Some Idiosyncratic Remarks on the History of Uniqueness as a First Principle and First Value

Marc Gafni with Howard Bloom[1]

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This is an early draft of this essay.

A later version of the essay will be part of the forthcoming *The Universe: A Love Story* series.

[1] Drawn from conversations between Marc Gafni and Howard Bloom.

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A Short History of the Evolution of Uniqueness Through Matter, Life, and Mind

This history of uniqueness originally emerged in a series of conversations between Marc Gafni and Howard Bloom from 2018 to 2022. The general topic of the conversations was *Cosmos and Meaning*, and we occasionally would come to the topic of *uniqueness* as a model of First Values and First Principles.

We then explored where we would locate the disclosure of the value of uniqueness in Cosmos. We have retained the informal nature of the exchange of information for the ease of the popular reader.

For the purpose of this writing, we intend only a short history of uniqueness. There are several words indicating different qualities or dynamics in early Cosmos, which all point to uniqueness. These words include, of course, *uniqueness*, but also words and dynamics like *group identity*, *us/them competition*, and *personality*.

Introduction: A New Story of Value in Response to the Meta-Crisis

Decades of research and study have led us to the conclusion, as we will briefly unpack below, that only a New Story of Value can avert unimaginable suffering or worse and change the vector of history towards ever-deepening expressions of the Good, the True, and the Beautiful. As perceptive historians point out, history changes when a compelling New Story [hi-story] emerges that changes the vector of cultural evolution.

Indeed, it is only a New Story that has the capacity to change the course of history. Technology matters. But the story we tell about technology matters as well. Exponential technology matters. But the story we tell about exponential technology matters exponentially more.

Without such a new, shared, evolving Story of Value, our capacity to escape unbearable suffering and, based on hardheaded analysis, even extinction seems, from a human perspective, unlikely. The results of not being able to articulate a New Story of Value are excruciating, both

in the level of suffering for billions of human beings, as well as the entire life system—and, more than even all that, for the trillions of lives that will remain unborn.

All of the past depends on us to fulfill its dreams.

All of the present depends on us to live.

All of the future depends on us to be born.

The overall purpose of this volume, *Some Idiosyncratic Remarks on the History of Uniqueness as a First Principle and First Value*, and the other volumes of the Great Library of CosmoErotic Humanism that this volume is part of, is to provide a first articulation of this New Story of Value in the domain of relationship, which, as we will see below, is the core structure of Reality itself.

CosmoErotic Humanism

CosmoErotic Humanism is a world philosophical movement aimed at reconstructing the collapse of value at the core of global culture. Much like Romanticism or Existentialism, CosmoErotic Humanism is not merely a theory but a movement that changes the very mood of Reality. It is an invitation to participate in evolving the source code of consciousness and culture towards a cosmocentric *ethos* for a planetary civilization.

CosmoErotic Humanism addresses three core questions: *Who? Where? What?*

- *Who am I? Who are we?* [Narrative of identity]
- *Where are we?* [Universe Story]
- *What is there to do? What do we want? What is our deepest heart's desire—both personally and collectively?* [Eros and *ethos*]

This movement is a strong, fluid, and emergent response to the meta-crisis, fundamentally understanding that existential and catastrophic risks are not just rooted in flawed infrastructure (technological and other systems), social structure (law, education, politics), but primarily in failed superstructure—specifically the collapse of an implicit, shared worldview, what we call a *shared Story of Value rooted in evolving First Principles and First Values as a context for our diversity*.

The core of CosmoErotic Humanism is therefore a new Story of Value rooted in First Principles and First Values that integrates the validated insights of the interior and exterior sciences—across premodern, modern, and postmodern thought—ultimately recasting cosmic evolution as a Story of Value, in which our stories are understood to be chapter and verse in the larger narrative arc of Reality—the CosmoErotic Evolutionary Love Story of the Intimate Universe.

These evolving First Principles and First Values embedded in a Story of Value are grounded in a comprehensive set of meta-theories, encompassing psychology (and a theory of self), epistemology, scientific metaphysics, education, ethics, theology, mysticism, sexuality, Eros, and *ethos*.

CosmoErotic Humanism offers some of the first words on the possible emergence of world philosophies and world religions adequate to our time of civilizational crisis and transformation—rooted in a universal grammar of value as a context for our diversity, weaving humanity into a shared story of inherent yet evolving Cosmic Value.

The Great Library of CosmoErotic Humanism

The monograph you are reading right now is part of a large cultural project, a kind of global genome project, which focuses not on human genetics or genes but on the cultural memetics or memes that animate and define Reality.

We call this *the Great Library Project.*

The purpose of this Great Library Project is to initiate a new Renaissance, which integrates the leading edges of human wisdom, from the traditional, premodern period, the

modern era and the postmodern moment, into a New Story of Value, which evolves the source code of culture and consciousness.[2]

At the core of this New Story of Value are a new Universe Story and a new narrative of identity, which we have called *CosmoErotic Humanism* and *Homo amor*. The essence of the new Universe Story and the new narrative of identity derive from the story of *I* and the story of *We*. This volume is focused on a pivotal dimension of the New Story of Value—the First Principle and First Value of Uniqueness.

