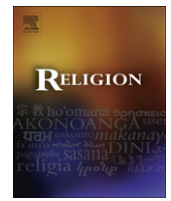




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Myths, models, and metaphors: Religion as model and the philosophy of science

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A B S T R A C T

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Clifford Geertz's widely-used paper 'Religion as a Cultural System', makes the claim that 'the importance of religion lies in its capacity to serve ... as a source of general, yet distinctive conceptions of the world, the self and the relations between them ...—its model of aspect—and of rooted, no less distinctive "mental" dispositions—its model for aspect'. However, apart from a highly critical article by Nancy Frankenberry and Hans Penner (1999) little attempt has been made to investigate this understanding of religion as model. This paper briefly considers the validity of Frankenberry and Penner's criticism and investigates possible applications of the elaborate analysis of models and metaphors in the philosophy of science since the time of Mary Hesse to the analysis of religious phenomena.

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The idea of religious narratives as models was most famously articulated by the American anthropologist, Clifford Geertz. Geertz's article 'Religion as a cultural system' (1972 [1965]) describes religion as both model of human experience and model for future human behavior in such a way as to suggest a partial solution to the problem of religious pluralism: how to recognize truth in alternative traditions without surrendering truth in one's own. Geertz's work is rich and complex and I do not intend to consider all of its points. It is sufficient for my purposes to concentrate on his claim that religions are "models," that is, they are sets of symbols whose relations to one another "model" relations among entities' (Geertz, 1972, p. 169).¹ It is first necessary briefly to explain Geertz's concept so as to avoid misunderstanding: There are two senses of 'model', although they are aspects of the same basic concept:

In the first, what is stressed is the manipulation of symbol structures so as to bring them, more or less closely, into parallel with the pre-established non-symbolic system, as when we grasp how dams work by developing a theory of hydraulics or constructing a flow chart. The theory or chart models physical relationships in such a way—i.e., by expressing their structure in synoptic form—as to render them apprehensible: it is a model *of* 'reality'. ... In the second, what is stressed is the manipulation of the non-symbolic systems in terms of the relationship expressed in the symbolic, as when we construct a dam according to the specifications implied in a hydraulic theory or the conclusions drawn from a flow chart. Here theory is a model under whose guidance physical relationships are organized: it is a model *for* 'reality'. (Geertz, 1972, p. 169)

That is to say, the model *of* something copies a pre-existing observable thing. The model *for* something pre-dates that thing and can exist without it. A model *of* something shows us what something is like; a model *for* something shows us how something *ought* to be. Religion, according to Geertz, is both types of model simultaneously (and thus, to some extent, proposes a solution to David Hume's problem of how we derive the 'ought' from the 'is': *A Treatise of Human Nature* (1740, Book III, part I, section I)).

Models *for* things are found throughout nature. Genes, for example, can be said to be models for 'the structurally complex proteins which shape organic functioning' (Geertz, 1972, p. 169) and the function of religion as exemplary or paradigmatic, that is, a model for our behavior, has been much discussed.

But models *of*—linguistic, graphic; mechanical, natural, etc., processes which function not to provide sources of information in terms of which other processes can be patterned, but to represent those patterned processes as such, to express their structure in an alternative medium—are much rarer and may perhaps be confined, among living animals, to man. (Geertz, 1972, p. 170)

Religion as model *of* the world tells us how things are, and thus induces certain moods in the believer, and religion as model *for* the world tells us how things ought to be, and thus induces certain motivations. 'We interpret motives in terms of their consummations, but we interpret moods in terms of their sources' (Geertz, 1972, p. 171). (Fig. 1)

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¹ I am aware of more recent related work in 'conceptual metaphor theory' (Lakoff and Johnson, 1999) and, beyond that, 'mental space' and 'conceptual blending' theory (Fauconnier and Turner, 2002). My purpose here is not to inspect either origins, mechanisms, or implications of this apparently pan-human propensity, but to consider the specific analytic and pedagogical applications of this understanding of 'model' seen from a particular perspective.

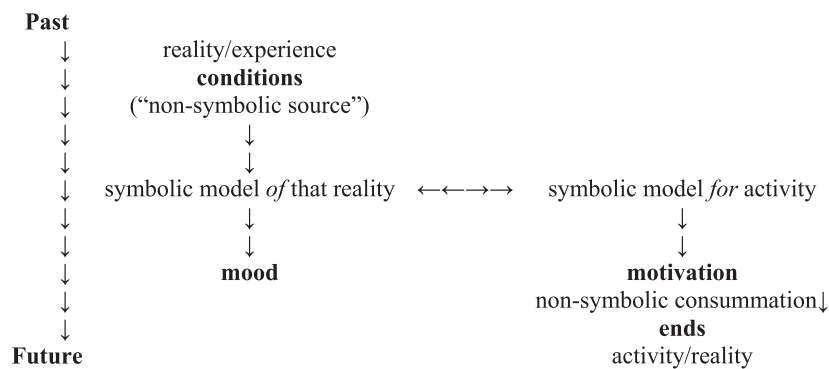


Fig. 1. Temporal Schema for Geertz's Concept.

The whole process is directional with respect to time. However, once motivation becomes behavior, that behavior is experienced as a reality, which can be represented in some model and thus is integrated into a further cycle. (Fig. 2)

It is important to note that, for example, the narrative structure of a religious myth must be apprehended as pre-existing in personal experience to be apprehended as a model of the *real* otherwise it will lack this power to produce the 'pervasive and long lasting moods', which Geertz takes to allow religious myths to motivate and operate as exemplary models. That is, to make the transition from a model of reality to a model for subsequent action. Of course, religion as a model of reality also includes 'synoptic formulations of the character of reality' and 'a synopsis of cosmic order' (Geertz, 1972, pp. 170, 177), that is, assumptions concerning the general order of existence, which mediate between the 'model of' and 'model for' functions. However, the salient point here is that the religious symbol system as model of the real does originate in and conform to the lived experience that it models. As we will see below, religion is not alone in exploiting this ability of the model to negotiate from the observational to the theoretical.

Geertz's suggestion, although widely popular and frequently used, has not been further elaborated, despite the existence of detailed elaborations of models in science. In fact, it has been seriously challenged by Talal Asad (1993) and Nancy Frankenberry and Hans Penner (1999). It is not my purpose here to mount a detailed defense of Geertz's concept. This has been capably done by Kevin Schilbrack (2005) in an article in the *Journal of the American Academy of Religion*. Suffice it here to draw attention to a significant fault in the criticisms of Frankenberry and Penner. They attempt to

make sense out of Geertz's discussion of models of by thinking of it as an epithet for a correspondence theory of truth. After all, blueprints and maps, and flowcharts are expected to 'correspond', in some sense of the word, to 'pre-established non-symbolic' reality [citing Geertz, 1965, p. 7]. So ... we can understand him as saying that symbolic systems *correspond* to nonsymbolic physical, organic, or social systems in some complex way. But ... correspondence theories are notoriously difficult to defend, and are elusive ... in specifying the nature of the correspondence relation. (Frankenberry and Penner, 1999, p. 622)

'Does the blueprint of the house match the actual house?' they inquire, and continue that '[s]uch questions as these have been the Achilles heel of all correspondence theories of truth, leading to their demise' (Frankenberry and Penner, 1999, p. 622, also quoted by Schilbrack, 2005, p. 444 n. 12). Their critique of Geertz's concept identifies it with the correspondence theory of truth, in which 'correspondence' is the relation that holds between true propositions and states of affairs, and truth is the characteristic of propositions that correspond to states of affairs. In other words, the correspondence theory of truth is circular—a proposition corresponds if it is true and it is true if it corresponds—and this is a vicious circularity. We are no closer to understanding what truth is by means of such circularity. Correspondence theory merely provides an alternative term for the characteristic we need to understand and returns to a pre-existing confidence that we just *know* truth when we see it. This simple and common sense theory is simply unhelpful, hence the rise of competing theories of truth such as coherence, and the pragmatic theory. (A concise and insightful summary, "Problems with the Naive Correspondence Theory of Meaning" occurs in the forthcoming article by Steven Engler and Mark Gardiner mentioned in my introduction to this issue).

