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God, Neo-Symbiosis, and the Unlearning of the Social Darwinist Narrative

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GOD, NEO-SYMBIOSIS, AND THE UNLEARNING OF THE SOCIAL DARWINIST NARRATIVE

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The evidence for symbiosis as a mechanism in evolution suggests that nature is not only competitive in the Darwinist sense, but also inherently creative and cooperative. The author grounds the concept of God's transformative power within this scientific mechanism of symbiosis, and argues against competition as the dominant social metaphor.

Our age is retrospective. It builds the sepulchres of the fathers. It writes biographies, histories, and criticism. The foregoing generations beheld God and nature face to face; we, through their eyes. Why should not we also enjoy an original relation to the universe? Why should not we have a poetry and philosophy of insight and not of tradition, and a religion by revelation to us, and not the history of theirs?

--Ralph Waldo Emerson

This essay tells a story about God. Specifically, it is a story about how science changed peoples' understanding of God's role in history; how the interpretation of scientific evidence forced God out of history; and how new scientific evidence can open the way for God's return to history. This is an interdisciplinary story. First, it tells history, because people learn the most meaningful lessons about themselves, when they encounter their own history. Second, it discusses science, because we live in an age when it is perilous either to accept or deny completely what science teaches. Finally, it explores religion, because, in the act of theological reflection, we can discover for our age what Emerson sought for his: revelation *to us*. These three disciplines do not appear in any particular order. They interact with each other throughout the essay, which is how they must interact in our lives if they are to teach us what it means to be fully human.

We tell history less to know the truth about what has happened, and more to articulate what we believe is true about ourselves. This species of history that lies

at the borders of mythology involves artistry and politics. An artistic endeavor, the telling of history seeks a deep understanding of the human condition. What does the past tell us about ourselves and our way of life? In answering these questions, history becomes metaphor, appealing to our innermost passions and values. Yet, as politics, history serves the often hidden purposes of the historian. Factual evidence is filtered through the historian's interpretive lens, so that the past appears to validate the present, when in reality, present conditions have been used to construct the past. Our great historical narratives inspire us to think boldly and creatively, and simultaneously enclose us in the social and cultural systems they uphold. History's drama brings us dangerously close to the precipice beyond which chaos reigns, and then calls us back to safety--to order.

Christian salvation history is one such narrative. For more than 1,700 years, from the time the New Testament was written, its message that God acts in history was the dominant narrative for Western society. The Luke-Acts composite is the New Testament's most cogent telling of this narrative. It divides history into three epochs. First, the time of the law extends from God's creation of the Earth, and foreshadows the coming of Christ. Second, the brief time of Jesus witnesses to God's fundamental revelations: the incarnation and resurrection of Jesus Christ. Third, the time of the Church extends from Christ into

the historian's present, and makes God's revelation manifest in the Church's activities. Most versions of the salvation narrative foresee an end to time, when Christ shall return to Earth to reign in eternal glory. This narrative's artistry is its capacity to impart a sense of meaning and historical destiny to its audience. Its politics aim at upholding the authority of Church and Bible. It gives Christians the freedom to experience God's love, while simultaneously providing parameters for the experience. It intertwines science, history and religion into one homeostatic system. Science serve the intellectual needs of religion and history; history explains the meaning of worldly events in terms of divine providence; religion is the source of highest authority for interpreting history and science.

The 1859 publication of Charles Darwin's *The Origin of Species* completed what the Enlightenment had begun: the elevation of science, the removal of God from history, and the unwriting of the Christian salvation narrative. Darwin's scientific claims did not dismiss God outright. He allowed that a Creator may have breathed life into a few original organisms; but from then on, natural selection was the sole creative mechanism.¹

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Evolutionary time replaced Biblical time. Darwin's conclusion that it might require a thousand generations for one species to produce two well-distinguished varieties was ominous: clearly, the world had been around much longer than the Bible indicated. "The mind," said Darwin, "cannot possibly grasp the full meaning of the term of even a million years."² Darwin removed God from creative proximity to humanity by articulating the sheer expanse of time that

had passed between the beginning of life and the beginning of humanity. God may have been present in the beginning, but had been replaced in history by natural selection.

