementing this solution
- Using feedback to adjust.

The first step, perceiving the situation, is critical. Unless one sees the big picture in terms of the whole, one's perception will be faulty and the rest of the procedure will be flawed.

At the heart of life is one's perception of reality. Almost everyone forms a worldview either implicitly or explicitly. Either one fashions one's worldview based on critical, creative, and integral thinking, and adjusts it based on feedback from experience. Or else one simply buys into an existing worldview or ideology, with the likelihood that it will remain fixed throughout one's life, in spite of conflicts that should call it into question.

On one hand, such worldviews are in part justifications of a style of life. To that degree, they are personal, social, and cultural frames of reference.

There are various sects and factions within every religion, political persuasion, and social sphere. Within these subsets are also various ways in which individuals relate. Some are open and flexible, while others are rigid and closed.

What distinguishes an ideology in the pejorative sense is fixed ideas and rigidly held views. For example, some religious sects and political factions are based on ideologies that are built on a foundation of fixed ideas and rigid norms.

All cultures exhibit ideologies that shift over time. Moreover, complex cultures are constituted of subcultures with differing ideologies. Globally, there are myriads of such ideologies that underlie different views of reality. Consequently, there are many ways of viewing reality, many of which conflict with each other, and some conflict with themselves.

There are also individuals, groups, and factions that remain open, flexible adaptable. They continually reinvent themselves in response to changing conditions. They use knowledge *heuristically*, that is, as a system of *working principles* to be adjusted based on feedback from experience. For them, human knowledge is a growing enterprise rather than fixed and determined.

The quest for knowledge seeks to attain an ever more accurate and comprehensive worldview as a template of reality. Philosophizing began in with this search. Philosophers question fixed ideas and rigidly held views, seeking views and ways that which are more comprehensive, more consistent, more

evidence-based, more practical, and more elegant than existing ones, for example.<sup>5</sup>

## What does it mean to be human?

On the other hand, almost all worldviews that have been propounded explicitly generalize from experience. The aim is to arrive at universal principles that are applicable not only to oneself and the members of the society in which one lives, but also to humanity as a whole. For example, one of the enduring questions is about what it means to be “a good person.” This is an enquiry into the criteria of a model human being as an exemplar.

The answer to such a question was initially provided in terms of religious and political ideologies, and enjoined through codes of conduct, laws, and customs. Later, philosophers attempted to state the matter in terms of rational principles. However, the most powerful teaching is by example. The most universal and inspirational teaching about the human condition based on exemplars is found in legends and stories, especially stories of lives of great people.

For example, notable exemplars are found in the great epics, which are often bound up in religious scripture. The stories of Aeneas and Odysseus in Homer’s *Iliad* and *Odyssey*, Socrates in Plato’s early dialogues, Moses and David in Hebrew scripture, Jesus in the gospels, and Siegfried among the European legends are well known in the West.

In the East, The *Ramayana*, which is the story of Avatara Rama, and the *Mahabharata*, in which stories of the five Pandava brothers are interwoven with stories of Avatara Krishna and other great spiritual figures, along with heroes, and heroines, form the basis of education and inspiration for Hindus in India. The life story of Muhammad (c. 570-632) and his companions inspires Muslims, and the story of Buddha, Buddhists. *Journey to the West*, one of the great Buddhist epics of China that humorously allegorizes the spiritual quest, is the story of the travels of a monkey, symbolizing the hard to control human mind in search of enlightenment. It is best known in English as *Monkey*, the title given to Arthur Waley’s abridged translation.

Every culture and civilization has such stories. Among ancient peoples, stories were the primary way of preserving and transmitting culture. Anthropologists have discovered that the stories of primitive peoples whose way of life was preserved are still told today.

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<sup>5</sup> The simpler an explanation, the more elegant it is considered, *ceteris paribus* (other factors being equal).

Such stories continue to enthrall children and adults across the globe and over millennia. Their pervasive and persistent influence is due to their universal character as much as their dramatic appeal.

Human beings feel intuitively that there is more to life than meets the eye. Humans feel a need to seek meaning in life. Asking fundamental questions is the outgrowth of this need that seeks to peek behind the curtain, so to speak. Men and women of all times and places have long sought to lift the veil of ignorance about ourselves as human beings, as well as about the environment we inhabit.

There has also been a long history of asking about what may be hidden from our senses, but which might be available to us through other ways of gaining knowledge. This history is reflected in the world literature, art, religions, and speculative philosophies. The various religions are indicative of different ways that human beings responded to fundamental queries, beginning in the earliest times. Only later did this questioning become specifically rational and discursive instead of symbolic.

The speculative endeavor that is now the academic discipline called “philosophy” is only one way of approaching such fundamental questions rationally. The arts, humanities, and sciences are others that modern civilization has evolved, building on what went before.

Broadly speaking, one’s philosophy is more a matter of one’s attitude in approaching life than of the field in which a person chooses to specialize, especially an academic one. Real philosophers — lovers of wisdom — are found in all walks of life, among the so-called uneducated as well as the learned. Some of the greatest teachers of humankind were illiterate, and many are known only through the reports of others since they wrote nothing. Many more have disappeared in the mists of time, although their impact continues invisibly through the now forgotten consequences they wrought.

The foundation of human civilization and culture was laid in prehistoric times under primitive conditions through processes that are lost to view and concerning which scholars can only speculate. The presumption is that they arose out of the evolution of “human nature” as that which differentiates *Homo sapiens* as a species from other primates. This development took place in response to evolutionary challenges that our early ancestors met successfully by applying human intelligence, whose special characteristic is reason. So it would hardly be reasonable to restrict “philosophy” as the fundamental rational activity to the particular branch of learning that has arisen only recently in the span of human thinking.

Many remembered chiefly as speculative philosophers in the modern sense also made significant contributions to other fields of specialization such as literature, science, and mathematics. For example, Gottfried Leibnitz (1646-1716) discovered the calculus and invented the first modern calculating machine

based on binary notation. R. Buckminster (Bucky) Fuller (1895-1983) was an architect by training and an inventor by trade. Yet, he was also a thinker, writer, and lecturer who gained his principle fame as a philosopher. He is remembered more for his innovative worldview and methodological contributions than the geodesic architecture that initially made him famous as an architect or the Dymaxion car and house that gained him fame as an inventor.

Viewing these different facets of their activity as entirely separate and unrelated is unwarranted. These people approached life as a whole, and their questioning lead them into different fields from the same point of departure.

Fundamental questions apply to everything, but it is not possible to specialize in everything. However, anyone can be a generalist as well as a specialist in a particular field by looking at everything one encounters in terms of "the big picture." The soaring eagle's eye can survey the entire horizon, yet also follow the tiniest movements of its prey far below.

The philosophical mind seeks for the big picture. This seeking does not hamper developing a more specialized focus in a limited area. Having the big picture complements specialized knowledge by connecting it to the whole of existence and the rest of life.

Philosophy deals with the whole, excluding nothing from its purview in the quest for universality. Accordingly, one who philosophizes seeks both to analyze the whole in terms of its parts and also to synthesize these elements in relation to wholeness considered as a system of structural relationships and functional roles.

Aristotle approached biology in terms of the organism as fundamental. An organism is a structural and functional whole, which can be considered not only as a system but also as an individual in a larger system, i.e., nature, on one hand, and reality as a whole, on the other. Being situated in a whole based on structure and function reveals purpose. For example, the purpose of a living organism in relation to nature is survival and reproduction, the end being species preservation. The purpose of an organism in relation to reality is to unfold its full potential, the end being its perfection, where "perfect" signifies being complete.

Looked at in this way, the contents of all the libraries in the world make up the library of philosophy, considered as an ongoing investigation of the whole in terms of everything constituting it. However, the whole encompasses a lot more than is contained in books and other media at any point in time. Therefore, philosophy is an evolving activity with a vibrant present, an ever-growing past, and a promising future.

What is the whole which philosophy approaches? The data of philosophy is experience, the resultant of psychological activities such as being aware, perceiving, thinking, feeling, imagining, remembering, dreaming, deliberating, choosing, and the like. Psychologists would divide these into awareness,

cognition, volition, memory, imagination, and affect as functions of consciousness, which are related structurally.

Consciousness is characterized by knowledge in the broad sense, which includes the subjective pole or the *knower*, the objective pole or the *known*, and the process of *knowing* that links them in *knowledge*. Moreover, human beings are capable of reflecting on experience, knowledge, and awareness itself. Human awareness is *reflexive* in that it is capable of self-reflection and self-referral.

This reflexive ability of consciousness is not a reflex, however. “Reflexive” in the sense of reflecting back on itself or referring to itself must be distinguished from “reflexive” in the sense of automatic and involuntary, as are physical reflexes.<sup>6</sup> Reflexivity in the sense of self-referral can be likened to a feedback loop.

Philosophy studies the range, depth, and breadth of possible experience in terms of key fundamentals. Armed with this data, philosophy then proceeds to reflect on the spectrum of possible experience and the continuum of consciousness that entertains it, using the tools the human mind has available to it. For example, by generalizing about themselves based on similar behavior, humans assume that other humans are similar to them in all essential respects, that is to say, humans share the same nature, including consciousness, knowledge, and experience.

Reflexive awareness, mind, experience, and tools of thought such as logic may be said to be the preconditions for doing philosophy as a human endeavor. Reflecting on these preconditions is called *critical philosophy*, since this endeavor undertakes a critique of fundamentals. As a critique of the process of philosophizing *critical philosophy* is logically prior to *speculative philosophy*, while not necessarily preceding the latter temporally.

Critical philosophy presupposes the mind’s tools for its critique, such as discrimination. These tools cannot be used to examine themselves without begging the question. Therefore, every intellectual endeavor ends in fundamentals involving either assumptions or appeals to self-evidence. This limitation is hardly a fatal flaw. Substantiation in science, which is supposedly

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<sup>6</sup> George Lakoff gives “reflexivity” a different meaning. He uses it to denote the unconscious, automatic, and involuntary functioning of consciousness, like physical reflexes, in contrast to “reflectivity,” which he uses to denote the conscious functioning that may be likened to “looking in a mirror.” *The Political Mind: Why You Can’t Understand 21<sup>st</sup>-Century Politics with an 18<sup>th</sup> Century Brain*. New York: Viking, 2008, p. 9. The logical and mathematical meaning of “reflexivity” is also different. It signifies expressions that refer to themselves, such as “everything is identical to itself,” or the relational formula,  $xRx$ .

the gold standard in the field of knowledge, is based on evidence. Since evidence based on experience is never complete, scientific knowledge is tentative.

The expression of human knowledge is relative because it lacks absolute criteria. The claim that a criterion is ultimate would have to be substantiated by another criterion, and so on *ad infinitum*. Therefore, all reasoning must come to a halt at somewhere that is not capable of being justified as the ultimate endpoint of knowledge.

Key fundamentals or ground principles either (1) are asserted as self-evident, or (2) are assumed or postulated without further proof, or (3) claim to be based on means of knowing that exceed the use of ordinary means such as sense perception, reasoning, imagination and feeling.

1. Categorical-intuitional speculative philosophies assert that their grounds are self-evident to all who are intelligent enough to grasp them. However, claims of self-evidence are arbitrary and are indicative of a norm instead of an objective certainty.
2. Hypothetico-deductive systems rest on assumptions and postulates, and inductive systems arise out of generalizations from observations, all of which grounds remain tentative. For example, the sciences are open to revision based on new knowledge and experience.
3. Religious ideologies rest on scripture taken as an expression of prophetic revelation. Revelation is arbitrarily held to be absolute as a norm of the system.
4. Psychic, occult or spiritual, and mystical views claim to be grounded in non-ordinary experience or cognition. The criterion is either one's own experience, or the testimony of others claiming to be in a position to know and who are credible in making this claim. Nondualists hold that since there is no distinction between subject and object in the realization of nonduality, this realization is its own absolute criterion. However, the logical problem of self-reference is involved in this claim, making it controversial as a criterion, since self-reference notoriously involves a vicious circle, an infinite regress, or an expression that is not well formed.

The issue of criteria is central to logic and philosophy, as well as methodology in general. Justification involves criteria. For example, knowledge is distinguished from opinion and belief by substantiation.

Different disciplines and field of study are differentiated by type of subject matter and methodology. Methodology leading to knowledge claims is dependent the rigorous application of criteria. In the final analysis, criteria other than the logical criteria of tautology and contradiction only yield probabilities. Stated another way, the only certainty is logical or mathematical certainty. However, Gödel's proof shows that no syntactical (logical, mathematical) system can prove its own consistency. Therefore, all human knowledge-claims are ultimately heuristic rather than categorical, probable instead of certain.

A particular philosophy is the outcome of a type of reflection on experience, resulting from questioning of it. Philosophy in general is the history and methodology of such a practice. There are many types of experience, hence, many subjects of enquiry, as well as many avenues of approach and many different methods. Therefore, there are many types of philosophy and many schools of philosophy. There are a great many individual philosophers with different viewpoints and positions. All exhibit different degrees of probability, and none of them are certainly true.

What this implies is that human knowledge is an ongoing endeavor that will never be complete in its expression. Even if a person should attain absolute knowledge, it could not be communicated in language in such a way as to substantiate its certainty, for lack of an absolute criterion that is publicly available. Therefore, when mystics make claims based on special experience, this justification belongs to them alone, being essentially private.

Others must assess such testimony based on criteria that are not absolute. In assessing such claims, one must be careful to distinguish criteria that are objective, in the sense of being publicly available, from arbitrary rules. For example, core beliefs function as fixed norms that regulate boundaries in the conceptual framework of a religious ideology.

Other types of human endeavor, principally the arts, humanities, sciences, and religions, also attempt to address the human condition. They differ from the activity of "philosophy" as this term is usually understood largely in their methodology and the subject matter to which their methods are applied. Broadly speaking, however, the arts, humanities, and sciences are properly deemed philosophical to the degree that they address and illumine the human condition. In addition, critical philosophy analyzes the fundamentals of these fields, e.g., the philosophy of art, the philosophy of history, the philosophy of science, and so forth.

As a result, it is not always clear where the boundary of philosophy should be drawn in any particular case. For example, a shaman attending an ecumenical theological conference was asked about his tribal theology. He responded, "We dance." His answer reveals that meaning and significance are broader than the rational and discursive. Non-rational expression is not necessarily "irrational" in the sense of nonsensical. It can be "extra-rational" in the sense of contributing to knowledge non-discursively. For example, volumes of literary criticism or analytic (Jungian) psychology are often written explicating the richness of a single poem.

Historically, philosophy begins as a primitive cultural artifact, and it is found in various forms as far back as it is possible to go in human history. What preceded the earliest philosophical records is unknown, and anthropologists can only speculate about them based on physical artifacts. Are burial mounds physical artifacts of philosophical ideas? Many anthropologists hypothesize that

they are, speculating that the mounds suggest some conception of an afterlife, which is no longer possible to discern from existing evidence other than possibly in broad outline.

Early *Homo sapiens* differed from closely related species of primates by burying the dead, for instance. Such kinds of behavior were likely motivated by what we might now call proto-philosophical accounts as attempts to express the human condition, however this may have been conceived initially.

Anthropologists do have a good grasp of shamanism, however, since many so-called primitive tribes preserved their ancient heritage in the form of the shaman, or “medicine man” as the custodian of knowledge. The term “medicine” means power, as in “knowledge is power.”

When the fundamentals of a shamanistic worldview are expressed in words, they turn out to be philosophically sophisticated. Indeed, the great traditions of India, China, Japan, Tibet, Persia, Egypt, Mesopotamia, and Greece were shamanistic in origin. Moreover, Western civilization was shaped as much by such roots as by its rational heritage, which was built on the foundations of what preceded and led up to it.

The naïve view is that a gap exists between primitive thinking and philosophizing as an intellectual activity. This is clearly erroneous when examined in the light of contemporary historical knowledge. So-called primitive humans were often quite sophisticated culturally and had highly developed arts and lore before the time that writing dawned.

Every culture began with an oral tradition, and some cultures remain largely oral today. For example, many wisdom traditions remain largely oral, passed from master to disciple in secret. Some traditions have an aspect that is public, or “open door,” and another that is private, or “closed door,” which is also known as “closet teaching.”

For example, some speculate that Plato’s *Dialogues* were his public teaching, but that the private teaching was only imparted to initiates of the Platonic Academy. Many mystical and martial arts traditions have an open-door teaching for recruiting and a closed-door teaching restricted to members.

Fortunately, the West followed the example of the Greeks in pursuing intellectual knowledge openly, especially objective knowledge. What began as philosophy subsequently culminated as science. Owing to the immense material benefits derived from science and its application through technology, Western civilization, based on an intellectual, objective logical and mathematical approach became dominant. The success of its children, the sciences, may have eclipsed Western speculative philosophy, but philosophy’s openness of approach made science possible.

To summarize, the term “philosophy” is used in many ways. Everyone has a worldview, much of which remains implicit. Many presumptions remain hidden and unexamined. Owing to hidden assumptions that are flawed, the worldviews that many people hold do not mesh with reality when tested against experience.

Most people mistake their worldview for reality, which is like confusing the map with the territory it represents. Just as a map is only a two-dimensional depiction of a three-dimensional reality, so too, a worldview is necessarily limited and even simplistic. Moreover, many worldviews contain contradictory assumptions, with the consequence that those who hold them are conflicted or confused.

Philosophy involves examining one’s worldview critically, along with its underpinnings. This involves self-reflection. Self-reflection presupposes a self that reflects. Who and what is that self that is being presupposed? Is this not that which is fundamental, hence, the starting point of reflection?

Inscribed on the lintel of the Delphic oracle were the words, Know thyself, telling those who sought advice that they should begin by examining themselves. Perhaps the most famous saying that Plato attributed to Socrates is, “The unexamined life is not worth living.” The examined life begins with such fundamental questions as, “Who am I?” and “Why am I here?”

There are many trivial answers to the question, “Who am I?” such as giving one’s name or describing one’s status in the world. This question is also often interpreted as involving one’s personality, self-image, or one’s psychological state. While these latter questions may not be as trivial as the former, they are not yet fundamental.

## I think, therefore I am

The philosopher René Descartes (1596-1650) is called the father of modern philosophy. While few are familiar with his philosophy today, he is still widely remembered for saying, “I think, therefore I am.” Why is this non-trivial?<sup>7</sup>

Ancient thought was most concerned with what is. Modern philosophy in the West was most concerned with what we can know about what is. That shift in emphasis began with Descartes.

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<sup>7</sup> Cognitive scientist Antonio R. Damasio argues that Descartes presumed that the mind was separate from the body, so that disembodied thinking was possible. Damasio holds that reason is not separate from emotion because of the way that the brain functions as an integrated system in the human organism. *Descartes’ Error: Emotion, Reason, and the Human Brain*. Kirkwood, NY: Putnam Publishing, 1994.

Launching his enquiry from the vantage of an assumed absolute skepticism, Descartes sought to identify something to serve as a fundamental that was certainly true from which indubitable knowledge could be derived.

Descartes was looking something that could be known as certain in a non-trivial sense, that is, something involving existence. Tautologies are certain in that they are logically necessary owing to their formulation. However, they are trivial because they convey no information about existence independently of symbols. For example, a mathematical equation is logically certain, but it says only that the symbols on one side are interchangeable with those on the other side, but nothing about what exists or how things stand in the world.

In addition to being the father of modern philosophy, Descartes was also a first-rate mathematician and physicist who created analytic geometry and made original contributions to optics. He was well aware that logic and mathematics say nothing directly about the world of existence until they are connected to the world through observations. He was also painfully aware as a scientist that sense experience, which deals with the existence of objects, is unreliable. Therefore, he sought a method based on a foundation that would ground indubitable knowledge about reality.

For example,  $2+2=4$ , in decimal-based arithmetic, based postulates. This equation says nothing about the world until it is applied to objects. As we all learned in grammar school, "You can't add apples and oranges." When adding objects, it is necessary to be sure that all objects are of the same type. It is possible to be mistaken about this, because counting objects depends on sense perception, which is notorious fallible.

The familiar equations of arithmetic are mathematically certain only because they are logically necessary based on the decimal system. However, they say nothing about existence independently of that system. As soon as mathematics is applied to the world, whatever is asserted must be checked against the facts through observation. This is fundamental to scientific method.

Therefore, Descartes was looking for something that is certain in the non-trivial sense of not being a mere tautology, but instead involves existence. However, it must not depend on sense experience, which is fallible.

Descartes believed that he had found this foundation in the experience of one's own existence that self-consciousness makes self-evident to everyone. Everyone agrees that they know they exist just because they think. No one needs to look to the world with the senses in order to know it is certainly true that they exist.

However, this knowledge is not merely tautologous — logically necessary based on the formulation of symbols. "I think, therefore I am," purports to impart knowledge of existence, not through the fallible senses, but through self-

evidence. This is the philosophical significance of, “I think, therefore I am,” that makes this utterance non-trivial.

“I think, therefore I am,” is less an inference than the observation that self-consciousness is tantamount to knowledge of one’s own existence. Being self-evident, this knowledge is indubitable. Involving existence, it is non-trivial.

Descartes thought he had discovered a solid foundation for certain knowledge. He sought to use this foundation as the starting point from which to deduce the rest of knowledge. Descartes was unsuccessful in this endeavor for reasons that are not germane to this enquiry and would involve a detour to consider.

What is important is that he was the first person in the West to assert explicitly that self-consciousness includes knowledge of the existence of consciousness. Because the human conception of “I” includes being conscious of oneself, this self-awareness makes one’s existence as a person self-evident and indubitable. Thus, the most fundamental non-trivial statement that every human person of sound mind who has reached the age of reasons is capable of making is “I am,” and this statement is self-evidently true for everyone.

Here there are four key terms — “I,” “person,” “know,” and “exist.” Each of these terms is important in the analysis of the reflexive nature of consciousness that underlies self-referral using the first person pronoun, “I,” which all human beings can apply to themselves.

“I” is a universal pointer designating the knower or subjective pole of consciousness. “I” designates being a human person. In the general sense, “I” denotes personhood. In every language, the first person pronoun is universal.

The awareness of all human beings is reflexive; therefore, all human beings are self-aware and capable of applying the first person pronoun. The transition from infancy to childhood could even be said to occur with the use of reflexive consciousness, when the child begins to refer everything to self as the center of its world.

The first person pronoun is universally applicable to all in the same way. Everyone can say, “I am,” with the same degree of self-assurance of being correct. However, appreciation of one’s existence does not dawn completely until one realizes the mortality of the body.

On one hand, humans do not experience consciousness as universal in the sense of there being only one consciousness chiefly because they identify their existence not so much with self-awareness as such but rather with the life of the psychophysiological organism, or body-mind. Associating their conscious being with a limited body and mind, humans ordinarily assume that consciousness, knowledge, experience, and existence are individualized, and that “I” is personal in the limited sense of being tied to a particular personality.

On the other hand, “I” designates personhood in the most universal sense, independently of particular characteristics. Everyone assumes that he or she is a separate individual among other individuals, all of whom are different. Yet, just about everyone also assumes that all are essentially the same insofar as they are human, in spite of individual differences. This is the basis of the concepts, person, self, and soul, for example.

Out of these assumptions grew the philosophical conception that all persons are equal as persons, even though they differ as individuals. Subsequently, this idea became an ideal that formed the legal basis of equal rights, equal standing before the law, and equal justice, as well as the notion of popular sovereignty that underlies liberal democracy.

This ideal was enshrined in the founding documents of the United States of America, for instance, namely, the Declaration of Independence, the Constitution, and the Bill of rights, as well as being expressed in Lincoln’s Gettysburg Address. Therefore, this is most definitely a non-trivial idea, even though the questioning out of which it grew may seem trivial to many — often the same people, it might be added, who now enjoy the benefits in which such concepts and ideas subsequently resulted. It was not long ago that the divine right of kings, privilege based on birth, and tribal status based on kinship were prevalent, and they still are in many places.

“Existence” designates the objective pole of knowledge, or known, while awareness indicates the subjective pole, or knower. “Know” designates process of linking the subjective pole or knower with the objective pole or known. In self-consciousness, the knower and known are the same, that is, the awareness identifies itself with its existence.

“Self-aware” designates reflexive awareness as consciousness of self. Reflexive awareness identifies the subject of knowledge or knower — “I” as a “person” — with the object of knowledge or known — the existence of that person — through the process of knowing that links knower, known and knowing in self-awareness, or consciousness of self.

I-ness, personhood, consciousness, knowledge, and existence are all given in the experience of self-referral that occurs whenever one uses the first person pronoun, “I.” What these concepts signify is accounted for by the experience of being self-conscious.

In the experience of pure self-referral, “I am,” these elements are not separate or distinct from each other. What the concepts “consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” are integral to each other as a unity, signified by “I.”

Moreover, this “I” as self-aware existence is a continuum that does not change over one’s lifetime, even though the body, mind, and even personality do change a great deal within the continuum of self-consciousness that one

identifies as oneself and refers to as “I.” Simply put, throughout life, “I am always me,” despite change in age, appearance, activities, attitude, and so forth.

The experience of self-awareness is simple, for it only involves awareness and existence. Being simple, it is available even to small children who can recognize themselves, and apparently to some animals that seem to recognize themselves also, at least as far as can be determined from behavioral experiments, e.g., recognition of oneself in a mirror image.

“Consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” are only distinguished through discriminative thinking and expressed using concepts of considerable sophistication. Human beings only learn to use these concepts as they mature.

Moreover, very few are aware of the nature of consciousness independently of content. There are several reasons for this. The first is that people are usually occupied with daily affairs, so their attention is turned to the world rather than within. Secondly, if when people turn their attention within, they do not find consciousness alone by itself but rather a mind filled with changing thoughts, called “the stream of consciousness.” Most people have not developed power of concentration capable of stopping thought from flowing, so they cannot reflect on consciousness independently of thought even when they try.

Nevertheless, there is nothing in principle preventing one from experiencing consciousness independently, and indeed, there are many reports of people having done so. Those who practice meditative techniques regularly over extended periods have often reported this experience. Such reports are found in the mystical traditions associated with most religions, although they are more common in the East than West. Eastern traditions emphasize absorptive meditation more than Western ones, which consider meditation more in terms of deep rumination or contemplation than absorption in self-awareness.

## East versus West

The Eastern and Western traditions part over emphasis of the subjective versus the objective. While there are many overlapping areas and thus it would not be correct to draw too sharp a boundary, it can be asserted with justification that Eastern and Western thought came to be distinguished by their focus. In general, the East focused on the subjective pole of consciousness — the “I.” Conversely, the West chiefly investigated the objective pole — the world.

Of course, this is not to imply that either East or West entirely ignored the other pole, because they did not. Both East and West made significant contributions to understanding and appreciation of both the subjective and the objective.

Westerners generally prefer an intellectual and rational approach to an introspective one. Moreover, the West rather quickly turned its focus outward onto the objective world and was rewarded with the creation of science and its application to technology through engineering. As a result, the West has often dismissed the introspective East as impractical and “mystical” in a pejorative sense. “Mystical” has even taken on a negative connotation in the West.

Turning attention outward to investigate the world not only resulted in the development of science and technology, but also fostered a predominantly objective worldview based on the success of science. Science became the ultimate arbiter of knowledge, and practicality was an important criterion.

The significance of terminology such as “consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” would be approached as objectively as possible in the West through rational psychology, the predecessor of the science of psychology. Scientific psychology would later come to view “consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” largely in terms of behavioral and physiological correlates to subjective reports, owing to this chiefly empirical orientation that science brought.

Scientific materialism considered mind was an emergent property of matter, since consciousness was a latecomer in the evolutionary process. Moreover, science would seek to explain mind in terms of physiological measurements and behavior observations. The scientific approach assiduously avoids introspection, because it is inherently subjective and cannot be observed and measured through objective means. Hypotheses formulated in terms of the subjective are not capable of being tested empirically.

Consequently, “consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” were considered “philosophical” in the pejorative sense that implies being devoid of real denotation for lack objective reference. As far as many scientists were concerned, mind does not really exist and plays no role at all in science as the arbiter of knowledge.

While this is an extreme view, one might argue that it is the logical outcome of the objective worldview underling scientific materialism. Admittedly, not all scientists are scientific materialists. However, as scientists they did not have any effective way of dealing with scientific phenomena objectively. Therefore, in essence, scientific materialism ruled the day.

Conversely, the East took a subjective approach to investigating consciousness through introspection. There is evidence that the use of meditation and attendant practices was prehistoric, and mysticism seems to pervade the earliest records, such as the Vedas.

In the course of expressing their findings, Eastern mystics evolved a developed terminology of consciousness not found in the West. The terminology

used to report mystical experience was qualitative, which is characteristic of the subjective, rather than quantitative, which is characteristic of the objective.

In spite of some important early discoveries in the East, which the West took centuries to match, Eastern thinking lagged scientifically as time passed. Many Western savants therefore concluded that the subjective absorption of the East was detrimental to progress, in addition to being unscientific.

This is not to say that the East was bereft of objective thinking. Eastern thinkers made important early contributions to philosophy, logic, mathematics, and proto-scientific lore. Nor should the considerable contributions that the West made to mysticism and spirituality be overlooked or minimized, including important philosophical contributions based on mysticism, such as Neoplatonism.

Yet, the focus was different in these two parts of the world. Hence, their cultures and civilizations developed differently also. The greater the separation, the greater the difference became until the two began to meet. Now, owing to developments in communications and transportation technology, East and West are coming together in an age characterized by globalization.

Due to their difference in orientation, the civilization based on Eastern Christianity was closer to the subjective view of the East than was Western Christianity. Hence, Eastern Orthodox peoples were more open to the mystical than Roman Catholics or Protestants. For example, *theosis*, or deification in the present life is key in Orthodox theology. However, the term is scarcely found in this sense in Roman Catholicism and Protestantism, both of which are ambivalent to the notion deification in this life, if they do not reject it as heretical.

Western rational philosophy is usually said to begin with the Greek Presocratics, whose aim was to explain the cosmos by fundamental causes. While various causes were initially asserted categorically. For example, the first of the Presocratics, Thales, stated that all things are from water. Subsequently, these explanations were expanded and developed intellectually.

Plato's philosophical dialogues are based on rational discourse, or dialectic, as a method of investigation and discovery through debate of issues. Aristotle established the supremacy of a philosophical methodology based on logical analysis and observation of facts that would evolve in the direction of modern science. Subsequent thinking followed Aristotle's approach more than Plato's. Plato's works read more like literature, while Aristotle's works are similar to contemporary academic philosophy. In the writings of Plato and Aristotle, one discovers the prototype of Western thinking that persists to the present day.

The Greek philosophical tradition was pressed into the service of nascent Gentile Christianity, which became the dominant religious ideology of the West, spreading throughout the Roman Empire after the reign of Emperor Constantine

in the fourth century. Eventually, Christendom as the interlinking of political and religious authority replaced the Roman Empire as the dominant force in the West.

The early Jesus tradition was diverse before it became Christianity as a religion and then Christendom when the Church rose to political ascendancy. Then, the normative worldview became uniform, and uniformity was enforced as law. As a result, Western thinking remained in this straightjacket for over a millennium, until after the Protestant Reformation and the rise of science.

In the course of its early development, faith, conceived as belief and expressed as adherence to authoritative doctrine, became the norm instead of experience, and mysticism was suppressed. As a result, Western philosophy developed parallel with Western theology as an intellectual pursuit rather than being grounded in mysticism, as was Eastern philosophy.

Anything appearing psychic, occult, mystical, or spiritual rather than religious was forced underground for survival. Now only traces remain of these traditions.

During this period, conditions were substantially different in the East. The Vedic, Buddhist, and Taoist traditions centered their attention on subjective methodology. They sought to plumb the significance of “consciousness,” “I-ness,” “personhood,” “experience,” “knowledge,” and “existence” in terms of experience and to express their findings in a methodology that not only explicated these concepts through testimony but also showed how to gain the experience for oneself through self-discipline and training under experts who had succeeded in their own quest.

Moreover, some of these spiritual adepts are still unmatched in intellectual rigor. For example, exposition of Advaita Vedanta by Adi Shankaracharya (c.780-820 CE), the discourses attributed to Buddha (6<sup>th</sup> century BCE), and the works of Nagarjuna (3<sup>rd</sup> century CE) on the Buddhist Middle Path are unsurpassed as philosophical contributions, independently of their merits relating to spiritual guidance. Ibn Arabi (1165-1240) played a similar role with respect to Islamic philosophy, specifically the Sufi mystical tradition.

While written works are the standard in philosophy, or oral works later recorded, there were many more mystics and masters than the number of extant works represent. Many works have been lost, and mystics and masters did not write anything down.

Jesus and Socrates, who were arguably the most important teachers of the West, wrote nothing. What is known of them was recorded subsequently from eyewitness memory or oral tradition. Since mysticism was suppressed in the West when normative Christianity became dominant, one may suppose that much was lost or destroyed, or was never written down at all, given the inhospitable climate.

Many renowned spiritual teachers of the East chose to write nothing. For example, what remains of the life and teaching of Sri Ramakrishna Paramahansa (1836-1886) and Sai Baba of Shirdi (d. 1918) comes from reminiscences of their followers.

Fortunately, a great many mystics did write of their experiences, and many masters wrote about spirituality as well. While there are many great mystics in the West who did record their testimony, and Western mystical theologians made important contributions to spirituality, too, most of the great mystical and spiritual literature is Eastern.

This literature remained largely unknown in the West until fairly recently, so it did not have much of an impact on the formation of the Western worldview. There was scant knowledge of Eastern thought in eighteenth century Europe, and good translations of Eastern spiritual works did not appear until the nineteenth century. Eastern spirituality only gained a significant foothold in the West late in the twentieth century.

## East meets West

After going their separate ways for thousands of years, East and West are finally meeting. Actually, they met several centuries ago, but under trying political conditions. Europe was going through its colonial stage, and Europeans shamelessly exploited their colonies and looked down on the “natives,” in spite of their venerable cultures.

Even after East and West were no longer ignorant of each other, they tended to ignore each other, because their interests, methods, and worldviews were different, and significant cultural biases separated them. The world is still working through this stage of development, and misunderstanding and prejudice have not yet been overcome.

On one hand, the East regarded the Western objective approach as immature in comparison with its interest in actualizing the full potential of consciousness through its subjective approach to gaining knowledge. On the other hand, the West saw the East as backward and tradition-bound in comparison with the science and technology that were the culmination of the Western focus on the world through the objective approach to gaining knowledge.

Science and technology had the effect of shrinking the world, in effect bringing East and West into closer proximity. Economic development opened the East to the West, since the East was hungry for material progress. Simultaneously, Eastern spirituality spread to the West, since many Westerners were eager for the experience it promised to give.

Through this interaction, East and West discovered that they shared a common ground in monistic and idealistic philosophy, as well as religious

mysticism. Eastern spiritual teachers began traveling to the West, and they found many eager students of meditation. Before long, humanistic and transpersonal psychology were replacing rigid behaviorism with a more open and flexible attitude toward the subjective dimension, even though the challenge of observation and measurement remained.

The meeting of East and West was also affecting philosophy. The predominantly objective worldview of the West and the predominantly subjective worldview of the East would begin to be integrated into a more comprehensive worldview more suited to humanity's increasingly global future.

On one hand, Eastern philosophy is primarily monistic and idealistic. Monism is the metaphysical view that reality is essentially one, and idealism is the holds that the ultimate nature of reality is one with the nature of consciousness, or mind.

A simple way to think about this is in terms of one's experience: All knowledge of reality occurs within consciousness as percepts and ideas, and reality itself is an idea of the mind. We *assume* that there is "something real" outside of our consciousness, for example, because "reality" is not subject to our will, but we only *know* what is in our consciousness. Everything that we perceive or know about "external reality" or "the world" takes place in us. There is no way that one can get out of the box of the mind, since what we know through the sense is percepts, not the things we presume are independent of the mind. No one thinks that objects as "things" enter the mind as the things themselves, or that the mind goes outside of itself to gain knowledge.

Indeed, according to mystics and masters, the assumption of an "external world" is erroneous, due to merely an illusion preventing one from realizing the underlying unity of subject and object. Many of them also hold that consciousness also is one, and that the presumption of individual consciousnesses is illusory.

On the other hand, the dominant Western worldview is dualistic and realistic. Dualism is the view that subject and object are essentially different types of existence, and that the objects of the world exist separately from each other. Realism holds that an independent subject knows an independent object directly, without affecting the independent, real existence of either subject or object as essentially separate from each other.

While most Westerners adhere to the dualistic view that reality is made up of mind and matter, these two being different and separate types of existence, which are completely independent of each other. Westerners also presuppose the realistic view of knowledge holding that that the mind knows real objects that remain independent and separate.

On the other hand, the Western philosophical tradition is replete with monistic and idealistic positions and schools, extending back in time to Plato and

even earlier. In addition, the rich Western mystical, occult, and psychic traditions that had remained largely underground for centuries were rediscovered by a new generation of seekers who sought to go beyond the limitations of traditional religion in search of non-ordinary experience and alternative states of consciousness.

Even scientists began noticing parallels between Eastern spirituality and the physics and psychology developed in the West based on scientific methodology. Now, works comparing Eastern spirituality and quantum physics, written by prominent scientists, are commonplace.

As a result, the world stands on the brink of new wave of investigation that combines the best thinking of East and West, and integrates them synergistically. The result is a developing integration of the subjective and objective ways of gaining knowledge that had not been explored previously.

