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Article review: New arguments for 'intelligent design'? By Philip Gagnon

William A. Dembski: *Being in Communion: A Metaphysics of Information*. Aldershot, Ashgate, 2014, 218 pages, ISBN 978-1-4724-3785-3; £54.00 (pbk).

In the field of science and religion, William A. Dembski became known when he published in 1998 his philosophy doctoral dissertation under the title The Design Inference: Eliminating chance through small probabilities. These were the days when the discovery Institute and its 'wedge' strategy were getting organized as a program to offer an alternate interpretation of the changes attributed to evolution. Coming a few years after Michael Behe's *Darwin's Black Box*, Dembski's book put him in a different category where he was viewed as the philosopher of the ID movement, along with Stephen Meyer. Unlike Dembski, it took Meyer many years to come up with a substantial work other than minor articles in third-level journals. Dembski followed up in 2001 with *No Free Lunch*, a book purporting to show that evolutionary algorithms and search strategies would not attain zones of functional efficiency without an input of information or a pre-programmation. This aspect will also be developed in the present work. The current monograph is therefore a third volume in a trilogy where Dembski, this time, will not deal with ascription of design or the technical aspects of the search strategy from computer science and inductive logic viewpoint, but rather with the metaphysics of information. It has 21 chapters, nearly all of them short, and they are devoted to the questions of materialism as a general understanding of the scientific picture, the question of free will, information, possibilities, probabilities, intelligence versus nature, embodiment, energy, determinism, contingency and chance, conservation of information, natural selection, creation of information, and the communion aspect announced in the title.

Dembski first reviews the fundamental stance about the 'stuff' of reality as understood from contemporary science and claims that the case can be made for a reality at bottom composed of informational patterns or signatures. He offers a libertarian account of free will, characterizing it as 'free won't,' and makes the case that material embodiment in a materialist perspective precludes free will. This position lends support to the core idea of information theory, which characterizes information as a reduction of possibilities. He offers examples that construe an informational statement as one that isn't a tautology. To understand information conveyed in a communication is to know what possibilities would be excluded by the truth of a string of received symbols. A chapter (6) deals with the measurement of information, and makes the point that smaller probabilities contain more information, not less. The information theory chapter distinguishes between Shannon's theory and Kolmogorov's, and explains why the Shannon ver-

sion focuses on how character strings can cross communication channels, while algorithmic information theory focuses on the degree to which character strings are compressible.

The chapter on intelligence vs. nature (8) is where the book really kicks off, if it is to develop a metaphysics of information. Dembski claims that since materialism downgrades intelligence by conceiving it in material terms, it is committed to seeing matter as not intelligent. It needs, therefore, to think of intelligence as existing outside matter and acting on it. For Aristotle, nature and design were two different ways of producing information: design produced information externally, while nature produced it internally. The word translated as design is *τεχνη* from which one derives technology (rendered by 'art' in most translations). Thus, externalist design is made to contrast with internalist nature, and nature as internalist looks to power within things to express information. Dembski considers that the boundary between internal nature and external design is not as clear as it might at first seem.

Dembski finds that matter is an abstraction drawn from the array of objects we observe with our senses. It is what hangs together, homeostatic clusters of properties, as one could say in Lockean language. He notes that matter is never observed as such by empirical science, it is inferred from observation. Dembski suggests that perhaps reality is gauged in terms of potential to produce information. When asking where these patterns would reside if they don't have a passive material substratum, he says that they reside in the actual world, and tries to flesh out an information realism.

Reflecting on embodiment, Dembski considers again the medium for information and introduces the idea of physical matter in contrast to a spiritual matter that, if it existed, would be the stuff outside the space-time mass-energy continuum, that could represent information and be a conduit for intelligence. God, in Christian theology, is regarded as pure intelligence, has no body and is therefore not a medium for information. God creates it, but does not in his being contain or exhibit information. As a Christian theist, Dembski regards intelligence as the prime entity, and accordingly considers that all information becomes a creative act by this intelligence, or by derived intelligences. Going all the way down, information comes to us embodied, the embodiment itself is informational and exhibits characteristic signatures, so that that embodiment, treated as information, is itself embodied … and on it goes. Where does the regress end? Dembski says he questions the value of speculating about information regress, and thinks God allows an infinite regress of information and embodiment to mirror his own unsearchableness.

Materialism would insist that any information transfer requires an energy transfer between material states, with a clear material basis. How can

we construe the concept of an energy that is not material? When information is transmitted, an information relationship exists that takes the form of a correlation between two ends of a communication channel. One can understand the correlation without the intervention of any physical process to connect the ends of the communication channel, and thus, without reference to any relationships of material causes spanning the channel. The question is whether all information must transfer by material means, and whether there are counterexamples. Dembski contends that the requirement that information relationships supervene on material causal relationships only needs to be justified if one presupposes materialism. To rest his case, he appeals to communication with a star 600 million light years from the earth, that would answer our questions instantaneously; the stars' answers would have to precede our questions by millions of years.

The chapter on an informationally porous universe (14), discusses the idea of causal closure as it poses a challenge to traditional theism, in asking how God, who is disembodied, could influence the material world, imparting information without imparting material energy. If we take our models from classical physics, they will contain informational closure, because determinism precludes novel external information from getting into a system once it is running. With a nondeterministic model of the universe, such as given by quantum mechanics, there is an informational openness. A universe of this kind will produce random events, and can produce patterns of events that stand out against a backdrop of randomness. Nothing prevents a non-material deity from enlisting random processes, which could in principle turn out any number of ways, and then have these processes in fact turn out one way rather than another.

Dembski says that invoking contingency and chance to account for the universe as a whole commits us to an argument from ignorance; chance is an empty word if we do not have a way of assigning probabilities. We need to know something about the underlying processes that give rise to those probabilities. To say that a bridge collapsed because ‘stuff happens all the time’ is not an explanation at all. One cannot infer preconditions for the universe's existence from the conditions by which the universe operates. We do not have a ‘god’s eye view’ that would allow us to stand outside the universe and assess how it came to exist and what accounts for its structure. Dembski remarks that it is a mysterious thing that chance events, when viewed aggregately, exhibit stable and expected patterns: on materialist grounds, there is no known independent fact of the matter to suggest why it should be so. Nobody has reliably ascertained the baseline probability distribution characteristic of long-run behavior.

In the discussion on search strategies, a thought-experiment is offered: say a biologist inserted a functioning module into a bacterium. Another bi-

ologist finds this bacterium with the novel molecular machine in the wild: would it be attributed to design or to natural selection? The molecular machine was designed, in an external engineering sense. By reflexively attributing these to blind material processes, one would miss the truth about their origin. The question is whether tracing the origin of intelligent agents to natural selection eliminates the need for teleology. Once evolution has done the work, concepts like teleology and intelligence are indispensable for describing the action of evolved beings. What of teleology and intelligence before creatures exhibiting these have evolved? To defend his idea that natural selection is inherently teleological, Dembski calls on the results of what he calls 'conservation of information' (COI).

The key idea around COI is that there is always a more difficult search that gets displaced by an easier search. Once the difficulty of finding what allows for an easier search, that we understand probabilistically, is factored in, there is no gain and in fact the total cost may have gone up. This formulation requires that we treat search itself as an object of search. Dembski quotes R. Dawkins' *The Blind Watchmaker*: 'The one thing that makes evolution such a neat theory is that it explains how organized complexity can arise out of primeval simplicity.' (p. 316) It wouldn't be a feat for evolution to explain how cave fish lost the use of their eyes. Evolution is remarkable as a claim to be able to explain how things like eyes that can see evolve, in the first place, from prior simpler structures that cannot see. COI denies that going back in time, one could get everything from nothing; it says that there never was a prior state of primordial simplicity.

The chapter on natural selection (19) goes over computer simulations of evolution, such as the one that Dembski has commented on many times, the verse of Shakespeare's Hamlet generated by Dawkins. He discusses the three things that, according to Kenneth Miller, are needed to have creation of information, and these are: selection, replication, and mutation. Dembski calls upon the 'method of difference' laid out by J.S. Mill in his *System of Logic*, which says that if an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance in common save one, then that one occurring only in the former, the circumstance in which alone the two instances differ, is the effect or the cause or an indispensable part of the cause of the phenomenon. If replication, selection, and mutation are present in cases of evolutionary increase of complexity as much as decrease, they cannot account for it. Dembski quotes Brian Goodwin who referred to S. Spiegelman's experiments, showing that what happens to a molecular replicating system in a test tube without any cellular organization around it, is that the replicating molecules require an energy source, building blocks, and enzymes that help the polymerization process involved in template copy, so that whereas more copies are made of the specific nucleotide sequence that define the initial

templates, the interesting result is that these initial templates do not stay the same, do not accurately copy; they rather get shorter until they have reached the minimal size compatible with the sequence retaining self-copying properties. In other words, in these experimental conditions evolution goes one way, it goes towards greater simplicity.

