

Chapter 5

HILDEGARD AND 21st CENTURY SCIENCE

Hildegard Meets Einstein

Recently I co-led an evening in the Episcopal Gothic Grace Cathedral in San Francisco with cosmologist Brian Swimme and organist Maryliz Smith. The theme of the evening, which was intended to be a contemplative event, was “Hildegard of Bingen Meets the New Cosmology.”

Swimme had recently released his film *The Journey of the Universe*, which has played on over 325 PBS stations around the United States and recently won an Emmy. Including fundraising and filming, the creative project had absorbed much of his time and energy over a nine-year period—not an introverted scientist’s primary love! Though he was exhausted from the experience, it was he who proposed the evening at the cathedral. Because he finds much in Hildegard that recharges the soul, he told me that even the idea of such a contemplative event imparted renewed life and energy.

One motivation for the occasion was to mark the 30th anniversary of his and my first meeting with Dr Thomas Berry—the “geologist,” now deceased, with whom Swimme has written a major work entitled *The Universe Story*, and who was an invaluable mentor to Swimme and many others, myself included. It was at my Institute of Culture and Creation Spirituality at Mundelein College in Chicago that Swimme, Berry, and I

first met up. As Swimme remembered, the day I met Berry, I launched into a discussion of Hildegard since I was writing my book of her illuminations. Immediately Berry responded in kind. He was the first living human being I had met who knew Hildegard.

I'm convinced that many scientists would enjoy knowing Hildegard, finding in her a valuable sister, just as Swimme and Berry have. Many of Hildegard's teachings are in tune with some of the most important findings of today's science. Let us consider some of these points.

1. *A Cosmological Perspective and a Love of the Cosmos*

We saw in chapter two what a pivotal role cosmology and the Cosmic Christ plays in Hildegard's worldview, and how physicist David Bohm talks about a knowledge of the "whole" that characterizes postmodern science. Hildegard was on a constant quest for a sense of the whole.

Because the whole and the cosmos furnished the entire *context* of her theology, how excited she would be to be studying the new cosmology! How pleased she would be to see faith-seekers moving from an overly *psychological* approach to religion, to a deeper and far more expansive *cosmological* approach. How thrilled she would be to discover the depth and wonder of the new cosmology, thanks to today's science.¹

The 20th century saw an explosion of awareness of the universe. For Newton, the universe was only 50,000 years old and there was but a single galaxy. In his worldview, the universe was fixed and completed. How much we have learned since then about the unimaginable size, age, and continuing expansion of the universe! We inhabit a cosmos that contains at least 100 billion galaxies—some guess as many as 500 billion—and has been 13.7 billion years in the making. Our universe has been creative from the get-go. Beginning smaller than a zygote, it has expanded creatively all this time. Since all beings in the universe had their beginning in that original moment of flaring forth, all beings are kin. Today every school-child knows these amazing facts that Newton never knew.

Of course, Hildegard didn't know these facts either. However, she intuited some of them insofar as she, unlike Newton, didn't take a fixed, cold, mechanical clock as the model for her universe. Instead she paints the universe as an *egg*, and of course an egg is an incipient being that bespeaks beginnings, growth, and evolution. It also has a nest-like quality—so we might think of the universe as our nest, our home. Further, an egg is obviously a feminine image, since it gives birth to the life growing within it. An egg also holds great promise, in that it's the genesis of a new being and signals new beginnings. And an egg is organic, found everywhere in nature. Within an egg is a dynamic balance—a state of homeostasis, representing the justice that allows life to flourish. Also present is a passion for life. The elements of Hildegard's day—earth, air, fire, water—are integrated into her painting of the egg of the universe.²

Later in her life, Hildegard dictated three other cosmic visions of the universe as a sphere.³ In her later life, scientists pictured the universe as a sphere, and she was clearly paying attention to them. Most important in Hildegard's depiction of the universe is the fact that she felt the cosmos was essential to an understanding of medicine, psychology, ethics, and religion. Unlike so many theologians of the modern era, so mired in anthropocentrism and cut off from cosmology and science, as mentioned earlier she casts her entire theology not in terms of *psychology* but in terms of *cosmology*. In her holistic view, we are citizens of the universe, not just of man-made institutions. Indeed, Hildegard's world-view encompasses the microcosm and the macrocosm. Today we understand as she did that our psyche is based on our relation to the universe and to all beings within it. Indeed, Carl Jung believed this holistic approach to be the psychology of the future.

