

Minimalism

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I. Fundamental Relationships.

Although reality is clearly made up of an infinity of attributes and relations, it is logically possible that all or a significant part of these can be defined in terms of a limited number of designated, fundamental relationships.

Examples:

The infinite spectrum of colors can be generated by three primary colors.

The infinity of possible sentences of a language can be generated by a finite alphabet.

Minimalism works with three fundamental (binary) relations: causality, \rightarrow , componenthood, \in , and value, \geq . Minimalism is not reductionist, and does not assume that these three suffice for all of reality. But minimalism deliberately restricts itself to a study of what can be obtained from combinations of these three relations.

Each of these relations, in its most general form, is logical (metaphysical), but each is *empirically grounded*, meaning that it is a metaphysical generalization of an observational truth. These relations hold between phenomena generally, though value must be restricted to *entities* (to be defined).

Causality: $A \rightarrow B$ means “B exists (as it is) by virtue of A.” The empirical counterpart is: “never A without B.” The point is that causal links are not observed but rather logically inferred (Hume). “Never A without B” is the minimum empirical condition for inferring the existence of a causal link between A and B.

Componenthood: Phenomena may be *composite* (have other phenomena as components) or else *simple (noncomposite)*, i.e., having no components whatsoever. Thus, $A \in B$ means “the phenomenon A is a component of the phenomenon B .”

All observed macrophysical systems are composite. The only candidates for simplicity in the known physical world are the fundamental particles of quantum mechanics (e.g., quarks or photons).

Whether or not the f.p. of current physics are indeed simple is still controversial (open) and relates to the metaphysical question of whether or not matter is infinitely divisible.

More generally, minimalism makes use of and deals forthrightly with the notion of infinity.

This approach takes seriously the following statement of ‘Abdu’l-Bahá, in the Tablet of the Universe, which indicts classical philosophy for its inadequate treatment of the notion of infinity:

“Know then, with regard to the mathematical sciences, that it was only in this distinguished age, this great century, that their scope was widened, their unresolved difficulties solved, their rules systematized, and their diversity realized. The discoveries made by earlier philosophers and the views they held were not established upon a firm basis or a sound foundation for they wished to confine the worlds of God within the smallest compass and narrow limit and were quite unable to conceive what lay beyond. . .”

This statement of ‘Abdu’l-Bahá follows his earlier clear affirmations in the same Tablet that God has created every category of existence in infinite number. He further underlines the immense difference between the classical and modern perspectives on these issues:

“Know thou that the knowledges and disciplines, the arts and sciences which appeared in previous dispensations, when compared to the divine questions, the eternal verities and the universal mysteries which have become unveiled, manifest and brilliant in their meridian glory in this resplendent Revelation, are nothing more than allusions and metaphors, nay, they are hardly better than superstitious fancies.”

Value: $A \geq B$ means “A is higher or more valuable than (or equally valuable as) B.” One measure of value in the material world corresponds roughly to thermodynamic complexity. Thus, $\text{humans} \geq \text{animals} \geq \text{plants} \geq \text{minerals}$.

This, of course is nothing but Aristotle's chain of being, reiterated and refined by 'Abdu'l-Bahá. However, for Aristotle, this cumulative hierarchy was strictly metaphysical, whereas modern science has now furnished us with an empirical measure in terms of energy transformations and increasing complexity.

Thus: energy transformation by rocks and minerals is essentially limited to absorbing and radiating energy, but with no increase in structural complexity.

Plants can do this but can also use energy input from outside to complexify their own structure, i.e., to grow (e.g., photosynthesis of leaved plants).

Such complexification is both quantitative (increase in number of cells) and qualitative (more sophisticated internal relationships resulting from cell specialization and organic integration).

Plants can also use energy to reproduce (thus to make copies of themselves), which minerals cannot do.

Animals add to the gamut of possible energy transformations by locomotion and sensibility (object-specific reactions such as sight or hearing).