This endeavor is fashioning a new worldview that is more comprehensive than either the Eastern or Western worldviews, which took millennia to develop. Thus, the world stands at the brink of an exciting new era, and we can only guess at what it will bring and how it will unfold as East and West influence each other.

Worldviews are merely conceptual frameworks. Although these conceptual frameworks are logical constructs, and few people outside technical fields construct them consciously, and only philosophers, linguists, and social scientists and other scholars and researchers consider the logic of their construction explicitly. Conceptual frameworks are used to generate, structure, explain, and justify knowledge in a society. They are a key element in every culture.

The expression of knowledge requires media of communication. The broadest medium is language but other media such as graphic media are also important. Marshall McLuhan famously observed that the medium is the message. He was speaking about communications media, television in particular. However, every medium shapes the message it delivers owing to the way it shapes data into information and structures that information for use.

Oral communication was the first medium of communication to be evolved in prehistory. Speech is still responsible for the majority of human communication, much of it trivial, perhaps. However, some important fields of knowledge remain chiefly oral, such as those that depend on a personal relationship of master and disciple or apprentice. Most spiritual traditions continue to follow this ancient pattern, for example, and most of the teaching takes place in private, either individually or in small groups.

Many teachers who wrote nothing made this choice because they felt strongly that oral communication is superior to written. For example, the dialectical method that Socrates famous used oral communication to accomplish what writing could not. Writing could record what Socrates said, but reports of

what he said and did are not the same as being with him personally. Those in charge of education have continued to agree with Socrates over the years, for the majority of formal education from kindergarten to graduate school takes place through personal interaction with teachers.

Writing was developed very early, and went through several stages, stone and chisel, ink and parchment, papyrus, and paper. Woodblock printing was introduced around 200 CE, movable type in 1040, and Intaglio in the 1430's.

The next big step was the Johann Gutenberg's invention of printing press around 1439, making printed material widely available through books, newspapers, and pamphlets. This proliferation of knowledge made liberal democracy based on an informed electorate possible.

The next step forward occurred with the development of audio-visual technology, initially separately as silent cinema and radio, and then as sound cinema and later, television. This transformation in communications media wrought great changes in the way that information was delivered and consumed.

The world is not in the process of the transition to digital media and digital communications. This promises to result in even greater changes than previous communications revolutions.

The transformation of media beyond oral and written communications occurred initially in the West and later spread to the rest of the world.

The West led the way scientifically and technologically. However, the East excelled in developing subjective means of gaining knowledge, in particular through mystical spirituality.

The Vedic tradition, Buddhism, and Taoism counseled turning attention within in order to investigate the nature of consciousness. A variety of spiritual disciplines and different types of meditation were developed for this purpose in these traditions. Because these subjective technologies were transmitted orally from master to initiated disciple, they were largely unknown in the West outside of isolated monasteries.

All of these means of gaining knowledge and communicating it shaped the message based on the media. These media are presently converging in single minds, as some children are exposed to all of them from childhood. The result will be something that the world has not seen before and cannot be predicted before it transpires on a large enough social scale.

Not only is a new worldview emerging, but also a new kind of worldview is being created. This new worldview will involve integration of the spiritual and material through integration of subjective and objective means of gaining knowledge, expressed in media heretofore unknown.

During the transition that is already underway with a generation of digital age children, many of whom also practice various forms of meditation, a great deal is being learned about how humans affect information and vice versa.

For example, the increased speed of global communications is revealing how knowledge is transformed. Some knowledge spreads with “contagion,” when it goes “viral.” What used to take decades and even centuries can presently occur almost overnight throughout the digital world, which is global in scope.

This has advantages and disadvantages. Knowledge spreads based on interest rather than value. Since there is little discrimination built into the system, error can proliferate as quickly as truth, and triviality as quickly as importance. Moreover, because the volume of information has also increased exponentially, absent a discriminative filtering process, a great deal of meritorious information receives insufficient attention or goes to waste due to information overload.

Consequently, the information processing system is developing discriminative filters to deal with the problems that digital media create. While traditional news organizations continue to filter the news, breaking news is now more often disseminated through web logs, “blogs” that are dedicated to specific purposes, keeping those interest in those fields instantly up to date through “feeds.”

Bloggers are also becoming investigative reporters and commentators. Their activities are greatly expanding the reach of information beyond that of traditional media. They are also providing deeper as well as broader coverage of specialized area in a more timely way than traditional professional journals and similar print media.

As a result, the overarching worldview is becoming globalized, as well as more specialized owing to the proliferation of niches. Moreover, owing to the ubiquity of the Internet, this knowledge source is universally available.

Greater understanding is also dawning about frameworks. Research reveals that as the speed and volume of information flow increases, the framework that structures information changes more rapidly, too, as pressure increases to become more comprehensive. As people see on television or the Internet what is happening around the world in real time or shortly after events take place, their worldview grows more global.

Cognitive scientists are investigating into how frameworks are constructed and how they function. It is becoming evident how frameworks can be intentionally manipulated to manage how information is structured, hence, how reality is perceived from the ensuing point of view. This is called “framing.”

The ancient were aware of the distinction between logic and rhetoric, and they knew how form, or manner shapes matter, and process influences

substance. While philosophers pursued truth through reason and logic, sophists taught their student how to win argument through rhetoric. They were expert in making the worse argument seem to be the better one by concealing logical fallacy behind the façade of rhetorical persuasion.

Propagandists developed sophisticated techniques for shaping views ideologically. Contemporary marketers also discovered how to increase sales by manipulate public perception through advertising. Political operatives became famous for their ability to “spin” developments for political advantage.

It is also coming to light how worldviews and ideologies such as are embedded in philosophies, religions, and partisan politics, shape perception of reality and impose norms. This has advantages and disadvantages.

The advantage is that this knowledge enables us to escape from the box of rigid thinking and create worldviews and philosophies intelligently, based on suitable criteria. These criteria would include:

- Correspondence with observation of facts
- Comprehensive account of phenomena in terms of fundamentals
- Systemic consistency
- Practicality, including efficiency and effectiveness
- Simplicity and elegance, integrating clarity, brevity and precision

The disadvantage is that this knowledge enables ideologues to further their interest through manipulation. For example, realizing how quickly packets of information to travel, ideologues rush to “spin” the interpretation of developing events to advantage in order to take dominate the established narrative that shapes perceived “reality.” However, there is also a corresponding rush to counter attempts to hijack the narrative through fact checking and debunking.

The effect of the way in which new developing media are affecting the message is having a profound effect on philosophy as well. Initially, philosophy began in the West through debate, but was later transformed into a literary enterprise that was eventually consigned chiefly to academia. Even though many of its contributions are significant technically, academic philosophy has become something of a hothouse plant, out of touch with the mainstream of thought.

However, philosophical issues of practical relevance are again being debated again in the public forum, as they were millennia ago in the *agora* at Athens. Through the Internet, anyone with a connection can interactively approach serious issues in an informed way. At this time, the debate is unlimited in scope and global in reach owing to communications technology, coupled with growing understanding of the importance of framing.

Neuroscience has also made the momentous discovery that neural pathways are activated by use. Not every available neural pathway becomes activated and those that are used infrequently are not maintained structurally. However,

neural pathways that are used frequently are maintained structurally, and expanded in proportion to use.

Different stimuli activate different neural pathways. Therefore, different communications media involve different types of brain functioning that structure the brain differently. These differences in neurological structure and function result in different types and levels of intelligence. Different types and levels of intelligence process data differently, yielding differences in the information that results.

For example, “modern” people think of tribal peoples who survive by hunting and gathering and have an exclusively oral culture as “primitive.” However, a modern person could not survive more than a day or two in the conditions in which primitive people live. So-called primitive people may not have as highly developed intelligence by modern standards, but their intelligence serves them well, given the circumstances in which they live.

There are similar differences that distinguish people of oral and written cultures. Those who can read and write look down on those who are illiterate, for example, and learned people are generally rewarded more highly socially and economically.

The audiovisual revolution did not result in any such stark contrast. However, the digital revolution is having that effect. People who are not computer literate are considered less educated and less valuable economically in the digital age.

Most importantly for current purposes, the various ways of gathering and processing data, and expressing and communicating information result in different types of intelligence, which in turn result in different types of worldview. For example, people with a predominantly oral culture do not have as broad and deep a knowledge perspective or as broad a social base as those who read and write. The audiovisual culture, especially television, introduced a global worldview, but it was not interactive. The digital age is introducing a global worldview that is interactive, hence cooperatively reflexive. It influences itself through feedback.

Research shows that not only do data received through the senses and behavior have neurological influence but also internal data processed through the reflexive capacity of human awareness. Thinking and feeling both activate neural pathways.

Human beings are capable not only of reflecting on ideas but also of self-reflection by turning attention on awareness through meditative practices. Research into meditation reveals that turning attention within creates a feedback loop in awareness that activates unique neural pathways that result in different types of brain function that correlate with subjective reports of meditative experience. Research also reveals that through regular practice of

certain types of meditation, pathways that are opened during meditation can be maintained after meditation, so that subjective experiences associated with meditation persist independently of meditation.

Mystics have reported such results for millennia, and the spiritual literature describes both the methods and predicted outcomes. This is particularly true of Eastern spirituality. In the East, specialized methods for developing mystical experience and terminology for reporting it were developed ages ago.

Historians of religion, mysticism, and spirituality have studied the testimony of mystics and teaching of masters from the various traditions around the globe from time immemorial. Some have concluded that there are commonalities among the experience reported by various mystics and the teaching among various masters. Considered from the perspective of commonality, the body of this testimony, teaching, and related literature is known as the *perennial philosophy*, or *perennial wisdom*.

The fundamental teaching of perennial wisdom is that the purpose of life is to comprehend the unity of subjective and objective through non-mediated realization of *nonduality* as an identity of knower, known and knowing. Thus, self-aware existence discovers the meeting point of knowledge within itself as *pure consciousness*, which is identical with pure knowledge, pure existence, and perfect fulfillment.

If this mystical testimony and teaching is true, the experiential solution to the problem of consciousness lies within everyone, waiting to be found at one's core. This process of self-discovery is available to all human beings based their very humanity.

## A way of life

On a personal note, my first philosophy course in college was in Greek philosophy. The professor emphasized that for the ancients philosophy meant a way of life. I never forgot that, and I was reminded of it later when I encountered Eastern philosophy, which is one with Eastern spirituality as the search for ultimate truth within oneself.

The root meaning of "philosophy" is love of wisdom. Wisdom is different from knowledge. Knowledge is the confluence of experience and understanding. Wisdom is the confluence of knowledge and action.

A wise person is different from a knowledgeable one. The knowledgeable person may or may not act on the knowledge, or the knowledge that one possesses may not be broad and deep enough to inform action to produce wisdom.

Wisdom has another, deeper meaning. In Greek, there are two terms translated as wisdom. They are *sophia* and *gnosis*. *Sophia* is speculative wisdom applying to knowledge of principles, in contrast to *phronesis*, which means “practical wisdom” or “prudence,” as the application of *arête*, “excellence,” or “virtue” in action. Plato held that *sophia* consists in knowledge of the good. Aristotle held that it is knowledge of causes.

*Gnosis* is the root of “knowledge.” The term “gnosis” has been imported into English to mean transcendental wisdom, the objective of the spiritual quest for self-knowledge. Aristotle asserted, apparently on his own experience, that God is “self-thinking thought,” that is self-knowing intelligence, and that through contemplation human beings are capable of experiencing the state of self-knowledge.

The Sanskrit root of “gnosis” is *jnana*, also transliterated “*gyana*,” and “*nyana*.” *Jnana* is used as a technical term in Eastern philosophy and spirituality to denote transcendental knowledge, specifically, one’s true nature. The truth of one’s nature is realized in the state of nonduality, which is the aim of Eastern spirituality.

In ancient times, philosophy involved a way of life in pursuit of wisdom in the broad sense of unfolding one’s full potential. Today, we speak of this as self-actualization.

The wise person was taken to be the standard of human excellence, and “philosopher” signified a person who was striving to become wise through this pursuit, as well as a person who was recognized as wise, just as *yogi* in the Vedic tradition meant both a disciple of *yoga* as a spiritual discipline and one who achieved mastery.

The ancients approached philosophy as a uniquely human activity that seeks to comprehend the human condition rationally, that is, based on fundamental concepts and principles, and to act on this knowledge. Philosophy asks what it means to be human, and what an intelligent, creative, and responsible person should do about this.

Asking what it means to be human is a question about human nature. Philosophy seeks to discover the capacity of human nature to actualize inherent potential by expressing itself fully, as well as how best to do this.

Science discovered that the human species evolved from the primates, who themselves evolved from less developed forms of life. There is clearly a distinction between humans and other animals, not matter how highly developed, because humans are guided principally by reason and make choice informed by reason, whereas less developed animals are guided chiefly by instinct.

Knowledge is largely inherent in animals, with minimal learning in comparison with humans. In contrast, humans must acquire the majority of theirs through complex learning over an extended period. In addition, as *rational* animals, humans have learned how to think logically and use language to express their thoughts, as well as to communicate among themselves.

Human thought was highly developed from the beginning of recorded history, the result of sophisticated thought shaped by complex experiences and cultured by already maturing civilizations. Yet, we know that thought had much humbler beginnings. Human beings had to evolve to a level of sophistication in language and culture over tens of thousands of years, if not hundreds of thousands, in order to develop corresponding sophistication of thought.

The evolution of language apparently arose from the use of primitive signs as symbols. Other animals have simple means of communicating, such as warnings of impending danger and mating calls, and we can imagine that the earliest humans gradually learned to use their evolving neurological and vocal apparatus to expand on these beginnings.

This evolution of language to the sophisticated level of philosophy involved both *discovery* and *invention*. The potential of human nature had to be progressively discovered and expressed in core concepts and fundamental principles. Additionally, these core concepts and fundamental principles had to be applied practically, both in individual circumstances and socially. This required invention.

The process of discovery and invention is never over. Human beings are continually finding themselves in uncharted territory and have to discover new concepts and principles, as well as invent ways of applying them practically.

What is remarkable, however, is that older concepts and principles still apply, even after millennia. The ancient philosophers were well aware of this phenomenon. They realized that they were involved with universal truth structured in both Nature as a whole and human nature as a subset of Nature.

Thus, it may be said that philosophy treats on the natural person using rational means. "Rational" here is not synonymous with "intellectual." In the ancient sense, "rational" signified that which distinguishes human from less developed animals, which includes much more than the discriminative faculty called "intellect."

Philosophy asks what it means to be a "rational animal." Human share a great many attributes and characteristics with other animals. However, something makes them different. What is that something? The ancients called it "reason" or rationality."

"Reason" and "rational" come from the Latin root *ratio*. Some linguists derive *ratio* from Sanskrit *rta*, meaning cosmic law in nature and moral law in humans.

The idea is that both Nature and human nature are structured on invariant patterns that apply universally and can be discovered as scientific law and behavioral paradigms.

Nature does not deviate from the invariant patterns of cosmic law. However, human beings have a certain leeway with respect to moral law, in that they can choose among various “goods,” or satisfiers of desire. Instinct guides animals to pursue their own good — survival and reproduction — while simultaneously promoting the survival of the species. However, the same does not apply to humans, at least in the same way.

Human beings are free to make choices in ways that animals are not. Human intelligence provides humans with far more options than animals.

Humans can make choices that are more or less responsible, for example. Hence, merit and culpability attach to human action. This freedom of choice implies responsibility in terms of consequences. Humans are free to act as they choose, but not to alter the consequences that inevitably follow action.

Experience shows that some goods are genuine goods because they lead not only to abiding satisfaction, but they are also universally life supporting. Selfish ends, especially those that disadvantage others, are bogus “goods,” in that they may lead to individual satisfaction in the short run but in the long run result in personal detriment. Moreover, genuine goods pursued by individuals promote the common good, whereas bogus goods do not, and may harm it.

The earliest philosophers on record noticed this discrepancy between Nature and human nature. They concluded that a wise person would live in accordance with both the invariant patterns of Nature and the behavioral paradigm consistent with unfolding maximum potential of human nature, by performing action based rational deliberation and informed choice. The criteria for action are moral law, the fundamental principle of which is to do no harm, and the cultural *ethos*, or standards set by the wise of the community for the regulation of society.

Very early, philosophers noticed that reason, implying intelligence and order, could be conceived not only as universal but also as having existence. They took this to mean that the rational part could potentially survive the death of the body as a disembodied intelligence, or “spirit.” They also speculated that there may be other spirits, as well as an all-encompassing Intelligence, “in whom we live, move and have our being,” as Paul quoted an unnamed and now unknown Athenian as saying.<sup>8</sup>

The testimony of Native Americans and other shamanistic cultures reveals that that at least some indigenous peoples held similar views, showing that the

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<sup>8</sup> Acts 17:28.

concepts involved are extremely ancient indeed, likely extending backward in time to the Stone Age.

In this broad and ancient sense, philosophy involves a quest for a definition of what it means to be a “good person.” It also asks what one is to do in order to attain this state of human completeness or perfection.

Many of the ancients held that the good person was one who was progressively actualizing the potential of human nature through “virtue.” The Greek word for virtue is *arête*, meaning excellence. Excellence is actualization of maximum potential. Human excellence, or virtue, is maximization of human potential.

The answer to questions about being good invariably involves adopting a way of life. This is the way of life of the “philosopher” in the ancient sense of “a lover of wisdom.”

It is important to note the difference between the rational way the philosopher follows and the established way of normative religions. The philosopher’s way is a natural one in that it seeks to discover truth through human means by reflecting on experience. The way of normative religions is a “supernatural” one in that it involves belief in received doctrines, performance of prescribed rituals, and observance of authoritative codes of conduct.

These two ways are not necessarily mutually exclusive, but they are different foundationally. The idea is that blind obedience without reflection is not a mature way to act, but to ignore or reject venerable tradition or the counsel of those acknowledge as wise would be folly, too. Philosophers in the ancient sense were often guided in their quest by the testimony and teaching of the ancients that had taken on the mantle of venerable tradition, if not sacred scripture. Yet, they reflect on this in light of reason, as well.

While religions have a cultural component that may obscure their origins, and the letter may conceal the spirit, all religions that endure are founded on the testimony of mystics and the teaching of masters — those who were most successful in actualizing the full potential of human nature through their way of life. The rest of humanity follows in their tracks. As has been aptly said, “We stand on the shoulders of giants.”

However, the original spirit of a teaching declines over time, and once venerable traditions eventually devolve into mere conventionality. Therefore, received teachings must be re-examined in every generation, and adjusted or amended as called for.

## The questioning process

Philosophy as a rational activity is about the questioning process. What does it mean to reflect using reason?

Plato and Aristotle laid the groundwork for subsequent thinking in the West about fundamental questions. According to Aristotle, all speculation — questioning — begins in wonder.

Children learn by asking questions. Typical questions are of the type, “Why is the grass green?” “How high is the sky?” and “Where do babies come from?” Such questions now have the answers are too complicated for them to understand, so they are given simpler explanations to tide over their curiosity until they are prepared for in-depth answers.

Similarly, human beings began asking fundamental questions from the beginnings of the evolution of the species. The initial answers, such as creation myths, were “primitive” from the contemporary standpoint, just as many answers we regard as being “advanced” or “state of the art” at present will be considered rather naive hundreds or thousands of years in the future.

The early questions that humans asked are unknown to us. We surmise from artifacts, such as burial mounds, that they had some notion of survival after death, for example. We do know from studying ancient people who survived at the Stone Age level until modern times that they answered their fundamental questions through stories, such as stories that explain creation and an afterlife. Some ancient stories also survive from ancient civilizations, for example, Mesopotamia, Egypt, Persia, India, and China.

What is striking about such stories is their similarity. Human beings apparently hit on ways of satisfying their curiosity about fundamental questions along very similar lines. The early stories later evolved into much more complex mythologies, such as are found in the hymns of the *Vedas* of India Hebrew scripture, the *Avesta* of Persia, and the Greek, Roman, Celtic, Norse, and other European myths. These were initially oral traditions whose origins are lost in prehistory. They are often narrative combinations of history, legend, and story, which mix purported factual events with symbols and fantasy.

Swiss psychologist and philosopher Carl Gustav Jung (1875-1961) held that such narratives were significant because they were built on archetypes of the collective unconsciousness, revealing universal symbols. Such symbols, e.g., the gods and demons, were indicative of psychospiritual concepts. Taken together with the web of relationships in which they play various roles, such symbols articulate fundamental structures of human consciousness as poetic solutions to fundamental questions about human nature and the human condition.

Gradually, narratives were combined with explanation. For example, the Upanishads of India explain ancient myths that the Vedic hymns put poetically.

Instead of poetic symbols such as Man or the Person (Sanskrit *purusha*), the Upanishads use philosophical concepts such as the universal Self (*atma*). The most famous spiritual teaching of the Vedic tradition, the *Bhagavad Gita*, is set within the *Mahabharata*, one of the two great Indian epic poems, the other being the *Ramayana*. As the Upanishads are said to be the “cream” extracted from the “milk” of the Vedas, the *Bhagavad Gita* is said to be the “butter,” because its teaching is the most highly concentrated.

At a certain point, narrative began to be largely replaced by discourse as a method of explanation. At this time, philosophy separated from narrative literature and poetry. In Greece, for example, the religious myth and the epics of Homer that had been the primary teaching tools were supplanted by what came to be known as “philosophy.” The transition was not immediate, however, and the use of myth and narrative within discourse that is chiefly explanatory is found as late as Plato’s *Discourses*, although it disappears in Aristotle.

Buddha in the East and Aristotle in the West each broke with the past and established a different explanatory methodology that might be called rational discourse. Their works mark the onset of a sharp transition away from narrative as a means of approaching fundamental questions about the human condition toward reasoned discourse based on understanding core concepts and fundamental principles and link them together in rather complex logical chains of reasoning. This trend persisted until the advent of modern science, when a more rigorous methodology was adopted in natural philosophy, combining observation and measurement with mathematical modeling, through which theoretical hypotheses could be tested empirically.

The German psychiatrist and existentialist philosopher Karl Jaspers (1883-1969) proposed that the period from approximately 800 to 200 BCE was an “axial age,” or pivot point in human development. He asserted that most of the fundamental philosophical problems were posed concurrently during this crucial period in India, Persia, China, Palestine, and Greece. Moreover, many of the solutions offered were put forward in the form of rational discourse rather than poetically and symbolically, e.g., through mythology.

At first, discursive thought was largely philosophical in nature. Subsequently, discourse was divided into discrete fields distinguished by different subject matter and methodology. Further distinctions were drawn as knowledge gradually advanced in sophistication. Finally, scientific methodology triumphed in the West as the superior form of gaining knowledge. The humanities often attempted to incorporate or at least emulate scientific method in order to regain lost credence and prestige. However, the sciences became the supreme expressions of knowledge, eventually unseating even theology, after a bruising conflict with institutional authority.

After the Renaissance in Europe, science became the standard of knowledge, as it surpassed philosophy and theology, and even threatened the long-

established authority of scriptural revelation. Since the rational arguments of speculative philosophy are neither evidence-based nor empirically testable, they no longer held the sway that science was gaining. Moreover, science was bringing tangible progress through technology, while philosophy seemed barren in comparison.

Consequently, speculative philosophy began to be replaced by critical philosophy, which emphasized the importance of logical clarity in formulating problems and solutions, instead of attempting to provide answers where the sciences were better suited. Emmanuel Kant (1724-1804) made the first coordinated attempt at this in his critical philosophy. Kant was the first person in the West to observe that the mind contributes substantially to the formulation of knowledge.

Later, philosophers would realize that logic is fundamental to the expression of thought. Logic can be studied directly through expression, which is publicly available, unlike thoughts, which are private to individuals. As result, logical analysis would prevail, especially in England and America. Logical criticism aims at clarifying expression.

Through such clarification, analysis often reveals that many philosophical problems are actually pseudo-problems, arising from faulty expression. Pseudo-problems trick the mind into believing not only that they make sense but also that they deserve to be taken seriously. However, when they are subjected to rigorous logical scrutiny, it turns out that they are ambiguous, misleading, or even nonsensical, hence, a waste of time to pursue.

The objective of logical approaches to philosophy was to state problems clearly, in such a way that they would be approachable through the rigorous methodology of science or else consigned to less rigorous but still rich avenues of approach.

Science did not replace all other forms of gaining and expressing knowledge. Not all fundamental questions are rational in nature, hence, subject to discursive treatment. As the ancients perhaps realized intuitively, some fundamental questions, concerns, and capacities are best approached through non-rational means, such as graphic art, music, dance, poetry, narrative, and storytelling. As a result, these fields of expression remain alive and well, and the ancient works that have long been highly regarded still have relevance today.

Moreover, many such works speak more clearly in their own way than do discursive attempts at accounting for similar subject matter, although this may not be obvious on the surface of things. Informed criticism can be helpful in illuminating their deeper significance intellectually. For example, almost no one would be able to appreciate the profundity of Shakespeare (1564-1616) today without some familiarity with Shakespearean criticism, if only because of the arcane terminology and unfamiliar context.

Science is suited to answer questions that have factual answers. However, there are many problems arising from the human conditions do not have solutions that are exclusively factual. Consciousness involves quality more than quantity, and norms are often as important as facts, if not more important. Therefore, human knowledge embraces more than science is capable of handling through observation, measurement, and scientific modeling.

## The enduring questions

What, then, are those enduring questions that inquiring minds continue to ask? Obviously, people do not keep asking questions that have already been answered satisfactorily, although each generation must learn the answers anew. Many questions have been settled to general satisfaction through science and mathematics, for example, which give definitive answers. We learn these answers in school and are satisfied by them.

Many of the enduring questions do not have definitive scientific or mathematical solutions, however, because they involve subjective, qualitative factors in addition to factual and logical ones. Such questions continue to occupy philosophy, the arts, and the humanities.

The various religions provide answers to many enduring questions. However, to the degree that religious answers are matters of belief rather than substantiated knowledge, these answers cannot be regarded as final. For example, even the most ardent believers cannot be said to *know* what happens after death, for they do not have adequate justification for definitive knowledge on unimpeachable grounds. That is to say, all religions can show is a scriptural *pedigree*, rather than an evidence-based *warrant*, logical necessity, or that which is self-evident. However, appeal to the authority of scripture begs the question, how to know for sure that scripture is true. Religious accounts all end in belief.

Belief is distinct from knowledge acquired through experience. Religions that are based on belief in revelation received through others must be distinguished from spirituality that claims to be grounded on mystical experience. Mystical experience asserts a non-ordinary kind of knowledge that is deeper and more comprehensive than knowledge derived from sense perception and reasoning. Therefore, it then becomes a question of assessing whether the person testifying to an experience is credible.

Another way to approach the enduring questions is rationally. Philosophy has traditionally done this through the subject matter of its various branches — *metaphysics*, *epistemology*, *ethics*, and *aesthetics*. These fields evolved in response to fundamental questions in the areas of reality, knowledge, action, and sensibility, or appreciation.

The fundamental question that metaphysics poses is, “What is the nature of reality?” Martin Heidegger asks, for example, “Why is there something rather

than nothing?" Most people take their own existence and that of the world for granted, as well as the existence of God, if they are believers.

Yet, from the very beginning of the history of ideas, philosophers in the broad sense have marveled at the experience of "the real," and they have wondered about the ground of existence underlying everyone and everything. That wondering led to metaphysics as the study of being simply as such, rather than in terms of any particular entity. For example, philosophers recognized very early that there is a difference between essence and existence, that is, between *what* something is, and the fact *that* it is. For example, the difference between essence and existence allows us to distinguish in thought between the possible and the actual.

The fundamental question that epistemology asks is, "What can we know?" This is not a question about enumerating objects but of boundary conditions. It seeks to establish the horizon of human knowledge, as well as the potential for pushing back this horizon — "pushing out the envelope."

The fundamental question that ethics asks is, "What ought I do to lead a good life and be a good person?" This is not a question about formulating a code of conduct. The ancients asked this question in terms of what it means to be a human being. On one hand, how are humans to differentiate themselves from brutes, and, on the other, how can we maximize our potential to become all that we can be, both individuals as members of our communities, and as the human family, given the inherent potential of human nature.

The fundamental question that aesthetics asks is, "What should I appreciate?" What makes anything attractive? Why are some artistic works enduring and others, not? Is it true that taste is an individual matter, not to be disputed, or is it culturally determined, or do some standards apply universally?

The answers to these questions that the various philosophical approaches give are many. Most are quite complex, requiring considerable training to be able to understand and evaluate.

Emmanuel Kant held that the fundamental questions are:

- What can I know?
- What ought I do?
- What can I hope for?

Kantian philosophy is an attempt to deal with such fundamental questions and those related to them. Even Kantian scholars who spend a lifetime studying his works disagree over just what Kant meant to say about this, so there are a variety of interpretations. In addition, others have used Kant's works as a jumping off point to develop different options in a Kantian framework. Philosophy expands from within in this way, exploring different avenues of investigation in search of greater rigor.

The study of such philosophies may not provide the ultimate answers that one seeks. However, it does help one to pose ultimate questions and to work toward formulating one's own conclusions about them more intelligently. For example, Kant's critical philosophy indirectly inspired the later trend toward logical analysis of epistemological issues.

Another approach to the enduring questions is through narrative means, such as story and myth. Literature and drama elucidate the human condition symbolically instead of discursively.

Hamlet's soliloquy in Shakespeare's play of that name begins, "To be or not to be, that is the question," posing fundamental metaphysical and ethical questions in a subjective light. Hamlet's internal dialogue might be said to epitomize the type of questioning that typifies the human condition when one is put in a situation so extreme that one is forced to contemplate what life means in order to take significant action.

In Mark Twain's novel *Huckleberry Finn*, Huck poignantly asks Tom Sawyer at one point, "Who am I?" According to mystical spirituality, "Who am I?" is the primordial question. Everyone is inwardly driven to seek its answer, whether consciously or not. A person's life may be seen in terms of steps in a process of self-discovery.

The questions posed by both Hamlet and *Huckleberry Finn* give deeper meaning to the fundamental question of metaphysics into the nature of existence as such, as well as relate this to ethics. To many people, such philosophical questions are so abstract as to seem frivolous. However, when put symbolically in the context of plausible situations, as good drama and literature do, abstract philosophical questions become personal, hence, more meaningful in the context of the human condition.

## The primordial question

The primordial question is, "Who am I?" Almost no one actually poses this question to oneself as such because the answer seems ridiculously obvious. However, everyone is continually asking this of oneself in the sense that life is a process of self-discovery and self-invention.

Everyone must discover his or her constitutional makeup, including natural tendencies and talents, personal strengths and weaknesses, and so forth. In addition, a person has to invent a self-image and personality that mesh one's inner being with the environment. Those who do this most successfully are in the running to become the most successful in life. Those who fail to do this, struggle with it, or make significant mistakes, sabotage themselves.

However, there is a deeper significance to the question, “Who am I?” This is what might be called its spiritual dimension in that “I” is universal — all apply it to themselves in the same way insofar as they are human beings.

Those who have asked this question at its universal level and realized the answer report that the process of self-inquiry is of much greater importance than could ever be anticipated based on a superficial appreciation of the question. They also assert that the answer goes beyond all expectations that one could entertain, because it transcends ordinary human experience and comprehension.

Who are the people that pursued the question, “Who am I?” to its final answer? They are the mystics and masters whose testimony and teaching constitutes the “perennial philosophy,” or *perennial wisdom*.

Most people who grew up in the West know of Jesus’ saying, “The kingdom of God lies within you.”<sup>9</sup> However, most people are likely not familiar with a more extensive saying that *The Gospel of Thomas* attributes to Jesus.

Jesus said: If your leaders say to you, ‘See, the kingdom is in the heavens,’ then the birds will precede you into it.

If they say to you, ‘It is in the sea,’ the fish will precede you.

But the kingdom is inside you, and it is outside you.

When you know yourselves, then you will be known, and you will realize that you are children of the living Father.

But if you do not know who you are, you are in poverty, and you are poverty.<sup>10</sup>

This precept is echoed in many other wisdom traditions of the world. In ancient Greece, “Know thyself” was inscribed at entrance to the Oracle at Delphi. Five thousand years ago in ancient India, Krishna (c. 3000 BCE) is reported to have said, “I am the Self stationed within all beings.”<sup>11</sup> Subsequently, Buddha reportedly said, “Look within; you are the Buddha.”

In ancient Persia, Zoroaster said, “I realized You, Wise God, when I was enveloped by enlightenment through Good Mind and it asked [me]: Who are

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<sup>9</sup> *Luke* 17:21. King James Version.

<sup>10</sup> *Thomas* 3. Rendered by the author.

<sup>11</sup> *Bhagavad Gita* 10:20.

you? To whom do you belong?”<sup>12</sup> In ancient China, Taoist Master Lao Tzu (c. 5<sup>th</sup> century BCE) is recorded as saying, “Those who are intelligent know others; those who are wise know themselves.”<sup>13</sup>

Similarly, Sikh Guru Nanak (1469-1539) said, “He alone is insane, who does not know himself. When one knows oneself, then one knows the One God.”<sup>14</sup> It is written in the *Book of Psalms*, “Be still and know, I am God,” and in the Holy Qur’an, “God is as near to you as your jugular vein.”<sup>15</sup>

Since human awareness is reflexive, the potential for gaining self-knowledge is inherent in human nature. This wisdom lies within everyone, awaiting discovery at the center of one’s innermost being. Its pursuit may be called *core spirituality*.

Core spirituality is the basis of all wisdom traditions. Virtually all the world’s wisdom traditions make self-knowledge a primary goal.

Self-knowledge is neither knowledge of the body, nor knowledge of the mind—neither physiological, nor psychological. Such knowledge is the subject of the sciences of physiology and psychology, which are subject to the limitations of the thinking mind and the perceiving senses.

Rather, the complete self-knowledge that the mystics and masters are talking about is “spiritual knowledge,” in the sense that it transcends perceiving, thinking, feeling, reasoning, imagining, and all other ordinary means of gaining knowledge. Because this self-knowledge goes beyond all accustomed ways of experiencing and all ordinary mental activities, it is said to be transcendental and supramental.

According to perennial wisdom, the self or “I” becomes individualized through the knower’s identifying with the boundaries of the limited mind and the physical body. When these boundaries are transcended fully and finally, then the empty state of consciousness is realized as being “no-thing.”

This emptiness of content takes place in deep sleep, where awareness is not active. Were self-awareness maintained in deep sleep, then everyone would be aware of pure consciousness, a state of universality in which awareness and existence are identical. As universal in nature and devoid of particular distinctions, this state must be identical for anyone realizing it.

The state of Self-realization transcends the duality of subject and object, unifying the knower, known and process of knowing. Complete self-knowledge is

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<sup>12</sup> *Ushtavaiti Gatha*, Song 8:7 (Yasna 43).

<sup>13</sup> *Tao Te Ching*, 33.

<sup>14</sup> *Sri Guru Granth Sahib*, Raag Bilaaval, 855.

<sup>15</sup> *Psalms* 46:10, *Holy Qur’an* 50:16.

the identity of awareness (subjective) and existence (objective) in the unity of pure consciousness.

“Perfect” means complete. The reason that all human beings are impelled to know themselves is to achieve completeness, or perfection as a human being. This is the state of maximum potential, or human excellence.

Completeness is a state of fulfillment, in which there is no lack. It is the natural state, in which one rests, since there is no further to go. One has arrived at the goal. This is the highest good in that there is nothing greater or better than completeness.

Reflecting on the fundamental questions asked by metaphysics, epistemology, ethics, and aesthetics, we find that attaining completeness of one’s nature answers all of them:

- The quest of metaphysics for ultimate existence is resolved by realizing the identity of subjective existence (knower) and object existence (known).
- The quest of epistemology into knowledge is resolved by realizing that the knower, known and knowing are identical in full self-knowledge.
- The quest of ethics for the ultimate end of human action is resolved by realizing that full and final self-knowledge is a state of completion, or perfection — the state of rest as the end in which action for a purpose terminates, making further activity unnecessary and superfluous.
- The quest of aesthetics for the ultimately appreciable is resolved by realizing that full self-knowledge brings complete fulfillment, or satisfaction.

These are clearly enormous claims. They are difficult to comprehend, let alone accept as true. On what grounds, then, are they asserted? What substantiation is offered?

## Mystical testimony

Intellectual reasoning about such matters is inconclusive, so logical argumentation cannot provide adequate substantiation. Scientific methodology is inapplicable because hypotheses capable of being tested empirically cannot be framed. Moreover, ordinary experience falls short. The only remaining possibility is the authority of testimony.

Some do claim to have transcended the limitations of ordinary knowledge through mystical experience. These include saints, sages, seers, mystics, masters, and prophets whose testimony is found worldwide from time immemorial.

Some of these spoke in a religious context and some not, but even those who spoke in a religious context did not base their assertions on authority other than their own experience. Some claim that they received this knowledge through the meditation of a higher power, while others held that they gleaned it from within themselves through immediate intuition. Yet, all claimed to know whereof they speak.

Teachings and lineages have arisen to preserve and transmit this experience, thus replicating it. For example, normative religions generally have mystical wisdom traditions associated with them, and there are universal teachers, lineages, and traditions that operate independently. For example, in the Vedic tradition there are yogic, Tantric and Vedantic schools and lineages. Buddhism, Taoism, Sikhism, and Jainism are mystically oriented. In Islam, there is Sufism, and in Judaism, Kabbalah. The Jesus tradition produced many mystics, and Jesus is regarded as a spiritual master per excellence. Some notable mystics and great masters were independent of any tradition, including Kabir (1398—1448), Shirdi Sai Baba (c. 1835-1918), and Meher Baba (1894-1969).