Today's creation story begins with the "fireball" or "flaring forth" that occurred 13.7 billion years ago. Curiously, Hildegard writes and draws pictures of what she calls "fireballs" that enter the human baby when we are born. As she explains, "A fireball possesses the heart of this child... The fireball rules the entire body just as the firmament of heaven contains lowly things and covers celestial things and also touches the

brain of the person. The fireball...pours itself through all the limbs of the person and gives the greenness of the heart and veins and all the organs to the entire body as a tree gives sap and greenness to all the branches from its root.”⁴ Today’s science tells us the original fireball is present in our brain when photons light up with new ideas, and also in the process of photosynthesis, the greening of the plants. Thus when we eat plants, fish, or other creatures, we are ingesting “fireballs” that are descended from the original fireball.

2. About Light and a Cosmic Religious Feeling a la Einstein

As we also saw in chapter two, light plays a significant role in Hildegard’s experience of Spirit, God, and life itself. Like Hildegard, Einstein was mesmerized by light and once said that all he wanted to do his whole life long was to study it.

In a remarkable book by a friend of Einstein in his days in Germany, who like Einstein emigrated to America, Einstein reveals more of his thinking about religion and spirituality. Sociologist and poet William Hermanns, in his book *Einstein and the Poet: In Search of the Cosmic Man*, relates an exchange Einstein had with a fundamentalist preacher who spent two hours trying to convert him to Jesus as his “lord and savior.” It was during this encounter that Einstein articulated his view of healthy versus unhealthy religion.

Like Hildegard, Einstein connects science and the spiritual experience of awe, explaining, “There is no true science which does not emanate from the mysterious. Every thinking person must be filled with wonder and awe just by looking up at the stars.”⁵ It was this sense of awe and wonder that nourished Einstein from a young age, as he testified after being accused by the fundamentalist preacher of having “no respect for miracles.”

Einstein’s reply to this accusation is instructive: “You are mistaken. I have marveled often in my life. As a boy of twelve I already marveled at Euclid’s geometry. Of course, what I thought was superhuman or miraculous was soon nothing but logical thinking added to experience. Still, I

marvel every day, and it is my faith in the order of creation which makes me marvel. When I do so, however, I use logical thinking to find out why.”⁶ The ability to marvel coupled with the intellect is immensely important to Hildegard.

Hildegard marvels every day, which is why reading her work and hearing her music arouses wonder and awe, causing us to marvel. She also fully endorses our intellect or “left brain,” for there’s nothing anti-intellectual about Hildegard. As we saw earlier, she insists that “our greatest treasure is a living intellect,” explaining that “all science comes from God.” Like Einstein or any scientist, she holds study up for engagement. Indeed, study is a kind of prayer or meditation, for through it we learn to focus as we learn more about creation and therefore more about God and ourselves. Study can be a spiritual practice just as work is in the Benedictine tradition.

Hildegard calls Christ “Holy Rationality” and teaches that humans understand “all things” because we possess rationality.⁷ Professor Kienzle recognizes that Hildegard identifies the “Word” or Logos as rationality: “She uses rationality here as the Son of God the *Logos*, but also as the rational faculty in the human being.”⁸

When Hildegard teaches that the word is rationality and “God is rationality,”⁹ she is saying that our employment of rationality is something “holy.”¹⁰ Indeed, rationality “leads the human being’s five senses to God’s righteousness.”¹¹ We employ rationality when we study the scriptures.¹² Thus we can see that for Hildegard as for Einstein, awe and knowledge, mysticism and intellect, aren’t at odds but are companions on the journey.