While it is undoubtedly true that correspondence theory in general suffers from the inability to describe the correspondence relation, this is precisely what is avoided in the case of models, where the correspondence relation is more precise. As Schilbrack says, 'an appropriate next step would be to develop Geertz's concepts theoretically' (Schilbrack, 2005, p. 448), and it is in that direction that I hope to progress. An understanding of the concept of model drawn from the philosophy of science can add a great deal to Geertz's as-yet-unelaborated insight. There was an upsurge of interest in the topic of models in science from the early sixties to the early seventies. Although monographs focusing exclusively on models have seldom appeared since the seventies (although see Bradie, 1998 and Morgan and Morrison, 1999), general works on the philosophy of science continue to contain sometimes extensive sections on the concept of models. The *Blackwell Guide to the Philosophy of Science* (Machamer and Silberstein, 2002) devoted one of fifteen chapters to 'Models, Metaphors, and Analogies' (Bailer-Jones, 2002). One typical introductory textbook to the philosophy of science explains that:

A model is a representation of a physical system such that certain relational properties of the physical system are preserved in the representation, i.e. the model is structurally similar or 'isomorphic' to the system ... a model is a set of entities—physical objects, points, numbers, whatever—together with a set of relations between them such that the sentences of the theory modeled are true (Lambert and Brittan, 1992, p. 108).²

² The relation commonly known as 'isomorphism' in the philosophy of science is in some ways better expressed by the term 'homology', commonly used by Mircea Eliade and apparently borrowed from evolutionary biology where it principally denoted such correspondence as between, for example, a bat's wing, a human hand, and a dolphin's flipper.

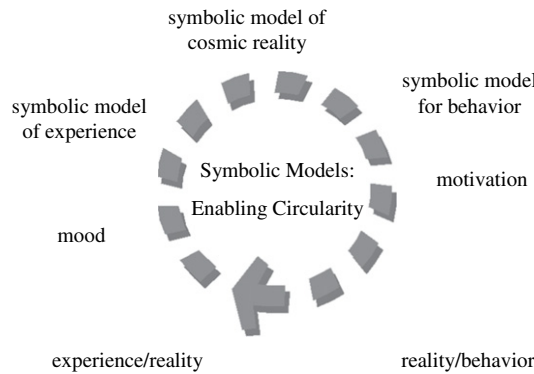


Fig. 2. The Enabling Circularity of Geertz' Concept.

Obviously, models of things are not restricted to scale models but can be 'physical objects, points, numbers, whatever', to which Geertz added, 'linguistic, graphic; mechanical, [and] natural' models (Geertz, 1972, p. 170). Bailer-Jones points out that,

The majority of scientific models are, however, a far cry from consisting of anything material like the rods and balls of molecular models used for teaching; they are highly theoretical. They often rely on abstract ideas and concepts, frequently employing a mathematical formalism (as in the big bang model, for example), but always with the intention to provide access to aspects of a phenomenon that are considered to be essential. Bohr's model of the atom informs us about the configurations of the electrons and the nucleus in an atom, and the forces acting between them; or modeling the heart as a pump gives us a clue about how the heart functions. The means by which scientific models are expressed range from the concrete to the abstract: sketches, diagrams, ordinary text, graphs, mathematical equations, to name just some. All these forms of expression serve the purpose of providing intellectual access to the relevant ideas that the model describes. Providing access means giving information and interpreting it, and expressing it efficiently. (2002, p. 109)

At a 1960 conference on *The Concept and the Role of the Model* Leo Apostel of the universities of Ghent and Brussels pointed out that

It often occurs that the theoretical level is far away from the observational level; concepts cannot be immediately interpreted in terms of observations. Models are then introduced to constitute the bridge between the theoretical and observational levels, the theoretical predicates being interpretable as predicates of the model and the observational predicates being also interpretable as being predicates of the model. (Apostel, 1961, pp. 2–3)

Apostel further pointed out that 'we have seen repeatedly ... that only when systems are partly known is modeling needed' (Freudenthal, 1961, p. 23). Of course, nothing is so partly known and so hugely in need of interpretability as 'the sacred', or reality (call it what you will—those who know my work will be aware that I follow my interpretation of Mircea Eliade in identifying 'the sacred' as whatever is apprehended and identified as the 'really real', see, for example, Rennie, 1996, ch.2).

Apostel gives nine distinct applications for models in the empirical sciences, and claims that other philosophers of science such as R.C. Braithwaite (1954) and Mary Hesse (1953) failed to respect the diversity of structure implied by the diversity of function of models. This criticism was premature in the case of Mary Hesse (1966) who, published what remains one of the most thorough considerations of models and analogies in scientific reasoning. Hesse provides a great deal of clarity and useful vocabulary for classifying and understanding models and analogies. A careful consideration of her analysis has potential to make the application of the concept of model to religion clearer and richer. I must be very clear in stating here that I do not imply that the application of models in science and in religion is somehow 'the same'. I am not trying to establish some weird parity between science and religion. It is Hesse's point that models in the sciences are capable of detailed, quantifiable exploitation, which is certainly not the case in the religious exploitation of models, in which, I would suggest, the normative ethical implications are more significant. Nonetheless, if we are to consider the role of religion as model, we can only profit from the detailed analysis of the nature and function of models that already exists in the philosophy of science.

Hesse begins by drawing attention to the fact that models have both positive and negative analogies to the subject they model. They also have 'neutral analogies', which is to say 'some properties of the model about which we do not yet know whether they are positive or negative analogies; these are the interesting properties' (Hesse, 1966, p. 8). She cites the familiar example of billiard balls as a model of the

"there is a one-to-one relation of identity or difference between a property of one of the analogues and a corresponding property of the other"

Causal	Earth		Moon
	Spherical Mass	...	Spherical Mass
	Atmosphere	...	No Atmosphere
Relations	Inhabitants	...	?

relations of identity or difference			

Fig. 3. Hesse's Type A. Analogical Model.

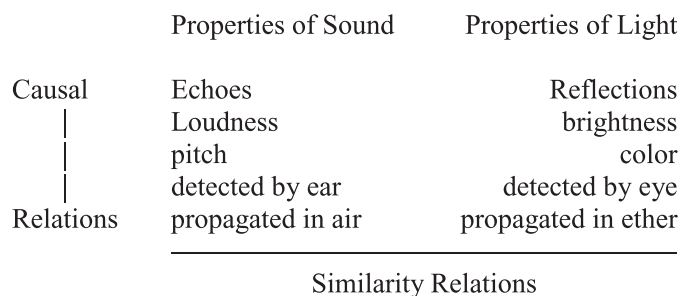


Fig. 4. Hesse's Type B. Analogical Model.



Fig. 5. Hesse's Type C. Analogical Model.

dynamical theory of gasses (Hesse, 1966, p. 8) and waves in water as a model of the wave theories of both sound and light (Hesse, 1966, p. 11), and sound as itself a model for light (Hesse, 1966, p. 41). With the help of such models 'we have two sources of information to aid our construction of theories ... namely ... observed properties and their observed analogies [with the model]' (Hesse, 1966, p. 12). Also, Hesse suggests 'a sense of analogy in terms of which you can make these one-to-one correspondences before you have got the theory, by some kind of prescientific recognition of analogies' (Hesse, 1966, p. 42–3). 'When the analogies have been pointed out, no esoteric insight and no specifically scientific knowledge are required to recognize that they exist' (Hesse, 1966, p. 13). Thus, although this analysis comes from the philosophy of science, it is nonetheless applicable to non-scientific reasoning.

Hesse classifies four types of analogical model:

A. Analogies that exist by virtue of common properties that constitute a positive analogy. Analogous objects can also have properties that are not held in common and thus share a negative analogy (Hesse, 1966, p. 58).

The validity of ... an argument [based on this type of analogy] will depend ... on the extent of the positive analogy compared with the negative. ... There is a one-to-one relation of identity or difference between a property of one of the analogues and a corresponding property of the other, and ... the relation between properties of the same analogue is that of being properties of the same object, together with causal relations between these properties'. (Hesse, 1966, p. 58)

Hesse calls these 'horizontal and vertical relations: Horizontal relations are concerned with identity and difference ... and vertical relations will, in most cases, be causal' (Hesse, 1966, p. 59) (Fig. 3).