What unifies these mystics, masters, and traditions is the claim of Self-realization, based mystical experience. If their claims can be substantiated, then their testimony and teaching rests on direct acquaintance.

The difficulty with appealing to mystical experience as a ground is that it applies only for those having the experience. Other must take the testimony on trust, an authority external to themselves that they cannot corroborate directly.

Accepting such authority as indeed authoritative involves resolving three issues. The first is justifying that the persons actually had the experiences they report, rather than either imagining or fabricating them. The second is that that they are accurately reported such experiences instead of being mistaken or exaggerating. Thirdly, it also requires justifying the interpretations that they put upon their experiences. For example, “seeing God” is an interpretation put on an experience. How does the mystic know this was “God?” Objections usually attack these factors like these.

Various criteria are advanced. For example, the credibility of a person making a claim is measured against the person’s being in a position to know, which is reflected in the person’s life. If a person does not act on the knowledge that one claims to have, then, the knowledge itself is cast into doubt. If a person personally profits from knowledge unverifiable claims, there is justifiable suspicion that the person is hypocritical charlatan whose claims are self-serving rather than true.

Yet, many people lives seem to indicate that they were unimpeachable sources. Who might these people be?

Perennial wisdom is replete with many others who are widely regarded as saints, sages, seers, mystics, masters, and prophets. Many have also undoubtedly

been forgotten and remain unknown to us. Some mystics choose not to reveal themselves or record their experiences or teachings. Some schools are oral, and the teaching is kept private even today, or at least the inner teaching. Some mystics and masters are associated with particular traditions, others not.

Some were already mentioned. The testimony and teaching of Zoroaster, Rama, Krishna, Moses, Buddha, Lao Tzu, Jesus, Shankara, Guru Nanak, and Muhammad, for example, are taken to be unimpeachable by adherents of their respective traditions and by many others also, at least to the degree the words attributed to them are accepted as genuine.

The more ancient of these are somewhat shadowy figures of legend, and the historical facts concerning many of them remain unclear and are sometimes controversial. Moreover, many older works were composed in dead languages and set in contexts that no longer exist, making them difficult to approach.

However, perennial wisdom finds fresh expression from age to age in a form that can be appreciated by the people of that age. A number of mystics and teachers have arisen in our own time, and continue to arise. The historical events surrounding many modern and contemporary spiritual luminaries can be established on evidence instead of legend.

Avatar Meher Baba is notable among contemporary spiritual figures. Several volumes of his works and discourses he gave have been published, as well as a twenty-volume biography and a number of memoirs composed by close disciples.

Meher Baba's teaching is unparalleled in clarity and profundity. Because his words are recorded in contemporary English and were recently translated into most of the principal languages, everyone who reads these languages can easily understand them.

The essence of Meher Baba's teaching about attaining the purpose of life is encapsulated in the question, "Who am I?" Here is what he says about it:

There is only one Original Question and one Original Answer to it. Between the Original Question and the Original Answer there are innumerable false answers.

These false answers — such as, I am stone, I am bird, I am animal, I am man, I am woman, I am great, I am small — are in turn, received, tested and discarded until

the Question arrives at the right and Final Answer, I AM GOD.<sup>16</sup>

Meher Baba set this process forth in detail, especially in *God Speaks*.<sup>17</sup> He also summarized it in a discourse called “The Journey of the Soul to the Oversoul,” the essence of which follows:

*Atma*, or the soul, is in reality identical with *Paramatma* the Oversoul — which is one, infinite, and eternal.... The sole purpose of creation is for the soul to enjoy the infinite state of the Oversoul *consciously*. Although the soul eternally exists in and with the Oversoul in an inviolable unity, it cannot be conscious of this unity independently of creation, which is within the limitations of time. It must therefore evolve consciousness before it can realize its true status and nature as being identical with the infinite Oversoul, which is one without a second. The evolution of consciousness requires the duality of subject and object — the center of consciousness and the environment (that is, the world of forms)....

In order to become conscious of the phenomenal world, the soul must assume some form as its medium for experiencing the world; and the degree and kind of consciousness are determined by the nature of the form used as the medium.... The driving force of evolution consists in the momentum consciousness receives owing to the conservation of the impressions (sanskaras) left by diverse desires or conditions. Thus, the sanskaras cultivated in a particular form have to be worked out and fulfilled through the medium of a higher form and a correspondingly more developed consciousness of the gross world. The soul, therefore, has to assume higher and higher forms (like metal, vegetable, worm, fish, bird and animal) until at last it assumes a human form, in which it has fully developed consciousness — in all the aspects of knowing, feeling, and willing — of the gross world....

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<sup>16</sup> Meher Baba. *The Everything and the Nothing*, 47, Beacon Hill, NSW: Meher House Publications, 1963, p. 49.

<sup>17</sup> Meher Baba. *God Speaks*. Walnut Creek, CA: Sufism Reoriented, second edition, 1973, 1997 reprint.

The soul has fully developed and complete consciousness in the first human form, and therefore there is no need for any further evolution of the gross form (body). The evolution of forms thus comes to an end with the attainment of the human form. To experience the sanskaras cultivated in the human form, the soul has to reincarnate again and again in human forms.... While developing full consciousness of the gross world, the soul simultaneously develops the subtle and mental bodies. But as long as its consciousness is confined to the gross world alone, it cannot use these bodies consciously in wakefulness. It becomes conscious of these bodies and the corresponding worlds only when its full consciousness turns inward, that is, toward itself. When the soul is conscious of the subtle world through the subtle body, it identifies itself with the subtle body; and when it is conscious of the mental world through the mental body, it identifies itself with the mental body; just as it identifies itself with the gross body when it is conscious of the gross world through the gross body....

The homeward journey of the soul consists in freeing itself from the illusion of being identical with its bodies — gross, subtle and mental. When the attention of the soul turns toward Self-knowledge and Self-realization, there is a gradual loosening and disappearance of the sanskaras that keep consciousness turned toward the phenomenal world.... Thus in the third and last stage, which is the goal, the soul ceases to identify itself with any of the three bodies that it had to develop for evolving full consciousness. Now it not only knows itself to be formless and beyond all the bodies and worlds but also realizes with full consciousness its own unity with the Oversoul, which is one, indivisible, real and infinite. In this realization of the Truth it enjoys infinite bliss, peace, power and knowledge, which are characteristics of the Oversoul.... At this state the soul completely transcends the phenomenal world and becomes Self-conscious and Self-realized.<sup>18</sup>

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<sup>18</sup> Meher Baba. *Discourses*. Myrtle Beach, SC: Sheriar Foundation, seventh revised edition, 1987, 1995 reprint, p. 222-227.

Meher Baba does not set this forth as speculative philosophy, but rather as a teaching based on his own experience, which he claims is identical with complete knowledge.

There cannot be anything hidden from the One who is everywhere present, for He is everywhere. And it naturally follows that when there cannot be anything hidden from this One He must also be all-knowing, knowing everything.

This infinite-Knowing is 'seeing' everything at one and the same time, and seeing it NOW. It is that knowledge that does not begin and does not end; which is indivisible and continuous, and to which nothing can be added and from which nothing can be subtracted.

It is that Knowledge that makes God at this moment know that which He knew when it occurred countless aeons ago, and makes Him know that which will occur countless aeons hence; that Knowledge which makes everything known to God simultaneously and NOW. This is the Knowledge of the Perfect Masters and the Avatar.

In terms simpler to you it means that which you as individuals know at this moment I knew aeons ago, and what you as individuals in ages to come will be knowing at a particular moment, I know now.<sup>19</sup>

Since this is not knowledge available to a person who is not God-realized, Meher Baba asks others to take this on faith.

Believe that I am the Ancient One. Do not doubt that for a moment. There is no possibility for my being anyone else. I am not this body that you see. It is only a coat I put on when I visit you. I am Infinite Consciousness.... Before me are saints and perfect saints and masters of the spiritual path. They are all different forms of me. I am the Root of everyone and everything. An infinite number of branches spread out from me.<sup>20</sup>

What is someone to make of claims such as this, which not only Meher Baba makes here, but also similar ones, like those attributed to Krishna, Buddha and Jesus, for instance? To assess claims such as those Meher Baba advanced and

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<sup>19</sup> Meher Baba. *The Everything and the Nothing*, 33. p. 38.

<sup>20</sup> Meher Baba. *The Everything and the Nothing*, 31. p. 35-36.

similar ones by other spiritual luminaries, one must question the justification of such assertions. How could they be substantiated?

## Justification

Those who accept such claims generally do so based on a degree of conviction. There is no way to either prove or disprove such a conviction. However, one may ask whether the conviction is reasonable.

This kind of conviction is extra-rational, in that it is not based on empirical grounds or logical reasoning from principles, but instead on feeling and intuition. Moreover, it is also said that gaining such conviction is chiefly the result of a gift, or grace of the master. Some might even say that it qualifies as a mystical experience, a personal revelation of sorts.

This kind of conviction is comparable to religious conversion or even falling in love. While reasons can perhaps be given after the fact, the conviction is not accounted for rationally but rather based on a “change of heart.” People alter their lives profoundly based on such changes of heart all the time, for example, falling in love, getting married, and establishing a family based not on reasons but on “matters of the heart.”

Many mystics account for their supernormal experience as “knowledge of the heart” in contrast to knowledge of the mind. They hold that until the “eye of the heart” opens, this level of knowledge is unavailable. Similarly, one cannot make oneself fall in love based on reason or even a strong desire for that experience.

Just as some people never have mystical experiences, or experience intuition, or have a conversion experience, so too, some people never fall in love. Such people remain ignorant of extra-rational and extra-sensory experience. Some of them may even doubt that such experience is possible, let alone significant, writing it off to overheated emotion or overactive imagination.

Yet, even where there is deep conviction based on inner experience, reason requires that it should be checked against objective criteria to the degree possible. Several such criteria are available regarding mystical experience, suggesting that a person may be in a position to know what is claimed, even though these criteria cannot serve to prove the substance of such claims definitively.

In assessing reasonableness when direct acquaintance through one’s own experience is unavailable, first, we look for plausibility and, secondly, assess degree of probability. Even science can only convey a high degree of probability.

The first criterion is personal associations that make an individual’s claims credible. For example, Meher Baba was associated with five acknowledged spiritual luminaries of his time. One of them was Sai Baba of Shirdi, famous for

the many miracles attributed to him. Another was Upasni Maharaj of Sakori (1870-1941), a close disciple of Shirdi Sai. The other three were Hazrat Babajan of Pune (c. 1806-1931), Narayan Maharaj of Kedgoan (1885-1945), and Tajuddin Baba of Nagpur (1861-1925).

While these five luminaries, whom Meher Baba identified as God-realized Perfect Masters, may not be well known in the West, they are acclaimed in India, and their shrines remain places of pilgrimage. Meher Baba's experiences with these spiritual luminaries are set forth in biographical material, with some of it independently attested. This association provides evidence of a lineage of transmission, as well as recognition by acknowledged spiritual masters.

A second criterion is living a life that measures up to one's teachings. When one's teachings are lofty, living up to them consistently is not a simple matter, especially over a lifetime. The exemplary lives of the wise are the most convincing criterion of their wisdom. In fact, the lives of the great set the standard for others. Meher Baba's life was recorded, often in detail, on his instructions, and the record of his life attests to his teaching.

Parenthetically, many spiritual masters teach that one should do as they say and not as they do, since the actions of an enlightened person are unfathomable and cannot be generalized. Moreover, a master's idiosyncrasies, such as manner of dress or speech, have been imitated and sometimes turned into societal norms, even when they bear no relation to the master's teaching.

The third criterion is enduring influence. Perennial wisdom is so called because those who have contributed to it have been recognized persistently over time as universal teachers of the highest order. They have transcended the limitations of culture to become criteria of wisdom themselves. Meher Baba's influence continues to grow, and people around the world are now awakening to his influence inwardly, as he predicted. While this criterion remains to be fulfilled in his case, the evidence is in regarding the enduring influence of earlier luminaries, such as Zoroaster, Abraham, Moses, Rama, Krishna, Buddha, Jesus, Guru Nanak, and Muhammad, for instance, whose lives and teaching continue to have an impact on billions of people.

A fourth criterion is the quality of their disciples and followers. Meher Baba's disciples live up to this high standard, by they are not yet widely known. However, the companions of previous luminaries are now famous in their respective traditions. In the West Jesus' disciples are best known. The gospels report that Jesus said that his disciples would be known by the love they had for each other. This was in fact reported of the early followers of Jesus, who were quite unlike most of their contemporaries in their familial love (Greek: *agape*), friendship (*philos*), and altruistic behavior.

A fifth criterion is the ability of other to replicate a master's teaching in experience either by following the master's instructions, or through the master's

ability to transmit influence directly, even after dropping the body. If a master's direct influence and teaching does not produce exceptional results in at least a few cases, then the master's effectiveness is called into question, and one wonders whether the master's teaching was just fine sounding words without substance in advanced consciousness. The various spiritual traditions and lineages testify to this through the mystics and masters that arise in them, the body of whose testimony and teaching constitutes perennial wisdom.

The influence of a master after dropping the body is a most remarkable aspect of great masters, who continue to have an influence not only on account of their teachings but also through the invisible presence that many followers report feeling and the inner guidance that many also report receiving. The ability of saints, sages, and masters to transmit their influence inwardly to others is one of the principal criteria justifying their claims.

In addition, there is the question of miracles. The problem with appealing to miracles as criteria is that confirming miracles is fraught with many difficulties, so their justification gets in the way of their serving as further justification. While miracles may seem to some to be the strongest criteria practically speaking, generally they are the weakest logically, since they often do not hold up well under rigorous scrutiny. So-called miracles are notoriously difficult to prove through evidence. Therefore, miracles are an unreliable criterion.

Finally, the combined testimony of mystics and teaching of masters, often independently of each other, reveals an overall momentum that no teacher or even tradition matches alone. Perennial wisdom is enduring because of its ability to preserve and transmit universal principles and values across generations. Its persistence is itself an important criterion of that universality.

The force and breadth of this momentum continues to influence all peoples and all cultures. Taken in combination with each other, those whose lives and teachings contribute to perennial wisdom constitute an overwhelming body of evidence. Indeed, it can be argued that human civilization has attained the heights that it has based on ideals these luminaries set forth, sometimes at the cost of their own lives.

For example, Socrates and Jesus were both condemned to death by their own societies for questioning established authority. Yet, their example, preserved in the narratives about them, lives on, and their influence continues to shape the future, though they themselves wrote nothing.

Not all of those enmeshed in the preservation and transmission of perennial principles and values were mystics or spiritual masters, although they are arguably sages or heroes who played a special role in history. For example, a handful of great souls risked all to found the United States of America as a liberal democracy based on the philosophical principles of the European historical period called the Enlightenment, namely, liberty, equality, and fraternity.

(community). This involves balancing and harmonizing personal freedom, equality of persons, and the common good of the community.

These principles concerning fundamental human rights stem from the coming together of the Greek and Judeo-Christian traditions centuries before. European and English thinkers created a political philosophy that influenced the intelligentsia of the time, including the American Founding Fathers. The foundational documents that they composed provided a template for future development, not only of America but also of other democracies around the world. This also created a push to guarantee basic rights for all human beings and outlaw crimes against humanity, for example, through international institutions such as the United Nations and the World Court.

The doctrine of human rights is based on the idea that all human beings are not only equal as legal persons but also inherently and ultimately valuable because they participate in the principle of life, however that is conceived. The religions of the Book — Judaism, Christianity, and Islam — consider the ultimate life principle to be God, and the human “soul” to participate in God’s life through God breathing life into Adam, the father of the human race. Thus, human rights are guaranteed through religious authority. Philosophers consider the ultimate life principle to be the Absolute, and the soul to be of the nature of the Absolute, thus guaranteeing human equality and rights base on the authority of reason. Perennial wisdom, that is, the testimony of mystics and the teaching of masters, views the principle of life as the experiential “answer” to the question: Who am I? This also guarantees human equality and equal rights, based on the authority of mystical experience.

These ideas, which were implied in the notions of spirit and soul found in the testimony of mystics and teaching of masters, bubbled to the top of European philosophy three hundred years ago and now dominate the Western political worldview. The ideas themselves are no longer the subject of debate. Political discourse revolves around how to balance and harmonize personal liberty, equality of persons, and the common good of the community in society.

These ideas are not merely presumed true but are taken to be “self-evident,” even though they are relatively new in history. In spite of the historical record of despotism and slavery, they now are enshrined as fundamental norms of thought, discourse, and behavior in liberal democracies, and powers that do not hold them are viewed as oppressive. This transformation demonstrates the power of philosophy.

## Criteria of truth

The three ways of gaining knowledge are:

- Acquaintance
- Reasoning

- Authority

*Knowledge by acquaintance* includes perception through sense experience, and knowledge of internal states, like pleasure and pain, feelings, memories and the like. Some would also include matters such as intuition and self-evidence, although others would dispute this. *Reasoning* involves sound argumentation based on true premises and valid logic. *Authority* derives from testimony by those in a position to know, either based on direct acquaintance or sound reasoning.

General agreement exists among authorities over two types of truth, logical or syntactical truth, and empirical or semantic truth. Semiotics studies processes involving signs, symbols, and signification. It is divided into three branches: syntactics, semantics, and pragmatics.

*Syntactics* studies the relationship of signs, for example, in logic and mathematics. The expression, “p implies q” is a logical expression. “ $2+2=4$ ” is a mathematical expression that is true in decimal arithmetic. Mathematical equations and algorithms are purely syntactical. Syntactics includes logic and mathematics. For example, it underlies computer science.

*Semantics* studies the use of signs as symbols used to denotatively, i.e., to refer. A sign used as a symbol with referential meaning is *semantically interpreted*. “Socrates was a Greek philosopher that lived in ancient Athens” is an example of a historical statement that happens to be true to fact. Descriptive propositions used to describe states of affairs are semantic, regardless of whether they are particular or general. Semantics is concerned with description and explanation.

*Pragmatics* studies how signs function as symbols having practical use in situations. For example, prescriptions are used to delineate norms and values, and commands are used to issue orders and give instructions.

Syntactics is said to be formal, that is, dealing with form, or symbols. Semantics is the interpretation of formal (symbolic) expressions with reference to matter, that is, what is symbolized.

The distinctions between form and matter, formal and material are difficult to grasp at first, but they are important to understand because they show how language (form, symbols) is connected with reality (matter, stuff). Failure to grasp this distinction results in confusion. Grasping it is necessary for clarity.

The distinction between form and matter is like the difference between a model and that which is modeled, or between a map and the territory. A model plane is like the aircraft it models because the form is the same, although not the matter. For example, even though the propeller of the model is tiny in comparison with the aircraft, the shape is the same, and the size is proportional.

Similarly, a map depicts an area through its form, even though the paper of the map differs materially from the physical territory. The lines of the map representing roads curve in the same way as the real roads, and they run in the same direction, if the map is oriented on the north-south axis.

Logic and mathematics function along these lines. Logical, mathematical, or syntactical truth is based on the role of signs in a syntactical system, or algorithm. “ $2+2=4$ ” as an expression of decimal, or base ten arithmetic is true solely because it follows from the axioms of arithmetic. Of course, people do not ordinarily derive the truth of arithmetic by deducing theorems from axioms. We just learn our tables and rely on that. But arithmetic is actually an axiomatic system.

Empirical or semantic truth depends on corroboration through observation, that is, by perception, or sense experience. Descriptive propositions assert the existence of a state of affairs in the world. A descriptive proposition is only true if it is found to correspond with fact. For example, we regularly use arithmetic in counting and computation, for example, in counting apples or computing their cost at the grocery. If we are paying attention, we are quick to notice if the clerk makes a mistake in the count or price.

Logical, mathematical, or syntactical truth is considered “trivial,” because it is merely an articulation of sign-use, hence, does not lead to acquisition of additional knowledge. Empirical or semantic truth is considered non-trivial because it yields factual knowledge. Scientific theories combine logical truth (deduction) with empirical truth (observation).

According to probability theory, certainty is a function of logical necessity, or tautology, whose probability is 100%, and logical impossibility, or contradiction, whose probability is zero. Tautologies are certainly true in the system in which they are nested, being equations under the rules, while contradictions are certainly false as violations of the rules. Empirical truths fall somewhere on the scale between 0 and 100.

Empirical truth and falsity are attributes of assertions and denials of fact. Justification is warranted by evidence. Evidence consists in direct experience of data, reasoning from experience of data, and authoritative testimony stemming from experience of data. Thus, justification warranted by evidence rests on establishing experience of the data in question through a credible witness. All data rest ultimately on some type of experience, either one’s own or that of others through testimony.

Some data are objective and others, subjective. Empirical evidence determines objective data. Empirical evidence is derived from perception either directly, through the unaided senses, or indirectly, with the aid of instruments such as telescopes, microscopes, and other laboratory equipment. Objective data is said to be factual, a fact being what corresponds to a state of affairs that exists

in the world. Citing facts as evidence is to provide an empirical warrant for a truth-claim.

This is somewhat of an oversimplification, since what exists in the world is a fluid series of events rather than static states of affairs. A fact could be considered on the analogy of a photograph of an event that freezes the event at a moment of time in relation to a particular space. A photograph of an event is an empirical warrant that the fact asserted occurred during the event. A statement of fact by someone who was an eyewitness to an event functions like a photograph.

In addition, there is the matter of knowledge-claims that are neither logically true, being dependent solely on the behavior of signs in accordance with rules, nor empirically true, that is, capable of being corroborated through observation or experiment. Subjective data such as interior states, qualities, and values fall outside the bounds of logical and empirical truth. Yet, subjective data play an extremely significant role in shaping individual and social life.

Subjective data are determined personally through mental phenomena such as kinesthesia, introspection, memory, feeling, intuition, and insight. Being personal in the sense of private to an individual, subjective data present special challenges with respect to corroboration. Therefore, justification of truth-claims involving subjective data is different from those involving objective data, for which factual evidence is decisive.

Whether knowledge of internal states involves truth is debated, because publicly available criteria are not available for corroboration. In addition, truth purportedly arrived at through intuition or from self-evidence is controversial, again for lack of criteria that are publicly available

Although subjective data are private, they can often be corroborated objectively based on publicly available criteria. For example, tests are used to determine what a student remembers, or what skill an apprentice has acquired. A physician may attempt to evaluate pain levels by palpating an affected area and observing the behavioral response. Instrumentation is also available now for correlating subjective data with objective measurements.

Some subjective data cannot be corroborated through publicly available criteria such as tests when the person is unavailable. Mystics who lived centuries ago and whose testimony concerning mystical experience is significant are cases in point.

However, there may be indirect means to assess such knowledge claims. For example, even in the case of objective data based on authoritative testimony it must be shown that the person was actually in a position to know. For example, it must be shown that supposed eyewitnesses were actually present at the

events they claim to have witnessed. Similarly, we have already mentioned that subjective data provided by mystics and masters are judged based on the quality of life of the persons involved.

The rules of evidence are different in different fields, and some fields admit more precision than others. Science, religion, law, and so forth have different standards and admit of different degrees of precision.

The standards for evidence are generally higher in the sciences because of the greater precision that is possible. Even in science, evidence cannot exceed the limits of observation or the tolerances of measurement, and different sciences allow for greater precision than others. For example, the physical sciences allow for much more than the social sciences.

Scientific evidence is different from religious evidence. Scientific evidence, the basis of scientific methodology, is strictly empirical, based on observation. Religious evidence, in which theological arguments are grounded, is based on established norms, such as the privileged position of revelation as conveyed in scripture or attested by sacred tradition. Thus, argumentation in a theological context may hinge on citing scriptural texts, which are taken as ultimate grounds for substantiation in theological argumentation. Disputations about “fact” would then be about textual authenticity and exegesis.

The rules of judicial evidence are as explicit as the rest of the law. Moreover, different standards are prescribed for different types of case. The rules of judicial evidence are different in criminal cases than in civil, and the rules of evidence are the most stringent in capital cases, since a life is involved. For example, in many jurisdictions, circumstantial evidence is permissible in civil cases but not criminal ones. Hearsay is generally ruled out as judicial evidence.

In every trial, a great deal of effort goes into establishing evidence in terms of both objective data and subjective data. Establishing motive and intent are as significant as adducing facts. Evidence is also approached differently in rendering a verdict and sentencing, with more latitude is permissible in the latter.

Justification is a philosophical problem. Different thinkers and various schools have approached the problem of justifying knowledge-claims differently.

However, justification in philosophy is generally based on reasonableness. Philosophers identify problem areas and attempt to provide reasonable solutions, the ideal being solutions that compel universal acceptance owing to their cogency. Generally, that goal is unattainable, because people see the scheme of things differently. Therefore, many philosophical options have been proposed.

To appreciate what philosophy does, it is necessary to examine how philosophy approaches problem areas. This involves investigating philosophy in terms of problem solving methodology.

## Problem solving methodology

The quest for human knowledge can be looked at in terms of the application of different problem solving methods to subject matter that covers not only the entire range of actuality but also the full spectrum of possibility.

This began in a general way as people asked fundamental questions about reality, knowledge, and value, for instance. Different disciplines spun off as various methods were discovered or invented for handling different subject matter.

What remains is a significant body of questioning in search of definitive methodology. Philosophers grapple with these unresolved problem areas, in search of better methods for dealing with unresolved questions. In the meanwhile, philosophers attempt to provide reasonable solutions through general problem solving, where specific methodology is has not been developed yet.

Thus, one characteristic of a philosophical problem is the further question, what would a satisfactory answer look like? That is to say, a philosophical problem does not fit into an existent paradigm in which a method, such as, science, is applied to some subject matter to derive a normal answer. A philosophical question is one that is lacking such norms, so that questions of this type are not susceptible of a “normal” answer.

Rather than speaking abstractly, it would more illuminating to examine a particular problem area, or problematic. A prime example of such a problematic is that of consciousness.

A fundamental problematic that remains unresolved involves the nature of consciousness. This problem has been studied for millennia as the philosophy of mind, or rational psychology. A newly emerging field called consciousness studies attempts to deal with the problem of explaining consciousness in a rigorous fashion, drawing upon science.

On one level, the question, what is consciousness? seems trivial and may even appear silly to some, like asking, “Who am I?” Everyone knows intuitively who he or she is. So too, being self-aware, every one is intimately acquainted with consciousness, knows this, and can reflect about it. If this were not so, this discussion could not be taking place.

On another level, what the nature of consciousness involves is a profound question indeed, for consciousness is asking this question of itself, which reveals

its reflexive nature. Human consciousness is the only phenomena in our experience with this capacity. Therefore, many questions arise about this unique phenomenon and extraordinary functionality, such as how awareness is possible, and, *a fortiori*, how *reflexive* awareness — consciousness that is aware of itself — is possible as a higher order operation.

When we speak of the problem of consciousness, we do not mean to suggest that there is any problem *with* consciousness. The problem does not rest with consciousness itself, but rather the difficulty arises from our inability to explain consciousness. St. Augustine encountered this difficulty with time. He famously said, “What is time. If no one asks me, I know; if I wish to explain it to those enquiring, I do not know.”<sup>21</sup> The same can be said for consciousness. Everyone that is conscious knows consciousness intimately but cannot explain it cogently or account for how it arises.

In the field of consciousness studies, people are coming together from different disciplines, combining their expertise in order to find solutions to questions that consciousness raises, for example, with respect to subjectivity in contrast to objectivity, and quality in contrast to quantity. How does consciousness arise from the brain and nervous system, which are physical? How do immeasurable qualities — the technical word is *qualia*— arise from measurable quantities, i.e., physical objects and events, such as brains and brain waves?

### Reflexivity

A major area of interest to the problem of consciousness is reflexivity. All consciousness is reflexive to some degree, since all sentient beings consciously or unconsciously refer their experience to themselves as the center of their experience of the environment. Apparently, only organisms with sufficiently developed nervous systems can do this consciously. At what stage of evolution this ability develops is not clear.

Higher order reflexive consciousness is self-aware. Human beings are self-aware. There is reason to think that some other animals with highly developed brains may also be self-aware also. However, it may be that only humans are capable of also being aware that they are self-aware.

Human beings can think of themselves, and they can use the first personal pronoun, “I.” Human consciousness becomes explicitly reflexive at a very early age. It seems to happen in infancy, before language learning commences. Self-awareness may be a prerequisite for learning a human language, because language is the expression of thought, and thought relates to the thinker as well as to the objects of thought. Thought is not abstract, nor does it exist in a

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<sup>21</sup> *Quid est ergo tempus? Si nemo ex me quaerat, scio; si quaerenti explicare uelim, nescio.* St. Augustine. *Confessions*, XI.14.17. Author’s translation.

vacuum. Human beings refer the information they acquire to themselves for their own use.

Since everyone refers one's experience to oneself, each person's ego is the center of that person's world. Each person's ego is also the center of one's self, beyond body, mind, and personality. It is on this basis that all persons are said to be equal as persons.

Human beings know their environment and others, know themselves as individuals, and know that they know this. Human beings also are aware of themselves as self-aware selves, and know that they are aware of their own self-awareness. Human beings can reflect upon this and can focus attention on it. The basis of many forms of meditation involves directing awareness toward self-awareness, for example. Many of these practices are extremely ancient. According to the reports of mystics, such practices lead to higher orders of self-awareness and self-knowledge that transcend ordinary awareness and knowledge.

Reflexivity may be individual or social. Individual reflexivity involves the orders of self-awareness set forth above. Social reflexivity is the effect that an individual's awareness has on others and the environment, and vice versa. "No man is an island, entire of itself...."<sup>22</sup> All of us influence to some degree that with which we interact, are influenced by that with which we interact, and are also influenced by this interaction and our knowledge of it. Just as each of us is a feedback loop for ourselves, so too, all of us are feedback loops for each other. Thus, there is not only individual consciousness feeding back on itself, but also "collective consciousness," although the latter does not exist independently of individuals.<sup>23</sup>

On one hand, reflexivity is the capacity of an individual to reflect inwardly on instead of focusing outwardly. Reflection on sense experience, reflection on inner experience, self-awareness, and awareness of self-awareness are aspects of reflexivity exhibiting itself in the consciousness of an individual as a "self," or "person."

Everyone has immediate knowledge of oneself and has no difficulty using words involving self-reference. However, the "I" as "self" or "person" remains unaccounted for, since self-awareness is non-explanatory and religious concepts of "soul" are bound up with ideology based on beliefs. No substantive explanation of self or soul has been forthcoming from either philosophy or science.

In this sense, the question, who am I? is neither trivial nor silly. The only comprehensive answer is that of perennial wisdom, which holds that

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<sup>22</sup> John Donne. *Meditation XVII*.

<sup>23</sup> Douglas Hofstadter. *I Am a Strange Loop*. New York: Basic Books, 2007.

consciousness can be realized as the sole reality. However, this must be corroborated individually through mystical experience, which is asserted as its own criterion. However, this raises the question of whether reflexivity can be considered an adequate criterion for itself, since it seems to be subjective rather than objective.

On the other hand, reflexivity also refers to the ability of a subject to influence its object and vice versa, as when an observer influences what is observed, and what is observed creates a bias in the observer. Human consciousness not only knows reality but also is part of reality. Human consciousness is expressed through human beings. Human beings participate in reality interpersonally and socially, in addition to being independent observers.

For example, anthropologists studying primitive tribes often influence them, and the tribe influences the anthropologists as well. Contact with modern people not only influences the members of the tribe as individuals but also influences the tribe as a society. This makes independent observation difficult to impossible for anthropologists, and it brings change having unintended consequences to the societies they study, too.

While this example is obvious owing to the extreme contrast it involves, all social interaction involves some social reflexivity, in which participants influence each other and events.<sup>24</sup> Cognitive scientists are discovering that human beings influence each other and their environment, and vice versa, with far-reaching implications. In a world gone global, everyone increasingly influences everyone else, and events are shaped by a wide variety of influences from many quarters and in ways that are often not obvious on the surface.

Scientific methodology may be seen largely as an attempt to exclude reflexivity from scientific research as much as possible in order to ensure that subjectivity intrudes as little as possible on objectivity. This goal is more attainable in the natural sciences than the social sciences, where the subjectivity of both observers and participants is a more pervasive factor. Even in quantum mechanics, Heisenberg's uncertainty principle reveals that observers influence outcomes through observation.

In the social sciences, the subjective bias of both observers and participants introduces *uncertainty*. The voluntary action of participants also introduces *indeterminacy* into the course of events, since behavior is motivated by belief, assumption, desire, aversion, feeling, expectation and other non-rational factors, in addition to reason. Changing events also generate feedback that influences participants. In addition, observers cannot separate themselves entirely from

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<sup>24</sup> George Soros. *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means*. New York: Public Affairs, 2008. Soros defines his concept of "reflexivity" in the way that "social reflexivity" is used here.

events. Consequently, social reflexivity vitiates objectivity in the social sciences, which adversely affects the probability of their conclusions.

Philosophers, psychologists, physiologists, biologists, neurologists, physicists, and social scientists are among those contributing to the emerging field of consciousness studies. Those participating attempt to bring the methods and criteria of their separate fields to bear on the question as specialists in those fields, while also working together as generalists.

At least some participants in this debate are also considering what the mystics and masters of perennial wisdom may have to offer in approaching the problem of consciousness. Some of the participants may even be able to draw on mystical or other non-normal experiences of their own.

### The Problem of Consciousness

What is the problem of consciousness? The problem of consciousness arises from reflexivity. We have to use consciousness to study consciousness, creating a reflexive relationship between subject and object. Many difficulties arise from this situation, since independent observation is impossible under such conditions. Observing one's own consciousness is like using the eye to study the eye. It is not possible to observe the consciousness of others directly. One must rely on subjective reports and objective phenomena such as behavior and physiology.

In addition, there is also the problem of expressing in language our thought, feeling, preference, imagination, and so forth, since language is the mind's medium of expression. Being an expression of consciousness, language is an artifact of consciousness. This creates further problems arising from reflexivity. Human beings have to use language to think about language as the expression of thought, and to communicate about it. Just as we are trapped in our consciousness and cannot escape it, so too, we are trapped in our language as a product of consciousness. How, then, can we be objective in investigating consciousness, using language in order to express thought about this? Are human beings condemned to presumption, if not fallibility?

Reflexivity presents a complex problem of knowledge that is seemingly insurmountable. However, if it is actually insurmountable, what is it that we can know, since consciousness and language are the foundations of knowledge? Are we lost at sea, floating without a compass in a boundless ocean of something about whose nature we can know essentially nothing based on solid criteria? Are we as conscious subjects projecting our world based on our assumptions and beliefs as much as receiving it through our perceptions? Are we as participants manipulating the course of events and each other through our preferences, feelings, and choices? Are we confusing imagination with reality, unbeknownst to us? Are human standards relative and arbitrary?

To answer the question, what is the problem of consciousness? involves dealing with such issues. To approach this problem, it is necessary to explore problem solving in general, as well as how philosophers approach a problematic as generalists.

The steps of problem solving can be broken down as follows:

- Perception of the situation
- Definition of the problem
- Design of the solution
- Implementation of the plan
- Adjustment based on feedback

Problems arise from situations that spark wonder. The first step in problem solving is to the situation to determine why and how a problem area leads to wondering about it.

### Reasons

Wondering inspires speculation about reasons where there is puzzlement arising from indeterminacy. Indeterminacy is indicated especially by the question, why? Generally, this question can be interpreted as asking for reasons. The indeterminate becomes determinate by providing adequate reasons.

Reasons are adequate for establishing determinacy if they provide grounds. A ground is an endpoint of explanation that satisfies wonder by providing determinacy where indeterminacy existed. Then, it is no longer necessary to ask, why? The matter is resolved satisfactorily.

A “reason” that simply disguises indeterminacy is not a ground. This is typical of pseudo-explanation using jargon, which masks indeterminacy as “learning.” However, when examined rigorously, the fancy words are discovered to add nothing material. For example, the French dramatist used this theme to great effect in his play, *The Doctor in Spite of Himself*, to satirize the medical profession of his day.<sup>25</sup>

Speculation attempts to explain a problem by giving a reasoned account based on grounds. Successful speculation results in theoretical knowledge. Philosophy has most often sought to provide reasons in terms of fundamental principles. The difficulty in philosophy has been justifying “first principles” that provide the foundation for philosophical argumentation because these principle do not rest on evidence based on observation.

Most philosophers therefore claim that the first principles that they identify are self-evident. The problem here is that there is wide disagreement over what

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<sup>25</sup> Molière. *Le Médecin malgré lui*. 1666.

is self-evident. When a number of highly intelligent people disagree over what is self-evident, claims of self-evidence seem suspect.

The other justification of first principles has often been authority of an ideology like a religious doctrine. Obviously, those not subscribing to the ideology reject such authority.

For this reason, speculative philosophies are generally considered to be ideologies. These ideologies compete with each other for dominance in the world of ideas, but ultimate resolution is difficult if not impossible for lack of justification that is compelling.

Science grew out of dissatisfaction over the foundations of philosophical speculation, which seemed not to be adequately grounded. Science sought to establish grounds based on logic and observation, since logic and observation provide grounds for general agreement. The test of logic is validity, and the test of observation is fact. Sound reasoning in science is based on the logical validity of argumentation coupled with factual evidence for truth claims of premises. This has become the basis for critical thinking.