Finally, humans cumulate all of these functions, but add the crucial capacity to transform energy in the form of pure, symbolic, abstract information.

Since we can define objective, empirical measures of these various capacities, the value relation is empirically grounded.

In the non physical portion of reality, the value relation is essentially the relationship between universal and particular, though such relations can also exist in the physical world. We illustrate with the following example, essentially due to Plato:

The universal human, embodied (realized) in the Person of the Manifestation.

SW

The individual human soul, which imperfectly (relatively) reflects but does not attain the attributes of God.

MW

The human body, which is a vehicle of the soul, depends upon the soul, and inhabits three dimensions.

Any two-dimensional image of the body such as a reflection in a mirror.

Composite phenomena will also be called *systems*. A phenomenon A is an *entity* if it is a component of at least one other system B , $A \in B$, $B \neq A$. We assume that all simple phenomena are entities. In SW all entities are simple, whereas entities can be either simple or composite in the physical world.

Thus, a fundamental difference between SW and MW is the principle of existence of entities. In SW entities are always simple (unified substances), whereas macrophysical entities are always composite. Both worlds can have (non-entity) systems (e.g., the collection of human souls).

(See ‘Abdu’l-Bahá, SAQ, PT, TU.
See also W. Hatcher’s exposition
in article “The Kitab-í-Aqdas, the
Causality Principle in the World
of Being.”)

Our three relations have connections with the traditional four fundamental branches of philosophy: epistemology, meta-physics, ethics, and aesthetics. The first is based on causality, the second on componenthood (structure), and the last two are based on the value relation.

Classically these relations were studied independently of each other (with a few exceptions). However, the metaphysical principles of minimalism involve connections between these relations and not just properties of the relations.

II. Examples from Minimalistic Metaphysics.

We illustrate the minimalist approach to metaphysics with several minimalist principles.

Mitigated Potency Principle:

If $A \rightarrow B$ and $E \in B$, then $A \rightarrow E$.

In other words, if B is a composite, then any cause A of B must be a cause of each component E of B. The logic of this principle is that a whole (composite) consists of its components. Thus, for B to exist,

every component of B must exist. Thus, if A is capable of producing the whole of B, it has to be capable of producing (causing) every component of B.

MPP means that our causality relation is that of *complete causality* (there are several different notions of causality in philosophy).

The usual notion of causality in science corresponds to Aristotle's notion of efficient cause. The efficient cause is the straw that breaks the camel's back; the complete cause is all of the other straws which, together with the last one, have broken the back of the camel.

We can thus formulate the following equation: $IP + EC = CC$, “the initial phenomenon plus the efficient cause equals the complete cause.” The point is that, in science, IP is taken as known and given, and one seeks only to know what else must be added to IP to obtain RP (the resulting phenomenon). Thus,

$CC = (IP + EC), \rightarrow RP.$

Limitation Principle:

If $E \in B$, then $B \rightarrow E$.

This is a generalized form of the second law of thermo-dynamics, which implies that there can be no transfer of energy from a whole system to one of its components, without any energy input from outside the system.

Example: The Brownian movement of air molecules in a closed room accounts for the spread of the contents of an unstoppered perfume bottle, but cannot account for the reverse transformation in which the dispersed perfume would spontaneously return to the bottle.

The Refinement Principle:
Where A and B are entities,
 $(A \rightarrow B) \Rightarrow (A \geq B)$.

This is yet another generalization of the second law of thermodynamics. If A and B are physical entities, then the causality of B by A represents a transfer of energy from A to B.

The conclusion that A is higher (more thermodynamically complex) than B expresses the scientific fact that entropy can increase (or remain constant) in such an energy transfer, but never decrease. There can be loss of information (complexity) but never gain.

Thus, all three of our principles are empirically grounded. A typical metaphysical application of, say, the refinement principle would be the affirmation that, since God is a universal cause (the ultimate cause of everything in existence), then God is the highest value (the most valuable of all existing entities).

