

WISDOM'S INFORMATION: REREADING A BIBLICAL IMAGE IN THE LIGHT OF SOME CONTEMPORARY SCIENCE AND SPECULATION

by Paul S. Nancarrow

Abstract. The biblical image of Wisdom as the power who “orders all things well” in nature and in human life can be read in the light of contemporary information theory. Some current scientific speculation offers an interpretation of reality as a vast information-processing system, in which informational situations are continuously transformed through algorithmic operations. This interpretation finds a metaphysical counterpart in the distinction between “nature natures” and “nature natures” in the philosophical theology of Samuel Taylor Coleridge. This confluence of religious, metaphysical, and scientific imagery suggests a picture of the world in which the processes of “nature natures,” “human humaning,” and “God Godding” inform and recur in each other.

Keywords: algorithm; Samuel Taylor Coleridge; information; *natura naturans*; nature; Wisdom.

One of the tasks of a contemporary theology of nature is to reinterpret and reinvigorate traditional religious metaphors in the light of data and theory from current sciences. This reinterpretation can lead to radical revision of metaphors and to introduction of new metaphors; it also can lend new life and new interpretive power to established and tradition-honored symbols. In this essay I will attempt a reinvigoration of the latter kind, using the framework of an “informational” model of the universe as drawn from frontier research in several scientific disciplines to try to elucidate some aspects of the biblical Wisdom tradition. The attempt will involve three steps: a brief account of the informational model of reality, a comparison of that model to the traditional distinction between “nature natures” and “nature natures,” and the application of that interpretive grid to a reading of Proverbs 8 : 22–36 and Wisdom 7 : 15–8 : 1.

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THE INFORMATIONAL UNIVERSE

“For postmodern people,” writes mathematician Rudy Rucker, “reality is a pattern of information, a pattern in fact space” (Macdonald 1994, 137). This statement reflects a basic attitude toward reality, a model of the universe, that has been gaining attention over the last few decades. Information theory was first developed as a distinct field by Claude Shannon in the 1940s for the specific purpose of improving the way communication systems were designed. Shannon’s insights and models, however, were soon being used to describe phenomena far afield from his original engineering concerns. Today the notions of information, data, signal, communication, and feedback are used to model fundamental processes in physics, biology, biochemistry, genetics, neuroscience, and other fields, in addition to their original provenance in cybernetics and communication engineering. An “informational” model of the universe is emerging today that serves the same functions that the mechanical and organic models of the universe served for their times.

In the informational universe things are what they are because of the information they carry, because of the data structures encoded in them and the way they exchange that data with other structures in their environment. What gives a determinate thing its particular character is not the fact that it is composed of certain particles stuck together in a particular way (as in the atomic mechanistic model), nor that it embodies certain ideal forms entailing certain predisposed entelechies (as in the Aristotelian organismic model), but that it maintains a “pattern of significant differences” that both distinguish it from and relate it to the surrounding world (Macdonald 1994, 137). Thus, an electron, in the fundamental physics of the informational universe, is not simply a hard, massy body shooting through empty space, interacting with other massy bodies through impacts or entanglements in their fields of force; an electron is a packet of information regarding potential states of energy distribution and exchange. Similarly, a tree, in the biology of the informational universe, is not simply a piece of inert, formless matter given shape by an ideal form so as to become an individual substance unfolding according to a pre-given *telos*; a tree is a dynamic system of energy patternings governed by the information coded in its DNA and the data structures that surround it. The “determinateness” of just this tree in just this place is a complex information pattern, a “pattern of significant differences” that conditions how the universe behaves in this particular region.