Theoretical knowledge in science has typically led to practical knowledge. Much modern theoretical knowledge in science accounts for functions in terms of structures. We don't observe things independently of each other. Rather, we observe events as relationships of things. Function implies action, and structure implies factors that interact. For example, understanding how structure — various factors — underlies function as action and reaction can be applied through engineering to create technology, or through medicine to cure diseases. In this sense, "knowledge is power." The power of applied science is an implicit justification of its theoretical value.

That which inspires wonder may or may not fit into an existing paradigm of explanation. If it fits an existing paradigm, then one proceeds to treat it in the normal way, by applying existing methodology. In cases where there is no existing paradigm, there is no normal way to deal with the problem, and a fresh way must be found.

All the problems that science has successfully resolved philosophers initially addressed in a general way. Their efforts led to the development of scientific methodology and its application of to these problem areas. Similar problems remain, especially in areas not susceptible to scientific method for lack of empirical criteria, such as the subjective dimension.

Philosophy deals with cases for which there is no existing paradigm for normal explanation, such as exists in the various sciences, for example. One of these is the problem of explaining the nature of consciousness. It might seem that consciousness is obviously a problem for psychology, but it turns out that consciousness is not fully captured by current psychological explanation.

What this means is that the problem of consciousness arises from circumstances that do not fall under the subject matter of existing paradigms of explanation and the methodologies they employ. Therefore, the first step involves examination of the circumstances from which wonder about the nature of consciousness arises, in order to determine what is lacking and what is needed. Perhaps something is being overlooked that would allow the problem to be approached through existing means, or perhaps an entirely new approach needs to be found.

On one hand, like existence consciousness is one of the most obvious phenomena there is. How could there be any problem associated with explaining it? Some would say that consciousness is the starting point of all explanation, because it is that which is most self-evident of all. Hence, it does not require explanation itself. However, that would have to be shown so forcefully as to compel general assent. That has not happened.

The problem is that although consciousness is perfectly obvious to everyone, it does not fit into any existing system of explanation but seems to call for one. Physics treats consciousness as an emergent property of matter. Psychology accounts for consciousness in terms of behavioral correlates, and physiology, in terms of neurological and biochemical correlates.

Some have tried to maintain that consciousness is accounted for, or can be in principle be accounted for, through existing scientific methodology. Others counter that this involves making assumptions that cannot be substantiated and are therefore arbitrary.

For example, scientific research shows that changes in subjective reports of mental states are correlated with measurable changes in brain states. Does this imply that the brain causes consciousness? As we will see, not necessarily.

In order to understand this, it will be necessary to investigate causality.

## Causation

Understanding causation, or causality, is fundamental to living rationally. Rational expectations are based on causality. We expect the future to be like the past. If something worked in the past, we assume it will work similarly in the future. If something did not work in the past, we presume it will not work in the future. On one hand, knowledge of causes gives the power to predict results. On the other, expecting different results from failed courses of action is the height of ignorance.

Initially, causation was not well understood. This led to “magical thinking,” that is, irrational expectations in the light of facts. Gradual realization of this error eventually resulted in the development of logic, mathematics, and scientific method.

Scientific methodology can be understood as a way of introducing precision into discovering and expressing causal relationships. Scientific thinking relies on logic for soundness of reasoning, and on mathematics for quantitative precision, thus maximizing objectivity by minimizing subjective intrusion. Scientific explanation is causal explanation expressed in scientific theory and scientific laws, which are generally expressed mathematically.

Explanation involves giving reasons that can be justified, and justification requires the comparison of claims with criteria for ascertaining truth. In ordinary language the terms “reason” and “cause” are often used synonymously. However, in technical terminology they are distinguished. In technical parlance, a reason is a looser form of explanation than a cause. (Explaining this distinction necessarily involves getting somewhat wonkish, but I’ll try to keep it simple.)

When giving reasons in ordinary language, one is not necessarily expected to be precise. Indeed, “reasons” are often lame excuses or are otherwise self-serving. However, in asserting causation in technical areas like science, precision is required.

The issues surrounding the explication of causation are central to philosophy, philosophy of science, and science, in all of which justification based on precise criteria is paramount. Understanding causation is vital to understanding how justification works. Therefore, this understanding is necessary for critical thinking. Philosophy and philosophy of science focus on explicating causality and how it works in science, while science is explanation in terms of causality.

The simplest and most precise language is mathematics, and the most rigorous approach to causation is scientific. Therefore, mathematics and science go hand in hand. To understand issues involving causality in a precise fashion, it is expedient to examine how mathematics and science work. (This will not require actually having to do any math or science, but introducing some basic logic will be helpful.)

The most obvious feature of causation is that causes are correlated with effects. However, the difficulty with explaining anything through correlation with observations is that constant conjunction of phenomena does not establish causation. Causality requires showing the dependency of the effect on the cause, in addition to their being correlated. This takes some explaining.

Causality is a thorny issue that philosophers have still not resolved to the satisfaction of all.<sup>26</sup> Aristotle proposed a theory of causality based on “first principles” that lasted until the rise of science. David Hume, the founder of

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<sup>26</sup> Mario Bunge. *Causality and Modern Science*. Piscataway, NJ: Transaction Publications (Rutgers - The State University of New Jersey), 4th Revised Edition, 2008.

modern empiricism, observed that while the principle of causality is claimed to be self-evident, no causal connection is ever observed. He held that “constant conjunction,” now called “correlation,” is the basis for the idea of causation. Since then, philosophers and scientist have attempted to account for the concept of causality in a more precise fashion.

Generally, we think of causality in terms of conditionality. Everyone is familiar with conditional sentences having the form, “if \_ then \_” and “if not \_ then not \_.” The “if” clause is the *antecedent*. The “then” clause is the *consequent*. Conditional sentences express *logical inferences*, in which an antecedent *implies* or *entails* a consequent.

A potential problem arises because conditional sentences are used to express both correlation and causation. Therefore, a conditional sentence can easily be taken to assert causation when it is only asserting correlation. Therefore, logic, mathematics (especially probability and statistics), and science have been developed to avoid error through precision.

In science, causality is expressed in terms of logical inference in a theoretical system, whose semantic interpretation connects expressions of entailment with states of affairs. This relates *formal* implication to *material* dependence. This is sometimes called explanation through *causal mechanism*.

The logical structure of the theory is expressed through scientific laws, which are formal, such as Newton’s second law of motion,  $F = ma$ , where  $F$  = force,  $m$  = mass, and  $a$  = acceleration. This law is semantically interpreted when it is applied to a particular body and its motion. Since Newton’s first law states that a body remains at rest unless acted upon by a force, if a body (mass) is in motion, then some force other than the body is responsible that motion. Golf balls sit on the tee until struck by a swinging club.

This law not only describes how a body was and is acting (past and present observation), but it also predicts how it will act the future (future observation), allowing a particular expression of the law to be tested through observation. This causal mechanism is well enough understood to have put a man on the moon and a probe on Mars using a chain of causal mechanism.

Causality enables testing through observation. A scientific hypothesis makes a general claim applicable to all instances. If a single instance does not conform to the expected result, the hypothesis is falsified. For example, it was thought that all swans are white until black swans were discovered in Australia.

On one hand, a single false result is sufficient to disconfirm a hypothesis. On the other hand, since general propositions subsume innumerable particular propositions, general propositions can never be verified through observation with absolute certainty. Hence, science is always tentative. For example, just before the discovery of quantum mechanics, some physicists assumed that everything of note had been discovered and that classical physics was a

comprehensive description of the way Nature works. Then came the discovery that quanta behave differently, and physics had to be rethought.

*Scientific theories* are formal systems of propositions that are interpreted through *theoretical models* that purport to model facts and events. These propositions are conditional in the sense that they have consequences. In logic, this is called *implication, inference, or entailment*.

Conditional propositions are used to express inferences. These logical connections among propositions enable deduction, upon which prediction is based. Therefore, it is important to understand implication and conditionals.

### Conditional Propositions

Conditions may be necessary, sufficient, or both necessary and sufficient:

1. A *sufficient* condition is defined in terms of the antecedent's truth being sufficient for the truth of the consequent. In the expression, "p implies q," "p" and "q" represent descriptive statements. Here, the statement represented by "p" is called the *antecedent* and the statement represented by "q," the *consequent*. This is usually expressed as, "if p is true, then q is true," or "p implies (entails) q." This says that the proposition symbolized by "p," which is the antecedent of the condition, is a sufficient condition for the truth of the statement represented by "q," the consequent. For example, given "if it rains, the street will be wet," raining (p) is a sufficient condition for the street being wet (q). Note that while rain sufficient for the street to be wet, it is not necessary — a fire main may be open, for example. Therefore, a sufficient condition may not be a necessary condition.
2. A *necessary* condition is defined in terms of the antecedent's truth being necessary for the consequent's truth. This can be expressed as: "Only if p is true is q true," or "p is necessary for q," or, "q only if p," or "not-p implies not-q." For example, given "if there is no water, there is no life," there being water (p) is a necessary condition for there being life (q). Note that water is not sufficient for life. Water may exist without life. For example, a bottle of distilled water is sterile. Therefore, a necessary condition may not be a sufficient condition.
3. A *necessary and sufficient* conditional is defined as the consequent being true if and only if the antecedent is true. It is expressed as: "If and only p is true, is q true," or, more commonly, "q if and only if p." In this case, the truth of p is both a necessary and a sufficient condition for the truth of q. In this case, both p implies q, and not-p implies not-q. For example, given "if a man is unmarried, he is a bachelor," a man's being unmarried (p) is necessary and sufficient for his being a bachelor (q). (Note that this is necessarily true because the definition of "bachelor" involves being an unmarried man. Therefore, there is no

causality involved. Being unmarried does not “cause” a man to be a bachelor. It is only a matter of the definition of terms.)

The conditionality set forth above can be put symbolically, without any reference to specific meaning. Validity of inference depends solely on the truth-value of the antecedent and consequent, independently of the meaning of the propositions.

For example, ‘If p, then q, and p, therefore q,’ is a valid form of logical argument. ‘If p, then q, and q, therefore p,’ is invalid, because the truth of q (the consequent) does not entail the truth of p (the antecedent). Q can be true but p false.

However, note that, “If the earth is a sphere, then the sun is a star,” is a valid inference because both antecedent and consequent are true. However, there is no causal relationship between the shape of the earth and the sun being a star. They are coincidental, even though there is “constant conjunction” in the sense that both are simultaneously true for reasons unrelated to the truth of either proposition.<sup>27</sup> Because their relationship is coincidental, there is no causation.

Note that conditionality is defined in terms of logical implication, or inference.<sup>28</sup> No material connection is implied, only a logical relationship involving entailment. Thus, logical conditionality expressing correlation alone does not imply causation.

## Correlation

Correlation does not imply causation. For example, the inference, “if the rooster crows, dawn will soon break,” is true because the truth of the antecedent is correlated with the truth of the consequent. Logically, the conditional proposition is of the form, p implies q. Thus, if p is true, so is q.

However, although there is a correlation between the rooster’s crowing and first light, the rooster’s crowing does not cause the sun to rise. Nevertheless, if roosters think about such things as this, many of them likely believe that their

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<sup>27</sup> English philosopher David Hume (1711-1776) was the first to called attention to “constant conjunction” as the basis of the notion of causation, since there is no causal connection is perceptible (empirical). Presently, the term “correlation” is used instead of “constant conjunction.”

<sup>28</sup> The terms “implication,” “entailment,” and “inference” have a variety of meanings. Herein they are used logically in the sense that if p implies q, then it is logical to infer that if p is shown to be true, q must be true. “Implication” or “entailment” refers to hypothetical conditionality, while “inference” signifies syllogistic reasoning or argument. These terms are used purely logical here, without reference to the thought processes involved unless specifically indicated.

crowling causes the sun to rise. This is a warning to us about being careful not to make similar mistakes.

On one hand, the inference that the sun will rise soon after the cock's first crowing is borne out by experience. On the other hand, astronomy shows clearly that the cock's crowing is not a cause of the sun's rising, since the dawn is in no way connected with a rooster's behavior or dependent upon it. To conclude causation from correlation in this instance would be an error.

The inference that the sun will rise soon after the rooster crows is a valid one, but it is based on correlation rather than causation. One can rely on the rooster as an alarm clock, but not for a causal explanation of sunrise.

In fact, the relationship is reverse. The approach of first light is the cause of the rooster's crowing. For the rooster's sensors are responding to the approaching dawn, rather than the sun to the rooster's call.

While this is an obvious example and people would make this kind of a mistake, correlation is frequently confused with causation, and mistakes that should be obvious do often occur. A great deal of thinking is not logical, which precisely why logic, mathematics, and science were developed. It is also why a great deal of specious persuasion works, owing to rhetorical devices instead of rational appeal. For example, budding advertising copywriters learn the acronym "FEGG," which stands for "fear, exclusivity, guilt, and greed," the prime motivators of behavior, along with positive motivators like "new," "free," and "gift." They are also told that a good advertisement has to have a "hook" that grabs attention and generates interest.

Many specious arguments are put forward that are based on confusing correlation with causation. For example, the fact that high debt to personal income ratios lead to bankruptcy is offered as proof that high government debt to gross domestic product (GDP) is dangerous during recessions, when governments typically borrow to spend more in order to pick up the slack in the economy and break the fall. The difference is that governments can "roll over" debt indefinitely, while consumers cannot beyond a certain point, so governments do not go bankrupt, while ordinary people and businesses do. When the economy picks up again, paying the debt with increasing revenues is easy for governments, and if all else fails, taxes can be raised. However, many people fall for this false logic and act against their best economic interests during recessions by pressing for "fiscal responsibility" on the part of the government, when doing so would lead to a greater decrease in GDP and a deeper and more painful recession.<sup>29</sup>

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<sup>29</sup> That this is false logic is easily shown through the equation for GDP, which is fundamental to macroeconomics:

$$Y = C + I + G + NX$$

Confusion of correlation with causation is common enough to have been given a name in logic. It is called the fallacy of *cum hoc propter hoc*, a Latin phrase that means, “with this, therefore, because of this.” A similar fallacy is *post hoc propter hoc*, which means, “after this, therefore, because of this.”

On one hand, conditionality is logical, based on valid forms of implication, or inference, which are determined solely by truth-value of the antecedent and consequent. On the other hand, causation requires a material relationship of provable dependency in addition to logical conditionality.<sup>30</sup> For example, the earth orbits the sun “because” of the force of gravity. The force of gravity can be calculated through measurement of mass and distance, using Newton’s universal law of gravitation. The law of gravitation is universal, while its application to the earth and sun is specific. The law is *formal*; the specific measurements are *material*.

### Form and Matter

In scientific explanation, a web of relationships in a theoretical system that involves logical consequence and material evidence provide the causal link. The web of relationships is expressed in a mathematical model, which is purely formal. A material connection having probative value is established through specific data. Causation is shown through the interpretation of the formal structure to the material data as a model of the data. Newton’s universal law of gravitation is used to model the relationship of the sun and earth when its variables are given specific values based on data (evidence).

On one hand, Kepler’s law of planetary motion *describes how* the earth travels around the sun in an elliptical orbit. On the other hand, Newton’s law of gravitation *explains why* the earth orbits the sun as it does, that is, because of gravity.

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In this equation, “Y” stands for GDP (gross domestic product), “C” is personal consumption, “I” is business investment, “G” is government spending, and “NX” is net exports (exports minus imports).

In a recession, personal consumption, business investment, and net exports all decline, resulting in declining GDP, unless government borrows and spends more in order to offset this fall in spending. When good times return, personal consumption, business investment, and net exports all increase, and government can spend less. Government revenue also increases allowing the government to reduce the debt. According to macroeconomics, personal debt and government debt are dissimilar and have entirely different effects.

<sup>30</sup> “Material” is used in the legal sense of having probative value through evidence. A material witness is one who can provide relevant evidence, and evidence is material if it is relevant to the issues of a case. (“Material” in this sense has quite a different meaning than it does in “material implication.” Material implication is weak form of logical implication. It is not relevant here.)

The technical way to express this relationship of the formal and material is to say that syntactics constitutes the logical or formal aspect and semantics the interpretation of the expressions in relation to material facts. *Syntactics* deals with the relationship of signs in an algorithm, while the connection of these signs to that way things stand is its semantic interpretation. *Semantics* deals with the relation of meaning to reference, e.g., names to objects.

An *algorithm* is a paradigm constituted of instructions for manipulating signs. Decimal arithmetic is an example of a mathematical algorithm that applies mathematical operators — addition, subtraction, multiplication and division — to numbers, using the base ten system. Algorithms of arithmetic may be applied to apples or oranges indiscriminately, or to nothing at all. The syntactical truth of the expressions is not dependent on application to content. Thus, it is said to be purely “formal,” that is, it involves form and not matter.

The formal basis of causation is expressed through necessary, sufficient, or necessary and sufficient conditionality in logic and probability theory in mathematics. These expressions are called “formal” or “syntactical” because they are based on the relationship of signs in algorithms, independently of the meaning of signs in relation to specific data. That is to say, formal expressions are constituted of variables, whose argument may be interpreted in terms of data but are not necessarily interpreted.

Evidence provides a material basis for formal expressions in knowledge claims that relate to how things actually stand. Experiments are designed to show that relationships of conditions to consequences are not only logical, that is formal or syntactical, but also material, that is, have semantic import based on evidence.

The technical way to talk about this is in terms of semantics. Semantics is concerned with the use of signs as symbols that signify something other than the formal meaning of the signs. For example, the number one is purely formal. When it is applied to counting apples, it is said to become “semantically interpreted.” The symbol is connected not only to the formal meaning of the sign in a system of signs, but also it is connected with a reference outside of the formal system.

When formal expressions or syntactical expressions are interpreted semantically, that is, abstract variables are made concrete in terms of data, then they have reference to material conditions that can be checked through observations. For example, statistical computation is applied to data acquired through rigorous experimental design and implementation in order to distinguish causation from correlation scientifically.

Mistakes are generally made in experimental design or data collection rather than in the mathematics, especially in the age of computers. Unless experiments are properly designed and carried out rigorously, correlation can appear to be

causation. However, in everyday affairs, correlation is often confused with causation through fuzzy thinking involving both logic and evidence. Statistics can also be used to intentionally misrepresent.<sup>31</sup>

## Variables

Causality is expressed theoretically in terms of invariant patterns of variables. Each variable is a logical entity when considered from the perspective of the mathematics and material evidence when considered from vantage of data. A theory is constituted of an array of data organized in terms of logical relationships, which are usually expressed mathematically in the sciences. The data are selected by type, so that inferences can be drawn about data of this types, including future instances.

The framing of such hypotheses allows for prediction, and prediction enables the testing of these hypotheses based on evidence. Hypotheses are *descriptive* of how things stand, and they are *inferential* to the degree that they imply how things will be found to stand, e.g., through experiment. The inferential aspect of hypotheses enables prediction of expected states of affairs, while the descriptive aspect provides for the testing of hypotheses based on whether experimental data correspond to states of affairs that the hypothesis predicts. This is the empirical foundation of scientific method, which is said to be *evidence-based*.

Scientific testing is done with reference to the effect of an *independent variable*, or *predictor*, on a *dependent variable*, or *response*. This is done in two ways. Scientific experiments manipulate the value of independent variables to predict and test changes in dependent variables. However, this is not always possible, especially in the social sciences. On one hand, manipulation or control would be considered immoral or unethical. On the other, experimentation may not be feasible politically or socially. Instead, observation is conducted in terms of existing data, such as economic reports, which are used to detect patterns without experimental intervention.

Science is a combination of *logic* and *evidence*. A scientific theory is ideally expressed using a mathematical model that is interpreted semantically, constituting a predictive explanation. The model is constructed of mathematical functions that express invariant relationships of independent and dependent variables. For example, the expression, “for all  $x$  and  $y$ :  $y=f(x)$ ,” states that changes in the value of  $y$  are a function of changes in the value of  $x$ , that is, changes in  $y$  result from or depend on applying the function represented by  $f$  to different values for  $x$ . Thus,  $y$  is known as the dependent variable, and  $x$ , the independent variable.

Mathematical expressions are purely quantitative, regardless of whether they are simple equations or complex algorithms. They concern only the

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<sup>31</sup> Darrell Huff and Irving Geis. *How to Lie With Statistics*. New York: Norton, 1954.

relationship of numbers, operators and other logical and mathematical symbols. They must be interpreted semantically, that is, with reference to how things stand in the world, in order to have descriptive meaning.

For example, decimal arithmetic says nothing about how things stand until the numbers are connected with things. The expression, " $2+2=4$ ," can be used for counting apples, or oranges, but as a mathematical expression it is independent of both apples and oranges, and can apply to many other things, too. The use of such an expression in the context of counting shows the particular meaning, whether apples, oranges, or whatever, or just in saying one's tables without reference to anything. That is to say, the expression can be used to enumerate items or simply as a mathematical expression.

On one hand, mathematical expressions have a meaning independently of connection with facts. This meaning arises from the role of an expression plays in an *algorithm* as a system of signs, such as the decimal arithmetic that we learn in school as children, or the binary system used in computer science.

On the other, mathematical expressions can be interpreted semantically to signify quantitative relationships in the world of facts., such as adding apples or oranges with the decimal system. A very simple interpretation of the binary system occurs in computer science, where "0" and "1" signify whether an electronic switch is on or off.

At a more complicated level, mathematical functions expressing invariant relationships between independent and dependent variables can be interpreted semantically to represent how one state of affairs depends on another state of affairs. This is the explanatory function of a theory. The same functions can be used to represent how a state of affairs can be expected as the outcome of another state of affairs owing to this relationship of dependence. This is the predictive function of a theory and also accounts for its explanatory power.

Semantically interpreted mathematical models use functions and their variables to explain how one thing follows from another logically and applies this materially by correlating symbols with data. Theoretical models in the sciences are mathematical structures, hence, purely logical.

The mathematical models used in the sciences are deductive or inductive. Logical necessity, impossibility, and different degrees of probability follow from the logic and mathematics. These purely mathematical structures are related to data through being interpreted semantically, that is, the symbols of the model are correlated with data that is independent of the mathematical structure. In this way, the mathematical structure is used to model the factual data quantitatively.

Logic and mathematics provide the *formal* aspect of the theory, while data collection and experimental testing provide the *material* or substantial aspect of

the theory. The formal aspect enables quantification and logical operations. The material aspect involves the measurement and observed relationships of data.

While this may seem complicated, it is just like the using  $2+2=4$  as a mathematical expression to count stuff, as in two apples plus two apples is four apples. The connection of the formal and the material occurs by using the mathematical expression in a factual context.

### Explanation and Prediction

The real power of a scientific theory lies in the conjunction of *explanatory power* and *predictive power*. Scientific explanation is expressed through general descriptions.<sup>32</sup> A theory is a general description of a particular type of states of affairs, including their invariant relationships. This is theory as explanation. Through it, we know how things stand in relation to each other, and what follows from what.

Knowing what follows from what allows for the anticipation of future states of affairs. This enables a theory to be used for prediction. Prediction makes testing possible.

General descriptions assert that all the instances they cover are the case. A general description can never be completely confirmed if the set of instances it covers is not closed. Most general descriptions in science include future events, so they remain open.

A general proposition is *falsified* by one contrary instance. Empirical testing does not prove a scientific law conclusively, because a future instance that it includes may be experimentally disproved sometime in the future. However, the failure of a single prediction invalidates the law.

Falsifiability of hypotheses is key to scientific method: A scientific law is never confirmed because all hypotheses that have been tested so far are true, because every future prediction tests that law. A positive result adds to the body of data supporting the law; however, a single negative result invalidates the law, requiring that the law be revised.

Scientific theories remain tentative, no matter how much experimental data supports them, and they can be called into questions by evidence that does not support their predictions. Science makes no claim to be absolute other than in the negative sense of falsifiability.

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<sup>32</sup> A form of general description can be written symbolically as, *for all x: if  $f(x)$ , then  $g(x)$* ; for example, if person is human, then that person is mortal. Another general form is, *for all x and y: if  $xR^1y$ , then  $yR^2x$* ; for example, if a person is the father of another person, then that second person is the child of the first person. The general form of these propositions applies them to all members of the classes or relations they encompass.

Reasoning is refutable based on logical grounds. An argument is sound if and only if its premises are true and its logical form is valid. If these conditions are met, then reason dictates that the conclusion is true. There is little disagreement over what constitutes valid logical form. However, there is some disagreement over the criteria of truth of premises.

## Justification

Truth claims must be justified. In the case of descriptive propositions and generalizations thereof, the appeal is to factual evidence. However, not all truth claims involve descriptive propositions. Some universal statements are no generalizations of descriptions.

For example, science requires empirical testing and falsifiability of hypotheses. On the other hand, many people, including scientists, hold that certain truths are self-evident and do not require independent testing. For example, the Declaration of Independence boldly declares, "We hold these truths to be self-evident, that all men are created equal."

The difficulty with non-scientific conceptions of causality, such as those founded on intuition, self-evidence, and the like, is that they are arbitrary in that they are not falsifiable because they lack publicly available criteria requisite for objective testing. This problem confronts philosophies based on reasoning rather than evidence, ideologies based on stipulated norms such as religious beliefs and political planks, and cultures based on customs accepted as bearing the authority of tradition.

Moreover, unscientific notions of causality, e.g., those based on commonsense, have often turned out to be wrong when subjected to rigorous investigation, e.g., through statistical analysis. For example, there is presently a strong impetus toward the practice of evidence-based medicine in order to improve treatment effectiveness and reduce costs.

Additionally, what appears self-evident to some may not be so for others. Where publicly available criteria are lacking, such issues are undecidable because they cannot be tested through experiment.

Before the discovery of scientific methodology, philosophers thought of causality as the self-evident principle, "Every effect has a cause." Hence, causality was considered to be an unchanging metaphysical absolute.

Conversely, the scientific conception of causality is based on an imputed invariant relationship of dependence being empirically falsifiable through testing against physical events. Of course, scientists do not doubt scientific laws because of this. However, they do stand ready to revise them if they are falsified. Science is tentative, being dependent on experience rather than principle.

What this does mean is that generalizations that are not falsifiable through experimental observation are unscientific. The potential for falsification through

testing is a fundamental qualification for a general statement to be considered scientific. This rules out most philosophical principles, which are not falsifiable through observation.

## Criteria

Scientific causality applies only factual data, because only facts are observable empirically, which provides for testing based on publicly available criteria. However, much of what is interesting in life, including life itself, has a significant non-factual component. Explanation in cases where publicly available criteria are lacking is therefore challenging without resorting to arbitrary ideology.

Human “interests,” which include categories like values, norms, and preferences, are non-factual to the extent that these interests involve dimensions that exceed description through behavior or physiology. This means that things like beauty and goodness, which lack objective standards based on publicly available criteria, must therefore be considered arbitrary and relative unless some other account can be substantiated factually. Similarly, both life and consciousness can only be accounted for causally, according to the scientific view, if they are reduced to being considered effects of material causes such as physiological conditions.

Until a theoretical model is interpreted semantically and connected with the objective world, it describes nothing material. Without this connection between logic and fact, a model has no real predictive power, since it cannot be used to generate hypotheses that can be tested empirically.

This leads to the claim that only scientific causality has true explanatory power, and materialists hold that other types of explanation lack substance. Non-materialists dismiss this claim as “reductionistic.” Lack of empirical evidence proves neither that a proposition is false, nor that it is nonsensical.

Applying this to the question of consciousness, the great question to be answered is whether the substantial equates with the material. If it does, then either life and consciousness are material, e.g., forms of energy not yet explained, or else they are insubstantial, e.g., “epiphenomena of matter.”

Materialists affirm this, but opponents of materialism are quick to point out that this is a claim that is not justifiable scientifically. The evidence is just not in. Moreover, absence of material grounds for an argument is not evidence for the non-existence of that which is non-material, as materialists hold. Science is limited to the empirical, but this limitation does not entail the non-existence of that which is not empirical. It simply indicates that what is non-empirical does not fall within the purview of science.

Materialists would counter that anyone is free to believe whatever they want arbitrarily, but beliefs are not facts, and facts require material grounds for

corroboration based on publicly available criteria. Non-materialists respond that matter as materialists define it must be able to be quantified and measured to be significant scientifically; hence, it must be localizable in some sense. However, consciousness is non-localized. If materialists object that some aspects of energy in the material sense are non-localized, hence, could account for non-localized consciousness, non-materialists counter that then the argument is merely semantic, amounting to usage of different expressions for the same thing.

This question remains unresolved and is hotly disputed, since opponents of materialism realize that a consequence of accepting the materialist position is to admit that most of what human beings regard as important is arbitrary, e.g., values are relative. Materialists respond that according to the theory of evolution, the fittest survive and the heartiest genes proliferate. The behaviors that the fittest generate become the standards for that period, given the conditions to which people have to adapt. Thus, different standards are appropriate under different circumstances, as anthropology seems to bear out.

There is no end to such arguments for lack of ultimate criteria that are agreed upon. Materialists say that this proves that criteria are relative, while non-materialists counter that this only shows that materialists are blind to what is self-evident, owing to their faulty presuppositions, which bias their viewpoint.

Once debaters argue each other to their fundamental presuppositions, and neither can compel the other to change them based on compelling evidence or logical argument, the debate ends inconclusively. So far, neither materialists nor non-materialists have prevailed. However, there is another possibility. Should either party offer a more comprehensive theory to explain the data, then that solution would carry the day, although only tentatively. In order to consider this possibility becomes necessary to examine how theoretical explanation provides reasons.

### Scientific Theory

In the scientific view, logical conditionality alone applies outside of scientific explanation, rather than causality in the scientific sense. Only when a model is interpreted semantically, that is, with respect to the world of fact and events, does it become connected with meaning that is material, hence, quantifiable and measurable. Before that, the theory is only a logical device, such as a mathematical model. Until a model is connected with the world by being tied to possible states of affairs that are observable if they are factual, it does not become a descriptive model, and its predictions are not testable through a publicly available criterion like empirical observation.

Scientific causality is established through theoretical models that are interpreted materially in relation to some data in order to explain that data. When one state of affairs is observed as the predicted consequence of another, we say that the later is the “cause” of the former or the reason for it, since this

explanatory relationship involves not only logical implication but also material dependence that is potentially borne out by fact, hence, is testable.

This concept of cause involves explanation by answering the “why” question. It also involves prediction through being empirically testable. The dependency underlying causality is established through the explanatory power of the theory, which is a web of interdependency involving many factors that mutually support each other. Scientific causality does not involve independent causes, but rather a web of causes. That is to say, scientific laws do not exist independently of the theory in which they play foundational roles in explanation and prediction.  $F=ma$ , and  $E=mc^2$  are only abstract formulas until they are given significance in a theoretical explanation.

The explanatory power of the theory underlies its predictive power. Predictive power enables testing the hypotheses that a theory generates by comparing them to observed outcomes. Prediction is essential to the scientific concept of causality because it connects logical implication or conditionality to material causality that answers the “why” question.

Causality is much more difficult to establish without being tied to an explanation whose predictive power can be tested against publicly available criteria. For example, before biology was developed as a science, a connection between sexual intercourse and pregnancy was observed, but the connecting link was not properly understood in terms of causality. Therefore, it may have seemed to many that intercourse was the cause of pregnancy because of the frequent conjunction of pregnancy with intercourse and the absence of pregnancy without intercourse.

Only with the advent of biological science was a provable causal explanation forthcoming. Biological understanding accounted theoretically for pregnancy based on fertilization rather than intercourse. Now we know it is not the act of sexual intercourse itself that causes pregnancy. Intercourse is only a delivery system.

The direct cause of pregnancy is the fertilization of an egg cell by a sperm cell. This does not depend solely on intercourse, given artificial insemination and *in vitro* implantation, so intercourse is not a necessary condition. Intercourse does not always result in fertilization since other conditions must also pertain, such as ovulation, so intercourse is not a sufficient condition either.

Fertilization is necessary and sufficient for pregnancy, and intercourse is neither necessary nor sufficient for fertilization to occur. Intercourse is not necessary owing to other means of delivering sperm to an egg. Having intercourse neither implies pregnancy nor is it necessary for it. Intercourse is one of many interrelated conditions that may be involved in pregnancy, which biology explains through a complex web of causality.

Taking intercourse to be the cause of pregnancy does not a *post hoc ergo propter hoc* fallacy — the fallacy of attributing causality to sequential conjunction of events — because intercourse may play a role in pregnancy as the delivery system. Nor does intercourse cause pregnancy directly, for the reasons just cited. Intercourse may be involved in pregnancy, and ordinarily is, but it is not necessarily involved, as artificial insemination proves. However, as a potential delivery system intercourse can contribute to pregnancy, so it may be designated a “contributory condition.”

The logical fallacy of confusing a contributory condition with a cause is actually a rather common occurrence. Sometimes it is even used purposely to shift blame.

The scientific concept of causation as expressed through scientific laws is a powerful form of explanation, because of the predictive nature of science that permits empirical corroboration. Causation in physics describes how objects move through space in time. This enabled humanity to conquer the challenge of space, put a man on the moon, and land a probe on Mars so far. Causation in chemistry and biology produced a theoretical understanding of how an organism functions, of which medicine is a spin off.

These theories show how some variables depend on others. Testing of hypotheses corroborates such relationships or falsifies them. This is the foundation for evidence-based medicine, for example. The theory of biology reveals how the body functions as an organism, that is, as a system of nested subsystems, each of which is composed of elements. The subsystems of an organism are organs, and the elements of a biological system are cells.

For example, biology provides understanding of circulation in terms of the functioning of the heart muscle as pump. The heart is able to function as a muscle, expanding and contracting, owing to its cellular structure. It is only relatively recently that major systems were explained in a way that relates structure to function. For example, William Harvey (1578-1657) published his theory of the circulatory system in 1628.<sup>33</sup>

Before Harvey’s discovery, circulation of the blood was not well understood. This is surprising to many, since it seems obvious to us now that the heart pumps blood through our arteries and veins. However, we learned this from biology, the basics of which are now integrated into our cultural worldview through education. This web of information — and sometimes misinformation — underlies the common conception of causality. Moreover, very few people who have not studied biology know in any detail how circulation works, or how

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<sup>33</sup> William Harvey. *An Anatomical Exercise Concerning the Motion of the Heart and Blood in Animals*. 1628.

it is integrated with other major systems. Yet, everyone knows that the heart causes blood to circulate, as well as the rhythmic beating of the pulse.

While most people today are familiar with the basic mechanics of the bodily systems, this was not always so. For example, before biological discoveries were made and this understanding became widespread, people were aware that the beating of the heart and breathing are constantly conjoined in a living human organism. Therefore, many people thought that there must be a causal connection between them, such as between the beating of the heart and that of the pulse.

However, before the circulatory and respiratory systems were understood, it was not known that the pumping of heart causes the pulse to beat, but that heart beat and breathing, which both pulsate, are not connected directly, nor did they realize that they belong to different systems that interact. Now we know that blood acquires oxygen from inhalation, distributes it to the cells for oxidation to produce energy, and then returns carbon dioxide for exhalation. Even though the respiratory and circulatory systems are distinct and can be understood separately, they are not independent of each other in the functioning of an organism. Their cooperation is vital.

Moreover, it took some time for these discoveries to permeate the culture. Similarly, a great deal has been discovered that is not yet known generally. While knowledge is now proliferating more quickly owing to the prevalence of communications technology, it still takes a significant amount of time for new knowledge to permeate a culture.

Currently, science has discovered how the functioning of the major bodily systems, — circulatory, respiratory, digestive, sensory, skeletal, muscular, endocrine, nervous, etc. — is based on physiological structure, down to the molecular and atomic level, and even the quantum level is now being investigated. While a great deal is known already, there is still much that remains to be discovered about the human organism.

### Reason and Cause

Now we are in a position to distinguish giving reasons and providing causes. This is important because science is based on providing causal explanations, while most other forms of explanation are based on giving reasons. The latter encompasses not only philosophy but also the so-called soft sciences, which include much social science.

The physical sciences, also known as hard science, are based on physics. Physical explanation is provided in terms of four key factors, which are quantifiable (measureable), namely, space, time, mass, and energy. Chemistry is based on physics. Chemistry is divided into inorganic and organic. Biology is based on biophysics, which is based on physics and biochemistry, which is based on organic chemistry.

So far so good for unified science, but at the level of biology problems arise because there is no satisfactory causal explanation for either life or consciousness. This leaves a gap between biology and empirical psychology, and *a fortiori* the social sciences.

This gap implies that no causal explanation of biological complexity is available in terms of that which is elementary. Thus, causality in psychology and the social sciences depends on statistical induction. Statistical induction requires identification and control of relevant variables, ideally through replicable experiment. However, in psychology and the social sciences, this capacity is limited.

Consequently, a great deal of explanation in psychology and the social sciences such as economics and political science is based not on experimental corroboration of causal hypotheses but on giving reasons. Some of these reasons are empirically based, derived from data mining, such as determining trends from census reports. Other reasons are more ideological and normative than empirical or substantive.

For example, justification based on assumed authority of ideological norms is arbitrary rather than scientific, and such appeals amount to pseudoscience when they are cloaked in scientific terminology. However, attention to detail and vigilance are required to catch out such fallacies. Here, the question “why” leads to exposing unsubstantiated claims that are masquerading as being causally based.

Many of the most intriguing questions involve areas that are not yet amenable to explanation through empirical methodology. While empirical methods can describe such phenomena and correlate their occurrence, empirical methodology cannot predict them with a significant degree of accuracy based on invariant laws. These are questions that concern quality rather than quantity, for example, values, preferences, and norms.