[2] The New Story of Value, which we have called CosmoErotic Humanism, is already evident in short form in the titles to multiple sets of forthcoming volumes. The first set of five volumes are called *Evolution: The Love Story of the Universe—First Meditations on CosmoErotic Humanism—In Response to the Meta-Crisis.* A short version, a kind of short recapitulation of the five volumes, is entitled *From Homo Sapiens to Homo Amor: In Response to the Global Intimacy Disorder—The Meta-Crisis.* Those volumes are then complemented by three additional volumes revolving around what we call the *Intimate Universe*. The Intimate Universe and what we have called the *Tenets of Intimacy* are in effect a particular door in. Their titles are: *The Intimate Universe: Global Intimacy Disorder as Cause for Global Action Paralysis—From the Global Intimacy Disorder to the Intimate Universe and the Evolution of Intimacy* and *CosmoErotic Humanism—Toward the New Human and the New Humanity*, and finally, *Homo Amor—The Tenets of Intimacy and the Social Miracles*, all by David J. Temple. Complimenting these two sets of volumes are two volumes exclusively devoted to the reconstruction of value—a New Story of Value embedded in First Principles and First Values—at the center of culture. One is already published, and the second is in preparation. Their titles are: David J. Temple*, Forty-Two Propositions on CosmoErotic Humanism: First Principles and First Values of Evolving Perennialism—A New Metaphysics—Post-Tragic Memories of the Future* (2023) and David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism: Introducing the Anthro-Ontological Method.* See also the four-volume *Meditations on the New Narrative of Desire* by Dr. Marc Gafni, Barbara Marx Hubbard, and Dr. Kristina Kincaid, as well as *God Loves Stores: First Notes on the Ontology of Story and the Narrative Arc of Reality*. There are also two other key short volumes, both of which are equally important. The first short volume is entitled *Global Intimacy Disorder as Cause for Global Action Paralysis: What the World Looks Like Sans First Principles and First Values* and the second volume *From Conspiracy Theory to the Great Conspiring of Reality—Information as Intimacy: Healing the Broken Information Ecology*. Their topics are self-evident in their titles, so we will add but a word. In the first short volume, we paint a stark but highly realistic vision of the system collapse that will likely emerge if we fail to articulate and download a New Story of Value into culture. In the second short volume, we talk about the destruction of information as intimacy, and the destruction of the information ecosystem we need to be fully human, which is a direct result—again—of the failure to articulate an accurate Story of Value, which points towards some of the inherent plotlines of the drama of Cosmos—a drama in which human beings are today—more than we have ever been at any previous stage in history—the leading actors on the stage. All of these volumes taken together, articulate the key next steps, grounded in our earlier work over the last twenty years, in telling the emergent Story of Value, the *New Story*—rooted in the exterior and interior sciences—or the Universe: A Love Story. Together, these books form what we are calling *the New Story of Value*, in response to the meta-crisis. David J. Temple is a fictional personality created for enabling ongoing collaborative authorship at the Center for World Philosophy and Religion. The two primary authors behind David J. Temple are Marc Gafni and Zak Stein. For different projects specific writers will be named as be part of the collaboration.

The Ontology of Story: Story Is the Structure of the Real

Postmodernity argues that Reality is *merely* a story, that no story is better or worse than any other story, and that stories are but social constructs, fictions, or figments of our imagination.[3]

But of course, postmodernity is not only deconstructing the ontology, or Reality, of Story, but also the ontology, or Real Nature of Value.[4]

These deconstructions of Story and Value are true but partial. It is true that there is a plentitude of stories we tell about Reality, and that Story is the underling unit that constitutes Reality. But it is not true that Story is mere fiction. There is a plentitude of stories, not because there is no Real Value or Meaning, but rather because there is a plentitude of Value and Meaning.

Story is the structure of the Real. This is what we have referred to, in other contexts, as the *Ontology of Story*. Story itself is the source code, not only of culture and consciousness, but of all of Reality all the way down and all the way up the evolutionary chain.[5] It is for that reason that to evolve the Story is to evolve the source code.

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[3] See, for example, our colleague Yuval Harari, who explicitly embraces this postmodern view of story through his writing on history. See for example, Harari, *Sapiens*, Chapter 2 and *Homo Deus*, Chapter 7, where he explicitly writes that all stories are but social constructs, fictions, and figments of our imagination, and that no story is intrinsically better than any other story. A second important source, which, like Harari, is reflective of the leading-edge embrace of postmodern deconstruction into the fabric of society is Irvin Yalom's classic *Existential Psychotherapy*, where he understands story in precisely this manner.

[4] Ibid, Harari and Yalom, who both embrace the deconstruction of value as well.

[5] We have written elsewhere of Story as a First Principle and First Value of Reality that runs all the way up and all the way down the evolutionary chain. There we discuss the four core elements of story that define all stories—whether at the level of matter, life, or the depth of the self-reflective human mind. These four elements of story include: 1) Events that are not merely random but inherently connected in their unfolding. 2) The story has *telos* or direction—what we have called *plotlines*. 3) The plotlines are driven by inherent value and the desire for more value. 4) There is some degree of freedom in the story. See David J. Temple*, Forty-Two Propositions on CosmoErotic Humanism: First Principles and First Values of Evolving Perennialism—A New Metaphysics—Post-Tragic Memories of the Future* (2023) and David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism: Introducing the Anthro-Ontological Method.* See also, our five-volume set on *Evolution: The Love Story of the Universe—First Meditations on CosmoErotic Humanism—In Response to the Meta-Crisis.*

Emergent from the recognition of the Ontology of Story is the recognition that we live in inescapable narrative frameworks—Stories of Value—which define the nature and quality of both our personal and collective human lives.

Stories are not merely randomly contrived conjectures. Rather, stories are attempts to gather information, interior and exterior information about the nature of Reality, and translate it into a coherent Story of Value.

Not all stories are equal. There is a hierarchy of stories. In other words, there are better and worse stories.

> *A better story takes deeper account of more meaning or information, exterior and interior, and weaves that meaning and information together in the most elegant, good, true, and beautiful fashion.*
>
> *A better story is aligned with more and wider Fields of Value, even as it integrates more contradictions into greater wholes.*
>
> *A better story weaves a narrative thread that articulates the most coherent and compelling framework that embraces, honors, and uplifts the most-possible people.*
>
> *A better story must be not only an eternal story—aligned with eternal structures of value—but also an evolving story, aligned with the evolution of value—the evolution of love—the evolution of the Good, the True, and the Beautiful.*
>
> *A better story is an eternal and evolving story.*

We cannot trust stories that claim to be *only* eternal stories, or that claim to be ever-evolving stories with no ground in Eternity—in the Real, which is not dependent on the changing mores of time. The more deeply we investigate Cosmos, both in its exterior and interior faces,

deploying the interior and exterior sciences, the more accurate—and the better, truer, and more beautiful—story we can tell.[6]

A story with flawed, incomplete, or distorted plotlines can bring us—and indeed has brought us—to the brink of existential risk, the potential end of humanity as we know it. To respond to this meta-crisis, we need to evolve the story, which is to evolve the source code of culture itself.

What Is the Meta-Crisis?

A simple image:

Let's turn to a cultural artifact, the *Death Star* in that cinematic classic of the late twentieth, early twenty-first, century—*Star Wars*.

The Death Star is a battleship armed so intensely that it poses an existential risk—that means that it has the destructive capacity not just to attack and damage but to destroy a planet.

That's existential risk—risk to our very existence.

There are two forms of existential risk. The potential death of humanity. The death star has the capacity to destroy a planet. Or the death of our humanity. The death star has the capacity to exert totalitarian control over a planet.

The forces of good in the *Star Wars* narrative don't have the capacity to engage the *Death Star*.

Of course, both the death of humanity and the totalitarian control that would lead to the death of *our* humanity as genuine options are very different in their genealogy than the precise

[6] You may have noticed some unconventional deployments of capitalization. For instance, we distinguish between a reductionist *cosmos* and a living *Cosmos*, while also distinguishing the degraded sense of *fuck* and the Eros quality of *Fuck* through capitalization. We are also referring, for example, to all of *Reality*, *God*, *Goddess*, the *Intimate Universe*, the *Amorous Cosmos*, etc. This mode of capitalizing will continue through this and all of the correspondent volumes as both an expression of the author's emphasis and also as an invocation of intrinsic Qualities of Eternal and Infinite Value into otherwise ordinary or degraded terms.

plotline of *Star Wars*.[7] But that does not matter. The Death Star emerges in culture as a foreshadowing of both forms of existential risk.

The Death Star as a Symbol for a Culture of Death

From the deeper perspective of cultural myth and prophetic symbol, the Death Star is not one weapon. It is a culture. It is a systemic culture of death that leads to intense suffering for the majority of human beings in the present, catastrophic risk in the immediate future, and impending existential risk in the near or intermediate future.

We are now—validated by the most hardheaded analysis from multiple vectors of leading-edge policy and social analysis[8]—confronted by the Death Star in myriad vectors of distressing disguises. That is quite literally true and self-evident to anyone who has the willingness and capacity to do genuine sensemaking, which begins by reading the serious background material available beneath the headlines.[9]

There is a realization in the cinematic version—which is not about what the writers were thinking, but it is culture speaking through this epic story—that the only way to take out the Death Star is with a direct hit: A direct hit that gets through all the defenses, all the structural obstacles, and actually explodes culture into a new possibility.

This writing is about one dimension—based on decades of investigation in the interior and exterior sciences—of how we can score that direct hit.

In a word, the direct hit is a New Story of Value. For as we noted at the outset, it is only a New Story of Value that truly changes the course of history.

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[7] The death star depicts a kind of Orwellian Totalitarianism of a kind of a closed society like it is enacted today in China, for example. There is however a more ostensibly covert totalitarianism, of the kind that is now gradually disclosing its nature in open societies, what we have called in other writings *TechnoFeudalism*, which seeks to enclose the world in a planetary stack, designed and monitored for maximum control, without the controlled even knowing that their freedom was forfeit.

[8] Ord, Toby (2020). *The Precipice: Existential Risk and the Future of Humanity*. London: Bloomsbury.

[9] See Peter Zeihan, who advises energy corporations, financial institutions, business associations, agricultural interests, universities, and the U.S. military, in his book, *The End of the World Is Just the Beginning: Mapping the Collapse of Globalization*, HarperCollins, 2022. See also Ray Dalio, *Principles for Dealing with the Changing World Order: Why Nations Succeed and Fail*, Simon and Schuster, 2021.

That New Story of Value is—expressed somewhat differently—a new interior technology of culture. It is this space from which all is generated. The New Story of Value itself is generated by new insights into the nature of Self and Reality. These new insights themselves are often provoked by interior practice and contemplation, which generate the evolution of consciousness. They are also provoked however by new exterior technologies, from the plough to the printing press to the internal combustion engine to the personal computer to social media to machine intelligence driven data sciences.

This book and its sister volume is about one dimension of that New Story of Value, the emergence of a new structure of relationship. In that sense, this book is filled with hope. For hope is a *memory of the future*. And the future is called into existence by a New Story of Value.

Before we turn to the direct hit, however, we need to understand more deeply the Death Star context. When we are talking about the Death Star, the culture of death, we are talking about, as we already noted, the meta-crisis.

The meta-crisis is what we call the *second shock of existence*.[i]

The second shock of existence, of course, implies the first shock of existence, with which we will briefly begin.

The First Shock of Existence

The first shock of existence is the realization of the death of the human being; our realization that we will die, which dawns in human consciousness at the beginning of history. We are not talking about the biological fact of death but the existential realization of death.

The existential fear or dread of death begins in the prehistoric period, according to some during the hunter-gathering era,[10] and according to others when we began to have surplus food. In the second reading, it had to do with having time on our hands. We started to think about our lives. We were much less worried than the hunter-gatherers about the elephant or mammoth or

[10] According to some historians, the existential fear of death was already present in hunter-gatherer societies. David Graeber in particular has correctly problematized the linear unfolding of hunter-gatherer to farming communities on several key accounts, showing conclusively larger organized gatherings with sophisticated religions appearing in the hunter-gatherer era. See David Graeber and David Wengrow. *The Dawn of Everything*, Farrar Straus and Giroux, 2021.

lion who was going to kill us potentially this afternoon. This is the natural fear that the human shares with the animal world of biological death. But when that fear became less immediate, the fear of death did not disappear. Rather, we began to think about death not in terms of warding off an immediate threat, but in terms of what we might call *the existential fear of death*. We thought, *Oh my God, I'm going to die*. The ego structure—that we developed after we emerged from humanity's early sense of being almost coextensive with nature—became afraid. The ego sought to arrogate its intuition of immortality to itself, which in reality belonged to Spirit or Essence. The ego desired its own immortality and was therefore shocked by the reality of its impending death. *I realize that my personality, family, social status, farming community—with my relatively stable home, identity, and existence—is ephemeral. I am going to die.* This is the existential fear of death that we are calling the first shock of existence.

The first shock of existence pressed the human being into disclosing meaning. The fear of death—the encounter with mortality—generated a depth of vision and understanding of human nature that invited the human being into a larger story, where he could, at least in potential, participate in immortality. The fear of death focused our attention inside. When we went inside, we accessed in our own interiors the deepest wellsprings of the interior face of Cosmos. The fear of death generated some of the great beauties and critical movements of value—including ethics, Spirit, and religion—which originally meant *religare—to reconnect, to realign with the nature of Reality*. So, the fear of death entering Reality generated this explosion of Spirit—a Story of Value, a story about what it means to be a human being in the Cosmos. And this new Story of Value in the premodern period was almost always called *religion*.

Of course, many of us have left the old religions behind. The intuition of immortality was priceless, but the ticket price demanded by each religion was too high. Every religion claimed in one form or the other that Eternity, or immortality, was available only to its adherents and only in exchange for various forms of submission, which ranged from doctrinal, psychological, theological, political, and economic. We are children of Voltaire, who led the liberation of the corruptions of religion's many shadows with the battle cry, *Remember the Cruelties*. And those cruelties were often bound up with the ethnocentric prisms of all the premodern religions, which mediated between human beings and the Infinite.

But we threw out the baby with the bathwater. While we rejected the ways of obedience and submission that were demanded by the religions, their essential intuition—the realization of the first shock of existence, the overwhelming existential fear of death and the need to respond to it—remains powerfully resonant and true.

To transcend the fear of death, post the old religions, we need to make our life a triumph. It is only a well-lived life that does not fear death. But a life well lived is—as consciousness has evolved—no longer reducible to obedience to the dictates of a local God who is alienated from Cosmos and denies human dignity and capacity. ***Instead, a life well lived is a life aligned with what we have called in CosmoErotic Humanism the eternal yet evolving Values of Cosmos, which themselves transcend death. But it is not only about alignment with those Values, but rather about the incarnation of those Values. In incarnating the eternal yet evolving Values, which transcend death, we most naturally transcend death ourselves. For we are those death-transcending Values ourselves.***

Postmodernity, however, moved to savagely deconstruct all previous narratives of the well-lived life, meaning a life rooted in in the personal incarnation of Values aligned with Cosmos. Indeed, postmodernity claimed that the very idea of a well-lived life, a life of intrinsic value, was itself a social construction of Reality, not backed by the Universe.

The Second Shock of Existence

The first shock of existence is the realization of the death of the human being.

The second shock of existence is the realization of the potential death of humanity.

After we have gone through all the stages of history—of matter, life, and mind in all of their stages of evolutionary unfolding—we have come to this place in the evolution of humanity, in which the gap between our exterior technologies in their exponential forms—from atomic bombs to social media to weaponized drones to artificial intelligence—and our failure to develop genuine shared interior technologies of value has created extraction models and exponential growth curves, rivalrous conflicts based on win/lose metrics, as well as complicated, incoherent world systems that, together, create dire existential risk.

A New Grammar of Value as the Context for Our Diversity in Response to the Second Shock of Existence

The second shock of existence must—like the first shock—press us into new *gnosis*. And at the core of the new *gnosis* is a new grammar of value—evolving yet eternal value—with which we are aligned—and which we incarnate. Such a new grammar of value engages both the terror of death and the terror of a life lived denuded of intrinsic meaning that is backed by the Cosmos. The new *gnosis* is the articulation of a new set of First Principles and First Values, eternal yet evolving, embedded in a New Story of Value. The First Principles and First Values are the plotlines of the Universe: A Love Story. The shared grammar of value is the only possible context for a global civilization that is not self-terminating.

This is the deeper sensemaking that seeks to emerge from the second shock of existence.

We don't only need. at this moment. to be activists to heal the direct crises—be they medical crises, environmental crises, AI threats, or wars. That's for sure—no questions asked, hands down—the very first thing we need to do. We need to revision our infrastructures and our social structures. That comes before everything. That trumps everything. Anything else would be a failure of intimacy.

But we also dare not to waste the meta-crisis, or it will be the last crisis we are privileged to navigate. We must allow this moment to spur us—to press into our interiors—and invite the second shock of existence into our hearts—not in a way that paralyzes us, but in a way that inspires new levels of insight and realization—precisely the insights and realizations that will be necessary to prevent the second shock of existence from ever actualizing.

Between Utopia and Dystopia

We stand in this moment poised between utopia and dystopia.

A Time Between Worlds: A Time Between Stories

We are at a time between worlds and a time between stories. We need a New Story of Value, eternal yet evolving, rooted in First Principles and First Values, which would become a universal grammar of value as a context for our diversity.

This is exactly what the Renaissance was—it was a time between worlds and a time between stories. In the Renaissance, we were swept with and challenged by the Black Death, a pandemic that swept Europe. The Black Death destroyed between a third to half of Europe and a huge part of Asia. It killed everyone. People died horrifically, brutally, in the streets. They had no idea how to meet this challenge.

And so, in response to the Black Death, da Vinci, Ficino, and their cohorts understood that they had to tell a New Story of Value—and that story was the story of modernity.

Did they get the story right? They got part of it right, and this birthed, to use Jürgen Habermas' phrase, *the dignities of modernity*, the new way of information-gathering, and universal human rights.

To the extent that the stories disqualified interiors, deconstructed the source of value, downgraded the dignity and Eros of human nature and identity, undermined the moral coherence of human communion, and disenchanted the Universe from the rivers of the sacred that nourished its core, they gradually generated the disasters of modernity, all of which together have led us to a point where our very future is at risk.

They *lost the basis* for the Good, the True, and the Beautiful.

This basis *used* to be Divine Revelation:

God told us.

But that Divine Revelation was owned by religion, and every religion had overreached and over-claimed. The revelation was often mediated through cultural categories and wasn't fully accurate—so, modernity threw out revelation, but was unable to establish a new basis for value. Value was just *assumed* to be real; as it says in the founding document of the American revolution, the Declaration of Independence, *we hold these truths to be self-evident*—that is, we don't really have a basis for value, but we just take it *as a given*.

In other words, modernity took out a loan of social capital from the traditional world.

The source of value has never been worked out, and then, gradually, value began to collapse.

The Universe Story began to collapse.

The belief that *the Good, the True, and the Beautiful are Real* began to collapse.

The belief that *Love is Real* began to collapse.

As Bertrand Russell is reported to have said,

> *I cannot see how to refute the arguments for the subjectivity of ethical values, but I find myself incapable of believing that all that is wrong with wanton cruelty is that I don't like it.*[11]

What do you do if you grew up in a world in which Value is not Real—a world without a source of value, without a Universe Story, without a story of human identity, without a story of desire, without a narrative of power?

In the words of W.B. Yeats, *the center cannot hold*.[12]

We become *the hollow men* and *the stuffed men*, *shape without form*, *gesture without motion*.[13]

You have a collapse at the very center of society because you no longer have Eros. You no longer have a Reality in which Value is Real—and so you have this lingering sense of emptiness. You have a complete collapse at the very center—and that's the source of existential risk.

To sum up:

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[11] See *Russell on Ethics*, edited by Charles Pigden, London: Routledge, 1999, 165/*Papers* 11: 310–11.

[12] William Butler Yeats in his poem "The Second Coming":

> *Turning and turning in the widening gyre*
> *The falcon cannot hear the falconer;*
> *Things fall apart; the centre cannot hold…*

[13] T.S. Eliot in his poem "The Hollow Men":

> *We are the hollow men*
> *We are the stuffed men*
> *…*
> *Shape without form, shade without colour,*
> *Paralysed force, gesture without motion…*

Without a shared grammar of value, there is no global intimacy, and therefore no global coherence, and no global coordination in response to catastrophic and existential risk, which means—put simply—there will be, quite literally, no future.

Hope Is a Memory of the Future

But we are not hopeless. On the contrary, we are filled with great hope.

Hope is a memory of the future.

That memory of the future is the direct hit that takes down the Death Star—the culture of death.

A Direct Hit Takes Down the Death Star

What's our direct hit move in response to the Death Star?

How do we respond to imminent existential risk?

The direct hit must be—as it has always been in history—the emergence of a new stage of evolution.

Crisis is an evolutionary driver.

And every crisis is, at its core, a crisis of intimacy.

From the oxygen crisis of the single cells dying at the dawn of life on Earth, which generated a new type of cells that were able to breathe oxygen, and later the emergence of multicellular life,[14] to existential risk in this very moment, ***all crisis is a crisis of intimacy.***

We demonstrate this principle in some depth in the writings of CosmoErotic Humanism.[15]

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[14] To which we will return later in Meditation Fifty-One in Essay Three of this volume.

[15] See Marc Gafni, Barbara Marx Hubbard, and Kristina Kincaid: *Meditations on the New Narrative of Desire*: Volume One, Introduction, Meditation Thirteen: "Every Crisis is a Crisis of Intimacy" and David J. Temple, *The Intimate Universe: Global Intimacy Disorder as Cause for Global Action Paralysis—From the Global Intimacy Disorder to the Intimate Universe and the Evolution of Intimacy.*

The direct hit, therefore, is—structurally and self-evidently—to evolve intimacy itself. Intimacy is always rooted in a Shared Story of Value. A crisis of intimacy, at its core, is a crisis in value. To evolve intimacy is therefore to evolve a New Story of Value. A new—emergent—Shared Story of Value generates a new—emergent—global intimacy.

More Adequate and Compelling Interior Technologies

Another way to articulate the story we are telling:

The generator functions of existential and catastrophic risk are the direct results of the failure to develop more adequate interior technologies that are sufficiently compelling to displace rivalrous conflict governed by win/lose metrics as the motivational architecture—in myriad forms—for the human lifeworld. This has led to the conditions for the essential implosion of our social and ecological systems. These systems are already—and quite literally—on the brink of collapsing themselves.

That's what we mean by *the second shock of existence*.

To recapitulate:

The second shock of existence is not the realization of the death of the human being; the second shock of existence is the realization of the potential death of humanity. It is the second shock of existence that is the *Death Star moment* of our species.

The Global Intimacy Disorder

But there is a deeper root cause for existential and catastrophic risk that lurks underneath these important generator functions, which we articulated above: rivalrous conflict governed by win/lose metrics and the fragile systems they engender.

And we cannot take the Death Star down without discerning and addressing this deeper root cause. We have already alluded to this deeper root cause above, in our invocation of interior technologies that are sufficient to displace the *current civilizational architecture of rivalrous conflict governed by win/lose metrics, which generates fragile systems*.

But at this point, we need to make the root cause, and from that the root response, more explicit and clearer.

The deeper root cause of the meta-crisis is a global intimacy disorder.

This ostensibly surprising statement can be understood in a few simple steps:

1) All of the catastrophic and existential risk challenges we face are GLOBAL challenges—from climate change to artificial intelligence, to pandemics, to systems collapse, to the exponential arms races of exponential weaponized technologies.
2) All of these factors are driven by the *tragedies of the commons*, *multipolar traps*, and *races to the bottom*[16]—all of which are expressions of the rivalrous conflict meta-architecture, and all of which generate fragile systems subject to multiple forms of gradual or sudden collapse.
3) Every global challenge SELF-EVIDENTLY requires a global solution.
4) Global solutions can only be implemented with global co-ordination.
5) Global co-ordination is impossible without global coherence.
6) Global coherence is only possible if there is resonance between the parts—global resonance.
7) Global resonance is only possible if we have global intimacy.
8) Global intimacy—just like intimacy in a couple—is only possible when there is a shared story—not just a shared history but a shared story—guiding us into the future. It is only a shared global story that can generate a new emergent quality of intimacy—global intimacy.
9) A shared story must be a Shared Story of Value.
10) A Shared Story of Value is rooted in shared *ordinating values*, or what we have called *Evolving First Values and First Principles*. Intimacy requires a shared grammar of values as a matrix for a Shared Story of Value.

[16] The *Oxford Languages* dictionary defines a *race to the bottom* as *a situation characterized by a progressive lowering or deterioration of standards, especially (in business contexts) as a result of the pressure of competition*.

11) It is only a shared global story that heals and generates a new emergent quality of intimacy—*global intimacy*.

12) Without a shared grammar of values, there is no global intimacy, and therefore no global coherence, and no global coordination in response to catastrophic and existential risk; the latter of which means—put simply—there will quite literally be no future.

Brief Recapitulation: The Global Intimacy Disorder Is the Root Cause of the Second Shock of Existence

The global intimacy disorder is the root cause of the second shock of existence—existential risk. It is the global intimacy disorder that underlies its core generator functions as we have described them above. The global intimacy disorder is rooted in the *failure* to experience ourselves in a Field of shared intrinsic Value—a Shared Story of Value rooted in First Principles and First Values. This failure itself derives from the deconstruction of value that has been one of the defining characteristics of modernity and postmodernity.[17]

[17] We have noted in other writings of CosmoErotic Humanism that the modern and postmodern period are characterized by two paradoxical vectors, the evolution of value and the deconstruction of value. Both modernity and postmodernity are characterized by both movements—think, for example, of universal human rights and the rise of the feminine in modernity, and the reaching out to embrace and honor and protect marginalized communities in postmodernity. The evolution of value in both eras, however, was funded by social capital borrowed from premodernity—the traditional period. That social capital was the core common-sense sacred axiom that Value is Real. That loan was then deconstructed in postmodernity—which deconstructed the very Reality of Value itself as being anything more than a contrived social construct, a fiction, or a figment of our imagination.

Responding to Existential and Catastrophic Risk: Between the Death of Humanity and the Death of Our Humanity

It is crucial to locate the conversation around the Universe: A Love Story, Eros,[18] Outrageous Love,[19] and uniqueness in the larger context of the meta-crisis, or what has also been termed *existential* and *catastrophic risk*, to which this writing, in part, responds.

We have outlined, in multiple writings on CosmoErotic Humanism, two distinct forms of the meta-crisis:

The first is the pending death of humanity—some form of extinction or collapse.[20]

The second is the pending death of *our* humanity.[21]

The Death of Our Humanity Is the Death of Our Uniqueness

The death of *our* humanity is intrinsically related to the death of our uniqueness. The death of our humanity will be a result of some form of totalitarianism. Totalitarianism of all forms aims to kill uniqueness.

The murder of Winston's Unique Self may be well formulated as the plot of Orwell's *1984*.

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[18] We use the term *Eros* in a very specific way, to which we will turn later: *Eros is the experience of radical aliveness moving towards—seeking—desiring—ever-deeper contact and ever-greater wholeness.* Eros in that sense is an evolving First Principle and First Value of Cosmos—meaning, Eros as a principle and value exists all the way up and all the way down the evolutionary chain, and yet, it evolves and takes on different forms on each emergent level. E.g., Eros between elementary particles is different from Eros between cells; and the Eros between dogs is different from the Eros between human beings.

[19] In the Love Story of the Universe, we refer to Love by many different names: *Eros*, *Evolutionary Love*, or *Outrageous Love* are names for the Love that is the Heart of Existence itself. That Love is Eternal, yet always evolving. It is the Love that drives evolution. It motivates the evolution of love itself. The Universe is a Love Story—not an ordinary love story but an Outrageous Love Story.

[20] The first form of existential risk is how the term is usually understood: Existential risk as the physical death of humanity—an extinction or near-extinction event. Likewise, catastrophic risk refers to events that will cause the death or extreme suffering of large segments of humanity.

[21] The second form of existential risk is equally threatening, but more insidious, harder to see, and thus harder to understand and fear. It speaks not of the physical death of humanity, but of the death of *our* humanity as persons. Humans might physically survive, but their humanity would be lost. This might be caused, for example, by a digitally mediated environment which speaks to the lowest common denominator of the human experience and effectively generates downgraded humans without any genuine free will, noble personhood, or dignity.

It is the repressive murder of human uniqueness that defines closed societies.

But the murder of uniqueness also takes place in the more covert forms of totalitarianism, as they express themselves in ostensibly open societies. They may express themselves, for example, in various forms of ostensibly benign techno-totalitarianism—what we have called, in a full-length book bearing that name, *TechnoFeudalism*.[22]

The goal of these more subtle forms of techno-totalitarian vectors in society is often ostensibly noble. It is an expression of a kind of techno-optimism that recognizes the genuine risks that societies face and seeks to transform society through technological means for the sake of its salvation.

These ostensibly noble motivations, however, mix strangely with the precise opposite of what writers like our friend John P. Mackey have called *Conscious Capitalism*[23] or Al Gore has referred to as *sustainable capitalism*.[24] Indeed, corrupt forms of what Mackey calls *crony capitalism*[25] have disproportionate power, binding both government, media, science, and medicine to their own corrupt agendas of outsized power and dominance.

Ivan Illich, to cite but one example, in his important volume *Medical Nemesis*, describes the horror of what can only be labelled as a *medical industrial complex*.[26] At the core of the medical industrial complex, is, as we have articulated it with our colleagues at the think tank Drs. Venu and Vinay Julapalli, a top-down, command-and-control administrative system, built on the

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[22] See Dr. Marc Gafni & Dr. Zachary Stein, *TechnoFeudalism: Turning the World into a Skinner Box—The Death of Value in the Digital Age*, forthcoming. See also Dr. Marc Gafni & Dr. Zachary Stein, *TechnoFeudalism as Thanos: From B.F. Skinner to the MIT Media Lab—A Deeper Dive,* forthcoming.

[23] Mackey, John P. *Conscious Capitalism* Harvard Business Review Press; 1 edition (January 7, 2014).

[24] See, for example, "A Manifesto for Sustainable Capitalism" by Al Gore and David Blood, originally published in the *Wall Street Journal*, December 2011—https://algore.com/news/a-manifesto-for-sustainable-capitalism.

[25] See, for example, Mackey, John P. *Conscious Capitalism* Harvard Business Review Press; 1 edition (January 7, 2014), the section "The Cancer of Crony Capitalism": "While free-enterprise capitalism is inherently virtuous and vitally necessary for democracy and prosperity, crony capitalism is intrinsically unethical and poses a grave threat to our freedom and well-being. Unfortunately, our current system has the effect of corrupting many honorable businesspeople, pushing them into becoming reluctant crony capitalists as a matter of survival."

[26] It of course must be immediately declared, before even proceeding with one more sentence, that within this complex. there are tens of thousands of noble doctors, nurses, orderlies, technicians, administrative staff, and researchers, acting with their own radical integrity and self-sacrifice, inside of a broken and often corrupt system.

denial of what we have called *Unique Self Medicine*.[27] Unique Self Medicine is a medicine that speaks to and engages—medically, diagnostically, and existentially—the Unique Self of the person, in terms of their total being, lifestyle, and practice.

The tragic result of the way medicine is practiced today, disassociated from a larger set of First Principles and First Values, is the generation of what can only be described as *a culture of unnecessary suffering and death* for huge swaths of the world population.

Another, perhaps even more insidious downgrading of uniqueness is the gradually unfolding story of what has been called the *Great Reset* to describe creeping forms of techno-totalitarianism. It is of course true that the *Great Reset*, as a term and as a description, has been irresponsibly hijacked and told in wildly uneven renditions of integrity, ranging from incisive and accurate to unhinged and conspiratorial.[28] It is also true, however, that the affixing of the term *conspiratorial* to a position has itself been deployed to debunk what are in fact credible positions.

Some accurately told stories of a creeping techno-totalitarianism have been told by computer scientist Jaron Lanier in his *Ten Arguments for Deleting Your Social Media Accounts Right Now*,[29] Brett Frischman in his *Re-Engineering Humanity*,[30] and Shoshana Zuboff in her

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[27] See the article on Unique Self Health & Medicine by Drs. Venu and Vinay Julapalli: https://worldphilosophyandreligion.org/unique-self-health-medicine/. See also *Outrageous Medicine: A Love Story: On Mom, Medicine, and Me*, by V. Julapalli (forthcoming).

[28] The Great Reset Initiative is an economic recovery plan, launched in June 2020, drawn up by the World Economic Forum in response to the COVID-19 pandemic. WEF chief executive officer Klaus Schwab described three core components of the Great Reset: creating conditions for a *stakeholder economy*, building in a more *resilient, equitable, and sustainable* way, utilizing environmental, social, and governance (ESG) metrics; and *harness*[ing] *the innovations of the Fourth Industrial Revolution*. See also Schwab, Klaus; Malleret, Thierry (July 9, 2020). *COVID-19: The Great Reset*. Agentur Schweiz. See also *The Great Narrative: For a Better Future*, Klaus Schwab with Thierry Malleret. Forum Publishing (2022). Schwab also wrote the preface to a 2010 report of the World Economic Forum's "Global Redesign Initiative." In it, he postulates that a globalized world is best managed by stronger multinational institutions. The term *Great Reset* is also used to refer to attempts to introduce what is called the *New World Order*. According to that theory, the WEF is planning to replace democracy with a model where a self-selected group of *stakeholders* make decisions on behalf of the people. The Transnational Institute, an international non-profit research and advocacy think tank founded in 1974 in Amsterdam, Netherlands, states that "we are increasingly entering a world where gatherings such as Davos" are "a silent global coup d'état" to capture governance. ["Davos and its danger to Democracy," Transnational Institute. 18 January 2016. Retrieved 17 August 2021.] ***Zohar Writing

[29] See Jaron Lanier, *Ten Arguments for Deleting Your Social Media Accounts Right Now*, Macmillan USA, 2018.

[30] Brett Frischman, Evan Selinger, *Re-Engineering Humanity*, Cambridge University Press, 2018.

Surveillance Capitalism.[31] While each of those books is decisively flawed, both in the diagnosis of the social illness and therefore in the social cures they offer—as we have pointed toward in our own writing on TechnoFeudalism and Value—the general story of corruption they paint is searingly accurate.

The goal of TechnoFeudalism, in its major centers—think MIT media lab for example—is, as we have identified in careful research, the transformation of the private and public space into a kind of global Skinner box.[32] A Skinner box means the creation of a total environment where (originally) the rats or pigeons (and in the global Skinner box the humans) are controlled by invisible schedules of negative or positive reinforcement—shocks and rewards—that invisibly condition or program their behavior.

The result of this Skinner box conditioning is what B.F. Skinner calls *radical behaviorism*.

Techno-Feudalism and the Murder of Unique Self

As we have pointed out in our *Techno-Feudalism* volumes,[33] the undermining of human uniqueness—what we might accurately call *the murder of Eros* or *the murder of Unique Self*—is key to the program.

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[31] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, Profile Books, 2019.

[32] A so-called *operant conditioning chamber* (also known as a *Skinner box*) is a laboratory apparatus used to study animal behavior. It was created by B. F. Skinner while he was a graduate student at Harvard University. The chamber can be used to study both operant conditioning and classical conditioning. While Skinner's early studies were done using rats, he later moved on to study pigeons. In his novel *Walden Two*, he describes a human community that is basically designed like a Skinner box for humans. ***Zohar Writing

[33] See David J. Temple, *Reconstructing Value & Preserving Human Freedom in the Age of Artificial Intelligence: Exit the Silicon Maze Vol. 1* and *Invisible Architects: Skinner, Pentland and the Hidden Blueprints for Techno-Feudalism: Exit the Silicon Maze Vol. 2,* World Philosophy & Religion Press, 2026. See, in particular, the section "Rejecting Personhood and Individuality" in Parallel Six, which shows how both Skinner and Pentland deny the unique personhood of each individual and privilege the social as a source of meaning. For them, there is nothing inherently valuable about the person—and of course, they also deny the existence of any source or basis of value.

The MIT media lab, covertly modelling itself—intentionally and directly—on twenty-three key principles of Skinner's,[34] euphemistically calls the transformation of the world space into a Skinner box by the techno-positive term *living lab*. *The world needs to be*, says Alex Pentland, the director of the MIT Media lab for decades, *turned into a living laboratory*, where we have real time information and can insert real time *controls*, *conditioning*, and *reinforcements* to *invisibly control populations*.

For Pentland, this transformation of the world into a Skinner box will be accomplished by the *Internet of Things*. Technology is, in this scenario, which is rapidly becoming the new human context, transformed from a mere tool to an immersive environment of upgraded algorithms, which downgrades human beings.

The particular methodology of the Skinner box, the worldwide living laboratory, is—as both Skinner and Pentland point out—a multi-tiered mundane process. And that very process—as we have described extensively in our *TechnoFeudalism*—results in the murder of Unique Self.

The Hijacking and Homogenization of Unique Attention as the Death of Our Humanity

At the core of Unique Self is the unique capacity to place and receive attention.

Attention itself is a core structure of Eros. Eros itself, desiring ever-deeper contact and ever-greater wholeness, is in one sense the capacity to uniquely place and receive attention. It is that unique placing of attention and that unique receiving of attention that are uniquely alluring. There is no Eros without uniqueness, attention, and allurement.

And all of these dimensions of Reality—Eros, uniqueness, attention, and allurement—are what we have identified in CosmoErotic Humanism as *evolving First Principles and First Values* of Cosmos. They are part of a universal grammar of value, which is the context for our unique diversity as well as for our coordination—our unique intimate communions.

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[34] Ibid. The intention of our work on *Techno-Feudalism* is to unpack these twenty-three principles that are currently guiding the creation of Skinner boxes in the contemporary social context, which provide the foundation for both Skinner's work and the Social Physics of the MIT media lab. Refer specifically to the section "Living Laboratories as Euphemism for Skinner Box" in Parallel Sixteen, which unpacks all the ways both Skinner and Pentland euphemistically distort language to disguise (either consciously or unconsciously) their intentions.

All of these qualities—Eros with its attention, uniqueness, and allurement—evolve and appear in distinct form at the human level of Reality. But they are evolved Values of Cosmos itself.

It is in this precise sense that the hijacking and/or homogenization of attention—rooted in the downgrading of our capacities for unique allurement—which is the core action mode of TechnoFeudalism—are direct and deadly expressions of the death of *our* humanity.

The Hidden Scientific Bias Against Uniqueness

The undermining of uniqueness that is core to Skinner's and Pentland's techno-feudalist project is rooted in the bias against uniqueness that is built into the current structure of mainstream science.

As we noted in *TechnoFeudalism*, both Pentland and his hidden teacher Skinner are attempting in their *Social Physics*—a term deployed by Pentland but drawn from Skinner and even earlier from Auguste Comte—to imitate classical physics. And science—in particular physics, but also biology and especially sociology and anthropology—is inherently structured to overlook uniqueness. For science is always—in part appropriately—searching for statistical patterns that transcend particulars. So, science looks to generate general rules, and homogenized groups, and treats them as if every individual is equal—but they are not.[35]

Part of the search for general principles is related to a core methodology of modern science—the movement from Aristotle's classification to Kepler's and Galileo's measurement. Both methodologies are biased against uniqueness but measurement much more decisively so. Science, resourced by power structures of modernity seeking to both benefit humanity and increase their hegemony, began to self-define itself as being inexorably connected with measurement.

Particularly, science seeks to measure common patterns. But of course, measurement of commonness as the default movement of science by definition caused uniqueness to be

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[35] Gafni and Stein, *TechnoFeudalism: Turning the World into a Skinner Box—The Death of Value in the Digital Age*. See, in particular, Parallel One, which investigates how the influential methods and discourses of physics and data science are deployed by Skinner and Pentland to modify social behavior, deny the importance of individual uniqueness, and undermine the foundations of value.

overlooked at best or more likely to be obfuscated, denied, or distorted. Measurement is a movement toward de-uniqueness. Moreover, measuring instruments themselves trick one into thinking that unique parts are fungible and replaceable when in fact they are not.

Eros Generates Uniqueness

Uniqueness, and what we have called in other writings *irreducible uniqueness*, is so crucial because it is actually the *condition and conduit* for our ever-evolving freedom, our ontological dignity, or even what some, including our *materialist mystic* science colleague Howard Bloom, might call *the spirit*—or Eros, value, or meaning—*that breathes us*.

In the language of CosmoErotic Humanism, we simply say that *uniqueness is the currency of Eros*. This expresses itself in at least two—ostensibly contradictory but in fact—paradoxical ways:

1. First, uniqueness is the currency of divine individuation.[36]
2. And second—as we will point towards again below—uniqueness is also the currency of connection.

Or said slightly different, uniqueness is an essential part of the structure of Cosmos that generates both radical individuation and intimate communion all the way down and all the way up the evolutionary chain.

Or said again slightly differently, it is uniqueness, which is the methodology of the ongoing process of differentiation and integration, that is, as Herbert Spencer reminded us,[37] the core pulsation of evolution.

On the human level, it is the movement from unconscious to conscious uniqueness, coupled with ever-greater depths of uniqueness, that is the wondrous expression of ever-deeper individuated human value—human goodness, truth, and beauty—all in unique human form. But at the very same time, uniqueness is the very ground of our allurement to each other, and

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[36] By divine individuation we are referring to the One becoming many, the undivided True Self expressing itself uniquely through each of our Unique Selves. Or said differently, *Unique Self = True Self + unique perspective + unique quality of intimacy.*

[37] Spencer, Herbert, *First Principles*, first published in London: Williams and Norgate, 1867, Chapter 15, Differentiation and Integration.

particularly of the depth and quality of our unique allurements—our unique Eros—our great loves.

In the following short idiosyncratic essay, we will discuss uniqueness as a fundamental quality of what we have alternately called the *amorous Cosmos*, the *Intimate Universe*, the *Universe: A Love Story*, *Evolution: The Love Story of the Universe*, or the *CosmoErotic Universe*. This new, scientifically compelling Universe Story integrates the leading-edge insights of traditional, modern, and postmodern wisdom. And it states that the inherent *telos* of Reality, which is the very Eros of existence expressed through the incessant creativity of the evolutionary process, is the generation of the twin intentions of Reality:

- the wondrous goodness, truth, and beauty of irreducibly unique individuation and
- the wondrous goodness, truth, and beauty of irreducibly unique intimate communion.

Said slightly differently, we are simply affirming that uniqueness is not an arbitrary social expression. Rather, uniqueness is a value. But not just a contrived or constructed value. