

Global Journal of Classical Theology

An International Journal in the
Classic Reformation and Evangelical Traditions

Vol. 1 / No. 1 — 9/1998

Communication as General Revelation: The Anti-Evolutionary and Pro-Trinitarian Implications of Communication Phenomena

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Introduction

In this brief paper we will be dealing with several very complex themes. The complexity of the themes and the brevity of the paper means that of necessity our treatment of these diverse issues will be cursory. My point is not to exhaust any of the subjects but to present an outline of some of my own thoughts and to elicit feedback from you all. I hope we will have an opportunity for plenty of give and take at the end of this paper.

Communicate, communism, and community all share the same Latin root: communis meaning common. Communication involves a sharing where something peculiar is imparted and made common. This exchange requires a generalized connectedness that may be expressed in any number of ways. Inanimate objects like rooms can communicate with one another. Disease can be communicated between organisms, as can information. But in whatever form communication occurs, it is predicated on having something in common.

Like communication, the word "information" is also of Latin origin and suggests the internalization of a pattern in the Platonic sense. Hence, the communication of information between two organisms involves something abstract.¹ Signals and signs inform, although an obvious connection between the signal and the information it conveys is by no means necessary. For example, the way a dog holds its tail tells other dogs and me something about that dog's emotional and mental state. This ability to transmit information about emotional and mental states implies some level of community between dog and dog and between human and dog. For communication to occur between humans and dogs, we must be able to imagine to

1. Organisms is a significant word here. The communication of information between computers is more like the communication of a disease. Nothing abstract is shared. Instead „bits“ common to the one machine are transferred to another.

some degree what it is like to be a dog, and we may suppose that a dog in some way intuits what it is like to be a human. This ability to intuit secures the appropriateness of response and is based on empathy.

It is important to distinguish here between effect and response. While cause and effect may appear to be the same as stimulus and response, they are fundamentally different. An effect is invariable. A response is not. A response implies not effect but affect, a feeling or emotional state, or an imaginative construct upon which one acts. Response expresses inwardness, a disposition, an idea, or most generally a combination of these factors. When effective communication occurs at the information level, the signal of one being is accurately interpreted by another being and appropriately acted upon. Effective communication requires highly integrated patterns of stimulus and response.

The question addressed in this paper is: can genetics alone establish communicative common ground? This question is important for two reasons. First, it has evolutionary implications. The theory of evolution has always been a theory about relationships, relationships where shared qualities are assumed to be based on descent. Such qualities of relationship have always been recognized, even when applied to life forms. After all, Linnean taxonomy precedes evolutionary theory. But, in the case of life forms, they were thought, prior to Darwin, to express something essential in nature itself. For those who believed the doctrine that all was created by God, the similarities between different species revealed the hand of their Maker. As Francis Bacon put it, to study nature was to think the thoughts of God after him. But with Charles Darwin's *On the Origin of Species by Means of Natural Selection* (1859) all that changed. Rather than appealing to essentialism, evolution supposes that similarities between life forms are similarities of descent. Creatures resemble one another not because they express archetypes or reveal the mind of God but because they share a common ancestor. As Daniel Dennett pointed out in the early chapters of *Darwin's Dangerous Idea*, by appealing to kinship evolution does away with essentialism.² However, as we have just observed, the communication of affective

2. This emphasis on relationship makes evolution a fundamentally historical theory, hence an aside by a historian might be of interest here. In historical research relatedness though important is insufficient to establish connection. For example, cultural parallels, many of them striking, have convinced some archeologists that there must have been significant pre-Columbian contact between the New and Old Worlds. Detailed similarities between the forms and decorations of the pottery of the Valdivia culture on the northern shore of Guayas Province in Peru and the early Middle Jomon culture in southern Japan imply some connection between these people though how such contact may have been secured two-and-a-half millennia before the birth of Christ remains an open question. (For a discussion of such similarities and what they imply see *Prehistoric Man in the New World* edited by Jesse D. Jennings and Edward Norbeck [The University of Chicago Press, 1964], particularly the essays by Robert Wauchope „Southern Mesoamerica“ and Alfred Kidder II „South American High Cultures“.) In the same way, John W. Emmert's 1889 discovery at Bat Cave on the Little Tennessee River of a small piece of light-tan siltstone inscribed with letters bearing a striking resemblance to a type of paleo-Hebrew used in the first and second centuries AD have occasioned some speculation that there might have been a connection between the Woodland-

states also suggests some level of commonality. If the theory of evolution understood as descent with modifications caused by random genetic changes cannot account for communication, we have reason to suppose the theory is false or at least inadequate. Second, since communication is such a widespread phenomenon, it may express something essential about fundamental reality and hence have something important to tell us about God.

Part I: A statement of the problem

Michael J. Behe, Associate Professor of Biochemistry at Lehigh University in Pennsylvania, has argued in *Darwin's Black Box* (The Free Press, New York, 1996) that the extraordinary complexity of those biochemical processes comprising a cell are compelling evidence for design and hence for a Designer. Pointing out that these processes resemble Rube Goldberg machines, Dr. Behe reasons that since they do nothing until all their components are fully in place, it is impossible to imagine how natural selection could have created them from simpler processes since effective simpler processes do not exist. He calls his argument the argument from irreducible complexity. I think his insight is a powerful one and I would like to apply it to communication phenomena. Mutations are autonomous but communication involves community. Hence, communication, like biochemistry, is irreducibly complex. Given such complexity, it is not easy to imagine how communication could be created contingently and via autonomous mutations.

This, it seems to me, is the crux of the problem: while we might imagine how a genetic mutation could change the behavior or appearance of an organism, it is not easy to imagine how such a change could provoke another organism to respond appropriately, yet such a condition-specific response is exactly what communication requires. It also follows that the difficulty in imagining how a genetic mutation could create both a change in one organism and a response to that change in another organism suggests that communication may transcend genetics.

To illustrate: suppose a mutation in a butterfly caused it to perch on a branch and open and close its wings at regular intervals thereby sending a "signal" to others of its kind. Unless those others responded appropriately to this behavioral innovation (let us say they attempt to mate with the signaler), the "signal" would not be a signal at all, merely an non-productive waste of effort or worse be a "signal" to predators. We can imagine how randomness might generate unproductive effort but how can it generate productive response to what would otherwise be unproductive effort? Yet if evolution is true, such randomly generated communication must have been exceedingly common since communication itself is exceedingly common. Indeed

period mound builders of central North America and the Jews of Roman occupied Palestine. (See *Biblical Archaeology Review* July/August 1993, Volume 19, No. 4, „Did Judean Refugees Escape to Tennessee?“ by J. Huston McCulloch and „Let's Be Serious About the Bat Creek Stone“ by P. Kyle McCarter, Jr.) But most scholars dismiss such suggestions as simply too implausible to be taken very seriously. Similarities even when remarkable must be weighted against a host of other factors.

communication is so common it would appear to express something fundamental to nature. That fundamental quality, I would argue, is community. Something in nature seems predisposed to organizing unrelated elements into meaningful patterns, and communication points starkly to the existence of that something.

Part II: Room for a soul

Life, complex, abundant and sexual, can exist without being aware and without communicating. This tells us that while life may be a prerequisite for awareness and communication, those abilities are not automatic consequences or expressions of life, even of complex life. Something more is required and at a minimum it would seem to be something connected with protein and the nervous system. This insight has inspired scientists like Tilly Edinger and Harry J. Jerison to attempt to trace the evolution of consciousness by measuring the endocranial casts or endocasts of fossilized animals and living species. Dr. Jerison writes, "[T]he mind and conscious experience [are] constructions of nervous systems to handle the overwhelming amount of information that they process. Intelligence...is a measure of the capacity for such constructions."³ Believing that brain size provides a rough key to intelligence, Dr. Jerison proposes a three-tiered model for brain evolution in vertebrates. On the first tier are fish, amphibians and reptiles. Birds and mammals occupy the second, and the genus *Homo* stands on the third tier alone with dolphins. Having proposed such a scenario, however, what impresses Dr. Jerison, and what must impress his readers, is the very conservative nature of brain evolution. Major jumps in brain size have occurred only twice: once between reptiles and birds and mammals with mammals developing a neocortex birds lack, and once between mammals and humans and dolphins.⁴ Furthermore both of these jumps occurred quite late in the fossil record. The fossil evidence should cause us to wonder if intelligence (which Dr. Jerison understands as a measure of consciousness) really conveys significant survival benefits since it developed so slowly.

While the correlation between consciousness and neural tissue might seem self evident, there are those who doubt that the presence of brains, even fully developed human brains, are necessary signifiers of consciousness. The rationalists of the

3. Jerison, Harry J., *Evolution of the Brain and Intelligence* (Academic Press, New York and London, 1973), Part I „The Approach“, Chapter 1 „Brain, Behavior, and Evolution of Mind“, p.4.

4. I should point out that Richard Leaky and Roger Lewin in *The Sixth Extinction* (Doubleday, New York, 1995) read Jerison as adding a third leap driven by the competition between ungulates and carnivores and occurring about sixty-five million years ago (Chap. 6 „Homo sapiens, the Pinnacle of Evolution?“, p. 95). Jerison discusses this in Part IV „Progressive Evolution of the Brain“, Chap. 13 „Progressive Tertiary Evolution: Ungulates and Carnivores“ in *Evolution of the Brain and Intelligence* but in my opinion does not give it the same weight as the other three. Of this advance he writes: „The progressive evolution of the brain can almost be characterized by a single word, ‚diversification.‘... [T]he brain evolved in a way appropriate to behavior within a particular niche... But the brain did not evolve in an exuberant way. It has been a ‚conservative‘ organ.“ (p. 318) Indeed, the conservative nature of brain evolution is the problem.

seventeenth century famously believed that animals were no more than robots, and today there are those who argue that consciousness is a recent cultural construct. One of the best known defenders of this position is Julian Jaynes of Princeton University who in *The Origin of Consciousness and the Breakdown of the Bicameral Mind* argues that civilization and literacy were developed by nonconscious beings whose volition came from a "god voice" (itself nonconscious) that had evolved in the right hemisphere of their cerebrums. He believes consciousness emerged only with a cultural crisis in the second millennium BC, a crisis that was exacerbated by the earlier invention of writing, but he does not think this change was global. He suggests instead that the appearance of consciousness was spontaneous, local, and uneven and that only recently has its triumph been secured. Indeed he supposes the conquistadors were able to so easily subdue Mesoamerican civilizations because the Amerindians who built those civilizations were little more than automatons.⁵ Obviously Prof. Jaynes believes that consciousness conveys some survival benefits, but, as in the case of Dr. Jerison's theory, those benefits are not immediately obvious. Certainly if Dr. Jaynes is right, only a tiny fragment of the world's protoplasm has ever achieved consciousness, and that achievement is uneven and, considered from an evolutionist's perspective, contemporary. In other words, consciousness is something of an anomaly. We should not have expected evolution to have produced it.

Another aspect of communication which bears on the problem we are considering is our experience of self as being in some sense unified. It is the isolation of the single self which makes communication necessary and so marvelous, but what exactly is this self? Does it have objective or only subjective and in some sense illusory existence? Richard Dawkins has described biology as "the study of complicated things that give the appearance of having been designed for a purpose."⁶ The operative word for Prof. Dawkins is of course appearance. His study and the philosophy he has embraced while conducting that study convince him that teleology is no more than appearance and that design and purpose are the outworking of randomness over vast periods of time. If it is possible for biological processes over time to produce organisms that appear to have been designed, is it also possible for them to produce a self that only appears to be unified?

Daniel Dennett believes it is. He argues in *Consciousness Explained* that there is no

5. Jaynes, Julian, *The Origin of Consciousness in the Breakdown of the Bicameral Mind* (Houghton Mifflin, Boston, 1976), Book Two „the Witness of History“, Chapter 1 „Gods, Graves, and Idols“ He says: „The unsuspecting meekness of the surrender has long been the most fascinating problem of the European invasion of America. ... It is possible that it was one of the few confrontations between subjective and bicameral minds. ... Not subjectively conscious, unable to deceive or to narrativize the deception of others, the Inca and his lords were captured like helpless automatons. And as its people mechanically watched, this shipload of subjective men stripped the gold...“, p. 160.

6. Quoted by Johnson, Phillip E., *Darwin on Trial* (InterVarsity Press, Downers Grove, Illinois, 1991), Epilogue „The Book and Its Critics“, p. 168.

Cartesian Theater where all information is integrated, that instead consciousness is the creation of subprocesses distributed throughout the brain that constantly produce Multiple Drafts of external events. As William Calvin has described it:

[T]here is no place in the brain where an executive sits, receiving reports and issuing orders. ... The real me is a little bit of everywhere in there. It's a committee of nerve cells.⁷

This insight rests upon the work of Santiago Ramon de Cajal who a century ago first realized that rather than being a continuous net, the brain was composed of discrete units. To date experiments conducted to unravel the phenomenon of visual awareness have confirmed the expectations of Professors Dennett and Calvin. What we experience as unified vision seems to be the product of several subprocesses that have no obvious connection to one another.⁸ And, as Dr. Semir Zeki points out, this strongly suggests that there is no central point for integrating information.⁹

What we have is a situation where current scientific speculation proposes neural processes that, though apparently unconnected, generate one's experience of unified vision and one's sense of being a unified self. The irony is that the door the researchers and theorists have opened leads directly to the room of the soul. Daniel Dennett for his part is very clear about this. He is forced to posit a soul but interprets it in mechanistic terms. It is, he says, the final result of the actions of millions of tiny robots. A "soul" is generated by them and ends when their action ceases.

Prof. Dennett spends so much time trying to explain away what he calls "the ghost in the machine" because recent scientific experiments have made that ghost so apparent. The unthinkable has occurred. Science has in effect demonstrated the necessity of a soul. What materialists like Daniel Dennett must do is explain that discovery away. Yet Prof. Dennett wrestles with questions he is never able to fully resolve. Why should unconscious robots create consciousness? Why should independent processes lose themselves in an illusion of unity? And why does consciousness involve any sense of self at all?

Considered from an evolutionist's point of view life could have evolved successfully and never become conscious. After all, as we have seen, consciousness seems to have only limited survival value and may even be imagined as a very recent phenomenon. Indeed, even the development of a nervous system proved no guarantee for the evolution of intelligence. The brain, as Dr. Jerison has shown, is a very conservative organ. Yet consciousness beings who can communicate elements of that consciousness to other beings are everywhere. Indeed, communicative

7. Calvin, William H., *The River that Flows Uphill* (Macmillan Publishing Company, New York, 1986), Day 6, p. 160.

8. The September 1992 special „Mind and Brain“ issue of *Scientific American* details the experiments leading to this surprising conclusion.

9. Crick, Francis, and Koch, Christof, „The Problem of Consciousness“, *Scientific American*, September 1992, p. 158.

consciousness is so common most people assume it exists across the universe. Such communicative unified consciousness is, I submit, the expression of soul. I also submit that rather than being the final result of the actions of millions of tiny robots, soul is the agent which integrates that action. And finally I submit evolutionists have convincingly if unwittingly demonstrated how extremely unlikely the evolution of soul was.

Part III: The Instability Factor

Since Darwin evolution has generally been conceived as the outcome of adaptation to a local environment. Such local adaptations, Daniel Dennett tells us, are the sources of evolutionary progress.¹⁰ Hence evolution has a deterministic and a random quality to which one can appeal to account for both the rich variety and the intricate order of life. Though evolution draws its raw material from random mutations, that randomness is shaped by the balance of nature, a balance implying that environmental stasis is the norm. This perceived stasis is one of the key components to evolution's deterministic side. It provides mutations with the stability necessary to establish themselves. In the Darwinian model competition among individuals of the same species was the primary engine behind the origin of species. Hence change was assumed to occur very slowly.

However, recent studies have suggested that environments are far more dynamic than the static "balance of nature" model suggests. Hence evolution, if it is occurring on the grand scale necessary to make the theory a viable alternative to creationism, must be reimagined to include factors that far transcend local environments. According to Richard Leakey and Roger Lewin in *The Sixth Extinction*, evolution is fueled not only by adaptations to local environments, but also (and more powerfully) by the internal dynamics of ecosystems that behave chaotically, and by history itself, a history, they point out, that is fundamentally contingent and can involve global catastrophes like collisions with massive comets as well as more local disasters like epidemics. In other words, what we see as stasis is ephemeral and emerges out of a far higher degree of randomness than has previously been appreciated. One of the consequences of this discovery is that evolution is essentially unpredictable, placing it outside the realm of traditional science. A second consequence, and one that is for the moment of more interest to us, is how this randomness impacts community and communication.

Michael Behe's irreducible complexity argument is two pronged. First, it makes the point that the molecules and chemical reactions of life are not only tremendously complicated, they cannot be simplified and still be effective. Hence, it is not easy to imagine how they could have evolved from more simple processes. Second, one

10. Dennett, Daniel C., *Darwin's Dangerous Idea* (Simon & Schuster, 1995), Part II „Darwinian Thinking in Biology“, Chap. 10 „Bully for Brontosaurus“, p. 308.

would assume from their complexity that the evolution of such processes, if it did occur, would require vast amounts of time. This second point is what the new picture of chaotic or dynamic nature subverts.¹¹ Instead of incremental development, the fossil record indicates that new forms of life appear suddenly during periods of instability and then maintain themselves relatively unchanged during periods of stability. The implication is that rather than breaking down orderly arrangements, instability is inexplicably the source of new expressions of order and that these forms appear quickly.

It seems to me that in the origins debate between essentialism and descent, the evidence as we have it today strongly favors the essentialist side. Order, even in its highly complex forms, would seem to be a fundamental rather than a contingent element to the universe, otherwise disorder would not be the vector of new and complex patterns of order. And of course essentialism, associated as it is with ontological universals, is the philosophical handmaid of natural theology.¹² So clearly has chaos theory established the essentialist position that James Gleick claims the reality of final cause is firmly established by Darwinism.¹³ And if Darwinism plus chaos theory have reintroduced Aristotle, we should note that Plato, too, has won reconsideration among mathematicians and logicians. Roger Penrose identifies Kurt Godel, the Austrian mathematician whose theorem demonstrated the centrality of intuition in mathematics, as "a very strong Platonist."¹⁴ And Penrose himself believes that mathematical truth transcends algorithms and that consciousness is essential if only to judge which algorithm is generating true statements.¹⁵ He writes, "I believe...that our consciousness is a crucial ingredient in our comprehension of mathematical truth."¹⁶ Interestingly he makes this claim only two pages after referring to the teleological dimension of evolution.

Part IV: The evolution of language

We referred earlier to the conservative nature of brain evolution. The cost of having a brain is one explanation for that conservatism. As we saw, complex sexual life can

11. Leakey and Lewin in *The Sixth Extinction* use the terms dynamic and chaotic interchangeably, basing the meaning of those terms on chaos theory.

12. For a very brief statement to this effect see Michael H. Macdonald's article „Essence“ (pp.365-366) in *Evangelical Dictionary of Theology* (Baker Book House, 1984), Walter A. Elwell, Editor.

13. Gleick, James, *Chaos* (Penguin Books, 1987), Chap. 7 „The Experimenter“, p. 201.

14. Penrose, Roger, *The Emperor's New Mind* (Penguin Books, 1991), Chap. 4 „Truth, proof, and insight“, p. 113.

15. *Ibid*, Chap. 10 „Where lies the physics of mind?“, p. 412.

16. *Ibid.*, p. 418.

generate abundance without benefit of a nervous system. Adding a nervous system conveys an absolute cost without absolute guarantees. If the cost is low enough, relative guarantees may compensate for it, but the biological cost of nervous tissue is high. The high cost of maintaining that nervous system coupled with its relative and diminishing returns explains the conservative nature of brain evolution.

Let us apply this insight to the current scenario proposed for human evolution and what it suggests about the evolution of language. I will borrow heavily here from the scenario sketched in Daniel Dennett's *Consciousness Explained* since he attempts to deal with the problem from a purely Darwinian standpoint.

Dennett begins with the proposition that considered genetically chimpanzees are our closest kin. He then argues from both genetic and fossil evidence that our line and that of the chimpanzee diverged approximately six million years ago. Two-and-a-half million years later our ancestors stood erect. While this change in posture had no appreciable effect on the size of our ancestors' brains, we can imagine that it left their hands free thus increasing the potential for tool manipulation. Another million years elapsed. Then in something over two million years our ancestors' brains swelled to their current size. Amazingly Dennett for theoretical reasons believes that this increase in brain size was not accompanied by language development, cooking (implying no real mastery of fire), agriculture, or any of those things we associate with higher intelligence.¹⁷ It seems to have been an increase in potential, nothing more. From a Darwinian standpoint this scenario introduces a huge problem: what was the value at the time of this extraordinary advance? What forces selected for this unprecedented increase in potential?

To drive the point home, consider what Dr. Sherwin Nuland says concerning the human brain, its size and complexity, and the cost it imposes on the body. Dr. Nuland begins by pointing out that much of the structure of the human brain with its ten billion neurons and sixty trillion synapses is unique to our species.¹⁸ He then writes:

Though three pounds [the weight of the brain] represents a mere 2 percent of the body weight of a 150-pound person, the quartful of brain is so metabolically active that it uses 20 percent of the oxygen we take in through our lungs...Fully 15 percent of the of the blood propelled into the aorta with each concentration of the left ventricle is transported directly to the brain.¹⁹

In other words, Darwinists like Daniel Dennett expect us to believe that the human brain which is four times larger than the brain of a chimpanzee, which puts

17. Dennett, *Consciousness Explained*, Part II „An Empirical Theory of the Mind“, Chap. 7 „The Evolution of Consciousness“, pp. 189-190.

18. Nuland, Sherwin B., *The Wisdom of the Body*, Chap. 12 „Mining the Mind: the Brain and Human Nature“, p. 327.

19. *Ibid.*, p. 328

tremendous metabolic demands on the body, and which is vastly intricate and unique to our species, evolved in a little more than two million years from an ape's brain, an ape's brain which had served quite adequately for three-and-a-half million years and still serves our nearest genetic relatives quite well. How random natural selection could have accomplished so wonderful a feat when the huge, hungry, and unique brains offered no obvious survival value, Prof. Dennett boldly leaves to our imagination. Once this evolution was completed about 150,000 years ago nothing else happened for over a thousand generations until our ancestors discovered how to control fire, then evolved some kind of language, and finally about ten or fifteen thousand years ago began to domesticate animals and plants.

In the middle of this century Susanne Langer, a Whiteheadian who was also interested in the origin of language and consciousness, pointed out that language is universal among human groups and that even among those which have what she calls "the simplest of the practical arts," there are no archaic languages. All are fully and complexly present.²⁰ She also suggests that language developed rapidly as members of our sociable species began to use sounds to name objects²¹, a scenario reminiscent of the second chapter of Genesis. Both she and Daniel Dennett believe for theoretical reasons that before language ability could develop, all the mental equipment had to be in place. Current science supports their surmise. Antonio R. Damasio and Hanna Damasio, a husband and wife research team at the University of Iowa, write: Language seems to have appeared in evolution only after humans and species before them had become adept at generating and categorizing actions and at creating and categorizing mental representations of objects, events and relations.

They go on to suggest that this process is recapitulated in infant development.²² The point, that conceptualization preceded the evolution of language, makes sense. Before speaking, one should have ideas to express. But this also suggests that language as we know it is neurologically distinct from communication per se since the purpose of language is precisely the accurate communication of complex concepts. Indeed, the model proposed by the Damasios is profoundly teleological and leaves us wondering how the three interacting sets of neural structures which the Damasios believe process language in the brain could evolved through natural selection.

Part V: Conclusion

20. Langer, Susanne, *Philosophy in a New Key* (Mentor Books, New York, 1951), Chap. 5, p. 99.

21. *Ibid.*, pp. 118-120.

22. Damasio, Antonio R. and Hanna, „Brain and Language“, *Scientific American*, September 1992, p. 89.

It is time to summarize our points and draw our conclusions. First, we have suggested that the commonness of communication implies community as a fundamental reality in nature. Second, we have also suggested that at least theoretically community and communication may be more basic than consciousness and that consciousness itself might be a construct of community, either a community of interacting neural structures or of human culture. Third, we have pointed out that brain evolution as revealed in the fossil record seems to have been very conservative, a phenomena which casts doubt on the selective advantage not only of intelligence but more particularly of higher intelligence. Fourth, we have posited communication as an example of irreducible complexity and hence as something that probably did not evolve from simpler processes. Having described communication as an example of irreducible complexity, we have attempted to distinguish between simple communication and human language and have stressed the teleological implications in the origins of human language. And fifth, we have argued that irreducible complexity along with a new awareness of the chaotic dimensions of nature and an increased appreciation of the role of intuition in mathematics point to essentialism rather than kinship as a more viable explanatory paradigm of origins.

The world as it appears today is not the world Darwin and his nineteenth century champions would have anticipated. It is a world where life evidences far more variety than would have probably occurred through descent with modification. It is also a world where natural systems are far more chaotic than Darwin, convinced by Charles Lyell's uniformitarianism, was willing to allow. It is a world where order and community are generated in the midst of these chaotic systems, a world where knowledge is predicated on intuition and empathy, a world where community and intuition together make communication possible, a world which requires soul. Hence, it is a world made more intelligible by essentialism than by inheritance, and a world which appears far more likely to have been fashioned by a purposeful creator than to have evolved randomly out of chaos. Finally as the artifact of a creator, it is a world which reveals things about its creator. I believe that communication as an example of irreducible complexity is revelatory.

What would communication as an example of irreducible complexity tell us about a Designer/Creator? It would tell us that community and communication might be an essential aspect of that Designer/Creator.

How might community and communication as an essential aspect of a Designer/Creator impact our creation dogma? Many religions lack an adequate doctrine of creation. Hinduism and Buddhism, for example, posit life's purpose as an escape from illusion and a return to Brahma or Nirvana but leave opened the question of why the original illusion was generated or expressed. Judaism and Islam (see Sura XIII) offer a solution to the mystery of creation by assuming creation glorifies God, but they leave open the question of why a perfect monotheistic deity would choose to create, or why, having created, would make himself available to his creation.

Christianity solves this problem. Like Judaism and Islam, Christianity supposes that God is glorified and revealed through His creation, but, unlike Judaism and Islam, Christianity via the doctrine of the Trinity makes such a glorification comprehensible. By presenting God as essentially communal and loving, Christianity unveils creation as a natural outflow of God's communal love. And since God's love is the highest love, our glorification of God becomes a communication in love and rebounds to our benefit. Of course this communication is secured for us by the sacrifice of Christ who via his Holy Spirit draws us into communication with God. As Andrew Murray observed:

When the Father gave the Son a place next to Himself as His equal and His counselor, He opened a way for prayer and its influence into the very inmost life of Deity itself.²³

Finally, the Christian doctrine of the Trinity offers an explanation for why communication is so common. Communication in creation is rooted in communication within the Godhead, and creation, spoken into existence by God, is an icon of the mind of God. As John tells us: In the beginning was the Word, and the Word was with God, and the Word was God.

23. Murray Andrew, *With Christ in the School of Prayer* (Whitaker House, Springdale, Pennsylvania, 1981). Chapter 17 „Praying in Harmony with God,“ p. 128.