

Sense and Nonsense

Observation #1: All things are either material or imagined.

There are two kinds of things in the universe: material things and imagined things.

Material things have mass and energy. Material things affect each other by contact with one another. We experience material things when either they strike some part of our bodies, directly, or by mediation of a device, that makes them sense-able to us.

Imagined things, on the other hand, do not have mass or energy, and they do not affect each other, or us, by contact. Imagined things are not material. Imagined things do require a material substrate to support their existence, for nothing exists except in a material form, but that material is not the thing imagined, or the meaning of the thing imagined.

Plane Geometry is a good example of an imagined thing. It is defined (in the most general terms) as a collection of things and a set of rules for combining and/or transforming the things, all brought into existence by ideation. None of the ideas that compose Plane Geometry exists as a material object. The “plane” in Plane Geometry is an idea, not a place somewhere in the universe. Plane Geometry depends for its existence on a material substrate of, for example, a book in which the definitions of its things and rules are written, or the mind of someone who has learned it, or who knows it by any other means.

I may type here that $3 + 7 = 10$. Although I typed the number three in the foregoing equation, I cannot make sense-able the physical number three, itself. There is no material number three anywhere in the universe. The number three is an *imagined thing, an idea*. I can write its symbol, or speak its name, but I cannot produce it beyond producing the paper and ink or the sound waves that are its material representations.

Most importantly, imagined things are unlike material things in that I can also write $3 + 7 = 22$ (or any other string of symbols from the set of ideas called *mathematics*), which has no correct or meaningful definition. We can never arrange material things in an “impossible” way.

Plane Geometry, or any other set of ideas, is applied to material things when we assert a correspondence between the set of ideas and specific material things, namely that imagined operations performed on the imagined things correspond to the material operations performed on the selected material things. We then say that we have made a structural correspondence, an *isomorphism*, between the imagined things and the domain of the specified material things. Alternatively, we say that the set of ideas is a model of the selected domain.

In the case of Plane Geometry, we assign to it the material domain of all flat surfaces. It should be noted here that ideas are abstractions; they are not identical in every respect to the material things they model. They share with those material things only those properties that are defined by and relevant to the purpose of the model. For example, there need not be a perfectly flat plane anywhere on earth, or even anywhere in the universe. There does need to be, however, material things sufficiently like their imagined counterparts for the model to yield useful results without undesirable, unwanted, or unanticipated side effects.

All knowledge of material things is composed of such an isomorphism, analogy, or mental model, for the purpose.

Observation #2: Only Ideas are true or false

Material things are neither true nor false. They simply are. The total of all material things defines the extent and structure of the universe, actual and potential, past, present, and future, beyond praise and blame alike. Or, to paraphrase a well-known text: *It am what am*, materially speaking.

To these material things, humans have added ideas. Ideas exist as members of collections of related ideas. Ideas are assertions about other ideas within their collection. One such collection is called Plane Geometry. Another is called The Big Bang Theory. Still others are called: Christianity, Double Entry Bookkeeping, Art Appreciation, etc.

Collections of ideas, regardless of their content, are subject to the operations of formal logic, which is a set of ideas that applies to all other sets of ideas. It is a function of formal logic to make possible the attribution of *true* or *false* to this or that idea, and to combine and transform ideas to form other ideas and determine whether those new ideas are, consequently, true or false. If a single idea within a collection is both true *and* false (a contradiction), the entire collection may not be used to form an isomorphism. The reason is that the isomorphism would call for some material object to be two different objects at the same time, a material impossibility.

Conversely, regardless of the substance or import of the ideas, if a set of ideas does *not* contain a contradiction, it is a candidate for forming an isomorphism with a selected subset of the universe, its domain, and thereby it is a model of that part of the universe.

Observation #3: Models are valid and useful only to a degree.

Although a collection of ideas may be a candidate for forming a model of a material domain, the model itself may not be valid, or not be useful. The model may be entirely

invalid, or it may be only partially so, or it may be valid on a more restricted domain than originally thought.

A good example of this latter condition is the relation between Newton's ideas and Einstein's ideas. Once the latter were accepted, the former remained valid, but its domain was restricted to material things when they were in motion at only a small fraction of the speed of light. In that restricted domain, no idea of Newton's needed to be restated or modified.

Advances in knowledge occur when a model is found invalid, or false, in such a way that a restatement, or refinement, of its ideas can restore validity to it.