In this way, the empirically grounded metaphysical principles of minimalism allow us to reason exactly about value issues which were previously thought to be untreatable by logical means. The empirical grounding assures us that we will never meet counter-examples to our logic in observable (physical) reality.

With a slight strengthening of MPP and the addition of another principle (called the Principle of Sufficient Reason), we can in fact prove by pure logic that there exists a unique, uncaused, noncomposite, universal cause, the most valuable entity in existence (see *Minimalism*).

These principles represent what I call the gross (or coarse) structure of reality. There is thus a hierarchy of ontological commitment. Pure logic represents universally true principles (true in all possible universes). Minimalist principles represent truths that hold in any universe which resembles ours

in its most general features.

Finally, there are specific principles which may be true only in our universe. Minimalism thus represents a level of generality and abstraction intermediate between pure logic and the principles of empirical science.

Note on logic:

Minimalism is based on the systematic use of modern relational logic, developed in the late 19th and early 20th centuries. Traditional, attributional, Aristotelian logic is wholly inadequate to deal with these questions. Indeed, the very basis of

minimalism consists in replacing the traditional, absolutist, attributional viewpoint of classical philosophy with the relational viewpoint, which involves the systematic use of the modern logic of relations.

III. Some Epistemological Issues.

Epistemologically, mini-malism represents a middle ground between reductionist objectivism (everything useful can be objectified) and post-modernist subjectivism (nothing significant can be objectified).

This “middle way” is not a passive compromise, but a precisely defined stance with regard to a number of contemporary (and perennial) issues in philosophy. We give some examples.

Truth:

In minimalism, “truth” is predicated only of propositions of a given language L. A proposition p is a meaningful statement of L which asserts that (some portion of) reality is configured (structured) in a certain manner. If (the given portion of) reality is indeed configured in the asserted manner, the proposition is said to be true. Otherwise, the proposition p is false.

Thus: truth is accuracy. So defined, truth is a function of two things: meaning (of the proposition) and structure (of reality).

Notice this definition is totally objective (Platonic). A proposition p can be true (or false) without our knowing it to be so. Knowledge means awareness of truth. Thus truth and knowledge of the truth are not the same thing.

Knowledge must, in turn, be distinguished from verification. Verification is the name given to a process of testing the assertion of a proposition against our experience of reality. This is, of course, a partly (though not wholly) subjective process.

When certain philosophers assert that “truth is subjective” what they often mean, in minimalist terms, is that verification (and thus knowledge) are partly subjective.

Yet another confusion is to transport the subjectivity of ideas to the subjectivity of the objects of knowledge. Ontologically, all ideas are subjective (mental) entities, but the reality described by these ideas may well be totally mind-independent. We must therefore carefully distinguish between knowledge itself (subjective ideas) and the objects of knowledge (which can be either objective or subjective).

To confuse the subjective ideas about a phenomenon with the phenomenon itself is often spoken of as a confusion between the (subjective, mental) map and the (possibly objective and mind-independent) territory described by the map.

All of these distinctions are clearly reflected in the following statement of ‘Abdu’l-Bahá taken from SAQ.

“Reflect that man’s power of thought consists of two kinds. One kind is true, when it agrees with a determined [reality]. Such conceptions find realization in the exterior world; such are accurate opinions, correct theories, scientific discoveries and inventions.”

“The other kind of conceptions is made up of vain thoughts and useless ideas which yield neither fruit nor result, and which have no reality. No, they surge like the waves of the sea of imaginations, and they pass away like idle dreams.”

The minimalist conception of truth, knowledge, and verification clearly owes a substantial debt to certain contemporary philosophers, but most particularly to W. V. Quine.

The great undecidability principles of modern science (Heisenberg, Gödel, and Penrose) have shown that there is an unavoidable trade off between exactness of meaning, on one hand, and completeness (or adequacy) of description on the other. Science opts for exactness of meaning (each symbol has only one logical meaning) and, through its verification procedures, engenders ever more precise theories of only a small part of reality.