It is time to react critically to this 'metaphysics' of information. Dembski never ceases to talk about creation of information, but how would one measure this information? All that Shannon was concerned with, whose diagram has been an inspiration all along in this work, and which gets pointedly discussed in the penultimate chapter, was taking bits from here and getting them there. If one were to not so much create information, but find a means of ascertaining whether a conscious creation of information has occurred, one would be facing this problem: if something answers to the operational definition of information, it must introduce unpredictability, and if it does, to recognize it would require that one is familiar with something already used to express the same thing in similar circumstances. A purely informative process would also be unrecognizable, one needs some redundancy, the presence of things priorly known as capable of operating it this way in that context. This means that we are cutting back on the information value. Dembski deals with this in a footnote where he quotes M. Shermer (p. 155), but his own argument about 'long runs' being indistinguishable from short ones (p. 133-4), would apply here. How indeed does one know that the patterns one has discerned are objective? When Dembski says that a matrix of possibility directs our attention and calls us to perceive certain patterns to the exclusion of others (p. 88), we are wont to ask where one gets this probability distribution from: is it from the observation of reality? Isn't one thus committed to a form of circular reasoning? The problem that marred the exposé in *The Design Inference* reappears, namely: can one really determine a rejection region *post facto*, when one needs to conjoin vanishingly small probability with the recognition of a pattern to the exclusion of all others? Information as conceived by Shannon was discrete. As conceived by Wiener, it was analogical, and was akin to the embodied pattern that keeps living tissues in their form. This has a degree of specificity; it also has, like Aristotle's categories, ontological import, since Wiener was anguished over reality's ultimate unknowability (see N. K. Hayles, *How we Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago, University of Chicago Press, 1999, pp. 97-98).

Dembski's statements are *a priori* and entirely abstract. The question is not whether we can have matter discarded for being a useless entity, whether ideological materialism is dead, nor is it the question to recognize that matter always obeys a certain pattern. It is rather: say we are put in front of such an informational signature which is non-deciphered, can we consider that the information has been put there by an informer, or that it has come

from complexity which will be generated by chance processes? The argument to the effect that a biologist could have successfully inserted a functional module in an organism's DNA (p. 146-8), which would require that we infer design there biconditionally ('if and only if'), is a two-edged sword. It has the same structure as that which would support GMOs, and the reasons for not going there, for not 'playing God' could be equally adduced from a position like that of Dembski ('this is the most intelligent scheme of organization, so let's not destroy its irreducible complexity'). It seems that, in the end, his position is shown here to be conceptually vacuous, in the same sense that D. Noble (see *The Music of Life*) has shown Dawkins' 'selfish gene' idea to be empirically devoid of content. They are mirror images of each other.

When we recognize information, it is too late, since what we will have iwill be human patterns of organization. This cannot be used as a means to prove the existence of a completely disembodied divine way of informing; about this, one could not say much, and would need to reconduct all the superlatives of the Aeropagite and speak of 'super information,' except that such an information would act unassailably, only God using it. Science drives toward simplicity, as Dembski gets from Goodwin's quote (p. 183-4): natural selection will let things be exposed as they are in their constitution, it will act as noise revealing things' structure. The problem is that this will also apply to any information that God would communicate. If there is no place for information or complexity in God, then the stuff that's fabric of the world would only testify to the divine if it managed a trade-off that's optimal in a definite way – but one wonders what that would even be. It would purportedly tell us how much pattern has been introduced into things, but then using it would be the problem, since to say that things are made of atoms would not be grasping much of that information, and the question raised by A. Holding (in *Modern Biology and Natural Theology*) would come into play: the miraculous would both require that God use proteins and colloids to make a finger, but that he also could make one without any of those layers of ordered patterning. Or else, we will mean, by God's information, the completion of a circuit, in other words a short-hand enabling us to say that something went from blueprint stage to fully effective launching and execution. God's power, as Leibniz argued against Newton/Clarke, would be shown much more in using less information to achieve effects, since information would be endogenous to terrestrial beings. This opens up the door for an account wherein they themselves have made choices, selected among possible outcomes, and furthered what their freedom as consciousness meant in the first place. If this could be said to support Dembski's libertarian position (chap. 2), it puts him at a difficult place to make a coherent model of how God would be acting when such selections are made. Dembski ends his chapter on energy with a quote from *The Gar-*

den of Epicurus by Anatole France, and stigmatizes how, for the materialist mindset, even miracles would make-be inserted in a greater discovery of the powers inherent in nature. He does not go down the route of considering how, as soon as you have chance, it becomes difficult to ascribe things univocally to a deity since chance could have produced it. This was objected to him more than a decade ago by Fitelson, Stephens and Sober, but Demsbki does not have a good record of integrating peer correction. The metaphysics we get at the end of this would be meagre in comparison to what's announced.

As much as it makes little sense to invoke lapses in design optimality against the existence of a designer God, because we do not know the obstacles and difficulties that would be encountered if one had a larger temporal view than ours, it makes little sense to declare information spent in this or that way in organisms as testifying in all cases to the action of some intelligent designer. One could have spent in many a case much less information if one would have designed something for a particular function, like a human engineer would. Design for a particular function can also amount to short-sighted or one-dimensional design, this is why evolutionists have brought attention to the coaptations in the history of life. God will not create a structure *de novo*, but will assist in the process of giving a new orientation to what was useful for a different function. This means less and less information, but the reason for it is not that one can directly find some degree of geniality behind this state of affair, since God, as he has always been doing, is attracting under-constrained elements, which lets the read-off of information be less, since creaturely cooperation has been instrumental in the process.

One cannot say that, on the one hand, God or a mind is behind information, that complex things would bear a great amount of it in virtue of their complexity, and that, on the other hand, one can recognize in the scheme a simple pattern such that only a mind would work this way. One criterion is probabilistic and logarithmic, and the other is aesthetic. We end up with an equivocation, since we use information in the sense of Shannon, which apprehends it as form without meaning, and we also use it in the other sense, where form means organized, embodied, and simple monads. The first use looks at how much strictures and constraints have been departed from, and the second does not need this selection from equally possible alternatives (arbitrary and blind to internal constitution as it is), rather the opposite, it affirms that nothing else could be this way. If one built on that second sense, perhaps one could get at what Dembski is after, an ‘all at once’ quality of a unifying scheme, such as was proposed around the ill-named notion of ‘irreducible complexity.’ If, however, we choose to speak this language, then gone will be all talk of a formidably great amount of information (see *No Free Lunch*, p. 156-7) that forever sets this or that design

out of reach for a naturalistic incrementally-functioning selection. This 15-year-old constant flip-flop between those two different understandings becomes irritating, as M. Chu-Carroll has pointed out.

Therefore, when Dembski calls upon Shannon's diagram and treats information coming from God or some designer as though it would be popping out of their mind, he underscores how indeed information theory seems to treat every conception as though the natural order were the result of a random flip of a coin. This needs fixing, it needs putting into place of stabilizing patterns or programs, but if one looks in the direction of algorithmic information theory, one will not find there any meaningfulness of information concatenation in terms of its translatability into a program, other than the sheer factual existence of the sequence. Randomness is shaved off as being mere continuation of a random-walk-type accretion, but the program in its compressibility and repetitive character gets us a step away from the notion of information imparted from a free agent, since it seems that the only 'shape' of anything captured here would be some capturing of gross cosmic periodicity.

In the end, Dembski does not seem to recognize that Mill's method of difference works against his case, since if information is being used equivalently for man and God, something else needs to be doing the work, and this can only be a knowledge of all the interactions and all the informational relationalities that exist in the fabric of things when they respond to God's communication of form, as was meant in the traditional theory of the soul. Arguing from this viewpoint would have put the ID endeavour in the camp of philosophy, and spared us many fruitless controversies.

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