Einstein says, “In the face of creation I feel very humble. It is as if a spirit is manifest infinitely superior to man’s spirit. Through my pursuit in science I have known cosmic religious feelings. But I don’t care to be called a mystic.”¹³ Obviously Hildegard isn’t shortchanged in the cosmic religious feeling department either. It leaps off the page in her writings, her music, and her poetry.

Einstein talks about mysticism when he says “there is a mystical drive

in man to learn about his own existence... I believe that the dignity of man depends not on his membership in a church, but on his scrutinizing mind, his confidence in his intellect, his figuring things out for himself, and above all his respect for the laws of creation.”¹⁴ He also endorses the mystical when he stresses that “it is not intellect, but intuition which advances humanity. Intuition tells man his purpose in this life...”¹⁵ He continues, “One never goes wrong following his feeling—I don’t mean emotions, I mean feeling, for feeling and intuition are one.”¹⁶

Hildegard would agree wholeheartedly. Feeling and intuition constitute the mystical dimension of our minds. They aren’t at the expense of a “scrutinizing mind” or confidence in our intellect, however. Intuition and knowledge are in a dynamic dance, enjoying a dynamic relationship with each other.

3. Values and a Cosmic Religion a la Einstein

Einstein calls for a “cosmic religion” that will put conscience above allegiance to nationhood or religious institutions. “The most beautiful Church for me is the church of conscience, found in the silence of one’s own presence,” he proclaims. “A cosmic religion is the only solution—then there will be no more Church politics of supporting the mighty at the cost of the human rights of the poor.”¹⁷

Einstein was reacting to the utter immorality of churchgoers in the Nazi era: “When I think of the tragic behavior of the German intellectual elite—famous scholars, ministers, and priests, generals [and many of them churchgoers, like Brauchitsch, Rundstedt, and Rommel!] I can only say that the welfare of humanity must take precedence over loyalty to one’s own country or to one’s church. I repeat, we need a cosmic religion.”¹⁸ A cosmic religion is post-tribal and post-anthropocentric.

Einstein resists rationalism and the idolatry of the intellect when he says, “Warn people not to make their intellect their god. The intellect knows methods but it seldom knows values, and they come from feeling.” What are Einstein’s prime values? “If one doesn’t play a part in

the creative whole, he is not worth being called human. He has betrayed his true purpose.”¹⁹ So our true purpose is to participate in the creative whole. As Einstein confesses, “I believe in one thing—that only a life lived for others is a life worth living.”²⁰ Einstein and Hildegard are truly on the same page in this, for she talks about the two dimensions to being human, which are praise and the carrying out of good works: “It is in praise and service that the surprise of God is consummated.”²¹

Einstein focuses on *vocation* when he talks about finding one’s call or true purpose. Hildegard is living out hers and urges us to do the same. Speaking personally, Einstein says, “I have only one interest: to fulfill my purpose here where I am. This purpose is not given me by my parents or my surroundings. It is induced by some unknown factors. These factors make me a part of eternity. In this sense I am a mystic...those unknown factors mold our inner self.”²²

The minister I mentioned earlier asked Einstein whether he had faith in a life to come, to which Einstein replied, “No, I have faith in the universe, for it is rational. Law underlies each happening. And I have faith in my purpose here on earth. I have faith in my intuition, the language of conscience, but I have no faith in speculation about Heaven and Hell. I’m concerned with this time—here and now... We don’t need to worry about what happens after this life, as long as we do our duty here—to love and to serve.”²³ Hildegard would agree that intuition is the language of conscience, that a life lived for others is a worthy life, and that we are here to love and serve, for “God gave to humankind the talent to create with all the world...the good deeds shall glorify, the bad deeds shall shame.”²⁴