### Unanswered Questions

Two areas remain opaque, even to experts. The first is the nature of life and the second is that of consciousness. No causal account is yet available for either, other than that they both apparently depend on the presence of certain physiological structures and functions. However, it remains unknown how physiological structure is related to life and consciousness other than by the constant conjunction that is observed.

Life emerges from organic complexity, and consciousness only manifests in a highly complex organism. Yet, the material structure of a physical organism does not predict the emergence of life and consciousness. A living organism is a synergistic system in that the living organism is greater than the sum of its components, in that it arises from that which is apparently non-living and inert. Moreover, there is no inherent reason to expect that a living organism such as a

cell will eventually evolve to a level of complexity that is capable of manifesting the phenomenon known as “consciousness.” How and why life and consciousness emerge and function as they do are questions that largely remain an unsolved mystery.

This inspires wonder in those who are familiar with the process of explanation and realize that there is no explanation for life and consciousness. True, mythological accounts and religious explanations exist, but these remain on the level of story rather than being rigorous explanations of a comprehensive nature.

Some hold that life and consciousness, which are unmanifest, manifest in an organism when certain physiological conditions are met. For example, William James observed that reception is different from production.<sup>34</sup> Although invented after James, the radio demonstrates this, receives already present waves rather than producing them. Could a sufficiently organized nervous system manifest consciousness, which is otherwise unmanifest, rather than generate it? Mystics and masters have advanced this view, based on mystical experience.

The chief reason for this position is authority, including that of longstanding tradition, religious doctrine, and testimony of mystics, who claim it to be a matter of their experience. The latter is of greatest interest, because it involves the claim of knowledge by acquaintance.

For example, in *God Speaks*, Meher Baba sets forth a view accounting for the independence of consciousness, as well as its primacy as a metaphysical cause. He also holds that this view is based on knowledge by acquaintance, gained through mystical experience. Perennial wisdom can be interpreted as corroborating this account through similar testimony of mystics and teaching of masters across time and around the globe.

Materialists dismiss mystical views from consideration as being non-empirical, but others hold that they should be considered. The question is how to consider them in a way that can lead to explanatory results capable of being substantiated.

One proposed avenue of approach compares consciousness with the operations of a cybernetic system. Indeed, this analogy was initially important in the development of cognitive science.<sup>35</sup>

Some scientists have suggested that consciousness might be approached through analogy with quantum mechanics and holography, for example.<sup>36</sup> For

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<sup>34</sup> William James. “Human Immortality.” Cambridge, MA: Harvard University, Ingersoll Lecture, 1898. URL=< <http://www.des.emory.edu/mfp/jimmortal.html> >.

<sup>35</sup> Howard Gardner. *The Mind's New Science: A History of the Cognitive Revolution*. New York: Basic Books, 1985.

example, in physics a great deal of explanation is in terms of forces and fields. A force is vector quantity of energy capable of “causing” an object with mass to accelerate. According to Newton’s second law, the acceleration will be in direct proportion to the net force acting on the object and in inverse proportion to the object’s mass. A field is a theoretical construct involving “lines of force” as vector paths plotted mathematically.

“Force” and “field” are theoretical terms, not “objects.” “Force” and “field” are concepts that play a theoretical role in the construction of models in physics. Their existence is purely logical or mathematical, rather than real, although their “presence” is quantifiable. That is to say, their predicted effects are measureable experimentally and can therefore be substantiated.

While forces and fields are not material objects, they play an important role in causal explanation in physics. Some look in this direction for clues about explaining consciousness.

Analogies with theoretical terms accept to overcome the tendency toward reification. One of the common traps is thinking of what is non-physical in the same way that one conceives a physical entity as a “thing.” This is called “reification,” from the Latin word *res* (genitive *rei*), meaning “thing.” For example, there is often a temptation to fall into the pattern of thinking of “the mind” as an object similar to “the body,” even though the body is a physical object, but mind and consciousness are not.

An important part of problem solving, and the first step in undertaking it, lies in perceiving the problem area correctly, so that the problem can be framed properly. Otherwise, the investigation is skewed from the outset and is likely to be unproductive, leading down blind alleys.

One avenue that might lead to a possible solution is to think of layers, levels, or dimensions nested within in each other. These levels would exhibit different degrees of subtlety, such that a subtler level is a more refined manifestation of a grosser one. For example, in the model of quantum mechanics mass is viewed as congealed energy, so to speak. Mass is made up of particles; elemental atoms combine into molecules of elements and compounds, which further aggregate into observable objects. Yet, at the quantum level particles are viewed as energy waves.

This is a theoretical model providing an explanatory account of behavior in the physical world of objects based on measurement of energy transformations posited as taking place at a much subtler level than the ordinarily perceptible. The model of reality used in quantum mechanics views energy as underlying the mass of objects.

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<sup>36</sup> David Bohm. *Wholeness and the Implicate Order*. London: Routledge & Kegan Paul, 1980.

Similarly, consciousness might be conceived as underlying both physical reality and the quantum level of energy identified by quantum physics. For example, just as physics thinks of energy as the ability or power to effect change, consciousness might be thought of as underlying energy as the intelligence responsible for change manifesting in terms of invariant patterns.

Mystics and masters express something like this view in reporting their mystical experience. According to perennial wisdom, the gross physical dimension manifests from the subtle dimension of energy, and the subtle dimension of energy arises from the causal or mental dimension of intelligence. All of these dimensions are manifestations of the one indivisible Absolute as the identity of knower, known and knowing.

How we look determines what we see. Therefore, it is necessary to take a correct angle of approach.

## Perceiving circumstances

Most people probably think of the mind as a mirror or reality, precisely reflecting what is “out there” in the world. However, this is not so. First, every observer sees the world from a different angle, or perspective. Moreover, the mind is not mirror reflecting reality directly. It does so through thought and thought is expressed in language. Thus, language influences perception of reality, too.

Conceiving the mind more as a camera than a mirror produces a better idea of the mind's operation than a mirror. A camera can only capture what falls in its frame. Similarly, human knowledge is framed by its limited horizon and particular angle.

To further the analogy, the camera should be thought of as having a wide-angle lens that distorts objects that are close to it, making them seem larger than they actually are. Similarly, the individual ego exaggerates the importance of that which it deems in its self-interest.

Most significantly, however, consciousness is not as much as mirror as a feedback system. The mind's data processing involves not only data collection through perception, but also organization on the data through reflection. Moreover, adjustments are made based on feedback from application. Many operations are performed simultaneously with perception, including conceptualization and ideation, feeling, comparison with memory, evaluation based on norms, and so forth, and more information is provided through use of information after the data are processed.

The unconscious also plays a significant role. Data may be either exaggerated or suppressed for emotional reasons during processing, for example. Unpleasant

data may be repressed, while data processing may generate information skewed by self-interest and toward self-importance and self-aggrandizement.

Wonder is the specific operation of the mind that provides an impetus to engage in problem solving. Curiosity — wondering why something is so, or is the way it is, or could be used or improved — impels examination of the surrounding circumstances in an effort to define the problem. This stage is crucial, because failing to notice any key factor will inevitably skew the analysis and bias the outcome.

For example, classical physicists who thought of space and time in absolute terms failed to notice relativity until Einstein's discovery. This discovery did not disprove classical physics, which remains largely intact at the levels of observation that it treats. However, Einstein's innovation did establish that classical physics failed to grasp the larger problem. After Einstein perceived the situation in a more expanded way, he was able to restate the problem and propose a resolution that would revolutionize the field.

Einstein did not make his discovery entirely out of the blue, independently of the state of physics at the time. There were certain problems that remained unsolved, about which physicists were curious. Einstein's curiosity led him to undertake the course that resulted in his discovery of relativity. While his method led to a discovery out of the blue, so to speak, in that it was not anticipated based on the current paradigm of normal science, it was sparked by apparent deficiencies of the normal paradigm. Einstein's discovery shifted the paradigm and changed the direction of normal science.

Since that time, implementing the plan he set forth based on his solution has led to a fresh concept of doing normal science and resulted in a vast body of knowledge that was not dreamed of previously. In fact, shortly before Einstein's discovery some classical physicists were proclaiming that physics was already largely complete.

What is significant about Einstein's discovery of relativity is that it required a new way of seeing the problem. Examined through the lens of normal science, a whole dimension of reality was being overlooked and the normal procedure was into capable of leading to a solution. An intuitive leap was required. It might be said that the prevailing norms were obscuring vision. Einstein had to use creative imagination to position himself outside the norms in order to be able to see beyond them.

A consequence of the principle of relativity is that the observed universe is not simultaneous. This may be compared to the situation in astronomy prior to the Copernican hypothesis that the earth revolves about the sun instead of vice versa. Einstein's discovery showed that since not all information arrives at the observer at the same time, the observed universe does not actually exist in the observed state at the time of observation.

This is quite evident, for example, when a flash of lightening and a thunder clap are perceived separately at a distance, since sound waves travel much slower than light waves. Similarly, observation of the stars in the heavens is also non-simultaneously because they are so far away that it takes light millions of light years to travel to earth. The heavens as they appear now were in the observed state eons ago, and some of the stars we see now no longer exist.

The divergence of reality from observation shown by relativity shattered old presumptions, just as previous views were shattered when Magellan's expedition circumnavigated the globe for the first time, showing that the earth is not flat, and the work of Copernicus, Brahe, and Kepler proved that the sun is the center of the solar system, around which the earth and other planets orbit.

But an even more upsetting discovery was also in the making. In 1900, at about the same time that Einstein was working on a solution to relativity by questioning the absolute nature of space and time, Max Planck (1858-1947) questioned the presumption of continuity of change, upon which classical physics was based. This led to the discovery of quantum mechanics, which also revolutionized physics.<sup>37</sup>

Planck was responding to his wonder about certain anomalies in the current paradigm that remained unexplained on the presumption of continuity, that is, that the nature is continuous. There is even a proverb, "Nature does not move in leaps." This was true of the universe of classical physics.

However, *intuitive leaps* are well known. Planck made just such an intuitive leap, arrived at independently of observation, when he hypothesized that reality is discontinuous at the quantum level. Subsequent observation corroborated his hypothesis through experiment. Quanta seemed to shift orbit without traversing the intervening space. This is not possible in the classical model.

As if questioning continuity was not enough, the development of quantum mechanics interjected the problem of consciousness into the center of physics when Werner Heisenberg (1901-1976) posited that observation affects events, based on the well-known *Heisenberg's uncertainty principle*. Also known as the principle of indeterminateness, this principle states that position and momentum cannot be determined to the same degree at the quantum level: As precision of measurement of one increases, information about the other decreases. Position and momentum cannot be determined with precision simultaneously.

Therefore, the observer must choose which measurement to favor. This intrudes the consciousness of the observer into the experiment as a determinant of the result. At the quantum level, the observer is no longer simply a mirror

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<sup>37</sup> Fred Alan Wolf. *Taking the Quantum Leap: The New Physics for Non-Scientists*. 2<sup>nd</sup> Edition. New York: Harper & Row, 1989. The following exposition is based on Wolf.

reflecting experimental conditions and results, but an active participant who influences the outcome of observation through choice. The continuity of nature was not only in question, but also the objectivity of scientific methodology. Needless to say, heads were exploding over this as classically trained physicists grappled with the implications.

Niels Bohr (1885 - 1962) subsequently showed that light can be considered as a particle phenomenon or as a wave phenomenon, but not both simultaneously, ruling out Einstein's hypothesis that light is a wave constituted of a cloud of particles. Thus, depending on how it is observed, light appears as either a particle or a wave. Wave and particle are complementary aspects of light. This is called *Bohr's principle of complementarity*.

This principle is illustrated by gestalt figures, such as Rubin's vase, which can be seen as either a vase or two faces, but both not simultaneously. Looking at the



white makes the picture appear as a vase, while looking at the black makes the picture appear as two faces. Similarly, one can choose to observe light experimentally as either a wave or a particle, but not both.

Heisenberg's principle of indeterminateness, when coupled with Bohr's principle of complementarity, implies that observation affects the way reality appears. That the appearance of reality is affected by the choice of observers implies that the consciousness of the observer impinges on reality instead of remaining inexorably separate from it. This seemed to contradict the principle holding that science rests on passive observation of reality.

Physicists had mostly subscribed to the Aristotelian view of the mind as a blank slate, a view that the influential realist philosopher John Locke (1632-1704) adopted. Sir Isaac Newton (1643-1727) was a friend of Locke and likely shared his realistic point of view, incorporating it into his physics.

Newtonian, or classical physics views scientific observation as a mirror image of reality, with reality being continuous and mechanistic. Classical physics rules out the disturbance of the observed by observation. It also excludes discontinuity and randomness. Classical physics views the universe on the analogy of a clock.

The idea that reality at the quantum level is not purely objective and determined shocked many physicists, since they were strongly committed to

objectivity and law-like behavior in science. A major purpose of scientific method was to isolate the vagaries of subjectivity from data that was presumed to be purely objective. This transition in thinking seemed to be letting subjectivity in through the front door, while cracking the façade of continuity and determinism. Even scientific realism, the view that events are independent of observers, would eventually be threatened.

However, quantum mechanics is highly theoretical and is not susceptible of being expressed in the comfortable models of classical physics that do not contradict perception. Therefore, it can be interpreted in a variety of ways that give its formal (mathematical) structure meaning with reference to material reality.

A number of interpretations of quantum mechanics have been put forward, including one that holds that since quantum mechanics deals primarily with theoretical terms, its reference to material “things” is irrelevant. Quantum mechanics is a convention physicists use to deal with data at the subatomic level, which cannot be observed directly. Therefore, its constructs are purely theoretical. This dispenses with difficulties by avoiding them. However, it avoids them at the expense of losing touch with “external reality” at the quantum level.

Bohr and Heisenberg put forward the Copenhagen interpretation. The *Copenhagen interpretation* views quantum mechanics as applying probability to randomness, taking questions about independent reality to be meaningless. It implies that since the observational apparatus cannot be distinguished from what is being observed at the quantum level, the boundary between observation and reality is blurred and ceases to exist in absolute terms. On this interpretation of quantum mechanics, the separation between observation and observed, subjectivity and objectivity, consciousness and reality, collapses.

Some theoretical physicists objected to this view, notably Einstein. Like many physicists, Einstein liked to think of physics as explaining “nature.” Indeed, the Greek term from which “physics” derives is *physis*, meaning “nature.”<sup>38</sup> The idea that nature, or physical reality, is neither continuous nor objective seemed to contradict the foundational ideas on which physics as an explanation of nature rests.

John F. Sowa quotes Max Born’s summary of the problem that quantum mechanics introduced in causality:

In his lectures on cause and chance in physics, Max Born (1949) stated three assumptions that dominated physics until the twentieth century:

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<sup>38</sup> F. E. Peters. *Greek Philosophical Terms: A Historical Lexicon*. New York: New York University Press, 1967, p. 258-260.

1. "Causality postulates that there are laws by which the occurrence of an entity B of a certain class depends on the occurrence of an entity A of another class, where the word entity means any physical object, phenomenon, situation, or event. A is called the cause, B the effect."
2. "Antecedence postulates that the cause must be prior to, or at least simultaneous with, the effect."
3. "Contiguity postulates that cause and effect must be in spatial contact or connected by a chain of intermediate things in contact."

Relativity and quantum mechanics have forced physicists to abandon these assumptions as exact statements of what happens at the most fundamental levels, but they remain valid at the level of human experience. After analyzing them in terms of modern physics, Born concluded "chance has become the primary notion, mechanics an expression of its quantitative laws, and the overwhelming evidence of causality with all its attributes in the realm of ordinary experience is satisfactorily explained by the statistical laws of large numbers."<sup>39</sup>

A vexing problem arises from the notion of unified science. Unified science is the view that complex levels of nature are based on simple ones. Physics provides the building blocks of chemistry, chemistry underlies biology, and biology accounts for physiology and psychology, while physiology and psychology are fundamental to the social sciences.

Given this notion of unified science, if the foundations of physics are not strong, then the whole edifice is shaky. Quantum mechanics seemed to undermine the foundations by questioning continuity and objectivity, for example, in its finding that the foundation of physical reality is based on chance, while calling in question the presumption that passive observation mirrors what is "out there" without influencing it.

This recalls the reaction to the ancient Greeks when irrational numbers were discovered. The Pythagorean theorem holds that the square of the hypotenuse of a right triangle is the sum of the squares of the adjacent sides. Solutions may

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<sup>39</sup> John F. Sowa. "Processes and Causality" (2000)  
URL= <http://www.jfsowa.com/ontology/causal.htm>

involve numbers whose value is a square root, like the square root of two, which is irrational.

The ancient Greeks were highly rational, and they recoiled at the idea of the irrational in nature. Similarly, modern physicists presumed that nature is continuous and deterministic — mechanistic. The idea of chance or randomness at its foundation was disconcerting to many.

At this point, you may be wondering why physicists were so upset. Why not simply reason that even though waves and particles are mutually exclusive when observed, it seems obvious that if waves and particles can be observed independently, then both “must” exist independently of observation. Because mathematics can be applied to chance at all, there “must” be pre-existing patterns.

This gets to the crux of the concept of causation. The only way to argue that waves and particles “must” exist independently, without reference to observation is by invoking the principle of causality — every effect has a cause. However, modern science departed from ancient thought by rejecting this principle as unsubstantiated empirically. Proponents of the principle of causality as a metaphysical principle hold that it is self-evident.

Opponents object that the “self-evidence” of the principle is based on either its being a tautology, in which case it says nothing, or “commonsense,” which is essentially convention, or else intuition, which is subjective, hence, lacks a publicly available criterion. In short, accepting the principle of causality as a metaphysical principle without scientific substantiation would be to take a step backward into the pre-scientific era.

To resurrect the principle of causality as a metaphysical principle to solve a problem arising from scientific theory and experiment would undermine the empirical basis of scientific methodology. Therefore, those scientists opposed to the Copenhagen interpretation, which most physicists accepted, had to take another tack, either a rival theory or a proof that quantum mechanics is insufficient to explain what it purports.

Einstein felt intuitively that Heisenberg and Bohr’s solution was unsatisfactory. He famously said that God does not play dice with the universe. By this, he meant that chance cannot be ultimate and a more complete scientific explanation must be possible, one that is objective and deterministic.<sup>40</sup> Therefore, he sought to overcome this challenge to continuity in physics, as well

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<sup>40</sup> "Quantum mechanics is certainly imposing. But an inner voice tells me that it is not yet the real thing. The theory says a lot, but does not really bring us any closer to the secret of the 'old one'. I, at any rate, am convinced that He does not throw dice." Letter to Max Born (4 December 1926) in *The Born-Einstein Letters*. Translated by Irene Born. New York : Walker and Company, 1971.

as to the dichotomy between the subjective and objective, by showing that quantum mechanics is incomplete.

Although Einstein was unable to devise a rival theory before he passed away, he nevertheless managed to call question Bohr's interpretation into question by advancing a paradox. Einstein published a paper with Podolski and Rosen in 1935, showing a paradox arises because observation of the existence of quanta as particles obviates their existing simultaneously as waves, and vice versa. This is called the EPR paradox, named after the first initials of their names.

The reasoning behind the EPR paradox posits that a necessary condition for producing a complete description in physics involves providing a full description of physical reality without disturbing it. Therefore, the sufficient condition to demonstrate the incompleteness of quantum mechanics as a complete theory is simply to produce a single case where quantum mechanics does not account for the physical reality of something it treats without disturbing it. A paradox devised by Einstein and his colleagues provides a sufficient condition that questions the completeness of quantum mechanics as an explanation of physical reality.<sup>41</sup>

Not all physicists were convinced that EPR was the final word, meaning that quantum mechanics would eventually have to be replaced by a more complete explanation. John Bell, for example, later proposed a solution. Bell's Theorem shows in essence that assuming determinism underlying the supposed incompleteness of quantum mechanics does not result in preserving the conception of physical reality familiar from ordinary experience and classical physics, in which objectivity and locality prevail.<sup>42</sup>

Quantum mechanics revealed that the observer influences experiments at the quantum level, since position and momentum cannot be measured simultaneously, and a choice must be made. Before this, physicists had not been much interested in consciousness. They had simply accepted passive observation as a given and considered the observer (mind) to be a reflection of physical reality (matter) instead of an active participant in its construction.

Scientific method had assumed that an objective observer is a faithful mirror that does not intruding on reality. With the advent of quantum mechanics, however, active observation was forced to the fore in the eyes of many physicists, and it seemed to stand in need of explanation. Consciousness had entered the scientific debate uninvited, whereas previously it had been considered chiefly a matter of philosophical interest, since scientific methodology sought to exclude subjectivity insofar as possible.

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<sup>41</sup> See Wolf, *Taking the Quantum Leap*, Chapter 9.

<sup>42</sup> Wolf, p. 198-208.

While physicists had presumed the consciousness of observers was passive, hence of no practical interest, modern psychologists had attempted to deal with consciousness and mental processes scientifically. Because subjectivity is not measurable objectively other than through observable effects, e.g., brain wave activity and biochemistry, this proved to be difficult to accomplish without equating consciousness with brain wave and biochemistry. Some were comfortable in reducing mind to matter, but others were not.

Even though the physical and biological sciences have had extraordinary success in explaining matter, contemporary psychology still lacks a theory of consciousness, in spite of strides in understanding the operation of the physical nervous system that supports consciousness.

Materialists are convinced that eventually mind will be entirely accounted for by material causes, but the prospect of completing that is not imminent. In spite of this, many psychologists do simply dismiss consciousness as inconsequential, considering it an “epiphenomenon of matter” arising as an “effect of brain states.” Many scientists chose to rule “mind” and “consciousness” out of the scientific universe of discourse to the degree that it was considered subjective and not explicable in terms of physiological and behavioral measurement.

Although some were satisfied with this account, others were not, feeling that this was simply to dismiss something because it could not be explained empirically grounds. Because something cannot be substantiated empirically does not imply that it does not exist at all. Moreover, there are reasons for thinking that a complete explanation on material grounds may not be forthcoming, because it does not seem possible to capture quality through quantity.

This debate is still raging.<sup>43</sup> On one hand, advances in cognitive science encourage materialists to think that developing a comprehensive theory to explain consciousness in terms of matter is possible in principle. On the other hand, evidence such as the apparent control subjects have over initiating changes in behavior through mental events makes others doubtful that a comprehensive explanation can be arrived at based on the physical nervous system alone, or at least as it is presently understood.

For example, scientific accounts of consciousness have been suggested but none has yet been elaborated as a comprehensive theory.<sup>44</sup> This controversy has

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<sup>43</sup> John Horgan. *The Undiscovered Mind: How the Human Brain Defies Replication, Medication, and Explanation*. New York: The Free Press, 1999.

<sup>44</sup> Fred Alan Wolf. *The Spiritual Universe: How Quantum Physics Proves the Existence of the Soul*. New York: Simon & Schuster, 1996. Michael Talbot. *The Holographic Universe*. New York: HarperCollins, 1991. Evan Harris Walker. *The Physics of*

spawned the new interdisciplinary field of consciousness studies, which now has its own journal.<sup>45</sup>

### How Is Consciousness To Be Explained?

Everyone experiences consciousness as self-evident. Because consciousness is self-evident, it seems trivial and most people do not spend time wondering about it. They take consciousness as a given, just as they presume the existence of the “things” that are apparently separate from their consciousness.

Because most people’s awareness is outwardly directed most of the time, they are hardly aware of consciousness at all, let alone bothering to care about what it is. However, from time immemorial, some have wondered about consciousness, and some have investigated subjective states by turning attention inward.

While the West has been more absorbed in directing attention outward to investigate nature, the investigation in the East has long been directed within. In the West, few wondered about consciousness until scientists recently became interested in it owing to contemporary discoveries about the role of the observer in relation to observation as a cornerstone of scientific methodology. However, the East has a long tradition of consciousness studies, which is recorded in the spiritual literature. This rich history is only recently being discovered in the West. While the West does have its own mystical traditions and literature, mysticism has not been a topic of interest until quite recently. In fact, “mysticism” still has a pejorative connotation for many, suggesting superstition and credulity. Mysticism in this pejorative sense is regarded as antithetical to science.

Most people do not experience consciousness independently of the mind and its content. On the other hand, mystics report that the experience of “pure consciousness” is independent of mental activity and content. Mystics of all times and climes wax poetic about such experiences, called *samadhi* in Sanskrit and *satori* in Japanese. Anyone reading the spiritual literature that reports about this might naturally wonder about it, and such reports have inspired others to seek for it.

Everyone experiences the customary three major states of consciousness: waking, dreaming, and sleep. There are “alternative states” such as hallucination, mental illness, drug-induced experience, and so forth.<sup>46</sup> Animals have different

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*Consciousness: The Quantum Mind and the Meaning of Life*. Cambridge, MA: Perseus, 2000.

<sup>45</sup> *Journal of Consciousness Studies*. URL= <http://www.imprint.co.uk/jcs.html>

<sup>46</sup> Charles T. Tart, Editor. *Altered States of Consciousness: A Book of Readings*. New York: John Wiley & Sons Inc, 1969.

types of consciousness, too, and children are conscious in different ways as they mature. In addition, mystics report states of “super-consciousness.”

Noticing this, philosophers and psychologists tried to explain the nature of consciousness in such a way as to account for the extensive range of phenomena that are reported. Their endeavors have left a track of their wondering and the avenues they pursued.

This speculation reveals a tendency to generalize from one’s own state of consciousness, taking it to be universal or at least representative. This is understandable, since consciousness is private, and one can only know one’s own consciousness directly, at least if one is not telepathetic. Therefore, knowledge of the consciousness of others can only be acquired through testimony, or by using inference, imagination, or analogy.

People tend to infer that the minds of others are like their own. Moreover, they may also presume that their consciousness is the most highly developed form. Of course, this is especially true of the learned.

In approaching the problem of consciousness, we begin to discover that we are caught within the problem. Consciousness is fundamentally reflexive, and it is this reflexivity that must be relied upon to analyze and explain itself, which in essence begs the question. We are caught in a vicious circle, trying to use what we are trying to explain to explain itself.

Philosophers struggled with this conundrum for a long, long while, until Ludwig Wittgenstein (1889-1951) noticed that they were trying to do something with language that language is not fitted to do. For example, thinking and talking about “the mind” may set us in search of a referent as a “thing,” when there is no such “thing” as mind at all.

Examining ordinary use, the term “mind” refers to a web of functions rather than a particular substance that causes them, e.g., as the body is the cause of physical action. We are confused by language use and look in the wrong direction. Language continues to play pranks like this on us until we notice how we are being taken in.

Actually, Buddhism took an approach similar to Wittgenstein’s toward mind millennia previously, in order to show how the idea of mind as substance is erroneous and misleading. The substantialist view correlates the mind with the body, and the various functions of the mind like thinking, feeling, imagining, and remembering with bodily organs like the heart, lungs, liver, etc. Mental faculties like the intellect and the will are compared with physical appendages like the arms, hands, legs, and feet.

In this way, the mind is conceived a sort of homunculus inside the body, just as many people still think of God as an old man living in the sky. This view still widely persists because of the model that language use suggests, and few people

examine it critically. Buddha and his followers provided tools for undertaking this type of criticism, but most people still labor under the old misconceptions, taken in by the way they use language to think and communicate.

Wittgenstein noticed, in addition, that all seeing is “seeing as.” Perception takes place through the lens of language and context, and language use shapes perception in addition to formulating expression. The notion of a completely independent and objective observer is unwarranted, and this presumption masks the angle of view.

Wittgenstein also investigated explanation. Scientific explanation is expressed in generalized descriptions about how things stand in the world. Descriptive proposition or statement represent states of affairs, which if existent are facts. Propositions are true when the states of affairs they represent are facts. Generalized descriptions summarize types of states of affairs. Science uses generalized descriptions to make predictions that can be tested against factual evidence through observation. The fundamental logical principle operative in corroboration is that a single negative instance negates a universal affirmation. The claim that all swans are white is refuted by the existence of a black swan.

Philosophical problems are categorically different, which is why they are knotty. Wittgenstein held that philosophy generally involves attempts to make language do more than it ordinarily does, for instance, by shifting language used in an accustomed context to an abstract one without noticing the effect of this shift on meaning as context changes. As a result, he recommended examining how signs are used as symbols in contexts, rather than presuming meaning. Very often, such presumptions are avenues leading to confusion instead of clarity.

Wonder takes us to new realms for exploration. Existing terminology is pressed into new uses that go beyond accustomed contexts. Consequently, meaning in a different context may not be as presumed. Unless this is done with care and circumspection, misperception and confusion can intrude inadvertently.

Thus, the problem that philosophers face as generalists is not only one being trapped in the confines of one’s own mind but also being trapped within the limitations of one’s language.

Perception of the surrounding circumstances in which the most general problems that give rise to wonder are embedded is fraught with challenges, even before definition of the problem begins. Much more could be said about perceiving a problematic, but the point here is, as Aquinas said, paraphrasing Aristotle, “A small mistake in the beginning is a great one in the end.”<sup>47</sup>

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<sup>47</sup> Thomas Aquinas. *De Ente et Essentia*: “*parvus error in principio magnus est in fine secundum Philosophum in I Coeli et Mundi.*”

Therefore, the first step is essential to the outcome; yet, taking this step presents a range of problems that remain unresolved.

## Defining the problem

Perception of the circumstances surrounding the problem of consciousness necessarily involves the subject as observer. However, the problem itself involves that observer as subject. Thus, the problem of consciousness is from the outset one embedded in the nature of reflexivity, for the observer as subject is called upon to observe itself and its operations as objects of knowledge, as well as to reflect upon them objectively.

Thus, one of the problems of consciousness is the degree to which a subject is able to observe itself, reflect upon itself, and report its findings objectively. Defining problems involving reflexivity are notoriously knotty ones logically, because they involve a vicious circle from the very beginning.

A fundamental problem of consciousness involves consciousness attempting to say what it is, even though consciousness is prior to language, for language use presupposes not only consciousness and but also context. Not being able to stand outside the circumstances surrounding the problem, how is it possible to define it?

Einstein approached a similar problem in the physics of his early years, when thinking about problems was trapped in the classical notion of space and time as a continuum, which was considered an absolute. The presumption was that simultaneity prevailed throughout this continuum, conceived as a container in which change takes place at the same time throughout a three dimensional spatial grid. It was a hidden assumption of which no one doing normal physics using the classical model was consciously aware.

Einstein later reported that at the age of sixteen, he conducted a thought experiment involving a paradox that set him on the right track to discover special relativity:

If I pursue a beam of light with the velocity  $c$  (velocity of light in a vacuum), I should observe such a beam of light as an electromagnetic field at rest though spatially oscillating. There seems to be no such thing, however, neither on the basis of experience nor according to Maxwell's equations. From the very beginning it appeared to me intuitively clear that, judged from the standpoint of such an observer, everything would have to happen according to the same laws as for an observer who, relative to the earth, was at rest. For how should the first observer know or be able to determine, that he is in a state of fast uniform

motion? One sees that in this paradox the germ of the special relativity theory is already contained.

Today everyone knows, of course, that all attempts to clarify this paradox satisfactorily were condemned to failure as long as the axiom of the absolute character of time, or of simultaneity, was rooted unrecognized in the unconscious. To recognize clearly this axiom and its arbitrary character already implies the essentials of the solution of the problem.<sup>48</sup>

What Einstein found was that the customary way of thinking about the problem was wrong, so that the conventional perception of the surrounding circumstances was incorrect. By abandoning the presumption about the absolute character of time, he was able to perceive the situation clearly, properly define the problem, and discover a solution to it that testing subsequently corroborated.

What is essentially noteworthy about this is that Einstein did not come to discover this through “normal science,” that is, applying customary methodology within an existing paradigm to solve a problem. Rather, his discovery involved a fresh perspective that revolutionized the existing paradigm.<sup>49</sup>

The question arises, how did Einstein hit on the new paradigm, if his discovery came about through neither logical deduction, nor induction, but rather by realizing that the axioms needed changing. This process of discovery is called “the intuitive leap,” and it has been identified as a primary constituent of the creative process.

Phenomena like the intuitive leap show that although consciousness is trapped in itself, it can operate on itself to tap into its potential through reflexivity, by reflecting back on itself. Einstein was able to stand outside the surrounding circumstance of the problem by imagining himself as a physical observer inside them and reflecting on the implications of this from the outside. Now, this is called “thinking out of the box.”

The fact that Einstein reports that his intuitive leap occurred at the tender age of sixteen, before he had even studied Maxwell’s equations, which were central to the problem at hand, shows the power of consciousness in this regard. Einstein clearly was not doing normal physics simply by applying conventional methodology.

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<sup>48</sup> Albert Einstein. *Autobiographical Notes*. Quoted by John D. Norton. “Chasing a Beam of Light: Einstein’s Most Famous Thought Experiment.”

URL= [http://www.pitt.edu/~jdnorton/Goodies/Chasing\\_the\\_light/index.html](http://www.pitt.edu/~jdnorton/Goodies/Chasing_the_light/index.html)

<sup>49</sup> Thomas Kuhn. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press, 1975, second edition.

We could say that Einstein was operating more as a philosopher (generalist) than as a physicist (specialist) when he made his discovery, even though acumen in physics was involved. After making his intuitive leap, he was able to express his theory in terms of physics.

The theory of relativity put physics on a new footing by providing a more comprehensive paradigm for explanation than classical physics. Of course, it could have turned out to be wrong. Conclusions derived for an intuitive leap are not corroborated until hypotheses based on the discovery are tested. However, subsequent experiment did corroborate Einstein's insight.

Einstein's intuitive leap was not based as much on facts or on theory as it was on wonder. As he reported, he noticed a paradox and was curious about it. As he also noted, the paradox itself contained the seed of the resolution.

Facts are the raw material of creative thinking, and technical expertise in a field is required for approaching data intelligently. In order to do creative problem solving successfully one must be on the cutting edge to push out the envelope. Einstein was not working in the dark, but it was his insight that turned on the light, rather than either observation of facts or technical knowledge.

It is possible for a single individual working alone to be creative enough to make an isolated breakthrough. However, in practice most problem solving arises out of common wonder and a common quest to satisfy it. Many people realize that there is some significant question begging for an answer, and attention is focused on this area. This was true in Einstein's case, for example, which involved anomalies in the theoretical behavior of light that he wondered about along with many others. Indeed, if that had not been the case and Einstein was working in isolation, the solution he proposed would not have been of such immediate interest among physicists. Einstein happened to be the one who discovered the solution and first published it.

However, some times similar solutions occur almost simultaneously, so it is difficult to establish definitively who thought of it first. The name of this phenomenon is synchronicity. Psychologist Carl Jung is most famous for investigating it. He defined synchronicity as "an acausal connecting principle."<sup>50</sup> Physicist Wolfgang Pauli sought to corroborate Jung's account with reports of having insights that he later found others had independently, almost simultaneously. Synchronicity is one of the many paradoxes of consciousness awaiting explanation.

Participants in the emerging inter-disciplinary field of consciousness studies are attempting to define the problems that paradoxes of self-reference and

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<sup>50</sup> C. G. Jung. "Synchronicity: An Acausal Connecting Principle." Published in Volume 8 of *Collected Works*.

synchronicity raise. Some are propounding solutions. So far, no one has advanced a solution that is compelling enough to be widely accepted.

Scientific materialists form one school of thought regarding this definition. They assume that matter is the basic “stuff” and therefore attempt to define the problem in terms of the empirical. This definition dictates that the solution would be by reducing the explanation of the mental to material correlates of subjective reports. This view is generally known as *reductionism*. Its key fundamental is that consciousness is “nothing but” an emergent property of matter, hence, accountable materially.

However, their opponents wonder how life, something apparently non-physical, emerges from matter, which is inert, and how higher forms of life exhibit consciousness, which is apparently not a property of lower forms of life. Finally, the highest known forms of consciousness are reflexive in that they are conscious of themselves and can use this knowledge to influence their mental and physical states. How is this phenomenon to be accounted for materially?

Moreover, science tries to isolate subjectivity insofar as possible from experimental observation owing to suspicion that subjectivity contravenes objectivity in observation and reporting. If the subject is material, how is it that subjectivity should be able to influence objectivity in a detrimental fashion? On the other hand, it would seem that the reason for isolating the subject from experiments is that subjectivity involves quality and objectivity only quantity. Thus, the question arises how quality arises from quantity and differs from it.

Paradoxes such as these suggest to the opponents of scientific materialism that the presumption that matter is the basic “stuff” may be wrong. They also note that this presumption is philosophical rather than scientific. As a result, they object that limiting definition of the problem of consciousness to the material is an unwarranted assumption.

Reducing all these questions to material correlates does not seem to satisfy wonder, in that there is no intrinsic connection between consciousness and matter. Part of the problem is that consciousness and matter seem to be essentially different. If consciousness is some subtle form of matter, that would have to be shown, as light was shown to be a form of energy that is accounted for by photons. Correlation of physical and mental phenomena does not establish a connection at the level of energy unless one accepts brain waves as equivalent to thought, for example, instead of physical correlates.

On one side of defining the problem is clarity concerning the attendant circumstances, and on the other side is what an acceptable solution would look like. In the case of consciousness, a significant aspect of the wonder associated with it is the relationship between what is physical, namely, the body, and what is apparently not physical, namely, the mind.