In the informational universe things do not appear first, followed by facts or qualities or relationships or data *about* those things. In the informational universe information and significant differences appear first; the ways in which these signals align or diverge, reinforce or cancel each

other, give rise to the large-scale interactive patterns that are recognizable as determinate things. Physicist John Archibald Wheeler thus asserts, “The world cannot be a giant machine, ruled by any pre-established continuum physical law”; instead, “all things physical are information-theoretic in origin” (Wheeler 1990, 3, 5). Wheeler sums up the new view in his slogan “It from bit”—which means, according to Paul Davies and John Gribbin, “every *it*—every particle, every field of force, even spacetime itself—is ultimately manifested to us through *bits* of information” (Davies and Gribbin 1992, 307). In this view the “bits” come first, and the “its” are the results of their mutual patternings.

But this informational model does not conceive of the universe simply as structure, as a static pattern of signals or a set network of “bits.” This model also is concerned with the ways the patterns *change*, with the dynamic character of information *processing*. As Copthorne Macdonald puts it,

A number of researchers have been working on the problem of relating natural law and the functioning of the cosmos to data processing and computer functioning. The emerging view is that not only is existence an informational construct, but the universe is an information processor. . . . In the information-processing cosmos, each physical situation, regardless of location, is input information. And behind each law of nature is a program, a functioning algorithm. (Macdonald 1994, 138)

This quote introduces into the scheme the important notion of the *algorithm*. For our purposes here, the algorithm might best be thought of as a rule for the transformation of information. Jeremy Campbell defines an algorithm as “some special method of manipulating symbols, especially one which uses a single basic procedure over and over again. It converts certain quantities into other quantities, using a finite number of transformation rules” (Campbell 1982, 130). It is not something “extra” added to the information that constitutes a thing or situation but is *information about information*—that is, information in the form of rules about how the data structure can change. Thus we may say that information functions in two ways: as *data*, the patterned “bits” that are the “givens” manifested in a determinate thing or situation, and as *algorithms*, or the rules for the transformation of bits into new patterns and new data.

One oft-cited example of this relation between data and algorithms in natural process is the differentiation of genes in the DNA molecule. Some gene sites along the DNA chain, as is well known, provide the coded information for the production of proteins that are the necessary building blocks of living tissue. These genes function as data, as structured patterns of differences that yield a given determinate content. The DNA molecule has other gene sites that do not themselves code for

proteins, however, but instead regulate how the protein-coding genes behave. These genes act, in effect, as rules for the activation of other genes: they serve as algorithms for the transformation of the genetic data. As Campbell says, "In the case of DNA, the rules may enable sets of genes to be copied over and over again and to be expressed as protein in various specific ways and not in others. The algorithm would be a kind of program, instructing certain combinations of genes to turn on or turn off at specific times, and would be stored in the DNA text as information" (Campbell 1982, 130). In this example, the data and the algorithm are both information, patterns of significant differences stored in the base-pair sequences of the DNA molecule; the "rules" are not something else or something extra added to the "bits." Yet there is this difference: that the data are manifested as successive actual states of affairs, as the proteins actually produced and present in the organism, while the algorithms do not "show themselves" in the same way. The algorithm is responsible for guiding the change but is not itself directly visible in the changed data structure.

Another way which the concept of the algorithm is applied to natural process is, as we have already seen in the quote from Macdonald, as the basis for "laws of nature." "Laws" here are not regularities imposed upon the system from without but are expressions of the information carried within structured situations functioning as rules for the patterning of bits. As Macdonald puts it, "Our laws of nature describe, at least to some extent, embedded operating algorithms, built-in rules of universal functioning" (Macdonald 1994, 138). Here again, as in the case of the DNA molecule, the algorithms, the "laws of nature," are not themselves available for observation, although their effects in changed data structures are. One can point to an apple fallen from a tree, a given informational situation; one cannot *point* to the law of gravitation. Macdonald characterizes this difference in visibility between data and algorithms as a difference between *message* and *medium*: the data, the patterned bits that are the givens of things, are like "messages," signs of structured situations; the algorithmic functioning, the transformational process by which the bits are arranged, is like the "medium," the activity—itsself not visible in any given structure—by which each structure arises (Macdonald 1994, 139). Thus, for the informational model, the universe has two distinguished but not divided aspects: the presented, explicate, manifested order of data, the series of given situations in the phenomenal world; and the nonpresented, implicate, unmanifested order of algorithms, the transformational activity that transmits and changes the data from each situation to the next.

Information theory has thus been generalized as a speculative model of the universe. Can it be further generalized for application to philo-

sophical, theological, and religious themes? Several suggestions along these lines have already been made. In his now-classic *The Tao of Physics* Fritjof Capra pointed out the resemblances between the physics of the information-processing universe and the metaphysics of Eastern mysticism. More recently, Wolfhart Pannenberg has suggested “that the ancient philosophical Logos doctrine can be reformulated in terms of modern information theory . . . it does not seem completely inconceivable that a field theory of information can do justice to the cooperation of Logos and spirit in the creation of the world” (Pannenberg 1993, 26). Macdonald notes that the twofold structure of information as explicate data and implicate algorithms suggests a strong analogy with the “Perennial Philosophy,” which states that, “underlying the transient, ever-changing realm of manifest existence there is an eternal unmanifested Ground—an enduring oneness that interpenetrates existence and enables it to be” (Macdonald 1994, 147). Although all these suggestions are of interest, I find that the informational model lends itself most congenially to comparison with the scholastic notions of “nature nated” and “nature naturing,” especially as those notions were developed in the natural philosophy of Samuel Taylor Coleridge. It is therefore to a consideration of those notions that we now turn.

“NATURE NATURING” AND THE FORMATIVE IDEA

The distinction between *natura naturata* (“nature nated”) and *natura naturans* (“nature naturing”) first appeared in Latin translations of the works of Averroes in the first quarter of the thirteenth century, and their combination in distinction offered the philosophy of the time a means toward a comprehensive view of nature. As John Deely puts it: “There is a view of nature which leaves nothing out. On the one side, ‘nature nated,’ we have room for the full range of phenomena themselves, past, present, or to come. On the other side, ‘nature naturing,’ we have room for all the potencies and acts which have manifested or could manifest themselves in the play of phenomena” (Deely 1994). It is this inclusiveness that led Coleridge to give the distinction an important role in his antimechanistic, organic speculative philosophy.

Coleridge distinguishes the “nated” and the “naturing” as passive and active aspects of the world: “the aggregate of phenomena ponderable and imponderable, is called nature in the passive sense,—in the language of the old schools, *natura naturata*—while the sum or aggregate of the powers inferred as the sufficient causes of the forms (which by Aristotle and his followers were called the substantial forms) is nature in the active sense, or *natura naturans*” (Coleridge 1949, 370). Here, the structure of “nature nated” can be analyzed by reference to the phenomena, as they are arrayed for the observer as objects spread out in time and space. This

is the kind of analysis at which objective materialist science excels. But for Coleridge that is only half of the story. The structure of “nature naturing” cannot be analyzed by any such direct query of the phenomena. As Owen Barfield puts it, “The essence of the natural process is that it is ‘productive,’ in the wide sense of evolving phenomena from other phenomena, and Coleridge held it to be a logical absurdity to suppose that this productive *power* is the same kind of thing as the phenomena themselves” (Barfield 1971, 23). The account of the structure of “nature naturing” must begin with “powers” rather than phenomena.

Coleridge’s account of this structure is complex and nuanced, and appears with varying degrees of clarity in numerous passages in his writings. A good entry comes in chapter 13 of the *Biographia Literaria*: “Grant me a nature having two contrary forces, the one of which tends to expand infinitely, while the other strives to apprehend or find itself in this infinity, and I will cause the world of intelligences with the whole system of their representations to rise up before you” (Coleridge [1965] 1975, 162). In this primary conception active nature is a productive power acting as two “contrary,” or polar forces, one of expansion and one of identification. Coleridge elsewhere calls these forces “free life” and “confining form,” and contends that the world of intelligences and representations—that is, the phenomenal world—arises from these forces’ interaction. Neither force alone is sufficient to bring a determinate thing or event into being. Only when these two forces meet and “interpenetrate” does the “living principle” of a “finite generation,” a determinate thing, take place (Coleridge [1965] 1975, 164; Barfield 1971, 24). In this “interpenetration,” the expansive force provides relatedness and connection while the identifying force provides definiteness and differentiation, and it is only as the balance of these qualities that a thing can unfold itself into phenomenal manifestation. As Coleridge put it in his *Hints towards the Formation of a More Comprehensive Theory of Life*: “That nothing real can or does exist corresponding to either pole *exclusively*, is involved in the very definition of a THING as the synthesis of opposing energies. That a thing *is*, is owing to the co-inherence therein of any two powers; but that it is *that* particular thing arises from the proportions in which these powers are co-present” (Coleridge [1848] 1970, 69).

In the structure of “nature naturing,” then, the productive power of nature acts through polar forces of “free life” and “confining form” to bring into being the particular formative principles of determinate things. Coleridge calls these formative principles “physical ideas,” or those ideas “which we mean to express, when we speak of the *nature* of a thing actually existing and cognizable by our faculties, whether the thing be material or immaterial, bodily or mental” (Barfield 1971, 121).

A physical idea, furthermore, functions in two ways. As internal to a thing or event, its idea functions as the “law” of its becoming, the particular patterning of relation and differentiation that guides that thing’s coming to be as a phenomenon. As external to a thing or event, its idea gives rise to what we more commonly mean by the word *idea*—that is, an image or conception or notion of the thing or event in an observer (Coleridge 1993, 182; Barfield 1971, 121). There is thus for Coleridge in the formative idea an indissoluble link between the way a thing *is* and the way a thing *appears*.

There are three significant parallels between this philosophical speculation and the informational model of the universe. We saw in the informational model a distinction between data and algorithms, between the givens of phenomena and the activity of information processing; that distinction is paralleled in the difference between “nature naturesd” and “nature naturing.” Another parallel is between Coleridge’s physical idea, which functions as the law of a thing’s becoming, and those particular algorithms that function as the laws of nature and as the “programs” that guide individual processes. We might say that such algorithms are instances of physical ideas. The third and most important parallel is that Coleridge’s account of the structure of “nature naturing” affords us a more detailed insight into the way algorithms work. If an algorithm is a rule for the transformation of data, the structure of “free life” and “confining form” allows us to characterize that transformation further as one that involves both order and novelty, both a continuity with the data structures that obtain before the transformation and an element of change, of differentiation, of noncontinuity from them. The metaphysics of “nature naturing,” then, extends the science of information to a wider scope of interpretive relevance.

Two further steps are crucial to Coleridge’s account of “nature naturing.” The first involves its relation to the realm of human being and human process. Coleridge, like many others before and since, was deeply opposed to the Cartesian separation of mind and matter; a principal goal of his philosophizing was to demonstrate that mental reality and physical reality are intimately linked. His means of arguing that linkage was the structure of “nature naturing.” In the phenomenal world, the world of “nature naturesd,” to be sure, such a linkage is impossible: for “nature naturesd” there are fixed objects spread out in space and, on the human side, a passive sensory apparatus that merely records the “impact” of objective “impressions.” The gulf remains unbridgeable. But in the realm of “nature naturing,” the structure of nature and the structure of the mind are the same, and so there is a functional link between them. The structure of “nature naturing” is a productive potency acting through polar tendencies of expansion and

identification to come to a particularity of “individuation in relation.” The structure of human subjectivity is formally identical: a potential for being human comes to actuality as expanding away from itself while also striving to identify itself; that is, it is a subjectivity experiencing itself as object, both connected to and yet differentiated from the world in which it finds itself. Only in such tension of “objective subjectivity,” or self in and from the world, does the human moment come to individuated selfhood, or spirit, at all (Coleridge [1965] 1975, 151–53; Coleridge [1848] 1970, 85–86; Barfield 1971, 104–14). The human being, therefore, is not something separate from nature but rather a particularly concentrated and self-reflexive instance of that same process by which all things whatsoever come into being. The “human humaning” is an especially intense phase of “nature naturing.”

It is because of this structural identity that physical ideas can operate both as laws by which things become themselves and as “ideas” represented in the mind of the observer. The same information, the same algorithm, that patterns the data of the given thing serves as a pattern for the information processing of the observing mind. Thought and thing are thus indissolubly related as springing from a common source, as patternings of a common program.

The second step toward completion of the metaphysics involves extending the structure of “nature naturing” to the being and activity of God—or, more properly, showing how that structure has its origin and guide in God. The key to this step is Coleridge’s account of the Trinity. In Coleridge’s conception the inner dynamic of trinitarian life begins with God as “I am” or “I will be what I will be”; that is, with God as the power or potency to be. That potency is expressed in two polar modes: as infinite expansiveness, the Spirit that blows where it wills; and as definite identity, the Logos that names and distinguishes. God as Absolute is self-named—and so “self-othered”—in God as Word; and the subjective unity of the two is maintained in the expansive relationality of God as Spirit. The tri-unity of God is thus the balanced wholeness of the “two forces of one power”: it is identical with the structure Coleridge identifies as “nature naturing” (Coleridge 1973, 4427; Coleridge 1858a, 18–19; Barfield 1971, 145–47; Clayton 1990, 229, 235).

Not only is this the structure of God’s trinitarian life; it is also the pattern by which God creates. The Trinity is the “*Idea Idearum*, the one substrative truth which is the form and involvent of all truths” (Coleridge 1858b, 407). That is, the tri-unity of God’s inner life is the most fundamental idea—the basic algorithm, as it were—from which all other ideas, all other formative patterns, derive and which all incorporate to the extent that they are actual. All of nature, the whole vast process of “nature naturing,” is therefore in a very real sense *imago Dei*,

the image of God, insofar as “nature naturing” is the created reflection of “God Godding.” This is especially, though of course not exclusively, true of humanity, where “human humaning” within “nature naturing” is a specifically intensive reenactment of “God Godding” (Barfield 1971, 147–49; Clayton 1990, 235). The whole complex is tied together by the formative idea, the inner dynamic of God’s own life, bestowed as the structure of created cocreating nature.

At this point the informational model of the universe, interpreted and expanded by a Coleridgean speculative philosophy, has brought us to specifically theological considerations. The next question to ask is whether this interpretive framework can be useful for Christian religious reflection: Can it reinterpret and reinvigorate central Christian symbols?

WISDOM AND THE INFORMING OF REALITY

Several potential points of contact exist between the informational model and the Christian religious tradition. One set of traditional images that lends itself to this type of speculation clusters around the figure of Wisdom. According to key biblical texts, Wisdom was active in God’s original work of creation, and her presence in the world continues to mediate God’s creative and patterning power to the creatures. Both these roles of Wisdom can be seen in “informational” reading of the texts of Proverbs 8 : 22–36 and Wisdom 7 : 15–8 : 1.

Proverbs 8 : 22–36 presents a story of creation that is in some important respects a parallel and a supplement to the more familiar stories in the first two chapters of Genesis. It bears some suggestive similarities to the informational model of the universe. In the first place, Wisdom here plays precisely the role of “nature naturing.” In this passage God “the LORD” is pictured as the *source* of creative potency, the origin of the creative work; but it is Wisdom who is the “master worker,” the *agent* through whom that potency is formed into the particularities of creatures. Thus the initial relation between God and Wisdom reflects the structure of “nature naturing” as potency differentiated through expansion and identification into individuation in relation.

This individuation in relation is also the formative principle of the things created. God with Wisdom “establishes the heavens,” “draws a circle on the face of the deep,” “makes firm the skies,” “establishes the fountains of the deep,” “assigns the sea its limit,” “marks the foundations of the earth.” Each of these actions involves differentiating a thing or class of things from a background or opposing class of things. To establish the heavens involves distinction from what is “not-heaven”; but such distinction does not involve division or separation, since it is heaven *with* not-heaven, or heaven and earth, that make the completed actuality. To draw a circle on the face of the deep or to assign the sea its

limit is to set sea and land in a certain determinate relationship, distinguished but not divided from each other. In each of these cases, Wisdom as “nature naturing” creates determinate things in the world as *patterns of significant differences*, or what we have called information structures. The things that are, the phenomena of the world, are what they are because of the information they bear; and they bear that information because of the algorithmic, “nature naturing” information processing of Wisdom within them.

If the Proverbs passage deals mostly with the imagery of Creation, the passage from the Wisdom of Solomon has more the character of a depiction of Providence. What is at issue here is not where things come from so much as what keeps things going, what orders and patterns the given world, what sustains things in their becoming. Read as an account of informational “nature naturing,” the passage evokes a rich picture of Wisdom, creatures, and humanity in complex interrelation.

Here again, Wisdom is portrayed as playing precisely the role of “nature naturing.” She is the overarching—or undergirding—formative reality in which all particular things arise: she “reaches mightily from one end of the earth to the other,” and she “pervades and penetrates all things” as the source of “the structure of the world.” She is both single and “manifold”; and “although she is but one, she can do all things, and while remaining in herself, she renews all things.” Interpreted in the light of the informational model, these lines sketch the structure of “nature naturing” as the integration of the tendency toward expansion and that toward identification. Wisdom is infinitely expansive in that there is not a determinate thing in existence with which she is not involved; yet Wisdom is perfectly unified, perfectly self-identified, “remaining in herself,” in that she integrates her involvement with all things into a single comprehensive whole. As “nature naturing,” Wisdom is the algorithmic matrix that is the source of all differentiation, the origin of all patterns of significant differences, and at the same time the source of the conditions of relatedness that gather such differences into patterns—and into patterns of patterns. Here the informational model helps us to interpret the religious image, not just as poetic hyperbole or as a paradox of faith, but as indicating the dynamic character of nature.

Wisdom also is named in this passage, not only as the general condition of the existence of things, but as the source of those specific “natures” that are the physical ideas or formative algorithms of orders and classes of creatures. Wisdom gives rise to the “activity of the elements,” the cosmic rhythms of change that are marked as times and seasons and astronomical process, the “natures” of animals, the “tempers” of wild animals, the “varieties” of plants, the “virtues” of roots, the “powers” of spirits. Here

the universe is a rich network of “natures,” “virtues,” “powers,” which form and inform each other in dynamic relationships.

Such a picture is very difficult to reconcile with a mechanistic model of the universe, in which the world is a collection of inert objects spread out in empty space and interacting through sheerly mechanical forces. From the mechanistic view, a passage that speaks of the “natures” and “virtues” and “powers” of creatures must be supposed to refer to occult qualities or supernatural entities, or else to mere abstractions generalized from pragmatic observation of physical phenomena, as if the Wisdom writers were second-class mechanists who lacked the benefit of Bacon’s rules of scientific method. Such a reading either dismisses “natures” and “virtues” and “powers” as irrelevant, or demythologizes them as uninteresting. Either way, reading the passage thus cannot be theologically or religiously fruitful.

In the informational model, however, each of these phrases can be interpreted as referring to the inherent algorithm, the “programlike” content of information in any determinate thing that gives that thing the potency of self-replicating process and change with continuity from one moment, one data structure, to the next. Read from a “nature naturing” perspective, “natures” and “virtues” and “powers” need not be dismissed but can be recognized as valuable pointers to a divine dimension in natural process. Here the ancient imagery and the contemporary theory work together to raise our perceptions to a new key.

It is around the theme of perception in the Wisdom-informational world that this text offers its most striking images. Wisdom is here not only “a breath of the power of God,” not only the fashioner of all determinate things in the world, but also the source and guarantor of human knowledge. Wisdom “teaches” the sage; she is the medium through which God gives “unerring knowledge”; she permits the learning of what is “secret” and what is “manifest”; and “in every generation she passes into holy souls and makes them friends of God, and prophets; for God loves nothing so much as the person who lives with wisdom.” But Wisdom does not work in the human mind only as a provider of content, a source of data, a kind of transcendent encyclopedia. Wisdom *shapes* the soul she informs, drawing the mind into “friendship” with God and integrating it into the coordinated activities of all creaturely “spirits that are intelligent, pure, and altogether subtle.” Through the mediation of Wisdom, the physical ideas of the creatures of the world—the “natures” and “virtues” and “powers” of things—are given also to shape and inform the human mind. That same Wisdom that in the animal or plant or constellation of the stars is the algorithm for patterning data into a determinate individuation is in the sage’s soul the algorithm for constructing a true knowledge and real understanding of that animal

or plant or constellation. As the Wisdom imagery depicts it, and as the informational model interprets it, the human act of knowing is never simply an arbitrary construction of presented data according to purely intramental conditions or limitations; instead, the human act of knowing is an information process, embedded in the universal information process, in which algorithms, some distinctive to the human knower and some shared with other processes, guide the patterning of data into integrated and integrative wholes. The human act of knowing is a feature of the process of “human humaning,” and precisely as such is it intimately involved in the process of “nature naturing” and “God Godding.” The metaphysics of the informational universe elicits all three of these dimensions from the Wisdom imagery of this passage: the central figure of Wisdom is at once God’s process, nature’s process, and humanity’s process. It is through Wisdom’s information that nature, humanity, and God are differentiated yet related in one real world.

These reading of Proverbs 8 : 22–36 and Wisdom 7 : 15–8 : 1 are not, of course, definitive or exhaustive. They demonstrate, however, that the framework of ideas developed from a consideration of information theory and “nature naturing” metaphysics can be applied to traditional symbols with both theological and religious relevance. The model encourages a view that sees God’s creative power, not as something externally imposed upon a passive creaturely order, but as an indwelling potency for self-replicating and self-modifying process. Embedded in “nature naturing” not only human beings but *all* creatures are seen as having some status as created cocreators. Furthermore, because the model sees all particular algorithms as embedded in a generally extensive information process, and hence all physical ideas as interrelated with each other, it encourages a view of reality in which categories of relation and interaction, rather than isolation and self-subsistence, are definitive for the natures of things. Interpreting the traditional symbols through this model discloses newly relevant meanings.

CONCLUSION

The new meanings gained from an informational approach to the theology of nature also suggest some areas for further development. One such area involves questions of epistemology and the “ways of knowing” that are implied or demanded by the Wisdom-informational model. If the constructs of the mind and the things in the world are shaped by the same algorithms, are differentiated-but-related products of the same real process, then what are the dynamics of such a way of knowing? What might serve as criteria of judgment and standards of accuracy in such an epistemology? What language is there to describe the *experience* of a knowing that understands itself as so intimately involved with “na-

turing” processes? Resources for exploring these questions might be found in feminist epistemologies that regard the other as subject rather than object, in “attention” epistemology (McFague 1993, 49–55) and in contemporary literature that blends spirituality and nature writing.

Another area in which further development is necessary is the role of this model in forming ethical commitments. The depiction of the world as a self-complexifying information system, in which interrelated things work toward the increasing enrichment of both their local data structures and the overall information content of the world, might serve to throw certain orders of relation and obligation into high relief and so to evoke certain kinds of ethical questions. The issue of species extinction, for example, might be seen not only as a loss of possible future utility to human concerns, nor even as a potential threat to the viability of the planet (and human beings with it), but as a loss of informational richness in the overall system. Such loss is an offense against Wisdom, against “nature naturing” and “God Godding,” and demands an ethical response as such. More detailed analysis of these ethical implications of the Wisdom-informational model is required.

Certainly one mark of the usefulness of an interpretive scheme is not just its ability to provide answers but its ability to raise new questions. I think that, on both of these criteria, such an interweaving of the theory of information, the metaphysics of “nature naturing,” and the biblical imagery of Wisdom commends itself for further investigation.

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