“One thing I know about my God,” reported Einstein, is that “he makes me a humanitarian. I am a proud Jew because we gave the world the Bible and the story of Joseph. As long as I live, I will try to save lives.”²⁵ Elaborating on his faith, he continued, “Judaism is not so much a creed as it is an ethical code that sanctifies life... I am concerned with this life... Shouldn’t we do good for the sake of doing good, and not because we fear punishment or hope for reward in a life to come?”²⁶

Einstein also provides us with insight into his understanding of the nature of God when he explains, “My religion is based on Moses: Love God and love your neighbor as yourself. And for me God is the First Cause. David and the prophets knew that there could be no love without justice or justice without love. I don’t need any other religious trappings.”²⁷ Hildegard would be on the same page with Einstein about love of God and neighbor, though her personal choice may be different when it comes to religious practices.

Einstein criticizes the bellicosity of America: “The atomic question is not so much a scientific as a moral one, you know. It disturbs me that, even though the atomic age is here, people still don’t want to change their mode of thinking. Also, when I look around I see a new slavery for the individual developing in the United States. Everything seems to be in preparation for war rather than peace, glorifying the warlike spirit to cope with the Russian threat. This capitalist interest in armament production reminds me of the conspiracy of the Krupps and others with Hitler. War industry is a source of wealth. These industrialists owned castles, land, and yachts.”²⁸ The situation has become worse since Einstein’s day. Militarism rules, and fat paychecks for industrialists and profiteering Wall Street speculators have blossomed during the past ten years of wars in the Middle East, for example. Offshore tax havens abound.

In her day, Hildegard also criticized the bellicosity of humans and writes of apocalyptic visions she had in which “the course of time will hold up warlike people. They will wage many wars, but forget to think about the righteousness of God during those wars.” But “these kingdoms will eventually begin to run into the weariness of feebleness” and a “son of destruction” will arise and deceive many. He is the antichrist, who “is the worst beast. He destroys people who deny him. He joins himself to kings, dukes, leaders, and wealthy ones. He presses down humility and lifts up pride. He subjects lands to himself with diabolical craft. His power goes forth right up to the edge of the wind so that he can stir up the air. He leads fire out of the sky with flashes of lightning, thunder, and

hail. He throws down mountains. He dries up water... He never ceases deceiving people... So many will be deceived when they cover over their inner eyes. They should have looked at me (God) with their inner eyes."²⁹ The "inner eye" denotes consciousness, surely, as well as discernment and intuition.

If we look at the state of our world today, is not the war machine sapping the creative energy of nations? Are not people losing their jobs, their homes, and even going hungry, while billions are spent on wars that don't seem to resolve the issues at the root of the conflicts?

Hildegard personifies the unconsciousness of humanity by speaking of it as the "antichrist," as if it were a single individual—an image from the Book of Revelation. However, just as the Christ isn't a term restricted to the individual Jesus of Nazareth, but is divine consciousness seeking to come alive in all humans, so too the antichrist is the spirit of militarism, environmental destruction, and oppression that is rife in our world today.

Hildegard continues, "The son of destruction—the antichrist—works the deceits of his own crafts in the elements. He makes the beauty, sweetness, and pleasantness of the elements appear exactly according to the wishes of the person he is deceiving... Whatever the son of injustice works, he does it by power, pride, and cruelty—not with mercy, humility, and discretion. He uses majesty and astonishment to rush people along so that they will follow him... The antichrist shows people treasures and riches and allows them to feast according to their own wills."³⁰ The allurements of power and riches that accompany the warlike souls will prove hard to resist—just as Einstein predicted.

When Hildegard speaks of using "majesty and astonishment," I think of the arrogance of the expression "shock and awe," words that figured in the American administration's strategy at the time of the U.S. invasion of Iraq in retaliation over 9/11. The desire to impose our political and economic systems upon others—the impulse to have the whole world follow us in our ways—is, in Hildegard's view, an aspect of the spirit of antichrist.

4. *The Importance of Science and Imagination*

Einstein states that “science without religion is lame and religion without science is blind. They are interdependent and have a common goal—the search for truth. Hence it is absurd for religion to proscribe Galileo or Darwin or other scientists. And it is equally absurd when scientists say that there is no God... Without religion there is no charity. The soul given to each of us is moved by the same living spirit that moves the universe.”³¹

Einstein insists that “imagination is more important than knowledge,” something he knows from experience. It happens that his brilliant breakthrough with regard to the speed of light came essentially from an act of imagination when he was sixteen years old. He imagined what it would be like to ride on a photon—and from this his relativity theory was deduced! Hildegard too puts imagination and creativity out front, for it’s the path to wisdom as distinct from mere factual knowledge. It constitutes the “greening” of our souls and of our work.

5. *Interdependence*

One of the lessons drawn from postmodern science is the ancient teaching of the interdependence of all things. This too represents a break with Newton and other modern thinkers who emphasized a kind of rugged individualism—a billiard ball theory of atoms, wherein only the independent survive. In contrast, today’s insights are all about interdependence—how we’re all connected, since all matter came into existence as a result of the original fireball.

Hildegard teaches interdependence as well. “God has arranged all things in the world in consideration of everything else,” she declares.³² There is an arrangement, a give and take, a system of interdependence everywhere we look, from oceans to forests, galaxies to black holes, planets to moons. Furthermore, Hildegard assigns this interdependence to the Holy Spirit at work within the interior of things when she says, “O

Holy Spirit, you are the mighty way in which every thing that is in the heavens, on the earth, and under the earth, is penetrated with connectedness, penetrated with relatedness.”³³

I want to draw your attention to the fact that not only is connectedness—relatedness—to be found everywhere, but it’s found deep *within* things. All are “penetrated” with connectedness and relatedness, as

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“Holy Spirit, you are the mighty way in which every thing that is in the heavens, on the earth, and under the earth, is penetrated with connectedness, penetrated with relatedness.”

Hildegard puts it. Such interconnectivity is within nature itself, manifest within every being in nature.

In other words, not the *ding-an-sich*—not substance—lies at the heart of reality, but relationship. This is feminist philosophy. It’s also what Meister Eckhart taught 150 years later—the idea that “relation is the essence of everything that exists.” It’s

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what science is learning about the world of the microcosm and the macrocosm, which matches the teaching of indigenous people who honor “all our relations” when they pray.

Physicist Fritjof Capra put it this way: “Subatomic particles have no meaning as isolated entities, but can only be understood as interconnections between the preparation of an experiment and the subsequent measurement. Quantum theory thus reveals a basic oneness of the universe. It shows that we cannot decompose the world into independently existing smallest units. As we penetrate into the matter, nature does not show us any isolated ‘basic building blocks’, but rather appears as a complicated web of relations between the various parts of the whole.”³⁴

Interdependence is also the bedrock of compassion. The Catholic monk Thomas Merton observed, “The whole idea of compassion is based on a keen awareness of the interdependence of all these living beings, which are all part of one another and all involved in one another.” If compassion lies at the heart of both Einstein’s ethic and Hildegard’s, then here too we find common ground.

Hildegard talks frequently about the “web of creation,” as does today’s physics. Capra comments, “In the new world view, the universe is seen as a dynamic web of interrelated events. None of the properties of any part of this web is fundamental; they all follow from the properties of the other parts, and the overall consistency of their mutual interrelations determines the structure of the entire web.”³⁵ Hildegard is surely on board with this further application of the principle of interconnectivity when she says, “Humanity finds itself in the midst of the world. In the midst of all other creatures humanity is the most significant and yet the most dependent upon the others.”³⁶