Revelation opts for maximalist language (free reference to nonobservables, use of metaphor and multiple meaning). Revelation therefore engenders a complete, but highly nonlinear description of reality. The study of the revelation thus consists of explicating the divine text, i.e., of finding the various linear (exact) meanings enfolded in the nonlinear text.

Otherwise said: in science, exactness of meaning is given apriori and truth (accuracy of meaning) is determined aposteriori (verification). For (the text of) revelation, truth (accuracy) is given apriori (the infallibility of the Manifestation) and (exactness of) meaning is determined aposteriori (explication).

Objectivity in discourse:

Taking Euclid and his axiomatic method as a model, Plato and his successors defined objectivity in discourse as viewpoint awareness. This was in direct opposition to the rhetoricians, who held that human discourse was not a truth-directed dialogue with reality, but a persuasion-directed discourse between and among people.

The currently widespread notion that objectivity in discourse means viewpoint neutrality (suspension of all value judgments) was launched by the positivists towards the beginning of the 20th century, in a conscious attempt to bury Platonism by declaring all value-charged discourse to be, not false, but meaningless.

Postmodernist and deconstructionist successors of the positivists have seized on the rather trivial and obvious point that viewpoint neutrality is impossible *and have retroactively applied this in an attempt to refute the classical notion of objectivity as viewpoint awareness.*

Objectivity as viewpoint awareness is epitomized by the axiomatic method in which every proposition in the discourse is either explicitly assumed or else explicitly deduced from the explicit assumptions (axioms). Since logical deduction can be totally formalized, use of the axiomatic method allows anyone to discourse object-ively about anything. One has only to ac-knowledge one's viewpoint and, within the given discourse, to restrict oneself to explicit logical consequences of this viewpoint.

Like any assumptions, the truth of the axioms of an axiomatic system are open to question, but the fact that the consequences of the axioms do indeed follow from the assumptions is not open to question, since the question of the validity of a given deduction is totally objective (indeed mechanically calculable). Moreover, logical deduction preserves truth. Thus, in any axiomatic discourse, the truth of the assumptions automatically guarantees the truth of the consequences.

We say that an axiomatic discourse “localizes” the truth burden to the assumptions.

The power of logic is that it gets the unobvious from the obvious through a series of individually obvious steps.

As ‘Abdu’l-Bahá has said:

“Know then that those mathematical questions which have stood the test of scrutiny and about the soundness of which there is no doubt are those that are supported by incontrovertible and logically binding proofs and by the rules of geometry as applied to astronomy...”

This citation is from the Tablet of the Universe. The last part is almost certainly a reference to Newton's *Principia*, which was, after Euclid, the second most historically significant use of the axiomatic method (and which proceeded by applying Euclid's axiomatic geometry to astronomy).

Postmodernism and deconstructionism have attempted to refute logic itself by developing a doctrine of logical apriorism that goes far beyond Kant and the positivists. This doctrine claims that logic is just an abstract “word game” which provides, at best, a convenient manner of organizing a discourse but which has no connection whatsoever with questions of truth.

The well-documented predictive power of, say, the Newtonian mechanics referred to by ‘Abdu’l-Bahá above, provides an irreducible refutation to that doctrine, but many postmodernists persist in refusing to acknowledge this fact. When pressed, such philosophers will often point out that science is “only” a product of culture, implying that a cultural product can only reflect culture itself. In philosophy, this view constitutes the so-

called “genetic fallacy” which transports (falsely) the properties of the origin of a theory to the theory itself. The fact that scientific theories are generated by culture doesn’t mean that they are only about culture. The g.f. is similar to the subjectivist fallacy of declaring truth or reality to be subjective because all our ideas are themselves subjective (mental) entities.

Conclusions:

These examples should not obscure the fact that minimalism is a proactive philosophy that yields genuine results and not just a polemical refutation of either reductionism or subjectivism.

From the minimalist perspective, philosophy is viewed as a truth-seeking dialogue between the human soul and reality rather than a persuasion-seeking polemic between different subjective points of view.