Therefore, for a solution to be satisfying it would have to account for the link between these apparently disparate things, or show how they really are different states of the same thing. It may be possible to show that consciousness is an aspect of the same energy that underlies mass, such that there is a quantum mechanical explanation for consciousness. This possibility has been suggested, but no account has gone further than providing useful analogies, such as superconductivity. However, one would have to account for how consciousness arises from superconductivity, which has not yet been done.

However, analogies are important in the problem solving process for several reasons. For one thing, they show how the circumstances surrounding the arising of wonder in a particular area are similar to that with respect to problems that have already been solved. For another, they suggest what a possible solution might look like, also aiding in problem definition. In addition, they suggest ways in which the problem might be defined successfully by using past examples.

While the field of consciousness studies is a newly emerging discipline, a great deal of work has been done in this field already, beginning in the distant past. In the West, most of the people that contributed to this study are considered philosophers, but modern psychology grew out of these studies when the scientific method began to be applied in this area. In the East, most of the contributors were spiritual luminaries; but the mystics of the West have also made many notable contributions.

A big shift occurred when theoretical physicists noticed that the mystics of East and West were often speaking in terms that were analogous to current developments in physics, especially quantum mechanics and unified field theory. Physicists had recently discovered that energy is the sole foundational constituent of the universe, mass being a “congealed” form of energy that is convertible with it at the sub-atomic level.

This raises many possibilities:

- Could consciousness be something similar?
- Could consciousness be a form of energy?
- Could energy be a form of consciousness?

Mystics testify that consciousness is foundational, and that all the diversity of existence is the projection of consciousness. In Western philosophy, monistic idealism also asserts something similar.

Some physicists began to ask whether the “consciousness” that mystics report as foundational and idealistic monists posit is the same as the “energy” that physicists posit as the basic stuff from which all diversity arises, or else is closely related to it? For example, could consciousness be the subjective pole and energy, the objective pole of a single basic reality?

Presently, those approaching problem is consciousness are dichotomous. Scientific materialists are intent on showing that the mental can be explained entirely by the material, so that consciousness is produced by material causation. The other party, yet unnamed, is attempting to define the problem of consciousness by positing consciousness as primary, with consciousness manifesting phenomenally through a nervous system as the receiver of an existing "signal." The former is more a mechanistic approach, while the latter is more an informational approach to problem definition.

The third possibility is that consciousness and matter are essentially different. Hardly anyone expects a solution to come from this quarter, however. The difficulty is in explaining how knowledge is possible if consciousness and matter are completely independent of each other, and the subject and object are fundamentally separate and discrete. This has been the problem of dualism in Western philosophy. Moreover, the human mind seeks to unify in explaining. A unified explanation is preferable, and so most of the interest lies in this direction.

The dualistic position is put forward chiefly by those with an interest in upholding the religious doctrine of creation, which holds that the Deity created the universe "from nothing," hence separately from the divine nature. This requires holding that the Deity and the human soul are immaterial, and that the material universe is separate from God and soul. Those holding such beliefs attempt to approach the problem of consciousness from this angle alone, presuming that other approaches cannot be correct. Arguing for this type of solution is the commonsense view of the world, for which the dualism of subject and object is intuitively obvious.

Because the matter as primary and the consciousness as primary positions agree on there being a single "stuff," they are closer to each other than to dualism. One is led to suspect that the matter as primary and the consciousness as primary positions may be variants of the same position when it is clarified.

The matter as primary position presumes that temporal priority is the deciding factor, while the consciousness as primary position takes logical priority to be crucial, because a knower is necessary for something to be known. The former claims priority for the known and the latter, for the knower. However, it might be possible to explain the basic "stuff" in terms of a single metaphysical reality, having subjective and objective poles, thereby reconciling the apparently divergent views in a solution that combines them.

There are essentially two types of solution, monistic and dualistic. The monistic view is that reality is fundamentally one, e.g., matter, spirit, mind, consciousness, or the Absolute. The dualistic view is that there are two fundamental constituents of reality that are inherently different, e.g., good and evil, matter and spirit, God and creation. There are a variety of positions among these types, many of which philosophers have debated over several millennia.

There have also been views holding that reality is manifold, such as the atomists of ancient Greece, but there are no longer any serious proponents of that kind of position.

The dualist solution holds that consciousness, mind, subject etc. are separate from the world, universe, object, etc. This view is also expressed as the real distinction between matter and spirit. It is called *theism*, *transcendentalism*, and *creationism*.

The other two expressions of a common viewpoint are similar but different. They agree that there is a single source existing as a unitary and indivisible wholeness, from which everything proceeds through degradation instead of separation. This is called *emanationism* and *emergentism*.

The first view of the emanationist-emergentist type is the view that everything is a *modification* of one underlying substance. Some hold that this one substance is matter and others, consciousness.

On one hand, views holding matter as primary are generally categorized as variants of emergentism. For example, scientific materialism is based on a model in which all phenomena are modifications of energy, which is material. This view posits that all phenomena emerge from a unified energy field, and theoretical physicists are now searching for a set of equations that describe it in terms of a model that can be tested.

On the other hand, views holding that consciousness is primary are classified as variants of emanationism. In the basic idea is that everything emanates from a single consciousness, like rays from the sun. In Western philosophy, the view that everything is a modification of consciousness or mind is called *panpsychism*. The similar view that everything is (a modification of) God or spirit is called *pantheism*. Baruch Spinoza (1632-1677) advanced a version of this view, for example, holding that everything is a “mode” of God as the sole reality. The view that everything is a modification of spirit is called *panpneumatism*. (*Pan* means all in Greek, and *pneuma*, spirit or breath.)

The second view of emanationist type holds that the Absolute is the source of both subjectivity and objectivity, which are identical in the unmanifest Absolute, but they manifest as apparently separate in finite consciousness. This view is called *panentheism*, and it is the view of most mystics and masters whose testimony and teaching constitute perennial wisdom. Hegel’s *panlogism* — “the rational is the real and the real is the rational” — can be interpreted as a variant of this view. Instead of conceiving God as substantive reality, Hegel posits Absolute, Spirit and Reality as one. They are identical with abstract Idea, Reason, or *Logos* for Hegel, for whom the Hegelian conception of dialectical logic is metaphysics and vice versa.

One’s philosophical presumptions dictate one’s perspective. Depending on difference of presumptions, different individuals will perceive circumstances

differently and approach the definition of a problem from different angles. For one's presumptions influence the way in which one perceives the circumstances surrounding a problematic and the way that one wonders about it, as well as the way one envisions what a possible solution would look like, and how it could be expressed rigorously.

## Designing the solution

A problem must be defined in such a way that not only permits a solution but also evokes it. Once a problem is stated satisfactorily, a solution is relatively obvious, at least in outline.

Justification is required to guard against solution through definition alone, without independent substantiation. A key element of a satisfactory solution is justification. A successful solution must be capable of corroboration, and corroboration requires that suitable criteria be applied. Different kinds of problem are susceptible of different types of method and different sorts of criteria.

For example, mathematics generates different algorithms using different axioms, and mathematical truth is justified by appeal to the axioms, which are postulated. Thus, the definition contains the solution. All that is required to establish truth is to articulate what is already present in the axioms through mathematical proof.

However, in a conceptual system that is interpreted in relation to reality, the assumptions must conform to reality. This is shown through independent substantiation, e.g., testing against fact through experiment, as in science.

On one hand, the difficulty with taking the mechanistic approach to the problem of consciousness and viewing the mental as a product of the material is justifying the link between them. Correlation does not in itself establish causal connection. How this would be accomplished needs to be clarified.

It is possible that a new material paradigm could provide such an accounting based on a more comprehensive theory. The quantum mechanical explanation that some expect to be developed might reduce consciousness to energy, as physics understands it quantum mechanically.

On the other hand, those viewing consciousness as primary would need to justify how energy comes from consciousness. As promising as the analogy between consciousness and energy may be, simply stating the analogous relationship of consciousness in mystical literature and energy in contemporary science is not yet a solution because it lacks sufficient justification. Something linking consciousness and energy as foundational must be demonstrated, either as an intrinsic relationship or as an identity of nature.

What would such a solution look like? In the first place, there are assertions of such an identity of nature in mystical literature, and some of these are set forth in considerable detail and in contemporary terminology, such as Meher Baba's *God Speaks*. Secondly, idealistic monists have offered philosophical accounts based on deduction from principles claimed to be self-evident.

Here it is important to note that human beings are more intimately acquainted with consciousness through reflexivity, as Descartes observed, than they are with matter. Even the most hard-nosed scientist has to admit that our knowledge of the world is in terms of sense data organized by the brain in such a way as to be presented "mentally."

Human beings know neither sense data nor the brain. We are directly aware only of mental percepts, which are particular, and concepts, which are universal, or general. By means of the judgments we make, we connect these with "external reality," sometimes erroneously. The possibility of error reveals that we do not know how things actually stand, but only as phenomena appear to us. The "things" that we assume underlie phenomena are inferred, based on subjective conviction.

Moreover, self-awareness, which the reflexivity of our consciousness makes possible, is not inherently connected to matter. It is unmediated rather than being mediated through sense experience or kinesthesia. We assume a connection between mind and body, because we identify with our bodies. Although the mind-body connection may seem self-evident, it actually depends on philosophical assumptions.

Sensation and kinesthesia generate percepts and concepts of the body just as they do in the case of other objects. We can also make incorrect judgments about the body, as shown by the phantom limb effect, where an amputee feels the lost limb as if it were present. Similarly, scientific research has been done mostly into the correlation between physical states and psychological reports. Correlation fails to establish any causal link between mind and body that would bridge the gap between mind and body, or to show that they are modifications of the same substance. Thus, the mind-body connection is on the same level as that of mind relative to "things in themselves," in that both result from the mediation of sense data instead of unmediated, as many people presume. Just as a connection between knowledge and external reality is inferred based on subjective conviction, so too, is a connection between mind and body.

However, self-awareness does not involve mediation. Owing to reflexivity, self-awareness is known as an attribute of human consciousness directly, independently of anything intervening.

This is the difficulty reducing consciousness to energy. Self-awareness is intuitive in the sense of being a result of direct acquaintance. Energy is not.

The scientific concept of energy is rather indefinite, being defined as “the ability to do work,” or “the capacity to generate heat.” It is an idea that functions as a theoretical term that is defined operationally. Energy is never experienced as such, but always as a particular manifestation of energy, like heat or light. Yet, energy is accepted as foundational in science because it is “quantitatively scalar” and thus can be measured.

According to physicist Richard Feynman, energy is just that ultimate something that can be calculated in terms of quantity.

There is a fact, or if you wish, a law, governing natural phenomena that are known to date. There is no known exception to this law; it is exact, so far we know. The law is called conservation of energy; it states that there is a certain quantity, which we call energy, that does not change in manifold changes which nature undergoes. That is a most abstract idea, because it is a mathematical principle; it says that there is a numerical quantity, which does not change when something happens. It is not a description of a mechanism, or anything concrete; it is just a strange fact that we can calculate some number, and when we finish watching nature go through her tricks and calculate the number again, it is the same.<sup>51</sup>

Physicists do not have any problem with accepting a foundational term that is not defined in relation to an objective referent, but rather operationally. Energy is that which is signified by the calculations relating to it. That is, “energy” plays a key role in a system of hypothetico-deductive relationships that allow for prediction of future states. The theory is corroborated by testing hypotheses as predictions of future states that are observable through measurement.

We see, then, that the physical concept of energy is quantitative and measurement of quantity underlies both the concept of energy and the theoretical system in which it plays a foundational role. What constitutes energy, or what its essential nature involves, remains unsaid. In this sense, energy is a theoretical term that is operationally defined by its role in the system, not something substantial.

Hence, it is difficult to see how consciousness can be reduced to energy, which is defined quantitatively, since subjectivity is qualitative. Consciousness

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<sup>51</sup> Feynman, Richard (1964). *The Feynman Lectures on Physics; Volume 1*. U.S.A: Addison Wesley.

adds a qualitative dimension to the quantitative that it would seem energy cannot explain as a purely quantitative concept.

The subjective and objective — quality and quantity — meet in consciousness. The subjective and objective poles of consciousness manifest knowledge when a knower comes together with a known through the link of knowing. Explaining how this process links what is (apparently) disparate is a central philosophical problematic. The clue may lie in the term “apparently.” How would this appearance arise?

To summarize, one of the chief interdisciplinary challenges today is the problem of consciousness. On one hand, the problem is to explain consciousness based on physiological support structure, including the brain and nervous system, and measureable parameters, such as brain waves and biochemistry.

The so-called hard problem of consciousness arises from the difficulty of reconciling the qualitative with the quantitative. The hard problem involves accounting for qualitative experiences in terms of empirical observations, material structure and function, and quantitative measurements without reducing the qualitative to the quantitative.<sup>52</sup>

Explaining how the qualitative arise from the quantitative is similar to explaining how the subjective arises from the objective. It is slightly different, however. While subjective operations involving data gathering and processing might be explained through quantitative means, e.g., by using mechanical, computational or physiological models, subjective phenomena involving quality seem to constitute an entirely different category, seemingly not susceptible to explanation through material and quantifiable models.

Additionally, a satisfactory mechanical explanation for subjective functions — the “soft” problem — has not been developed thus far, so the distinction between hard and soft problems is moot at this time. Indeed, Roger Penrose has suggested that the difficulties standing the way of constructing a satisfactory mechanical or computational model of consciousness may be virtually insurmountable.<sup>53</sup>

Even if a material explanation of the soft problem should prove possible, reducing that which is subjective and qualitative to what is objective and quantitative is to equate the former with the latter. Reduction essentially does

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<sup>52</sup> David Chalmers, "Facing Up to the Problem of Consciousness," *Journal of Consciousness Studies* 2 (3), 1995, pp. 200-219.

<sup>53</sup> Roger Penrose. *The Emperor's New Mind: Concerning Computers, Minds, and the Laws of Physics*. New York: Oxford University Press, 1989.

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away with subjectivity and quality, which seems counterintuitive, hence, unsatisfying as an explanation.

Materialists would counter that mind and qualities are subjective phenomena that do not exist in the same way that objective phenomena do, just as the image in a mirror is not the real thing, but only a reflection of it. If the objective world is the standard of reality, then the subjective is not real. The rejoinder to this is that it does not solve the problem of how the subjectivity and quality arise from objectivity and quantity, so it is not an explanation at all. Something inconvenient does not disappear by taking a head-in-the-sand approach — ignoring or denying it.

The problem of consciousness lies in accounting for how the experience of subjectivity and quality arise in a physical organism when a sufficiently complex nervous system is evolved. For example, observing a correlation between subjective reports and objective measurements does not in itself establish a causal link. How experience, which is qualitative, can arise from physical energy that is essentially quantitative remains unexplained by simply by constant conjunction between objective observations and subjective reports. Similarly, observations of brain functioning does not account for qualities without further explanation of the causal connection between them as a bridge.

Key to resolving the problem of consciousness is accounting for quality in addition to quantity. So far, this has not been done satisfactorily. Thus, the question remains as to how this might be accomplished, and it is questionable whether a purely quantitative concept like energy is up to the task.

However, examining how the term “energy” functions quantitatively in physics could provide some hints about consciousness and quality. Physicists probably feel comfortable leaving the concept of energy somewhat non-specific because the term has a long history that specifies the meaning of “energy” in terms of the familiar — fire, heat, light, sound, and motion. Physics began by generalizing about different manifestations of energy, such as kinetic versus potential, and different types, such as thermal, gravitational, electrical, magnetic, chemical, and nuclear. The possibility of an explanation in terms of a unified field emerged much later.

Progress in physical explanation can be approached in terms of the development of equations applicable to these different types of energy, and then equations that unite them in terms of a more comprehensive account. For example, Maxwell’s equations unified understanding of electricity and magnetism. The present aim of physics is to develop an ultimate set of equations that would account for all forms of energy and their mutual transformation in terms of a unified field.

Because they are subject to change, and energy is defined as the ability to produce change, both life and consciousness seem to be related to energy, either

as types of energy similar to other types, or categories of a more comprehensive explanatory principle that includes energy, life, and consciousness.

Life and consciousness are as evident to all observers as the various forms of energy, such as heat and light. Moreover, their expression is varied, in that there are many forms of life and many types of consciousness. In addition, consciousness is active in the waking and dream states, like kinetic energy, and it is passive in the deep sleep state, comparable to potential energy.

The correlation of measurable physical characteristics with mental activities suggests that there is a link between them. Similarly, the remarkable fact that mathematics, which is logical, is applicable to the physical world, suggests that there is a connection between the structure of the world and the structure of consciousness. Even more significantly, everyone experiences the link between the mental and physical through volition. Intention is capable of producing bodily change, for instance, through locomotion. In addition, physical conditions can produce feelings of pleasure or pain, as well as influence emotions.

This link has led to a search for a “life force” as fifth force comparable to the four fundamental forces of physics already discovered, namely, gravitation, electro-magnetism, the strong force, and the weak force. An alternative would be to reduce life to one of these, in particular, through quantum mechanics. Similarly, there has been an effort to account for mental activity in terms of energy, either in terms of electro-magnetism or quantum mechanics, or some combination thereof.

However, there is reason to think that this may not be the optimal course. That reason is the apparent irreducibility of the qualitative to the quantitative. Is this reason insurmountable?

The English word “aporia” is an imported Greek term meaning puzzlement. Enquiring into the significance of the scientific term “energy” one encounters an aporia, because the nature of energy is left indeterminate. Energy is defined operationally in terms of quantity, namely, measurable change. The first law of thermodynamics says that energy is neither created nor destroyed. Thus, energy as such persists through all its transformations. Yet, what this energy may be is never defined specifically, but only as the ability to do work, where “the ability to do work” means the ability to produce measurable change.

The unanswered question is how energy actually produces change. Physics simply presumes this remarkable ability without explaining it. The Presocratic philosopher Anaximander proposed that there is a basic “stuff,” which he called the *apeiron*, or indefinite. Similarly, physics leaves the nature of its basic stuff indefinite, since no satisfactory explanation of this enigma has been forthcoming in the intervening millennia. Matter has not been accounted for, either.

Scientists are chiefly interested in the quantifiable, and energy, and matter serve this purpose conceptually. What their nature may be, other than by enumerating different types of phenomena that fall into these categories, is therefore not terribly significant to doing science. Consciousness is problematic for science, because it is not measureable directly.

Moreover, there is also the question of how change follows regular patterns, or is ordered by laws, instead of being random. The ancient Greeks distinguished the *cosmos* as an ordered whole from *chaos* as an unpredictable void. The Stoics accounted for cosmic order by *logos*, or intelligibility. This merely moved explanation a step backward, since as many questions arise about intelligibility as order.

Now we conceive the regularity exhibited by natural phenomena in terms of invariant principles that can be discovered and expressed as scientific laws. However, observing invariance and translating it into logical and mathematical functions just moves the explanation back a step without explaining why invariance occurs, or how consciousness is able to discover it. While a great deal has been accomplished over the past several centuries filling in the gaps of knowledge about physics, the foundations on which the theoretical superstructure rests remain obscure.

In addition to the question of how order arises, there is the further question of how consciousness recognizes it and applies logical operations such as mathematics to describe it. While those that do not reflect on this take it for granted, those who do, find it astounding. How to account for such remarkable phenomena?

Science either assumes fundamental concepts like energy, invariance, order and similar key concepts or defines them operationally as theoretical terms, considering them as “merely” logical constructs rather than corresponding to anything “real.” Their meaning is established by the role they play in the theory.

Like the concept of energy, the concepts, consciousness and life, also involve puzzlement. Like energy, everyone is personally acquainted with life and consciousness. Similar to energy, what the intrinsic nature of life and consciousness may be is at present not definable precisely. How and why energy produces change, how and why life generates self-reproducing organisms, and how and why consciousness reflects nature and itself in experience give rise to wonder.

Merriam-Webster defines life as:

- a) The quality that distinguishes a vital and functional being from a dead body
- b) A principle or force that is considered to underlie the distinctive quality of animate beings

- c) An organismic state characterized by capacity for metabolism, growth, reaction to stimuli, and reproduction<sup>54</sup>

The first two entries appeal to the cognates, “vital,” and “animate.” Being cognates, they do not add anything substantial to the definition of “life.” The third entry defines life in terms of physical characteristics, which, as we have seen, involves a jump between categories that are different in kind, which consequently avoids the key question of how the categories are related intrinsically. Like energy, how life comes to be is unknown, and how it produces the results that it does is unspecified.

The dictionary definition of “consciousness” is similar to “life.” Consciousness is defined in terms of awareness, a cognate meaning that adds nothing substantial. How consciousness produces experience and knowledge remains a mystery. A bigger mystery is the reflexive nature of consciousness that allows humans to reflect on their own experience, their knowledge, and themselves as self-aware.

The difference between the concept of energy and the concepts of life and conscious is that the concept of energy is solidly embedded in a theoretical structure in which it plays a key role as a theoretical term. Moreover, energy is quantifiable and measureable, which makes it capable of mathematical expression.

The justification of this theoretical structure is by way of:

- *Correspondence* with facts, testable through hypotheses
- *Comprehensiveness* in terms of providing a complete account of the data
- *Coherence* based on the logical consistency of a conceptual or mathematical model
- *Economy* based on simplicity and parsimony
- *Elegance* based on brevity, clarity, precision
- *Practicality* through application, e.g., as evinced by the tremendous success of technology in improving people’s lives.

As a result, the concept of energy is considered explained, even though no mention is made of what the nature of energy is or the dynamics of how it produces change. Rather, energy is defined by describing change in terms of invariance (equations). The important factor is that energy is quantifiable and measureable, hence, amenable to mathematics.

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<sup>54</sup> URL=<http://www.merriam-webster.com/dictionary/life>

This approach to the concept of energy suggests that it may be possible to approach issues involving consciousness by treating the concept of consciousness as similar to energy, but in terms of quality instead of quantity. What would such a system look like if quantitative measurement were not fundamental to its articulation, but rather quality?

A number of systems exist already that might be pressed into service. Previous philosophical attempts to articulate the problem and solution are relevant. While none may provide a definitive answer, all make contributions that may be suggestive. Jungian analytic psychology, humanistic psychology pioneered by Abraham Maslow as an alternative to Skinnerian behavioral psychology, and transpersonal psychology that grew out of an integration of humanistic psychology and Eastern wisdom are attempts to deal with the issues involved.

Most significantly, perhaps, the testimony of mystics and the teaching of masters that comprise perennial wisdom provide experiential accounts of the nature of consciousness and its unfolding that are unparalleled. A number of traditions have had a great deal to say about consciousness, and different schools have debated alternative explanations, for example, in Vedanta and Buddhism. These works are mines of information and storehouses of insights.

Perennial wisdom suggests the outlines of a possible theory of consciousness in terms of its unfolding. Mystics assert that at the most expanded level consciousness is absolute and nondual. Life finds ultimate significance through gradually yet progressively unfolding the full potential of consciousness in order ultimately to realize the state of nonduality as comprehensive and complete. This is not only the goal of individual lives but also of nature, which sets all creatures on the inexorable path to this realization. That is to say, both individual life and nature are purposive.

This is a very different perspective from that of science, which seeks to describe changing events in terms of states of affairs that can be checked against factual evidence. From the scientific point of view, nature has no inherent purpose. It simply changes from one state into another moment by moment in accordance with invariant patterns that can be used to describe change through equations.

On the other hand, mystics assert that diversity manifests when the nondual state, which is unmanifest, manifests as the duality of subject and object, which appear to be separate and distinct as phenomenal self and phenomenal world. The nature of the nondual absolute is obscured by the impressions arising from experience of phenomena. This process of manifestation gives rise to the appearance of a phenomenal self as the subjective pole of knowledge, knowing a phenomenal world of objects that seem to exist separate from both the phenomenal self and other phenomena. This appearance rises from and in the unmanifest source, as thoughts arise from and in a mind.

This notion of phenomenal reality as appearance in the mind accords with the scientific view that what we know is percepts, or phenomena, rather than “things in themselves.” We simply infer the existence of an “external world” underlying phenomena.

In the mystical account, the knower is the subjective pole and the known is the objective pole of a single reality. A limited mind, playing the role of the subjective pole projects the world, which plays the role of the objective pole. The limited mind is unaware of the underlying unity, owing to its limitations, and owing to the same limitations, the world appears limited as well. However, limitation is phenomenal rather than real. Reality is absolute, eternally one and indivisible. The manifest is phenomenal, or appearance. The unmanifest is noumenal, or real.

The objective pole, or known, is made up of three nested dimensions in the phenomenal, namely, the causal or mental sphere, the subtle sphere, and the gross or physical sphere. Everyone in gross consciousness only experiences the gross sphere consciously and is unconscious of the other two spheres. The impetus of life is to realize the totality by unfolding the full potential of consciousness, so that it encompasses the full range of the manifest — gross, subtle, and causal — and the unmanifest. Everyone and everything is somewhere on that path, advancing toward the goal.

Mystics of different grades are aware of different regions of the subtle and causal spheres, and a few have realized the Absolute while retaining the physical body. Their testimony and teaching constitutes perennial wisdom.

This paradigm suggests how a solution to the problem of consciousness might be formulated. It is similar in many respects to the articulation of energy in physics, which aims at explaining energy in terms of a unified field. However, measurement would not play the foundational role it does in the construction and testing of scientific theories, differentiating an explanation of consciousness from the scientific account of energy as a quantitative concept.

However, energy — albeit in a non-quantitative sense — does emerge organically from the theoretical structure explaining consciousness that perennial wisdom offers. In the mystical paradigm, energy is equated with life force, instead of quantity. The different meanings of “energy” should therefore not be confused because the same word is used for both. Differences in meaning must be made clear in order to obviate confusion arising from ambiguity.

The same term can be used in three ways, (1) univocally, that is, in the same sense, (2) equivocally, in different senses, and (3) analogously, in similar senses. Many scientists would claim that “energy” is used equivocally when it is not defined quantitatively. However, others would say that as long as energy signifies the power to produce change it is used analogously.

In the mystical paradigm, “energy” means the power to produce change, comparable to the scientific sense, but it includes quality, which the scientific sense excludes. Therefore, the two senses of “energy” would be analogous rather than equivocal. In this view, the scientific concept of energy is a special case of a broader concept. This understanding seems to be true historically, as well as with respect to the way “energy” is used in ordinary language.

The paradigm perennial wisdom suggests presents the challenge of assessing the nature, function, and accessibility of non-ordinary experiences and alternate states of consciousness. Many such temporary experiences and established states have been reported in the mystical literature of the past, and contemporary mystics continue to report them. These reports are too numerous to dismiss as irrelevant, and there is no reason to think that mystics were misrepresenting their experience in the reports they gave. Nevertheless, there are difficulties with interpretation that need to be addressed. Since mystical experience is private and unique, interpreting the reports presents significant challenges, and this field is controversial.

One aspect of the problem is that there is a widespread presumption, especially in the West, that human consciousness is essentially the same for all. That is, although human consciousness exhibits different levels of intelligence, aptitude, learning, and so forth, the fundamental nature of waking consciousness is the same in everyone.

However, mystics report different types and levels of awareness, and spiritual literature describes their hierarchy in terms of comprehensiveness in some detail. Moreover, scientific research is correlating such reports with signature states of brain structure and function by measuring such physiological parameters as chemistry and EEG, and psychology is correlating behaviors with such states.

This research suggests that there are major states of consciousness in addition to waking, dreaming, and sleep, which involve awareness of “pure consciousness” while in meditation and outside of meditation. These different states have behavioral correlates in addition to physiological ones.

Most significantly, the teaching of many masters accounts for the various mystical reports in an ordered way. Perennial wisdom asserts the existence of a hierarchy of established states of consciousness and temporary stages of unfolding awareness, the terminus of which is comprehensive awareness in non-mediated realization of the state of nonduality, identified with the Absolute of philosophy and the God of religions. Mysticism comprises reports of these states and stages. The masters’ teaching organizes these reports systematically and provides methodology for unfolding the potential of consciousness.

The non-mediated realization of the unmanifest state of nonduality together with awareness of the full range of manifestation would be the ultimate wisdom

that philosophers have sought as the actualization of the full potential of consciousness. This state is reported in mystical literature.

If this state could be corroborated through mystical experience, as claimed, the problem of consciousness would be resolved practically, since the nondual state unifies unmanifest and manifest, subjective and objective, quality and quantity, and meaning and reference. This would also reconcile of all apparent opposition among objects through realization of their underlying unity. Indeed, the masters invite all to corroborate this knowledge practically for themselves by following the methodology that they prescribe.

## Corroborating solutions

Taking the above as an example of a possible avenue to a solution to the problem of consciousness, those who realize the nondual state substantiate the solution based on evidence gained through acquaintance. The solution is also corroborated for others on the authority of their testimony.

Some might object that these mystics may have misinterpreted their experience and exaggerated it. To this objection, Meher Baba provides this response:

What is the meaning of God-Realization? It means to become one with God. By thinking and imagining, one can never become one with God. Union is possible only after the death of thoughts and imagination — the mind must die.

How does a person know that he has realized God? It is automatic. You are a human being. Do you ever think to yourself, 'Am I a human being?' You do not ask yourself this because you are a human being. In the same way, once a man realizes God, he spontaneously knows that he is God. He has the full experience of it by personal experience.<sup>55</sup>

An intriguing aspect of the solution to the problem of consciousness that perennial wisdom suggests is that it can in principle be verified in consciousness owing to the reflexive nature of consciousness. Mystics attest to this realization, as well as experience of the intermediate states and stages of the path. Masters

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<sup>55</sup> Quoted in Bhau Kalchuri. *Lord Meher: The Biography of Avatar of the Age Meher Baba*. N. Myrtle Beach, SC: Manifestation, 1989, vol. 4, p. 1191. When Meher Baba says that the mind must die, he means that the phenomenal mind must be annihilated. This takes place when the limitations of the phenomenal mind are removed, so that consciousness knows itself as it really is — Infinite Consciousness.

have also provided detailed instructions on how to undertake this process of unfolding and charted the course.

Mystics and masters have articulated landmarks on the path allowing for corroboration of the states and stages in personal experience, that is, in the “laboratory” of one’s own awareness. The testimony of those who have gone before attests to the reality and structure of the path, as well as the nature and attainability of complete realization of the Absolute in the state of nonduality.

Basic criteria for corroborating a solution seem to be present. The existence of experiential landmarks satisfies the requirement for verifiable prediction. The outline of a comprehensive articulation of all possible experience suggests that a coherent explanation is possible. Finally, the outcome of unfolding the potential of consciousness would be expected to have outcomes that go beyond personal experience by being expressed in more ideal behavior.

Considerable research has already been undertaken in this direction. For example, Maharishi Mahesh Yogi began laying out such a project in the 1960’s after introducing the Transcendental Meditation Program™ in 1955. He enlisted a number of scientists in the project, and a large body of research has been published, as well as a number of theoretical papers. For example, Robert Keith Wallace joined Herbert Benson in publishing the first article establishing a scientific basis for the existence of a fourth major state of consciousness in *Scientific American* in 1972, which built on Wallace’s dissertation at UCLA in 1970.<sup>56</sup> John Hagelin, a theoretical physicist who has contributed to unified field theory, has been in the forefront of this project that Maharishi initiated to integrate Vedic wisdom with modern science since the early 1980’s.<sup>57</sup>

Undertakings like this are laying the groundwork for a new understanding of consciousness and its role. Moreover, knowledge gained through this work is being applied in order to better the lives of individuals and to improve society as well. As a result, a new paradigm of consciousness is emerging.

It is important to note that a solution to the problem of consciousness is only substantiated through evidence acquired by acquaintance in the case of mystical experience, specifically, realization of nonduality. For others, corroboration involves shifting their frame of reference based on the authority of testimony provided by credible mystics. The new frame of reference provides a way to personally substantiate the theoretical solution based on evidence through

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<sup>56</sup> Robert Keith Wallace and Herbert Benson. “The Physiology of Meditation.” *Scientific American*. (February 1972, Vol. 226, No. 2).

<sup>57</sup> John S. Hagelin. “Is consciousness the unified field? A field theorist’s perspective.” *Modern Science and Vedic Science* 1, 1987, pp 29–87; “Restructuring physics from its foundation in light of Maharishi’s Vedic Science”, *Modern Science and Vedic Science* 3, 1989, pp 3-72

acquaintance. This evidence unfolds through experience of landmarks set forth as a charted course.

Since everyone's path is unique, depending on one's constitution, tendencies, and circumstances, the path is not a linear one in practice, even though it is often set forth in linear terms theoretically. Different people will experience the landmarks in different ways and in a different order. Nevertheless, the outline of a course has been charted, which serves not only as a guide for the way, but also to provide confirmation of progress on with way.

The most important criterion of a theory's truth is its explanatory power. Explanatory power is gained from relating disparate information in a conceptual framework in order to make sense of the body of information. Explanatory power is based on synergism: The whole, comprised of information tied together in terms of the framework that organizes it, is greater than the sum of its parts, because the organization of the data goes beyond any of the data taken separately or in smaller chunks.

Predictive power is related to explanatory power. If a theory is able to account for existing data, it should be capable of predicting new data. This is the basis for corroboration in the sciences. Scientific theories are capable of generating testable hypotheses.

Predictive power shows *that* a dependent variable follows from an independent variable. Explanatory power accounts for *why* this dependence pertains.

On one hand, lore may be correct in predicting a result but does account for it. Herbal lore may prescribe an herb that is effective for a particular condition but gives no rationale for this other than long-standing experience. Until modern medical science isolates the active ingredients and shows how chemical interaction accounts for the effect, the reason for the effectiveness of the herb remains a mystery. When scientific studies confirm results that are merely anecdotal in the lore, then the explanatory cycle is complete.

On the other hand, ideologies can be fitted to explain just about anything, but they have no predictive power to generate hypotheses for testing. Therefore, the explanations they provide are arbitrary.

Ideally, a theory gains explanatory power through a web of causality that accounts for a body of data economically. The theory's explanatory power is substantiated by evidence through testing hypotheses generated by the theory.

A successful theory of consciousness would have to exhibit both explanatory and predictive power to be taken seriously. The sciences have already explained the objective realm to a great degree. What remains to be accounted for is the subjective dimension.

The body of data to be explained is the various kinds of experience that are reported, including mystical experiences of different types, as well as the nature of the subject that experiences and reflects. Psychology provides some explanation, but fundamental questions about the consciousness remain. Moreover, no satisfactory account of mystical experience is yet available. It may be that perennial wisdom provides at least an outline for such a theory.

Perennial wisdom offers an explanatory paradigm that accounts for the range of experience hierarchically, based on comprehensiveness. Lower levels are included in higher levels. Perennial wisdom also has predictive power in that it provides methodology for replicating experience, making the testing of hypotheses possible in principle. This avenue of research holds out the hope of producing a substantiated theory that resolves the problem of consciousness.

Maharishi Mahesh Yogi suggested how this might be accomplished in a way that integrates contemporary scientific methodology and the universal mystical spirituality of perennial wisdom. He called this approach of integrating the subjective and objective, "the science of creative intelligence."

Maharishi advocated recognizing that there are two principal ways of gaining knowledge, objective and subjective. Scientific methodology is based on the objective means for gaining knowledge, and universal mystical spirituality is based on subjective means.

These ways are not in opposition to each other as sometime supposed. Rather, they are polar opposites. Therefore, they are complementary, and both are necessary for integrated knowledge. Each is "scientific" in its own sense, since each is an organized body of explanatory knowledge, and each is based on criteria that permit corroboration. However, the methods are quite different in their approach to the subject matter.

A useful analogy is provided by the relationship between contemporary allopathic medicine and traditional Chinese medicine (TCM). Sinologist Manfred Porkert compared the two systems theoretically.<sup>58</sup> According to Porkert, Western medicine and TCM are based on not only different principles but also on different worldviews. The Western worldview is predominantly analytic, while the Chinese worldview is synthetic. The Western worldview is based on structure, whereas the Chinese worldview is grounded in functioning. Structure can be analyzed into discrete parts, while functioning involves the behavior of whole systems. The Western scientific worldview tends to be mechanistic and materialistic, whereas the Chinese worldview is organismic and purposeful.

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<sup>58</sup> Manfred Porkert. *The Essentials of Chinese Diagnostics*. Zurich: Chinese Medicine Publications, 1983. *Theoretical Foundations of Chinese Medicine: Systems of Correspondence*. Cambridge, MA: MIT Press, 1974.

Western scientists regard the organismic and purposeful worldview with suspicion if not rejection because this was the Western worldview also, before scientific methodology replaced the Aristotelian worldview. Consequently, those trained in scientific methodology react against an approach they regard as having inhibited thinking for centuries, and they resist any attempt to return to it. Hence, scientists have a difficult time accepting that anything resembling the discredited Aristotelian approach could contribute anything useful.

The approach of Western medicine is through causal analysis of structure. According to Porkert, the approach of TCM is through “inductive synthesis” of functioning that relies on observation of “correspondences” instead of looking for causality. He claims that analysis is the polar opposite of synthesis, and so the two approaches are complementary. However, since the two approaches are polar opposites, they are entirely different and may appear to be incompatible. In his view, Western scientists are blindsided about this.

Porkert laments that most Western physicians and scientists reject the value and effectiveness of TCM because it is not an evidence-based causal explanation conforming to scientific methodology. Because they are able to see medicine only in terms of the view in which they are trained, Many Westerners cannot recognize TCM as the polar opposite of Western medicine, hence, its complement.<sup>59</sup> As a result, they reject a health care system that has demonstrated its effectiveness empirically through its success in treating many diseases that allopathy considers chronic or incurable.

Consequently, they reject a methodology that is capable of dealing with problems for which Western medicine cannot find a solution because these problems are due to energetic imbalances with respect to systemic functioning. Hence, Western medicine is unable to diagnose the symptoms in terms of structural cause. In the absence of etiology, treatment is haphazard instead of evidence-based. Conversely, TCM can diagnose the symptoms functionally and treat the complaint using its therapeutic methodology in order to restore the system to functional equilibrium.

Similarly, Western scientists and thinkers accustomed to viewing the world through the lens of objective methodology may reject subjective means for gaining knowledge as lacking in objective criteria. However, the subjective approach to gaining knowledge employs its own criteria to deal with areas of knowledge that are important to life. Objective methodology excludes these significant areas from its purview, and sometimes even denies them. Therefore, the subjective approach is a necessary complement to the objective approach in order to achieve integrated knowledge that is more comprehensive than that gained through either approach alone.

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<sup>59</sup> Porkert. *Essentials*, p. 1-15.

Those advocating an integrated approach see no conflict in explaining consciousness scientifically in terms of the structure and function of the brain and nervous system, based on energy and material causes, and explaining consciousness based on the concepts of perennial wisdom. These polar explanations can be viewed as complementary instead of contradictory. Both can be corroborated based on their own criteria.

From the integral vantage, the objective approach might produce a comprehensive explanation of consciousness events, accounting for the qualitative in terms of the quantitative, based on material causes. The subjective approach might yield another comprehensive explanation based on non-material reasons. For example, the Chinese medical system is integrating Western medicine and TCM in practice, while keeping them independent of each other theoretically since they are polar opposites. Western scientific medicine and TCM work together in a complementary fashion when harnessed in tandem, rather than by blending them together, so that they lose their polarity.

Moreover, wherever polar opposition manifests, the poles complement each other in terms of the whole. Therefore, in principle an overarching explanation is capable of reconciling them in terms of the whole. For example, in medicine the polar opposition between structural and functional is reconciled at the level of the organism as a whole system. An organism is not only a structure in which the parts can be analyzed separately. An organism functions as living system. Life is not part of the structure. It underlies the function of the structure.

Similarly, subjectivity and objectivity are complementary poles of a single reality. Perennial wisdom explains that reality based on an ultimate whole, the unmanifest Absolute, manifesting dualistic consciousness as subjectivity (selves) and objectivity (worlds). The explanation is in terms of the process of manifestation.

The claim is that this explanation is based on mystical experience rather than reasoning, so it is testable in principle, although it requires developing the capacity to do so. Perennial wisdom includes the procedure for unfolding this experience through successive levels, and the history of comparative spirituality suggests that the procedure has been successful, based on the testimony of many mystics.

Scientific materialists would object that the appeal is mystical experience is invalid because it is not publicly available, as is testing based on empirical observation. However, the counter to this is that the public cannot test the results of most scientific experiments, so what does “publicly available” mean? Only a few highly trained people with access to the proper apparatus can do so, and often such results are based on interpretation of data about which experts disagree. This is quite similar to the case of mystical experience, where only a few highly trained “experts” are able to gather, process, and evaluate the data.

Why should the public accept only one sort of test report as based on sound criteria and not the other?

This conveys some idea of the issues involved in justification and how those with different perspectives approach them through the give and take of debate.

## Using feedback

Few solutions are perfect out of the box, and most need adjusting based on results, or feedback. The term “feedback” is another way of saying “trial and error,” or “learning from experience.” Some aspects of a solution may need to be modified or even eliminated based on results in application. Moreover, most solutions are not complete and can be improved upon by addition as more information is gained through application.

This is true of unfolding of the potential of consciousness. Much teaching already exists. Explanations and practices have existed for thousands of years in the mystical traditions of the religions and in the world’s wisdom traditions. However, most have been expressed in terms of lore or myth rather than systematized as explanations and related instructions that can be tested experimentally. Many have even been kept relatively secret as oral traditions passed directly from master to disciple, for example, to guard proprietary knowledge, or to keep it from falling into the wrong hands, where it would be misunderstood or misused. In addition, the authorities of some cultures suppressed such knowledge, so it was hidden or disguised for protection.

On the other hand, many comprehensive explanations exist. The voluminous and highly detailed works of Adi Shankaracharya in Vedanta and Ibn Arabi in Sufism are cases in point. Moreover, there is ample evidence in the form of first-hand reports that mystical experience has reliably arisen in such contexts. Mystical knowledge has also been preserved over time through transmission in a spiritual lineage or teaching of a wisdom school.

Historically, the various streams of traditional wisdom were mostly isolated from each other geographically and culturally. Little attempt was made to relate them in terms of a comprehensive viewpoint. Recently, that has changed. Now a push is on to formulate a comprehensive viewpoint.

Previously oral material was eventually recorded in writing. Many translations of these ancient mystical works have been published. As a result, theoretical understanding is growing and their methodology is being explored. Through greater interest and wider application, knowledge is proliferating, and scientific research is being conducted on the results of practice.

Moreover, every position meets with objections as part of the feedback process. Answering objections strengthens the solution by either improving upon it materially, or making it logically clearer. Of course, if objections are

substantial and cannot be overcome satisfactorily, either by counter-argument or altering the theory, they throw the solution into question, or even show it to be untenable.

Feedback operates on two levels. First, an explanation must correspond to what is explained. If the facts contradict an explanation, then the explanation must be brought in line with facts, or else replaced with one that is in line with them.

The second level of feedback comes from the interplay among possible explanations. Historically, a great deal of controversy concerned the suitability of contending explanations. The explanation that is simplest, clearest, most precise, and most comprehensive is to be preferred. Proponents of different explanations argue with each other how their theory meets these criteria and others fail.

For example, there are many contending schools of Vedanta. They agree that realization of the Absolute is fundamental, but they contend over the best way of explaining this. For example, is it more appropriate to say that there is difference in identity, identity in difference, or only identity, difference being an illusion? Different consequences follow from different choices, which can be measured against such criteria of correspondence, comprehensiveness, coherence and economy, and practicality. The Vedantic schools of dualism, qualified nondualism, and unqualified nondualism debate this.

The primary data of the Vedic tradition of India are the four Vedas, which are attributed to the supernormal cognition of seers. The Upanishads comment upon the four Vedas, providing feedback. The Upanishads are summarized and distilled in the Bhagavad Gita. A range of commentators commented on the Gita, providing a spectrum of feedback. Three of the most important Vedantic commentators are Madhva, representing dualism, Ramanuja, representing qualified nondualism, and Shankara, representing unqualified nondualism. This constitutes a chain of feedback based on not only incisive discernment of issues, but also mystical experience. The Vedic tradition can be viewed as a vast feedback system, largely grounded in mystical experience, which seeks to provide the highest level of explanatory power available, given the limitations of language.

This lengthy debate is based on different perspectives and aims at justifying the expression of different viewpoints. Each viewpoint captures essentially the same data (realization of the Absolute) from a different angle. Therefore, the different views are complementary rather than mutually exclusive. The same data can be approached in different ways by structuring explanation differently.

Other wisdom traditions can be viewed similarly. Jewish Kabbalah is based on the teaching that Moses left a secret oral tradition based on his inner experience, which great teachers subsequently articulated and on which they elaborated, based on their mystical experience. The rabbis transmitted this “oral

Torah” across the generations orally. Sufis are the mystics of Islam that articulated and explained the Qur’an, which results from the mystical experiences of Muhammad, on the basis based their mystical experience. This tradition is also preserved mostly orally, through a master-disciple relationship. Christian mystics similarly explained the mystical revelations of Jesus based on their experience.

Buddhism is a commentary on the teaching of Buddha based on the mystical experience of Buddhist adepts, and Taoism is a record of the teaching of Taoist adepts, elaborating the mystical teachings of Lao Tzu and Chuang Tzu. Likewise, the mystical dimension of Sikhism is largely preserved through a master-disciple relationship, which reveals the inner dimension of the teaching of Guru Nanak and the subsequent Sikh gurus.

All of these mystical wisdom traditions can be viewed as feedback on the founders’ teaching. This proliferation of knowledge through feedback would be expected since the Absolute cannot be explained absolutely, but only in terms of the relative. Therefore, different approaches and viewpoints are not only possible but also called for, as questioning brings out additional explanation.

Materialists counter that mysticism does not produce actual knowledge since it is based on magical thinking, hallucination, or misinterpretation of unusual experiences obtained through ascetic practices that can be accounted for naturally. They hold that mystical experiences are subjective phenomena that can in principle be accounted for empirically, like other subjective phenomena, such as thought and emotion. Supernatural interpretations put upon them are nothing but magical thinking, similar to seeing faces in clouds.

Those defending mystical explanations would counter that they have explanatory power, including predictive power, and are more comprehensive than material explanations. They would further claim that corroboration of claims based on mystical experience is unmediated, whereas corroboration of empirical evidence is mediated by sense data and mental constructs. They would adduce the body of mystical testimony in support of their claim, and argue that just as lay people cannot verify scientific claims for lack of technical expertise, so too, the claims of mystics require special training to corroborate personally. Just because materialists never subjected themselves to this training is not reason for them to deny the result of such training.

Proponents of the consciousness theory would submit that the various wisdom traditions commenting on their own material reveals a feedback process. This feedback process shows that there is an interrelated web of experience and explanation, the coherence and comprehensiveness of whose structure reveals the functioning of consciousness across a broad spectrum. They would also argue that the body of testimony about mystical experience correlates with this body of explanation in such as way as to corroborate it.

Perennial wisdom is a vast body of mystical testimony and teaching that is almost ubiquitous and extends across time from prehistory to the present. Thus, a question arises as to how these closely related experiences and tightly structured explanations could manifest over such a span of time and geographical distance.

On one hand, some materialists hold that this occurred through the historical diffusion of some initial fantasy that some unknown person or group concocted in prehistoric times, who knows where? The plausibility of that explanation, which some have put forward, is low, and evidence for it is lacking.

On the other hand, proponents of the consciousness theory assert that this has more explanatory power, is more economical, and is more plausible on the evidence than any other theory advanced. They hold that mystical experience arises from the inherent structure and functioning of consciousness. They also assert that those having such experiences are best qualified to explain mystical experience. The various feedback loops that the testimony and teaching of the different wisdom traditions evince reveals how mystical experience is not isolated. Rather, it exhibits a definite structure and reveals a purpose, unfolding through a hierarchy of experience toward a goal of comprehensive self-knowledge.

## Problem areas

This investigation of what a philosophical problem is and how it might be solved has explored the question by applying philosophical procedure to the problem of consciousness. The investigation examined what goes into developing a satisfactory solution to a fundamental problematic through a rigorous methodology. Using this approach, perennial wisdom was suggested as a possible avenue.

The intent has been to show that doing philosophy is a type of general problem solving. While there is no single philosophical method that holds sway, there is a philosophical methodology based on perceiving the circumstances surrounding wonder, defining the problem in order to resolve that wonder, propounding a solution that can be corroborated rigorously through suitable criteria, testing the solution, and then adjusting it based on feedback from results.

What constitutes a philosophical problematic is wondering about something fundamental, in the sense it that does not fall into an existing discipline whose specific methodology could provide a solution. When a specific methodology is developed for answering questions falling into this type, then a new discipline spins off. The sciences spun off from philosophy when scientific methodology was developed.

Moreover, the foundations of a field of study lie outside the bounds of the discipline's methodology and are treated as question pertaining to the philosophy of that discipline, such as, philosophy of science, or philosophy of psychology. This task generally involves clarifying the foundations of a discipline, such as its framework, presuppositions, scope, methodology, and key terminology, rather than developing substantive knowledge.

Since Aristotle, philosophy has traditionally been divided into different problem areas, and its task is to determine the key fundamentals of the disciplines involved. "Key fundamentals" translates the Greek word *aitia* (pronounced eye-tee-ah and accented like idea). While *aitia* is usually translated "cause," the meaning is wider than that, so "key fundamentals" is used instead.

The nominative singular form is *aition* (eye-tee-on). *Aition* can mean cause, principle, reason, or explanation. Broadly speaking, an *aition* signifies an answer to a "why?" question.

Aristotle attempt to provide answers to fundamental questions in the various areas of speculation that he identified in terms of what he called *aitia*. Fundamental areas of philosophy that Aristotle treated separately include:

- *Logic*, which studies argument based on inference,
- *Metaphysics*, which studies existence or being as such
- *Epistemology*, which studies knowledge,
- *Rational psychology*, which studies the mind,
- *Physics*, which studies nature,
- *Ethics*, which studies individual action,
- *Politics*, which studies society and government
- *Esthetics*, which studies appreciation

These areas of interest had been addressed by Plato, but not in the organized way that Aristotle approached them as separate subjects. Since the time of Aristotle, philosophy has been divided into these disciplines.

Many different solutions have been offered over the centuries in these basic areas. None have been established as definitive other than those that were found to be susceptible to resolution through a specialized methodology such as science. Physics and psychology, for instance, are no longer considered branches of philosophy, but rather, as different sciences. Politics is now also studied as political science and economics. Metaphysics, epistemology, ethics, and esthetics are still considered chiefly philosophical rather than scientific.

Owing to the predominance of science, speculative philosophy has fallen out of favor other than as a historical study, especially in England and America. Logic now plays a principle role in philosophy, with the principal focus shifting to logical clarification instead of speculation based on foundations that cannot be substantiated compellingly.

Scientific explanation has become the standard at which all other types of explanation aim. Scientific explanation has the advantage of being confirmable empirically. Explanations that are not testable empirically are now regarded as ideologies.

Ideologies are considered pseudo-explanations because their claims are not subject to confirmation using publicly available criteria. Therefore, philosophers have had to choose between becoming logicians or ideologues.

Most contemporary philosophers have opted to become logicians. Analytic philosophy is dominant in America and the United Kingdom, while postmodernism, poststructuralism, and deconstructionism are prevalent on the European continent. All of these trends have undermined philosophical absolutism by demonstrating that criteria are relative.

Why is it that some problems are solvable through the development of a specific methodology and some not? There are essentially two types of subject matter, namely, (1) that which changes materially, hence, can be measured quantitatively and (2) that which does not change materially and cannot be measured quantitatively.

What changes falls under the category of energy, in that energy is defined as the ability to produce change. Science deals with what changes materially, hence, can in principle be measured quantitatively. What changes materially can be observed either directly or with the aid of technical apparatus that extends the reach of the senses, like telescopes and microscopes. What changes materially is also capable of quantitative measurement, hence, can be expressed mathematically.

Science deals essentially with relationships of independent and dependent variables, expressed in mathematical equations. Scientific laws are examples of key equations expressing a constant or invariant relationship of independent and dependent variables. This is the subject matter of science. Thus, disciplines that are susceptible of observation and measurement, in which empirical data can be expressed in terms of relationships of variables, have become sciences.

However, what does not change materially is not observable and is not measurable. Therefore, it is not susceptible of scientific explanation. What does not change materially remains the subject of philosophical speculation.

What does not change materially falls in several categories. That which is absolute does not change at all. Absolute implies unchanging. Quality is also not quantitative and cannot be measured empirically.

Regarding the absolute, some hold that everything is relative and changing, there being nothing unchanging, or absolute. Other hold that certain things do not change; that is, they are absolute. For example, being as such is always the same, therefore, unchangeable. The attributes of being — unity, truth, goodness,

and beauty — are unchanging in their nature, too. This debate between relativists and absolutists remains unresolved, since concepts like being, unity, truth, goodness, and beauty are transcendental ideas, for which no independent criteria can be adduced.

Another problematic also arises with respect to quality. In discussing the problem of consciousness, the difference between the quantitative and qualitative emerged as basic.

Quantity can in principle be measured. Therefore, it is subject matter for science. However, quality cannot be measured quantitatively. For example, colors are not equitable with light frequencies, nor are musical reducible with sound frequencies, even though they are correlated with them. Color and sound result from the interaction of these frequencies with consciousness, mediated through the senses and nervous system. How qualities arise from differences in quantity remains unexplained.

Moreover, consciousness involves subjective qualities and attributes that are not found objectively in nature. Qualitative aspects of experience that have objective correlates, such as light and sound frequencies, are only one type of quality.

Some types of quality apparently have no such objective correlates, but rather, they arise as either purely subjective artifacts of consciousness, or else as phenomena having only a loose connection with the objective world that is not susceptible of direct observation and measurement.

Purely subjective phenomena include consciousness itself along with its attributes. Among these attributes are awareness, cognition, volition, appreciation, affect, memory, imagination, and sensation, as well as faculties such as attention, intention, discrimination, discernment, feeling, perception, and the like.

Purely subjective phenomena also include the broad area of what might be termed “interest,” such as values and preferences. “Interest” in this broad sense encompasses the *normative* in contrast to the *factual*.<sup>60</sup>

Facts are describable through assertions and denials of states of affairs. States of affairs are logical representations of how things stand in the world. Descriptive propositions function like maps. A map can be checked against the territory it is supposed to represent. Similarly, a descriptive proposition can be checked against the facts. Facts are objective and empirically verifiable based on publicly available criteria, namely, evidence.

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<sup>60</sup> Perry, Ralph Barton. *General theory of value; its meaning and basic principles construed in terms of interest*. New York: Longmans, Green and Company, 1926.

Norms are different from facts. Norms do not exist in the world. Norms exist in the mind. They are subjective.

Science deals with facts. Norms may enter science in terms of factual data. For example, cultural norms are inferred from behavioral patterns and artifacts. Social science deals with norms scientifically in this way. However, science does not consider norms as norms.

Philosophy deals with norms as norms. Truth, goodness, and beauty involve values, hence, norms. A great deal of human life is bound up with norms. In fact, it might be argued that norms constitute most of what is important to human life.

The principal problem affecting norms is whether they are relative or absolute, arbitrary or rational. Those holding that norms are relative (cultural) or arbitrary (posited) argue that no criteria apply to norms that are universal and publicly available. Those who hold that criteria exist adduce various rationales. Pragmatics argue that what makes a difference is significant and norms make a measurable difference. Absolutists argue that values like truth, goodness, and beauty are indeed universal and self-evident.

On one hand, if scientific method sets the standard, then it would seem that norms are relative because there are no criteria for norms other than utility. On the other hand, objectors point out that scientists hold that certain truths are self-evident, such as human freedom, and scientists support the rule of law based on equality of persons — as fundamental and not simply as matters of utility.

Philosophy deals not only with norms but also with questions that cannot clearly be answered through scientific methodology. Thus, philosophical questions encompass the broad range of those that do not concern material change, which can in principle be measured quantitatively and expressed mathematically in terms of relationships of variables.

Even though philosophers have largely abandoned speculation as it was carried on for millennia, they have found other ways to occupy their attention. In ancient times philosophers were occupied by the question, "What is there?" Modern philosophers then realized that the question to be answered is really a question about what we can know. Finally, contemporary, or postmodern philosophers came to see that this is really a question about what we can say. Now philosophers are chiefly concerned about issues regarding expression. These are logical or procedural questions rather than questions relating to substance ones, since substantial questions are now relegated to the sciences.

Logic, which includes both word meaning (language) and numbers (mathematics), is a mental phenomenon. While logical argumentation apparently arose out of inferences based on observation, and mathematics originated with counting, both logic and mathematics are derivable from the mind alone, without reference to objective facts. Logical and mathematics are

said to be “a priori,” meaning independent of sense experience, hence, non-factual. Logic and mathematics are therefore “logically prior” to objective reality, even though they may have arisen subsequent to experience, from reflection on it.

One of the great mysteries remaining to be penetrated is why logic and mathematics, which are essentially mental and logically prior, fit so neatly with objective facts. For example, Riemannian geometry had already been developed. Einstein had only to recognize that it applied to the theory of general relativity.

Meaning is also inexplicable. Meaning arises from mental operations that mediate between experience and language-use. Experience is apparently of particulars, but the principal use of language depends on categorizing particulars based on common characteristics rather than simply naming particulars. Why mental phenomena, such as the complex mathematical models science employs, correspond closely with factual events remains unresolved.

The logic of induction is well understood in terms of probability theory and statistics, but this does not explain how small children learn to use language through experience by absorbing meaning. Children easily learn language, sometimes several languages at once, suggesting that consciousness is a natural receptacle for meaning. Moreover, research suggests that the “depth grammar” of language that enables translation from one language to another is logically prior and is structured in human consciousness.

Consciousness is also capable of generating new meaning. Civilization is largely the result of human discovery and invention, much of which is the consequence of the expansion of significance. Culture results from a variety of inputs, many of which involve quality and interest. For example, most people take legal rights for granted. However, legal rights arose from an expansion of significance. This involved discovering the concept of right as inherent in human nature and inventing a rational justification for it.

How meaning arises out of matter is also a key question. Obviously, a complex nervous system and highly developed brain is required. However, many questions remain. For example, how does thought arise from electrical synapses? How does the complex web of meaning that contributed to the development of civilization result from brain waves that correlate with thoughts?

Another problem associated with meaning is known in philosophy as the problem of universals. How does meaning that is general arise from particular data? Mental operations, such as categorization and classification, seem to go beyond the sense data derived from particulars. This is similar to the question about how quality arises from quantity or consciousness from matter.

This problem is one of bridging the gap between two categories of existence — mind and matter — that are apparently different in kind. Is the

bridge some third factor that connects them, or are the two categories grounded by the same foundation?

Is subjectivity somehow a modification of the objective, or vice versa? On one hand, it would seem that the subjective is a modification of the objective, or dependent on it, since consciousness emerges late in the developmental chain of events. On the other hand, the problem can also be approached from the angle of subjective and objective being opposite poles of a single reality that includes them.

Different parties have offered a rationale for the positions they hold. For example, materialists argue that matter is basic, while idealists posit mind as fundamental. Emanationists hold forth that matter and mind emanate from spirit, like rays from the sun, and transcendentalists assert that they are created by spirit and are separate from spirit, once created. This debate remains inconclusive because there are no criteria that all accept.

Why does anyone care? What is at stake? The simple answer is that something matters only if it makes a difference. These questions actually do make a big difference to the way life is lived, individually and socially.

Why is it, then, that fundamental questions about reality, knowledge, and interest are not pressing ones for most people? The simple reason is that such questions are answered by so-called conventional wisdom.

What is conventional wisdom? In order to answer this question, it is necessary to understand the concept of worldviews and how they operate.

## Worldviews

Everyone has a philosophy of life that guides his or her thinking, choices, and action. There are two aspects of one's philosophy of life. The first is implicit. Most people are unconscious of it, but observation of their behavior reveals certain presuppositions and norms that they follow rather consistently. The second is explicit. It is revealed in how people justify what they say and do, showing how they see the world and the rules they follow in dealing with their affairs.

Few people think out their philosophy of life clearly, and fewer still identify specifically with some philosophy. People rarely call themselves Platonists, or Hegelians, for example, although people who adhere to rigid ideologies, such as that of a religious sect or a political persuasion, are clear about the key fundamentals of that ideology.

One's philosophy of life reflects one's worldview. Worldviews function as maps of reality. They delineate boundaries, indicate conventional routes, and provide landmarks that aid in navigating life.

Worldviews are based on fundamental presumptions that serve as norms, such as core beliefs and values. Few people examine their presuppositions critically. This is one aspect of the admonition of Socrates about the examined life. While everyone has a philosophy of life, few are philosophers in the Socratic sense, because few take the trouble to examine their core beliefs and values. As a result, most people's worldview is conventional. Only the intelligent examine their presuppositions critically, and only the creative shape their worldview proactively.

Since humans are not omniscient by nature, we lack a comprehensive view of reality. Moreover, we do not come into the world with an operating manual. Hence, everyone needs a map of reality and a set of basic instructions in order to get along in life. A worldview is the conceptual model of reality that functions as a set of norms, which one uses for this journey.

Few people realize that they are using a mental map and following subliminal norms. Even fewer attempt to examine their map and associated tools. Almost no one asks how such maps function, or is even interested in this. As a result, most people assume a great deal uncritically and take their presuppositions for granted. Consequently, they lead conventional lives instead of creative ones.

A map is not the territory, but rather a representation of a territory from a particular point of view. Nevertheless, people often confuse the map with the territory and mistake their worldview for reality.

How does this confusion come about? In order to understand this, it is necessary to investigate how a worldview is constructed.

Every infant finds itself thrown into a world that it did not choose to enter and over which it has little control. At first, its needs are met by its family, but as infancy develops into childhood, life gets increasingly complex, and the growing child finds it necessary to learn a great deal as its territory increases from crib, to playpen, to room, to home, to street, to neighborhood, to town and then beyond, to country, world, and, for a few, space. This means using many different maps. It also involves creating a comprehensive picture of the world based on these maps.

In the course of this progression, a lot of information and skill must be acquired. Many other things come along with this, too, such as the social norms and customs of the culture in which one is raised. Socialization is a significant part of education as one learns to delay gratification and balance individual desires with social responsibilities. It also requires conforming to conventions. The developmental process is one that combines education with enculturation and aims at fitting one for a productive life in society.

By the time that one is ready to pass from adolescence to adulthood, one has acquired the principal outlines of a cultural worldview. One is also schooled in

the conventional wisdom and established norms of one's society and particular social group.

This worldview and its conventional wisdom are grounded in what is over called the commonsense view of the world. What is commonsense? Commonsense is what just about everyone presumes is correct. This includes both basic assumptions and norms.

The so-called commonsense view of the world is said to be naïve because it is assumed uncritically through early upbringing, education, and enculturation. Those that question the received wisdom are generally considered "rebellious" unless they become successful. Then, they are "trendsetters."

Who are these rebels, some of which become the avant-garde and trendsetters? Everyone is the product of nature and nurture. One's temperament and tendencies are determined by nature (genes). Thus, even when one's nurture (education and culture) is the same as everyone else, some people react differently because of their constitutional makeup.

Often, these social rebels get together with like-mind people in enclaves, because they do not fit in with the rest of society. Previously, this included predominantly artists and intelligentsia, or so-called bohemians. Conventional society excluded them, unless their contributions became too valuable to ignore. However, many great artists and thinkers went unrecognized or rejected in their own time. After the countercultural revolution for the Sixties, this distinction broke down. The old conventionality of being conventional became passé, and the new conventionality was being unconventional. Now, marketers and the media seek out the most unconventional people, in hope of sparking new trends that will increase profits.

Yet, even today, some very creative and forward-looking people remain controversial, and they may even be marginalized, especially if they are outspokenly critical of social norms and are perceived as threatening the status quo. Society is often slow to recognize a rising wave and often resists change until the wave clearly crests.

Looking back in history it was only a few centuries ago that the commonsense view of the world pictured the world as flat, with the sun rising and setting at the "edges," as it appears to do. Sailors were afraid to venture far from shore because they assumed that might fall off the edge of the world.

However, great mariners like Christopher Columbus (c. 1451-1506) cast aside such presumptions to undertake bold adventures that resulted in significant discoveries. The expedition led by Ferdinand Magellan (1480-1521) eventually showed that the world is a sphere by circumnavigating the globe, although Magellan lost his life on the voyage when hostile natives attacked a landing party he was leading.

At around the same time, Nicolaus Copernicus (1473-1543) used Tycho Brahe's astronomical observations to show mathematically that the earth is a planet tracing an elliptical orbit around its star, the sun. While Copernicus did not venture from his study, his undertaking was as bold as those of Columbus and Magellan. Indeed, Galileo Gallilei (1564-1642) was subsequently persecuted for promulgating the heliocentric theory, which, contradicted established the Church's doctrine.

Such rebels were willing to question commonsense and the conventional wisdom of their day. They changed the prevailing worldview because of it. Examples of scientific discoveries and inventions that overturned widely held assumptions can be multiplied. However, other contributions also shifted the prevailing worldview momentarily.

For example, the Declaration of Independence asserted that all men are created equal and are endowed with fundamental human rights, such as the right to life, liberty, and the pursuit of happiness. The Constitution of the United States and the Bill of Rights guaranteed these rights and more, and declared that no one could be denied these rights without due process of law, before which all persons are equal.

Such ideas were not widely accepted at the time, nor were they well received by those in power. When the Founding Fathers made these assertions, they were staking their lives and their fortunes on the outcome. After the Revolutionary War, the establishment of these ideas as the law of the land of the United States of America radically altered the political worldview prevalent at the time in the rest of the world, based on a new philosophical understanding.

However, not all those who reject the prevailing worldview are forward thinking. Instead, many are backward thinking. For example, a significant number of people reject the scientific worldview that predominates in contemporary society in favor of conflicting views based on religious doctrine.

In addition, anthropology, sociology, and world history provided ample examples of different worldviews and how they shifted over time. There is also a sad record of worldviews both coming into conflict and provoking conflict. In almost all cases, the adherents of various worldviews accept their particular view as identical with reality. This is especially true of worldviews grounded in religious doctrines believed to be the indisputable truth. Many wars have been fought over such differences. Some now see a clash of civilizations in progress, as the West and Islam encounter each other close up, rekindling memories of similar conflicts between Christendom and Islamic Caliphates centuries ago during the Crusades.<sup>61</sup>

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<sup>61</sup> Huntington, Samuel P. *The Clash of Civilizations and the Remaking of World Order*. New York, Simon & Schuster, 1996.

How does a worldview come to be? Experts now recognize that worldviews are constructs that arise from the interplay of tradition, custom, and convention, as well as innovation, including discovery and invention. Worldviews also contain many hidden assumptions that are difficult to discover, especially when one is caught up in the worldview that one is investigating.

Core assumptions, beliefs, and values are used to construct the foundation of a conceptual framework for organizing data and serve as a set of norms regulating stimulus response. The behavior of those holding a particular worldview is relatively predictable, given the nature of the framework and norms, especially in rigid views where the norms require strict adherence and allow scant departure, stifling creative expression. Liberal democracy is a reaction against such rigidity, for instance.

Biologists look at evolution in terms of different responses to environmental opportunities. Nature evolved a series of such responses of increasing complexity in order to take advantage of more and more opportunities for survival and reproduction. Animals rely on natural instincts to respond to environmental challenges. Human beings are essentially different in that they have evolved a nervous system of sufficient complexity to support rationality and informed decision-making. The exercise of rationality gives humans an enormous degree of control over the environment that is not available to other species and provides us with many more options.

The evolutionary process took place over eons, and it involved a multitude of factors that were incorporated as complexity increased. For example, the human brain contains a “snake brain,” an animal brain, and the cerebral cortex that is unique to humanity. Each section of the brain grew from the need to respond to different types of challenge in the course of evolution.

In addition, different genetic strains proliferated in different places, facing different conditions, resulting in different languages and different cultures in addition to different “nations,” in the biological sense of a nation as a people. The Latin term signifying a nation or people is *gens*, which is the root of genetic.

These differences resulted in differences in both nature (genes) and nurture (culture). Different perspectives on life developed out of such differences in constitution and enculturation. Therefore, it is hardly surprising that there are a variety of worldviews. It would be surprising if there were not under such circumstances.

It is actually fortunate that there are. As long as a social group is caught up in an exclusive worldview and remains unaware of other worldviews, it is difficult for people to distinguish their worldview from reality. However, when people encounter other worldviews, then at least some begin to examine their views for evidence of bias.

The difference between the scientific worldview and that of Christian Fundamentalists who take the biblical account of creation as literally true is well known. However, less well known is the fact that almost every social group has a particular set of views that is different from others. For example, there are some twenty thousand sects of Christianity, all of whom share some fundamentals but hold others, too, some of which are incompatible with other views. Listening to political debates, one sometimes wonders if the parties inhabit the same universe. Views are also colored by emotions, as rabid sports fans make evident in their support of their home team.

Differences in viewpoint are often only a matter of opinion, even though they may involve heated debate or provoke conflict. However, different worldviews are indicative of different philosophies of life.

What is a philosophy of life? It is a comprehensive rationale of the cosmos, the human condition, and what may lie beyond, e.g., almost all human cultures have incorporated some concept of an afterlife.

Being directed chiefly by reason instead of relying instinct, humans developed rationales for meeting basic needs, meeting challenges, and taking advantage of opportunities, both individually and in social groups. As these rationales increased in complexity, they became rather elaborate as philosophies of life underlying civilization and culture. Thus, it makes sense to talk of the East versus the West, Western civilization, European culture, and the American way, for example.

Moreover, every individual has a philosophy of life that is unique, because no two individuals see the world in precisely the same way. Fundamental differences always emerge eventually, even in a close-knit family.

## Philosophies of life

Philosophies of life are comprehensive rationales underlying worldviews. They are different from philosophies developed consciously and intentionally by individual thinkers and schools of thought. They generally arise spontaneously in response to circumstances without being constructed consciously or expressed explicitly, although they may be based on or incorporate ideologies that are well thought out, such as religious ideologies.

Even though they may not be consciously constructed or expressed explicitly, worldviews are called “constructs,” because they are logical systems erected in thought and embedded in the meaning of ordinary language. Language-use reflects a worldview that can be detected by observing how meaning functions in context. We view the world not only through the medium of the senses but also in the way we construe the language we use. The map we follow is embedded in our ordinary language.

By examining language-use, Ludwig Wittgenstein sought in his later work to articulate how worldviews function not only as maps of reality but also as norms and criteria.<sup>62</sup> Worldviews are comprehensive rationales that not only describe in general terms what is true but they also establish criteria for justification. For example, the so-called truth of many components of a worldview is not based on evidence. Rather, their arbitrariness shows that such key fundamentals function as assumptions and norms against which material subsidiary to them is evaluated.

Such norms may even override a preponderance of evidence. For example, in a worldview based on the assumption that the bible is God's word, scientific evidence supporting evolution is discounted as being either erroneous or irrelevant since it contradicts the accounts of creation found in *Genesis*.

Knowingly or unknowingly, everyone has a philosophy of life functioning as a comprehensive rationale underlying one's worldview. One absorbs most of this rationale without even realizing it. This process begins at a very early age, certainly as one learns a language, and it continues through the process of one's education.

Most people's worldview has crystallized by the time they reach maturity. Very few question this worldview, and fewer still change it consciously based on investigation.

This prevailing worldview is accepted as based on commonsense as a criterion of truth. It constitutes conventional wisdom. In the commonsense view of the world, commonsense is the ultimate criterion of truth and falsity. Anything that runs counter to commonsense is summarily rejected. Anyone who does not accept key aspects of this view is considered ignorant, deluded, confused, mistaken, dishonest, or insane.

Many serious problems arise from presumptions about commonsense. In order to understand them, it is necessary to specify what "commonsense" means when it is used this way.

"Commonsensical" implies connotations such as reasonable, intuitively obvious, self-evident, straightforward, unsophisticated, common knowledge, knowledge gleaned from experience, uncomplicated, and available to all. Thus, "the commonsense view of the world" signifies the map of reality that is generally agreed upon in a society as intuitively obvious, even to those who are not learned.

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<sup>62</sup> In *Philosophical Investigations*, Ludwig Wittgenstein sought to illuminate how "all seeing is seeing as," as well as to show how language reflects a "world-picture" (German *Weltbild*).

On one hand, the commonsense view has been different in different societies. For example, in the West, the way of Oriental thinking is said to be inscrutable because it proceeds on different assumptions. On the other hand, fundamental views also change over time within the same society, affecting the commonsense view. Not so long ago, most people thought that the world was flat. Now, everyone accepts that the world is round.

Moreover, the commonsense view is often in conflict with more sophisticated views, such as science. Science challenges many key assumptions of the prevailing commonsense view. For example, it takes considerable time for scientific discoveries to be integrated into the conventional wisdom, leaving a gap between the commonsense view of the world and a more comprehensive scientific view. Probably, most people still assume that they live in a universe in which everything observable is occurring simultaneously, even though science has shown conclusively that this presumption is erroneous.

The commonsense view shared by most people of the modern West is based on conventional thinking and is an amalgam of many inputs. These inputs include longstanding social custom, religious tradition, and scientific knowledge. It is also based on shared experience and common perception. All of this is taken for granted and is generally neither examined nor questioned.

Naïve realism lies at the basis of this shared experience and common perception, and it is a key component of the prevailing commonsense view of the world. According to naïve realism, the world that everyone perceives is the “real” world, as it exists independently of observers, and the universe is a continuum in which everything that is perceived is happening simultaneously.

Moreover, this commonsense view of the world is based on the logical principle of identity. The principle of identity states that everything is identical with itself. Its corollary is that nothing is different from itself. This implies the principle of non-contradiction, which states that a thing cannot both be and not be at the same time, in the same respect. This logical principle is then transformed into a metaphysical principle of naïve realism stating that everything in the world exists separately from everything else.

The epistemological principle of naïve realism holds that perception is of real objects, that is, “things” as they exist in the world, separately from both observers and other things. Another fundamental assumption is that thoughts are not things. Since the body is a “thing” like other objects, the mind must be separate from the body. This is called epistemological dualism. It is a key feature of naïve realism.

While all of this may seem intuitively obvious, science has discovered serious problems with it — for example, that the universe is not simultaneous, that everything is connected at the quantum level of energy, and that perception

through the senses is mediated by sense data that the nervous system processes, selectively shaping the raw data into useable information.

Moreover, and more importantly for the investigation of what philosophy is, the commonsense view of the world based on naïve realism results in many philosophical problems. For example, the commonsense view is neither internally consistent nor does it account for all experience and knowledge, but rather results in many contradictions and anomalies.

One of the most obvious contradictions is that between the assumption that perception conveys reality faithfully and the rising and setting of the sun, or the stars moving in the heavens, both of which turn out to be perceptual illusions owing to relative motion. Similarly, the assumption that the universe is simultaneous for all observers is contradicted by the scientific knowledge that visual perception is mediated by light, hence, is dependent on the speed of light waves propagating in space. This difference is illustrated by the difference in time between a flash of lightening and the corresponding clap of thunder as the distance of the observer increases, owing to the difference in velocity of light and sound waves.

In addition, considerable other evidence contradicts the assumption that reality exists as substantially perceived. In spite of this evidence and sophisticated understandings based on it, most people assume that they are aware of objects as they are, rather than as they appear.

Internal contradictions also arise from conflicting assumptions. The commonsense view presumes that all observers have substantially the same knowledge of the world and that observers are separate and distinct from each other, as well. If observers are separate and distinct from one another and do not know other minds, then they do not know directly that they share substantially the same knowledge.

The presumption of common knowledge could only arise from some other factor, such as inference based on agreement. However, this reduces the criterion of the commonsense view to agreement instead of direct knowledge, as claimed.

Many anomalies also emerge from the commonsense view. Many of these anomalies became the problems that philosophers addressed, along with other contradictions. For example, the early dialogues of Plato picture Socrates questioning his contemporaries about things that they take for granted to demonstrate to them that they do not know what they think they know just because it seems obvious or is widely accepted.

One of the greatest anomalies arises from the claim that observers gain substantial knowledge of the world directly. If the existence of a subject is different in kind from the existence of an object, the former being mind and the latter, matter, how is it possible for a subject to know an object substantially as it

is? Again, if the existence of an observer is entirely separate and distinct from the existence of a known object, how is this separation overcome in the process of knowing?

For example, if a third thing is required to bridge the gap, then knowledge is not direct, as claimed, but is mediated by that third thing. If the third factor is not both mental and material, then it seems that a fourth is required and so forth, in an infinite regress. If the third is asserted to be both mental and material, then a host of other questions arise as to how this is possible.

Problems arise not only with respect to the commonsense view that most people presume but also with respect to the personal philosophies of life that people construct as rationales to guide them. Very few people think through this rationale in constructing it. Instead, they are motivated not only by reason and evidence but also by desire and emotion.

As a result, many inconsistencies and errors creep into their hidden assumptions unnoticed. For example, pleasure is often confused with happiness. Consequently, many people adopt a philosophy of life that prioritizes pleasure, with the result that unknowingly they invite the unhappiness that excessive pursuit of pleasure eventually involves.

## The examined life

Socrates famously said that the unexamined life is not worth living.<sup>63</sup> He took it as his mission to assist others in this by questioning received authority and conventional wisdom. Calling himself a gadfly sent by God, Socrates made others think through their positions critically by calling presumptions into question.<sup>64</sup>

The dialectical method, or dialectic, is based on a dialogue, in which participants argue for a particular view and against other views. The exchange not only brings out strengths and weaknesses in the various arguments but also examines the foundations of the various views under discussion. For example, the premises of an argument may correspond to the presuppositions that underlie a view. An attack on the premises of an argument is therefore an attack on the foundation of the position being argued.

The dialectical method that Socrates made famous uses persistent questioning to expose flawed reasoning, indefensible presumptions, and unclear or ambiguous meaning. This questioning is often designed to show people that they do not know what they are talking about because they have not thought through the matter sufficiently. The aim is to make implicit contradiction explicit.

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<sup>63</sup> Plato. *Apology*, 38a.

<sup>64</sup> Plato. *Apology*, 30e-31b.

The dialectical method that Socrates employed worked chiefly by asking for substantiation of knowledge-claims and for clarification of key terms. Through such questioning, many presuppositions are discovered to be groundless, and many key terms are found to be unclear, undermining the position and showing it to be untenable. A classic example of this approach is found in *The Republic*, Book I, where Socrates questions a view of justice attributed to Simonides, in which Socrates reduces this view to absurdity.

Socratic dialectic is a negative method characterized by deconstruction rather than construction. Were this all there were to philosophizing, it would be still be useful in discovering error and preventing confusion, but it would not lead to many positive contributions.

In addition, however, Socrates often put forward his own positions, at least in Plato's account. Plato has Socrates advance a version of perennial wisdom. Socrates subjected his own views to testing through dialectic by inviting objections. This established the procedure of debating issues that has become the mainstay of discourse among professionals in all fields. In different fields, appropriate standards, such as rules of evidence, were developed over time.

Philosophy is still concerned with examining the rationale of worldviews. No worldview is yet universally accepted, although the scientific worldview is closest. However, the scientific worldview is essentially materialistic as it is currently expressed. Materialism is a philosophical presumption. Therefore, this limits the appeal of the scientific worldview as a universal explanation to those who are though-going materialists.

Most others incorporate the scientific worldview into their worldviews, which may include presuppositions that conflict with materialism. Religious worldviews that incorporate science often make room for this discrepancy by also incorporating mystery as a key fundamental. Spiritual worldviews, especially nondualistic ones, hold that matter is a manifestation of spirit.

Different rationales still compete with each other for dominance in many areas of life. Moreover, there is no universally accepted worldview, or philosophy resolving all issues that relate to reality, knowledge, value, and interest. Nor are such issues merely academic. They relate to law, politics, economics, and healthcare, for example, as well as personal life. Many of these issues are the stuff of contemporary political debate.

Most of the fundamental questions have been probably asked already, and solutions have been offered in the form of conventional wisdom, various ideologies such as religious doctrines and political positions, science to the degree that scientific methodology is applicable to them, and specific philosophies. However, no resolution that has been proposed has been accepted as definitive, because criteria are lacking to compel universal acceptance based on either reason or evidence.

This does not imply, however, that all positions are either equally unfounded, or equally arbitrary if accepted. Some positions are poorly conceived or logical inconsistent, lack clarity of meaning, do not accord with evidence, and so forth. Others meet these criteria at a much higher standard, but no one of them has yet garnered supremacy, let alone universality.

Moreover, some positions are more comprehensive than others and account for more data. For example, quantum mechanics is more comprehensive than classical physics because it includes all that classical physics does, and it explains more than classical physics is capable of doing.

Similarly, perennial wisdom is more comprehensive than other positions because it includes the physical dimension of gross experience and the subtle and causal spheres of subtle and mental experience. It also includes as the unmanifest Absolute, which is the source and ground of the three manifest, phenomenal, and relative “worlds,” as well as the levels of awareness corresponding to them.

Perennial wisdom is different from speculative philosophies not only in being more comprehensive but also in being based on testimony attested to from different levels of awareness. It may be objected that the experience upon which this testimony rests is merely subjective, hence, not publicly available. Therefore, it is not valid as a criterion.

On the other hand, the various sciences are based on evidence that is not widely available because it involves the expert use of technical apparatus. The empirical evidence for hypotheses based on theoretical terms is not direct observation but rather inference from results observed in measuring devices. Many scientists admit that the evidence does not prove the existence of referents to the theoretical terms, but rather only shows the usefulness of the theory in making predictions about measurements. Even though this knowledge may have practical value in the development of technology, the theoretical terms say virtually nothing about how things actually stand in the world.

Moreover, the sciences require intensive training and the development of knowledge and skill beyond the capacity of most people. The notion that scientific evidence is empirical in the sense of observable is quite different from the ordinary meaning of “observable.”

Similarly, while mystical experience is not commonly available, full awareness and complete knowledge is everyone’s birthright as a human being according to perennial wisdom. Through diligent application under the guidance of a qualified guide, anyone is capable of unfolding experience that is more expansive than the ordinary, and ample testimony attests to this.

The examined life is a life that is reflected upon. Self-reflection is possible for human beings because human consciousness is reflexive, that is, capable of turning attention away from the world to focus on itself. By turning attention

within, one can reflect on the mind's contents, the mind itself, and the ego, or self. In this way, consciousness can come to know consciousness directly, without intermediary, something that matter cannot do.

Through self-enquiry, the subject becomes its own object, and one commences the process of knowing oneself that eventually ends in self-realization. This is the goal of perennial wisdom, where the lover of wisdom unites with truth.

This gets back to the problem of consciousness that we explored in order to illustrate a philosophical problematic. According to perennial wisdom, the fundamental question is, "Who am I?"

The reason for this is that the ultimate "answer" to this basic question is realization of the state of nonduality. This reveals that the unmanifest Absolute is the source and ground of manifestation: The duality of subject and object is apparent, as is separate existence also.

Thus, the notion of the examined life is far broader and deeper than either reflection on what one holds or psychological introspection of the mind and its contents. It also goes beyond investigation of one's personality and self-image. The examined life is the life of a spiritual seeker who pursues ultimate truth.

Plato's *Dialogues* suggest that this was indeed the goal of Socrates himself. The "ladder of love" passage of *The Symposium* summarizes this. In *The Symposium*, or *Banquet* Socrates reveals what a Mantineian woman named Diotima taught about how to realize unity by climbing the ladder of love.<sup>65</sup> This passage, one of the best known in Plato, reveals the significance of "philosophy" as love of wisdom. Since it is not only one of the most famous passages in Plato but also in all of philosophy, it is worth quoting in full. In it, Socrates quotes the teaching he received from Diotima of Mantinea:

These are the lesser mysteries of love[set forth in the previous paragraph], into which even you, Socrates, may enter; to the greater and more hidden ones which are the crown of these, and to which, if you pursue them in a right spirit, they will lead, I know not whether you will be able to attain. But I will do my utmost to inform you, and do you follow if you can. For he who would proceed aright in this matter should begin in youth to visit beautiful forms; and first, if he be guided by his instructor aright, to love one such form only — out of that he should create fair thoughts; and soon he will of himself perceive that the beauty of one form is akin to the beauty of another; and then if beauty of form in

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<sup>65</sup> Plato. *Symposium*, 201d-212d.

general is his pursuit, how foolish would he be not to recognize that the beauty in every form is and the same! And when he perceives this he will abate his violent love of the one, which he will despise and deem a small thing, and will become a lover of all beautiful forms; in the next stage he will consider that the beauty of the mind is more honourable than the beauty of the outward form. So that if a virtuous soul have but a little comeliness, he will be content to love and tend him, and will search out and bring to the birth thoughts which may improve the young, until he is compelled to contemplate and see the beauty of institutions and laws, and to understand that the beauty of them all is of one family, and that personal beauty is a trifle; and after laws and institutions he will go on to the sciences, that he may see their beauty, being not like a servant in love with the beauty of one youth or man or institution, himself a slave mean and narrow-minded, but drawing towards and contemplating the vast sea of beauty, he will create many fair and noble thoughts and notions in boundless love of wisdom; until on that shore he grows and waxes strong, and at last the vision is revealed to him of a single science, which is the science of beauty everywhere. To this I will proceed; please to give me your very best attention:

He who has been instructed thus far in the things of love, and who has learned to see the beautiful in due order and succession, when he comes toward the end will suddenly perceive a nature of wondrous beauty (and this, Socrates, is the final cause of all our former toils) — a nature which in the first place is everlasting, not growing and decaying, or waxing and waning; secondly, not fair in one point of view and foul in another, or at one time or in one relation or at one place fair, at another time or in another relation or at another place foul, as if fair to some and-foul to others, or in the likeness of a face or hands or any other part of the bodily frame, or in any form of speech or knowledge, or existing in any other being, as for example, in an animal, or in heaven or in earth, or in any other place; but beauty absolute, separate, simple, and everlasting, which without diminution and without increase, or any change, is imparted to the ever-growing and perishing beauties of all other things. He who from these ascending under the influence of true love, begins to

perceive that beauty, is not far from the end. And the true order of going, or being led by another, to the things of love, is to begin from the beauties of earth and mount upwards for the sake of that other beauty, using these as steps only, and from one going on to two, and from two to all fair forms, and from fair forms to fair practices, and from fair practices to fair notions, until from fair notions he arrives at the notion of absolute beauty, and at last knows what the essence of beauty is. This, my dear Socrates," said the stranger of Mantinea, "is that life above all others which man should live, in the contemplation of beauty absolute; a beauty which if you once beheld, you would see not to be after the measure of gold, and garments, and fair boys and youths, whose presence now entrances you; and you and many a one would be content to live seeing them only and conversing with them without meat or drink, if that were possible-you only want to look at them and to be with them. But what if man had eyes to see the true beauty-the divine beauty, I mean, pure and dear and unalloyed, not clogged with the pollutions of mortality and all the colours and vanities of human life-thither looking, and holding converse with the true beauty simple and divine? Remember how in that communion only, beholding beauty with the eye of the mind, he will be enabled to bring forth, not images of beauty, but realities (for he has hold not of an image but of a reality), and bringing forth and nourishing true virtue to become the friend of God and be immortal, if mortal man may. Would that be an ignoble life?

Socrates then concludes:

Such, Phaedrus — and I speak not only to you, but to all of you — were the words of Diotima; and I am persuaded of their truth. And being persuaded of them, I try to persuade others, that in the attainment of this end human nature will not easily find a helper better than love: And therefore, also, I say that every man ought to honour him as I myself honour him, and walk in his ways, and exhort others to do the same, and praise the power and spirit of love according to the measure of my ability now and ever.

The words which I have spoken, you, Phaedrus, may call an encomium of love, or anything else which you please.<sup>66</sup>

Neither is there evidence corroborating this story as fact, nor the existence of Diotima. However, Plato's overall account of Socrates suggests that it substantially represents his views. Based on this passage and the equally famous allegory of the cave, for example, Plato presents Socrates as holding that the purpose of life involves gaining knowledge that transcends ordinary experience.<sup>67</sup> This view accords with perennial wisdom, and Socrates is generally considered one of its proponents.

Although it is not possible to distinguish the historical Socrates from Plato's portrait of him, anymore than it is possible to discern the historical Jesus from the New Testament portrayal, both Socrates and Jesus are presented as showers of the way. While some aspects of the narratives about them may have been altered for dramatic effect or doctrinal purposes, scholars are in general agreement that the message of both Socrates and Jesus is substantially as represented in the early works about them. The same is true regarding both other teachers who wrote nothing and early works that did not survive in their original form, such as the teaching of Krishna recorded in the *Bhagavad Gita* and the discourses attributed to Buddha.

Perennial wisdom teaches that the purpose of life is to realize truth by expanding the scope of awareness to encompass the infinite potential of consciousness. This is to be accomplished through leading a disciplined life. In Sanskrit, such discipline is called *yoga*, and one who follows it is a *yogi* (masculine) or *yogini* (feminine). In Sanskrit, those who pursue wisdom and those who realize it are both called yogis, because the term *yoga* comes from the root *yuj*, meaning to unite. Thus, *yogi* can mean both one who pursues realization of unity and one who has realized the unified, nondual state.

The Greeks called the disciplined way of life that leads to wisdom *philosophia*, or philosophy. Those who pursued this disciplined way of life were called *philosophoi*, or philosophers, and the wise were called *sophoi*.

The examined life came to signify this disciplined way of life in pursuit of wisdom. It can be compared to the way of life followed by seekers in other wisdom traditions. Thus, the examined life is comparable to *yoga* in the Vedic tradition, where "yoga" is taken in the broad sense of the *Yoga Sutras* of Patanjali, for example, instead of as only the physical postures and breathing methods characteristic of Hatha Yoga.<sup>68</sup>

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<sup>66</sup> Plato. Symposium, 201d-212d. Translated by Benjamin Jowett. Public Domain.

<sup>67</sup> Plato. *Republic*, Book VII, 514a-521b.

<sup>68</sup> Patanjali. *Yoga Sutras*, 2-4.

The examined life involves three factors.

- Self-criticism
- Self-discovery
- Self-invention

Criticism, discovery, and invention are turned toward the self through the reflexive power of human awareness.

*Self-criticism* is not criticizing oneself as inadequate for having weakness. This type of self-criticism often leads to a poor self-image instead of self-improvement. Rather, it is concerned with identifying and removing blockages to natural and normal functioning, so that one can realize one's full potential in life. There are many types of blockage. The principal types are mental, emotional, energetic, physical, social, and environmental.

Western philosophical methodology was initially holistic, incorporating these different areas of life, as were Eastern systems, such as the Vedic tradition of India, and the Taoist tradition of China. However, over time Western philosophy began to focus chiefly on the mental at the expense of other factors.

Now many of these areas are reemerging as the subject matter of psychology and psychotherapy in the West. For example, the humanistic and transpersonal approaches to psychology are attempts to integrate psychology, philosophy, and spirituality. They often bring in perennial wisdom in their attempt to escape from a conception of psychology that is either overly rational or materially reductionistic, the former being considered too speculative and the later, only physiological or behavioristic.

Removing mental blocks involves rigorously examining one's beliefs, assumptions, values, norms, and, indeed, one's entire worldview. In this process, one must scrutinize received authority and conventional wisdom, using both reason and evidence to substantiate assumptions, criticize core beliefs, and scrutinize norms. Anything not meeting these tests is to be rejected, and what is not harmonious and conducive has to be changed.

Mental blocks are pervasive because one's worldview determines one's conception of reality, and most people's worldviews are haphazardly constructed. As a result, one's worldview may fail to correspond to reality at significant points, resulting in conflicting feedback from experience, and may involve inconsistencies that result in internal conflict, as well as contradictions causing double binds — "damned if you do, and damned if you don't" situations.

Changing one's worldview entails changing one's conception of reality, which is often difficult not only mentally but also emotionally and perhaps socially as well. This is particularly true when one's worldview is bound up with an ideology as a system of ideas with rigid boundaries, such as a religious or political ideology based on fixed principles and norms. For this reason, changing

one's worldview usually involves a double bind. Therefore, only the inwardly strong and the spiritually or psychologically desperate can muster the gumption for it.

The Socratic dialectic was an early method for accomplishing this kind of criticism in concert with others, but it could also be applied individually. The advantage of examining fundamental issues through debate is the additional perspective that others inject. However, few turned this method toward self-criticism, as Socrates did. Debate eventually became a type of performance or competition, sort of an intellectual sport.

Self-examination largely declined in the West, although it found a correlate in the Christian notion of the examination of conscience. St. Ignatius of Loyola, the founder the Society of Jesus, better known as the Jesuit Order formalized this procedure in *The Spiritual Exercises*, which later became the paradigm for Christian retreats.<sup>69</sup>

Buddha also emphasized the need to engage in self-examination, and a great deal of Buddhist thought is devoted to revealing the errors of received authority and conventional wisdom. While Buddha discouraged speculative disputation as inconclusive, he strongly encouraged self-criticism in order to remove bias and shed light on erroneous assumptions.

Subsequently, different methods were developed in the West to address emotional, energetic, physical, social, and environmental blockages. In contemporary psychology, this is called "shadow work." The so-called shadow is the side of oneself of which one is unaware, or only dimly so. Often, one is in denial of one's blocks and attempts to repress awareness of them. Much effort can be expended in resisting, avoiding, or escaping, draining energy away from productive use.

The shadow is not to be confused with the "dark side," in the sense of irrational tendencies. The shadow may be conceived as the dark side in the sense of the moon's dark side, which is never seen from the earth. However, "dark side" as it applies to the shadow is not pejorative and does not indicate evil tendencies.

However, everyone does have a "dark side," arising from one's "animal spirits," or passions, which come in conflict with both reason and social norms. This is the wellspring of individual desire based on self-interest, especially one's "basal" tendencies, which are inherited phylogenetically through the process of evolution. The process of socialization through enculturation is designed to suppress this aspect of individuality in favor of sociability.

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<sup>69</sup> Father Elder Mullan, S.J., Translator. *The Spiritual Exercises of St. Ignatius of Loyola*. New York: P.J. Kenedy & Sons, 1914. Public Domain.  
URL= <http://www.ccel.org/ccel/ignatius/exercises.html>

Enculturation is seldom entirely successful in this, and most people therefore struggle with resulting emotional blockages. A great deal of inner conflict arises from repression of social taboos acquired in the process of socialization. These blockages eventually must be addressed for a personality to become integrated.

The West is now integrating ancient Eastern knowledge, as well as recovering its own classical past. For example, ancient systems of healthcare are holistic because they were founded on holistic worldviews that integrated body, mind and heart, as well as society and environment in terms of their unmanifest ground, call “spirit.”

The word “spirit” comes from Latin *spiritus*, meaning breath. Since the ancients observed breathing is intimately connected with life, it signified life force for them, as well. Although the ancients seem to have equated life and breath, we recognize there is a difference between respiration and life. However, the term “spirit” continues to be taken in its symbolic meaning of life-principle, which many presume is capable of existing independently of matter. This concept appears in Sanskrit as *prana*, Chinese as *qi* (pronounced chi”), Japanese as *ki*, Hebrew as *ruach*, and Greek as *pneuma*.

“Spirit” has taken on a supernatural connotation in contemporary English, but for the ancients life breath was a bridge concept integrating the spiritual with the material. This bridge seemed to be verified in practice. For example, the ancients developed a variety of approaches to removing energy blockages and maintaining energetic balance through breath work, such as *pranayama* in the Yogic tradition, and *qigong*, or *chi kung* in the Taoist.

Perennial wisdom conceives of spirit as what we now call a “holon,” from Greek *holos*, which means whole. A holon is a whole in relation to its parts, and it can be a part in a larger whole, too. For example, an organism is also a holon with respect to its organs, and each organ is a holon with respect to the cells constituting it. Similarly, God or the Absolute is conceived as the Supreme Spirit in which all other spirits, or “souls” have their being. Each embodied soul is also a whole that gives life to a physical organism.

Self-criticism involves analyzing this web of relationships to identify mental, emotional, energetic, physical, social, and environmental blockages. The ancients considered these factors to be an integral part of a balanced way of life, and this knowledge is being rediscovered and reapplied.

Self-criticism is an important factor in approaching life holistically. Without rigorous self-criticism, blockages may skew one’s approach in such a way as to make it difficult or impossible to accomplish one’s goals, making life an ongoing struggle in which one is constantly sabotaging oneself. Without rigorous self-criticism, it is difficult to unfold one’s potential because was it blocked from doing this by numerous distractions that sap energy and resources.

*Self-invention* is about composing a life. While self-invention should ideally follow upon self-discovery, this is seldom the case practically. Most people begin to fashion their personality and self-image as adolescents, based on gratification of individual desire, perceived self-interest, the need for approval, social pressure, limited knowledge and experience, and a host of other matters that are unrelated to self-discovery. Most adolescents receive little direction in self-creation based on self-discovery, and most are not interested in this anyway, being distracted by hormonal pressures.

Moreover, enculturation is seldom oriented toward self-discovery and self-creation based on it. One's early upbringing involves chiefly language learning and socialization. The, one gets enculturated in the process of education. If one has a religious upbringing also, one learns the mores of that group. The result is that when is ready to enter adulthood, one is primed with received authority and conventional wisdom. One is prepared to take one's place as a cog in the wheel of progress.

A large part of the process of self-criticism involves examining this received authority and conventional wisdom, pruning it using reason, and fitting it to one's temperament and talents. It is easier to tear down than to build up. The latter requires self-invention.

Self-invention requires a person to be proactive rather than reactive. One must inquire into the purpose of life and how to achieve that purpose through a suitable strategy. Then, one must implement that strategy through tactics. This requires the use of focused intelligence, including discernment and discipline.

One must ask what makes life worthwhile: Is the purpose of life simply the accumulation of fame, fortune, power, and pleasure, or, does a worthy life involve something more?

What makes a life "worthy?" Those who have shown the way are unanimous in proclaiming that worldly success does not bring abiding satisfaction, hence, that kind of achievement cannot be the source of true happiness. They emphasize that real success leads to abiding satisfaction and that this comes as a result not of doing well, but rather from being good.

What constitutes a good person is a central question for philosophy. This requires an investigation into the meaning of "good." The ancients realized this and attacked the challenge. For example, according to Aristotle, true happiness is a by-product of virtue (*arête*), meaning human excellence.<sup>70</sup>

Achieving human excellence involves building character. Aristotle counseled that one builds character through moderation in all things, avoiding excess and

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<sup>70</sup> Aristotle. *Nichomachean Ethics*.

defect. He defined excellence in terms of balance and harmony, individually and socially.

The ancients broke down the process of building character into various “virtues,” or excellences. The Greek term *arête* means excellence with respect to a function or activity.

According to the Greeks, the virtues of the mind or intelligence include knowledge (*gnosis*) and wisdom (*sophia*), as well as the ability to apply knowledge wisely, or prudence (*phronesis*). The virtues of the heart, which we also call the will, are love, compassion, fortitude, courage, zeal, enthusiasm, zest, and the like. The virtue of the passions is temperance (*sophrosune*, or *sophrosyne*).<sup>71</sup> The overarching virtue is justice (*dikaiosune*, or *dikaiosyne*), which balances the mind, heart and passions, and creates harmony among all the different functions and activities in a full life lived holistically.<sup>72</sup>

A good life is one lived in accordance with enduring values, expressed as the virtue or excellence of each function and activity, integrated with each other. Thus, one cannot be truly wise without also being loving, and vice versa.

The purpose of life is to realize the Good (*ton kalon*). The Good is the final cause that attracts everyone and everything to it as the perfection of all things. The Good can be conceived as a principle or as substantial. Conceived as a principle, the Good is the perfection of nature that in the human being affords the highest happiness of which a human being is capable. Christian theologians equated the Greek ideal of the Good as final cause with God, thus the highest good for man is the Beatific Vision. In perennial wisdom, the highest good is realization of the Absolute as one’s own true nature.

According to these views, the Good is to be discovered. The way is established by the attractive power of the Good, which draws all toward itself as their own perfection of being. Thus, the journey to self-discovery lies in following this Way. Almost all spiritual traditions call the spiritual path “the Way” in this sense.

*Self-discovery* is this process of enquiring into who and what one really is, behind the armor and the masks that veil us from ourselves. Self-discovery is often chiefly thought of as discovering one’s temperament and talents, one’s strengths and weaknesses, and similar psychological characteristics through introspection. However, it is much more than this, as well.

Moreover, the mind alone is not capable of covering the full range, since this involves feelings in addition to thoughts, and the interaction with the body,

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<sup>71</sup> Σωφροσύνη.

<sup>72</sup> Δικαιοσύνη.

others, and the environment. Therefore, one must test oneself through action. Knowledge that is not acted on cannot be called wisdom.

All factors related to achieving excellence in life are important to the process of self-discovery. Yet, the ultimate discovery is finding one's own nature, the unmanifest dimension that lies beyond the relative and changing phenomena of the manifest realm. This is the ultimate purpose of philosophy as a way of life, in the sense that the ancients understood this and practiced it.

Plato approached the meaning of "good" in terms of purpose. According to Plato's analysis, everything changes. He sought to explain change in terms of overall purpose. A "good" is that toward which an agent moves in the process of change. For example, through tropism, plants turn during the day to maximize the sunlight falling on them, and flowers close at night when the sun goes down in order to protect themselves from the cold. Following instinct, animals seek to survive by eating and to perpetuate the species by reproducing.

However, human beings are presented with a variety of goods and must choose among them. Not all apparent goods are real goods, in that they do not conduce to the purpose of life, which is self-discovery. In fact, many apparent goods may distract from this purpose. Therefore, they are to be subordinated to real goods, if not entirely avoided as diversions.

The purpose of rational activity is to discover the good as such as the ultimate purpose of life and to follow that pull. This notion was incorporated into Christian doctrine by the early Church Fathers, who equated God with the good as final cause, and it became part of the worldview. Today, probably most people think of the purpose of life in religious terms if they are religious.

However, the scientific worldview questioned the relevance of purpose in explanation and discarded it in science. Owing to the influence of science in fashioning the modern worldview, the concept of purpose was diminished. As a result, the concept of life purpose has been submerged, and people have instead largely pursued fame, fortune, power, and pleasure. In contemporary Christianity, some sects even teach that Jesus wants you to be rich.

Lack of purpose in life found ultimate expression in existentialist philosophies like that of Jean-Paul Sartre that viewed life as absurd. This way of thinking concludes that when the significance of life is analyzed rigorously, life is found to be purposeless rather than purposeful. Many concluded, therefore, that the meaning of life is not discovered, but rather is wholly invented, and human beings are free to shape their destiny however they will, to the degree that they are able.<sup>73</sup> If nothing is ultimately true, then everything is permitted.

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<sup>73</sup> Jean-Paul Sartre. *Being and Nothingness*. In classical Greece, Protagoras similarly taught, "Man is the measure of all things."

Conversely, perennial wisdom teaches that the purpose of all manifestation, or creation is discovery of the unmanifest ground in the realization of nonduality. Many mystics report on this state, as well as the intermediary stages of the path. The urge for realization pulls every being in creation toward it until full and final realization of the Absolute. Thus, the idea that the good as perfection of nature is the ultimate aim of human purpose accords with perennial wisdom.

For example, in *God Speaks*, whose subtitle is *The Theme of Creation*, Meher Baba articulates the process of evolution to the human form, reincarnation in the human form, involution through the spiritual planes as a spiritual adept, and realization of the Absolute.<sup>74</sup> All beings are somewhere along this journey towards ultimate truth which brings complete and abiding fulfillment. Regardless of whether they realize it, all are being drawn inexorably toward the goal of life — actualization of full potential through realization of one's true nature.

## Conclusion

You now know what to say when someone tells you that philosophy is just an exercise in chopping logic. Tell them how science spun off from philosophy and gave us the technology that has transformed civilization. Tell them, too, how the ideas of personal liberty, equality of persons, and social community based on the common good that are enshrined in Declaration of Independence, the Constitution, and the Bill of Rights are directly traceable to the philosophical speculation of Enlightenment philosophers. Their works influenced the Founding Fathers deeply enough to risk all in order to found the first liberal democracy. This was a momentous choice, and it sparked a political ideal, the success of which is still in the process of changing the world.

Moreover, remind them that everyone has a philosophy of life that guides them, and everyone can be proactive in fashioning it. Philosophy can be considered as a way of life based on creative problem solving, using a rigorous methodology that involves self-criticism, self-invention, and self-discovery. Examined in this light, philosophy is a specifically human activity that involves self-reflection and self-examination with a view to unfolding one's potential holistically. In this sense, philosophy is a way of life based on using one's intelligence and freedom of choice for self-creation, instead of just slavishly following the crowd.

Of course, philosophy can also be approached as a body of knowledge, for example, the history of philosophical speculation, or the various problems philosophers have typically attacked. Usually, this is the way that philosophy is

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<sup>74</sup> Meher Baba summarizes the theme of creation in *Discourses*, seventh revised edition, p. 222-227, and *God Speaks*, Supplement 14.

conceived today, and it is what you will find in an encyclopedia article on philosophy. However, that is only a small part of the story of philosophy.

Far from being an historical museum piece that has largely been replaced by science, even academic philosophy is still contributing to many fields and philosophy in the broad sense is improving lives individually. For example, applied philosophy is a spin-off from speculative philosophy that is contributing to emerging fields, such as bioethics. Moreover, to the degree that all mature humans are rational, they are called up to be philosophers in the ancient sense of taking responsibility for their choice and the thinking on which it is based.

Since ancient times, philosophy in the broad sense of learning to use reason for guiding one's life has been viewed as an activity vital to maturing as a responsible person and citizen. While this was called "philosophy" in ancient Greece, and the name was adopted in the West, similar procedures are discernible in the various wisdom traditions, in which self-examination and self-reflection play a role. While the ancient Greeks developed a methodology for doing this in a particular way, which came to predominate in Western civilization, other cultures have developed similar methodologies suitable for them.

In the West, we have tended to divide knowledge into (1) the religious, based on belief, (2) the philosophical, based on reason, and (3) the scientific, based on empirical evidence. Now we are coming to see that these differences are artificial distinctions that do not have rigid boundaries. Knowledge is expressed in language, and meaning is based on presumptions that function similarly to belief in religion. Religion, philosophy, and science all use reasoning. Similarly, religion and philosophy incorporate evidence, even though not as rigorously as science requires. However, the standard of evidence in the physical sciences is much tighter than other sciences, which are blends of presumption, speculation, and observation.

One of the principal tasks of philosophy is distinguishing among presumption, reasoning, and evidence, as well as examining criteria. This is called critical thinking, and it is not possible to live intelligently without doing it.

We also examined doing philosophy by taking the problem of consciousness for an example. The question is how best to explain consciousness: Is consciousness best explained as a manifestation of matter (materialism), or is matter best explained as a manifestation of consciousness (idealism)? Are consciousness and matter best explained as being separate realities (dualism)?

This illuminated how a speculative or theoretical problem involves matching language to experience through reflection. This type of problem requires getting language right in accounting for experience.

Speculation arises from wondering. We have some experience about which we wonder, leading us to seek an explanation based on reasons. On one hand,

giving reasons involves logical conditionality, e.g., inference. On the other hand, scientific causation involves semantic interpretation of logical conditions that enables testing hypotheses against evidence through experimentation, thereby making outcomes dependent not only on logical conditions but also on material conditions. Other types of causality appeal to non-empirical criteria, such as self-evidence or intuition.

This led to consideration of the controversy over criteria. Materialists hold that only publicly available criteria are admissible and publicly available criteria are limited to the empirical. Non-materialists object that this claim limiting criteria to the empirical is a gratuitous presupposition. They hold that intuition is immediate, where as sense experience is mediated. Non-materialists also point to different categories of experience attested to by mystics, some more comprehensive than others, which suggests that there are states of consciousness other than ordinary waking, dreaming, and deep sleep.

Investigating the problem of consciousness led to considering perennial wisdom as a possible proto-theory of consciousness. Many traditions approached wisdom from the perspective of levels of awareness transcending the ordinary. They emphasize that the quest for true wisdom in the sense of comprehensive knowledge requires tapping into non-ordinary awareness. They also emphasize that all human beings are capable of doing so. Their testimony and teaching is called “perennial wisdom.” It is also known as *philosophia perennis*, or perennial philosophy.

Now that this knowledge is proliferating, inner space is fast becoming the next frontier for exploration. Even science, which had previously rejected the subjective as non-empirical, hence, unscientific, is now investigating areas it had previously either excluded from consideration for lack of criteria, or denied as really existent owing to absence of empirical evidence.

When one undertakes a rigorous analysis of human knowledge and the capacity of the human mind, one is struck that ultimate criteria that are universally compelling seem to be lacking. This led us to a consideration of the concept of causality. Based on this, we discovered how philosophy has not managed to produce a comprehensive worldview that has won general acceptance. While science strives in the direction of an objective worldview that is comprehensive, it admits that it is never complete. Science is also value-free.

The task of offering a comprehensive worldview capable of providing ultimate resolutions to human problems has fallen largely upon ideologies, such as religions and utopian political systems. However, the various religions are in disagreement over key fundamentals, and no political system has yet produced a utopia.

Reason shows that even though compelling universal criteria may be lacking, solutions can be shown to be superior to others on rational grounds. The

absence of absolute criteria does not imply that all solutions are equally unfounded. For example, consistency, comprehensiveness, correspondence with experience, economy, and elegance, are standards for assessing the theoretical aspect of explanations, while practicality arises from predictive power and making a difference in life through application.

It can be argued that the theory of consciousness that perennial wisdom suggests offers the most comprehensive resolution of the problem of consciousness. According to the testimony of mystics, this resolution is capable of being corroborated sequentially through non-ordinary experience. These reports can be viewed as the landmarks that those who have trod the path previously have laid down to guide those who come after, as well as to confirm the way stage after stage, and station by station. This suggests that in principle the theory has both explanatory and predictive power.

Philosophy in the classical sense signifies love of wisdom leading to the pursuit of truth. Thus, philosophy in this sense is embodied in a way of life. Masters assert that perennial wisdom is ultimately practical because its application as a way of life leads to the actualization of life's purpose in realization of nonduality.

As Bernard of Chartres said, "We are like dwarfs seated on the shoulders of giants."<sup>75</sup> While all must undertake their own wisdom quest, no one needs to reinvent the wheel. Those who have gone before us have already done a great deal of the work. Patterns of life and their consequences have been identified. Various paths and means have been elaborated. Many time-tested tools are available, and new ones are being developed.

All of us resonate with different inputs, depending on one's temperament and tendencies. The developmental and transformational processes are not fixed and rigid, but fluid and flexible.

One must feel one's way along the transformational path, as much as think the way through. Mystics testify that knowledge of the heart is more important than knowledge of the mind. However, one must acquire discernment by achieving a balance of mind and heart, in order to be able to discriminate among intuition having a rational basis, "wishful thinking" that is primarily emotional, and "magical thinking" that is purely imaginative.

Once people embark on the quest for wisdom, they find that their intuition pulls them in directions they never anticipated or imagined. Serendipity furnishes resources in the most unexpected places or people. Synchronicity is often difficult to distinguish from coincidence. The quest has therefore rightly been termed an adventure.

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<sup>75</sup> Quoted in Whitall N. Perry. *A Treasury of Traditional Wisdom*. San Francisco: Harper & Row, 1986, (1971), p. 964.

The quest is an individual one, and everyone has to discern one's own way. However, guides who have trod the path and know the way are invaluable. They still speak through the perennial wisdom preserved in the testimony of mystics and the teaching of masters. Moreover, mystics of all times and climes testify that inner guidance is available to those who seek it out.

No one is ever entirely alone on the path that leads to wisdom. Thus, it is written, "Ask and you shall receive, seek and you shall find, knock and the door will be opened to you."<sup>76</sup>

However, one must know what to seek and ask for, and on which door to knock. Here, reason can be both a guide for the mind and a check for the heart.

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<sup>76</sup> *Matthew 7:7.*