If a model is found invalid and cannot be restored to validity by a restatement of the ideas or restriction of the domain, then it is said to be refuted.

The activity that determines the validity of any part of a model is called *experiment*. An experiment is simply an effort to observe whether asserted correspondences exist under the conditions of the experiment. In the general view, experiment is thought relevant only to scientific inquiry. The only way to judge any model is by experiment. That assertion is as valid for religion as it is for physics, for bookkeeping as for art appreciation. Every act a human performs in the expectation of gaining a material result is an experiment, whenever an effort is made to evaluate the correspondence between the ideas behind the act and its material results.

To say that an isomorphism, or model, is valid, however, is not to say that it is true. *True* is simply not a property of the relationship between a model and its domain. The reason for this is that we cannot ever perform every possible experiment or prove that an invalidating experiment cannot exist. Valid signifies only that, in all observations to date, the model worked as intended within its domain. The more experiments we perform without *invalidation*, the more confident we become in the *validity* of the model. The more material phenomena the model accounts for, the more *useful*, the model is. In this regard, Newton's laws of thermodynamics are both convincingly valid and extremely useful, so long as we restrict their domain to objects that are not moving at too great a percentage of the speed of light. Einstein's ideas are more useful because they are valid for all Newton's laws and more.

Observation #4: Nothing is nonsense, except experience makes it so.

Reason refers to the set of ideas that deals with all the formalities of logic, deduction, inference, true, false, etc., that allow us to relate ideas to one another in coherent ways. Reason permits us to create ideas from ideas in an orderly way that avoids contradiction.

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Reasons, in contrast, are *why* we do what we do, the beliefs and feelings that lead us to adopt one course of action rather than another. Belief, itself, is but an idea that applies only to ideas. A religion is a model that we invest with belief, so we will be able to act, although we do not know what we are doing, scientifically speaking.

Because we often cast our ideas in terms of material objects, we often confuse an idea with the referent material object itself. From there, it is only a short step to saying, and believing, that if the ideas hang together and are true, then they accurately model the material things whose names they incorporate.

In religion especially, but also in science and all other areas of thought, people try to prove the *validity* of their models by arguing the *truth* of their beliefs. One important reason these discussions seldom yield agreement, or any other desirable result, is that the believer is free to assert that any idea is true, or false. He need only avoid creating a contradiction within the set of all things believed. Any model without a contradiction is as eligible as any other similarly untainted model for testing by experiment, which alone has the power to deny the utility of the model.

Please take note: although one may choose any model at all to explain a given aspect of the universe, one has reason to keep only those that are the most useful, in the ways just defined.

Some systems of thought are so constructed that there is no way to prove them true or false by experiment. Much religious thinking and some would-be scientific theories appear to be so. If a model is so defined that failures to produce the result, as called for by the model, are explained away by other statements of the model, then its validity cannot be established.

For example, the medium at a séance may say that the spirit has not appeared, because one of the participants harbors skeptical thoughts. It may be that the common feature of all such models is that knowledge of some initial condition of the experiment is known only by analyzing the result. Such models owe their lives strictly to belief.

Although we cannot establish validity without being able to observe the absence of *invalidity*, it is still possible to evaluate the model's utility. The only way to avoid the outcomes of valid or invalid is to sacrifice utility.

For example, if the model predicts the result no better than a flip of a coin or roll of the dice, then those simpler models are to be preferred.

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Similarly, when predictions are hedged by many arbitrary or vague qualifications, such that what is predicted is unclear (as in astrology), then the model will be seen to have little or no utility for practical purposes.

If, as speculated above, the relevant initial conditions cannot be known until the results of the experimental event is known, then the model has all the utility of knowing that the lady was behind the *other* door, while being eaten by the tiger.

Theories, whose validity cannot be determined by experiment, may be treated only as to their internal consistency and consonance with models already validated by the established rules of reason. They may be believed, but unless they are acted upon, or unless material events are assigned to them, and the correspondences evaluated by experiment, they remain acts of the mind with no material effect.

Finally, in every human mind, indeed in every nervous system, there is a model of the universe (Glenn Ransier). It is that model that makes it possible for all sensate beings to act, and react, as material things among material things. Ultimately, what distinguishes sense from nonsense is the survival and welfare of the actor. Meanwhile, we can increase our own sense to nonsense ratio only by constant experiment, rigorous evaluation of the results, and an uncompromising willingness to adapt ourselves to our conclusions. "Reality is your friend" – Glenn Ransier 1926 - 2018

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