Evolution's implications for the future were also devastating to the principles of salvation history. Where Christians had envisioned Christ's eschatological return to Earth, Darwin saw only uncertainty:

Of the species now living very few will transmit progeny of any kind to a far distant futurity...for the greater number of species in each genus...have left no descendants, but have become utterly extinct.³

Humans would not necessarily recognize themselves in the future; nor could they legitimately claim to have a future. One thing was certain: in this narrative, Christ was not coming back. "Thy kingdom come" was still a powerful theological petition, but it carried no historical significance in the new scientific reality.

The disappearance of God from history went hand in hand with the decline of Church authority and the rise of secularism. In this context, Darwin's followers formulated a new narrative for Western society: *Social Darwinism*. Although Social Darwinism wore the cloak of science, Darwinian evolution proved too bleak an

interpretive tool for understanding society; and historical and religious imaginings soon replaced scientific rigor. The Social Darwinists never quite admitted that natural selection occurred over hundreds of generations, or that it referred mainly to the ability to reproduce.

Their version of Darwinism assumed that through competition a human being could become highly evolved within one generation. They translated Darwinian science into a dramatic story of competitive human struggle against adversity. Their twisting of Darwin's theory made the science behind it more palatable. The Social Darwinists' artistry lay in their recasting of Darwinism as a socially meaningful story, in which they identified themselves as trium-

phant masters of natural selection. The politics of this narrative lay in its affirmation of society's most rich and powerful members. One's wealth became proof that not only were Darwin's theories correct, but that the wealthy were shining examples of human progress. Those who could not see themselves reflected in this story were regarded as unfit to survive. Social Darwinism thus provided the perfect historical explanation for the rise of big business and free markets, and it became the new scientific rationale for "rugged individualism," racism, economic exploitation, and imperialism.

Natural selection also acquired religious characteristics in the Social Darwinist

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narrative. British philosopher Herbert Spencer, who coined the term, "survival of the fittest," understood evolution as a moral system. He saw the human capacity to adapt to environmental conditions as synonymous with the capacity for good; non-adaptation was the root of all evil.⁴ Nature, he felt, sought to eliminate those who were not morally capable, as they constituted a drain on society's resources. If the poor were not fit to survive, he wrote, then perhaps it was best that they die.⁵ In the United States John D. Rockefeller explained evolution as a law of God, while Andrew Carnegie used it to replace his old religion. Carnegie said, "Not only had I got rid of theology and the supernatural, but I had found the truth of evolution."⁶ Science, history, and religion--though truncated--had reached a new homeostasis in the Social Darwinist narrative. In this new system, the counterpart for God was a competitive, individualistic spirit who sought to control or vanquish society's weakest members.

Although Social Darwinism's most ruthless Spencerian form was gone from the American scene by World War I, Richard Hofstadter argued in 1944 that a resurgence of Social Darwinism was always possible, as long as an element of predacity existed in society; scientific critiques of Darwin's theories would have little impact on social thought, because "survival of the fittest" was fixed in the public mind.⁷ Today this narrative still resonates deeply in society. We may think "survival of the fittest" is inhumane, but no idea has yet challenged the stability of the Social Darwinist homeostasis. God remains in exile from history, replaced by a compassionless, pseudo-scientific notion.

The scientific basis for a new narrative--one that can bring God back into history--has already been established: *symbiosis*. University of Massachusetts microbiologist Lynn Margulis has been the primary theorist behind *symbiosis* for more than thirty years. She defines *symbiosis* as "the living together in intimate association of different kinds of organisms."⁸ In studying the microbial world Margulis has shown in a myriad of ways how microorganisms do not always compete for survival; rather, they frequently join together, creating wholly new organisms to meet environmental challenges. The evidence for *symbiosis* as a mechanism in the creation of species suggests that *Nature is not only competitive, but also cooperative and creative*. *Symbiosis* thus subtly complements and expands Darwin's theory of evolution.

For an example of *symbiosis* as an evolutionary process, consider the relationship between eukaryotes and mitochondria. All eukaryotes--organisms with nucleated cells, such as humans, animals, plants, and fungi--depend on mitochondria in their cells to process oxygen and convert nutrients into energy. Interestingly, the DNA in mitochondria is more akin to the DNA of certain free-living bacteria than to the DNA in the nuclei of their home cells. This is evidence that in

our evolutionary past mitochondria were free-living bacteria that, over time, came to merge with nucleated cells, creating the oxygen-processing metabolism common to all eukaryotes today.⁹

Symbiosis is not limited only to such microbial mergers. There are many ex-

amples of "intimate associations" in Nature that illustrate symbiosis, such as the relationship between insects and flowers in pollination. This leads to a tempting question: Is the cooperative principle in symbiosis

an example of divine revelation in Nature? Not at all. The claim that symbiosis manifests God's actions has been made before, but it is no different than the Social Darwinist search for moral guidance in Darwinian science. Margulis would agree; she is known for her criticisms of those who equate symbiosis with spiritual forces. Nor does symbiosis constitute evidence that cooperation and competition are respectively good and bad; competition is too important a biological force for such a sacred-profane dualism to take hold. Symbiotic cooperation, like Darwinian competition, is foremost a scientific theory that informs us about evolution. We should not succumb to the temptation to see it otherwise.

We encounter God only when we remember that science in the form of basic knowledge is insufficient to account for our whole experience of reality. To learn how symbiosis might inform us about God, we must situate it in relation to history and religion. I call this project *neo-symbiosis*. What narrative would we tell if we interpreted the past in terms of cooperation and creativity rather than competition? How might this narrative intersect with our religious lives? In answering these questions, it is not enough just to tell stories about teamwork. Nobody disputes the value of cooperation, yet Social Darwinist competition remains operative in our lives. Truly to change peoples' attitudes about how best to order their lives, this narrative must

self-consciously dismantle the tenets of Social Darwinism, so that a balance between competition and cooperation can be achieved. Such is the task of the neo-symbiotic narrative.

What better way to begin imagining neo-symbiosis than to tell a neo-symbiotic

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story? It begins with the revolutionary success of antibiotics in fighting infectious diseases. The rise of antibiotics was often described in Social Darwinist terms: humans increased their ability to survive by adapting to an environmental threat. In the process of our adaptation, we demonized bacteria, much as Herbert Spencer demonized the poor a century earlier. However, winning this struggle produced hidden medical costs. In 1953, biologist Helen Coley Nauts noted:

[N]eoplasms [cancerous tumors] have been observed to regress following acute infections, principally streptococcal. If these cases were not too far-advanced and the infections were of sufficient severity or duration, the tumors completely disappeared and the patients remained free from recurrence.¹⁰

Similarly, in 1950, M. J. Shear of the National Cancer Institute observed that seventy-five percent of the spontaneous remissions in untreated leukemia at Boston's Children's Hospital occurred following an acute bacterial infection. He went on to ask, "[I]n making progress in the control of infectious diseases, are we removing one of Nature's controls of cancer?"¹¹ Until now the medical world has never answered this question, because to do so would be inconsistent with its Social Darwinist view of bacteria.

John Pawelek of Yale University has begun to rethink the demonization of bacteria. He offers the following answer to

the queries of Nauts and Shear: *progress in the control of infectious diseases very likely did eliminate one of Nature's controls of cancer, namely, bacteria.* In an unpublished article, "Tumor-Targeted Salmonella as a Novel Anti-Cancer Vector," he describes his success in using bacteria to suppress growth of human melanoma tumors in mice.

Pawelek found that properly engineered salmonella can selectively infiltrate tumors, reproduce, and retard tumor growth. They can also deliver anti-cancer proteins to tumors.¹² As with fire or water, what is perceived as an enemy in one context may be an ally in another. Bacteria can wreak havoc in human bodies, but the Social Darwinist belief in their inherent badness isolates us from their contribution to a larger, healing reality. Though far from complete, Pawelek's work suggests that the human body can cooperate with bacteria--that bacteria symbiotically become part of our immune response to cancerous tumors.

There are three elements that make this a neo-symbiotic narrative. First, there is a lived experience of cooperation and creativity. The story above features cooperation between humans and bacteria, creating the possibility of a new approach to treating cancer. Neo-symbiotic partners work with each other, helping each other, learning from each other. Their act of coming together, whether a physical merger or a sharing of skills or ideas, creates something new: it may be a new organism; it may be a new concept. Note that the lived experience of cooperation does not have to be symbiotic in the strict scientific sense. Symbiosis simply provides the natural model for neo-symbiotic cooperation.

Second, neo-symbiosis locates itself in history. For example, the story above presents Pawelek's work not only in his scientific terms, but as the emergence of a new approach to medical healing, after forty years of Social Darwinist misunderstanding of bacteria. The artistry of the neo-symbiotic narrative lies in its capacity to make cooperation historically meaningful. Its political aim is to problematize Social

Darwinism so that some authority is transferred to cooperation. It does not allow us to value cooperation in word and then practice competition in deed. It illustrates how we avoid cooperation at our peril.

Although science does not permit us to view symbiosis and Darwinian competition as opposite extremes on a moral spectrum, history takes greater liberties. To make history relevant we must find our moral lives reflected in it. As we move from Social Darwinism to neo-symbiosis, we unabashedly attach moral significance to each, making competition morally subordinate to cooperation. The neo-symbiotic narrative thus gives the comforting sense that history is moving toward cooperation.

Third, neo-symbiosis presents new possibilities in religious discourse and experience. It does so by begging a question that science and history can only partially answer: What is self? For example, are bacteria that can enhance our immune response to cancer part of our self or not? Where Darwinian competition upholds the self, encouraging independence, symbiosis suggests that self is an illusion. It regards self as a composite, a merger of once distinct organisms, and always merging further.¹³ To admit that the living self is an inherently dynamic and expanding incorporation of organisms means letting go of the differentiated self we know. Here the limits of science merge naturally with religion. In wrestling with the fuzzy boundaries of self, we begin to speculate about our true nature and purpose. We wonder: If we choose to let go of self, what will we become? We find ourselves dangerously close to the precipice beyond which chaos reigns. Letting go requires faith that in relinquishing self, we become contributors to a creative process that ultimately transforms us for the better. In letting such faith guide our lives, we stop valuing our competitive isolation and start cultivating creative relationships. In these relationships we bring what is best in ourselves to the creative process, and we make ourselves open to what others bring. It is almost paradoxical that in moving

beyond the "completeness" of self, we encounter a sense of wholeness that the self alone cannot attain.

From the realization that neo-symbiosis supports an abiding faith in the power of creative relationships, we may come, if we choose, to the reemergence of God in history. For in placing our faith in mutual creativity as the source of transformation, we stumble upon God. Twentieth-century theologian Henry Nelson Wieman suggests how this might happen. Wieman examined the natural world for an experienced reality that is beyond our control, yet involves us in our own redemption. He found this reality in the Creative Event, which he identified as God. The Creative Event has four sub-events. First, the individual becomes aware of qualitative meaning extending from another organism. Second, this new meaning is integrated with the individual's old meaning. Third, the individual's capacity to appreciate the world is increased. And, finally, there is a widening and deepening of community among all participants.¹⁴ The Creative Event itself always takes precedence over an individual's stated conception of truth. That is, one does not experience God in isolation, but in creative process with others. When human beings choose to come together in cooperative relationship, God moves among them as creativity, and yields transformation.

This does not mean that neo-symbiosis requires a theological position, nor does it automatically proclaim the reemergence of God in history. Wieman's approach to creativity is one of many we could incorporate into the neo-symbiotic narrative. Nevertheless, where competition leads us further into ourselves, neo-symbiotic cooperation leads us beyond ourselves into unknown space and time. This can be difficult and frightening. In claiming with Wieman that God is creativity, we give a name to that experience of selflessness at the center of the neo-symbiotic narrative. We enter the space between ourselves and other organisms, not knowing what may become of us, but believing that God/Creativity will transform us. This neo-symbiotic faith

liberates us from the competitive stress of Social Darwinism, giving us the freedom to embrace cooperation and creativity as new organizing principles for our lives.

At the base of the neo-symbiotic narrative is science's revelation that Nature is cooperative. Symbiosis is the evidence our minds crave for the legitimate writing of a new narrative. It provides the much-needed metaphor to make our new history resonate deeply in our hearts. And its challenge to the self is the catalyst for a new faith in creativity that nourishes our souls. Neo-symbiosis thus encompasses a reconfiguration of science, history, and religion, such that we may encounter God acting anew in history.

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⁷*Ibid.*, p. 203.

⁸Margulis and Sagan, p. 64.

⁹*Ibid.*, pp. 62-63.

¹⁰Nauts, p. 5.

¹¹Shear, p. 390.

¹²Proper engineering virtually eliminates the pathogenicity of the salmonella. Treated mice in Pawelek's study lived twice as long as untreated mice. See Pawelek, Low, and Bermudes.

¹³Margulis and Sagan, p. 66.

¹⁴Southworth, pp. 41-42.

Endnotes:

¹Darwin, pp. 116, 123.

²*Ibid.*, p. 117.

³*Ibid.*, p. 122.

⁴Spencer, pp. 9-80.

⁵*Ibid.*, pp. 414-415.

⁶Hofstadter, p. 45.

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