B. In the second type 'pairs of corresponding terms are never identical but only *similar*': 'In this example, unlike the first, the question of defining the analogy relation must come before the question of the analogical argument' (Hesse, 1966, pp. 60–61) (Fig. 4).

C. A third type of analogy is the analogy of a classification system: Here the horizontal relation may be one or more or several similarities of structure or of function and each list may contain some items which have no, or no obvious correspondent in the other list. ... The vertical relations may be conceived as no more than that of the whole to its parts, or they may be regarded as causal relations depending on some theory or interrelation of parts ... Again, the nature of the analogy relation itself requires elucidation before considering the validity of the argument. (Hesse, 1966, p. 61–2) (Fig. 5).

D. In her fourth type, an analogy ... is apparently an assertion that the relation between father and child is the same in many respects as that between state and citizen. ... Its purpose is persuasive rather than predictive. ... It is, rather, pointing out the consequences, of a moral or normative character, which follow from the relations of four terms already known ... the vertical relation is not specifically causal. There are in fact several vertical relations ... and the argument implicitly passes from asserting some such relations ... to persuading the hearer that other relations ... follow from these. (Hesse, 1966, pp. 62–63) (Fig. 6).

That is: "the relation of father to children is analogous to the relation of state to citizen."



Fig. 6. Hesse's Type D. Analogical Model.

	BUDDHA	INDIVIDUAL
Causal	sheltered	sheltered
	learns of limitations	learns of limitations
	learns of mortality	learns of mortality
	learns of renunciation	learns of renunciation
	practices meditation	neutral analogy
Relations	becomes enlightened	neutral analogy

Similarity Relations

Fig. 7. Application of Type B. to religious narrative.

Family	State	Heaven
First Ancestor	Emperor	Shang-di
First Son	Feudal Lord	Lesser Gods
Next Son	Deputies	Local Gods
Daughter-in-law	Peasants	Shên (spirits)

Fig. 8. Application of Type D. to religious classification.

This by no means exhausts Hesse's analysis. However, any or all of these schemas might be applied to religious narratives. My immediate point is to ensure that the concept of model is clearly understood, so its application to religious narratives will be clear. The narrative shares certain more or less precise relational properties with the lived human experience of the real that it models.

For example, the 'four passing sights' of the Buddha can be seen as a narrative model of human development. As you no doubt know, at his birth it had been prophesied of Siddhartha that he would become either the ruler of the world or its savior. His father, being a king, was determined that Siddhartha would also become a ruler so he separated Siddhartha from all signs of human weakness, sickness, or mortality and kept him enclosed in his palaces. He grew up happy and healthy, became an accomplished warrior, and married Princess Yashodhara. One day, however, Siddhartha began to long to see the world outside and instructed his chariot driver to arrange tours of the kingdom and on four successive trips Siddhartha saw a sick man, and old man, a corpse, and a religious mendicant. Realizing the frailty of all flesh and the unavoidable suffering of all people, Siddhartha determined to become a renunciant himself to seek out the answers to the puzzle of mortality and to bring the gift of enlightenment to all people. From that day his feet were set on the path of enlightenment and he finally won through to bring nirvana into the world of suffering humanity as the Buddha (Fig. 7).

This type B model of relations of similarity is evidently widely applicable, but the others can also be applied. The type D model, with its recognized emphasis on persuasion, morality, and normativity, can be seen in the relation: God is to humanity as father is to child. This is a simple structure but can find more complex applications. For example, the traditional Chinese family lineage relationships were considered to hold true for the state and also for Tian (Heaven) itself. The Emperor performed the sacrificial ritual to Heaven and Earth as his parents to ensure the co-ordination of these three strata (Fig. 8).

Another example, this time applying Hesse's type A model, can be made of a Native American medicine story about a mouse, intrigued by an inexplicable sound, who sets off, despite his own fears and the disinterest of his fellows, to find the source of the sound. It turns out to be the roaring of a river where the mouse meets a frog who teaches him to jump up very high—which is itself a gift of great medicine that allows the mouse to see the sacred mountains. Once more intrigued, he sets off again to visit the sacred mountains, but on the way meets two great but weakened beings, Buffalo and Wolf, both in need of help that only Mouse can give. At considerable self-sacrifice Mouse helps them both and finally comes to the medicine lake in which all things are reflected, high in the sacred mountains. Here Mouse apparently dies but is transformed into Eagle. (Brutally abridged from Storm, 1972, pp. 68–85) (Fig. 9).

	JUMPING MOUSE	HUMAN INDIVIDUAL
Causal	Needs to interpret environment	Needs to interpret environment
	Desires to learn	? = ("neutral analogy")
	Confronted with choices	Confronted with choices
	Overcomes fears	?
	Encounters suffering	Encounters suffering
	Practices honesty	?
	Sacrifices for others	?
	Undergoes change	Undergoes change
Relations	Is elevated	?

← Relations of Identity or Difference →

Fig. 9. Application of Type A. Model.

	Nativity	Winter Solstice
Narrative	Holy Family in danger and without shelter	: Longest night of the year
	Birth of the awaited savior and the beginning of the salvation of the world	: Sun ceases to recede and begins to return
	Acknowledgement of the Magi	: Observable Astronomy
Relations	Celebration of the Shepherds	: Popular Festival

Fig. 10. More Complex Application of the Type B. Model (#1).

Obviously, some analogies can be complex and difficult to recognize. Consider, for example, the Christian nativity as a narrative model of the Winter solstice (Fig. 10).

Some are easier to detect, even if more abstract. The parable of the sower (Mk. 4:3–8) does not need an allegorical interpretation to yield its function as narrative model of experience: some potentials are realized and some are not (Fig. 11).

In this way, the model of our own experience becomes the model for our future behavior as we are motivated by it to provide a supportive environment in which potentials are fully realized. Furthermore, although based upon observable experience, the model is a way to bring to light a theoretical understanding of ‘a synopsis of cosmic order’ (Geertz, 1972, p. 177) and to suggest normative ethical behavior on this basis.

Vindicating Geertz’s concept of religious narrative as simultaneous model of experience and model for behavior and applying this concept in some detail is not, however, the intent of this paper. My main point is that, if religions are seen as complex models of the sacred/real, derived from but theoretically surpassing lived experience, we have a position from which to see all traditions as genuinely, and, to a necessarily limited degree accurately, representative of reality (or ‘the sacred’) without surrendering the claims of our own perspective. The sacred/real intersects individual human lives in individual experience of the historically conditioned nature of the material word (or the bounty of God’s creation—or the mercy of Allah—or the dance of Śiva—or *pratityasamutpada*—or whatever model one applies).

One of the contributors to the aforementioned 1960 conference on scientific models pointed out that

we have ... three essentially different models of the earth: the ... [point-mass], the ellipsoid and the fluid model. These relate to three different problems: the movement of the center of gravity, the movement round the center of gravity and the deformation of the earth. These three models cannot be reduced to one another, although they relate to the same real body. They are artificial constructions, which have to be thought out after observing the phenomena and which at the same time must have some sense in connection with the problem on hand. This requires equivalence between the model and what is pictured—equivalence in those aspects, which are of importance for this particular problem. ... The physical model never pretends to be a faithful copy of reality; only the main lines, with which we are concerned here, in this particular problem, must be sharply outlined in the model, so that we can survey the whole, and thanks to this survey get an insight into the real state of affairs. (Kuipers, 1961, p. 130)

And Albert Einstein pointed out that ‘when the number of factors coming in to play in a phenomenological complex is too large scientific method in most cases fails us’ (Einstein, 1941, p. 75). Assuredly, scientific method fails us when it comes to the whole span of all human experience, actual and potential, and it is notoriously unhelpful in the day-to-day solution of ethical problems. Religions centered on the sacred/real as Eliade and others (for example, John Hick, 1973, 1989, p. 130) describe them must employ language with the artistry of the portrait painter, not the accuracy of the anatomist (Fig. 12).

These are very different models of the same original reality. As different models of the sacred/real, different traditions address the different problems of our experience of our different embodied existences within different human cultures. Of course, we need some

	Parable	Lived Experience
Narrative	Man Sowing Seed	Communication of Message
	Seed on path eaten by birds	Some potential outcomes neutralized by natural processes and yield nothing
	Seed on rocky ground grows but withers	Some potential outcomes yield immediate results but are not supported by their environment
	Seed among thorns choked	Some potential outcomes overcome by competition
Relations	Seed in good soil yields a hundredfold	Some potentials are fully realized through a supportive environment

Similarity Relations

Fig. 11. More Complex Application of the Type B. Model (#2).

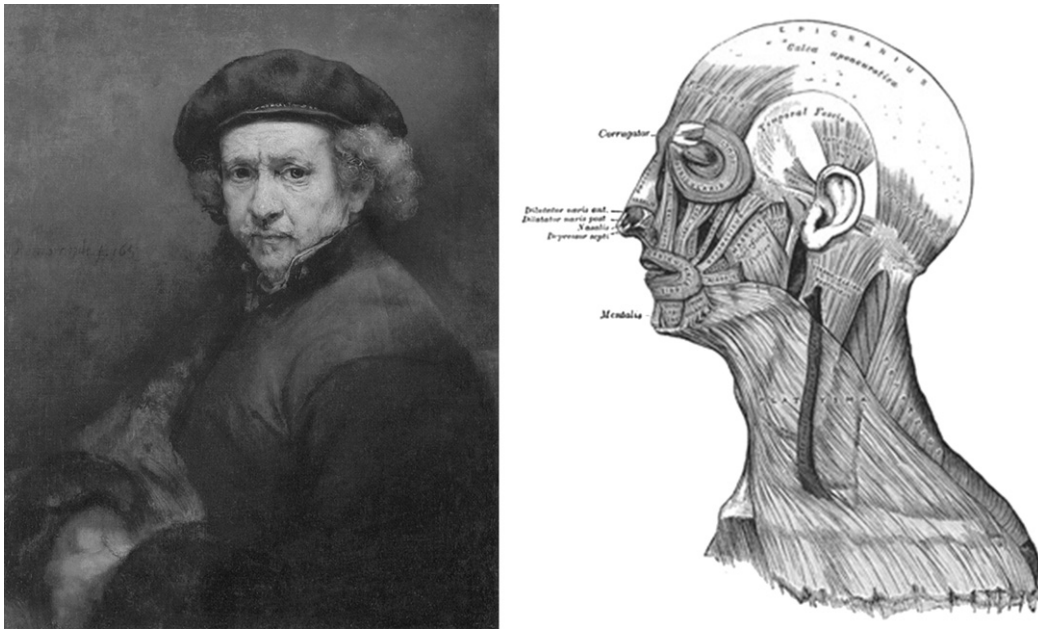


Fig. 12. Different Models of the Same Initial reality.

humility to recognize that our own models of the sacred/real are not privileged because they are not perfect copies of that sacred/real. As Mac Black (1962) said, there is 'a vast difference between thinking of something *as if* it had certain specific relations and properties and thinking of something *as having* those specific relations and properties: 'In *as if* thinking there is a willing suspension of ontological unbelief, and the price paid ... is absence of explanatory power. ... In risking existential statements, however, we reap the advantage of an explanation but are exposed to the dangers of self-deception by myths' (Black, 1962, p. 228). However, can we not walk a tightrope between the two, accepting the accuracy of the model enough to reap an ethical explanation, but restraining ourselves from the self-deception of which Black warns? The model, after all, is never the object modeled. Our perspective on reality is not itself the real. In the case of the planet represented by differing models, we have empirical access to the object modeled. How much more humility is required concerning our models of the sacred/real when we do not have such empirical access—such as when talking about 'ultimate cosmic order', the great chain of being, *asha*, *rta*, the *dharma*, the *Dao*, or 'the will of God?'

The advantages of the application of these model schemas to religious narrative are manifold. They may be used for an elaborate analysis of religious narrative with considerable potential for understanding why these narratives are apprehended as credible. They permit a plurality of models, even radically different models, to be nonetheless accurate, each in its own limited way, thus allowing for a more ramified and fully rational understanding of religious pluralism. Furthermore, they encourage us to exercise some humility that, while our models might be genuinely representative of reality, they are never exhaustive and do not exclude alternatives.

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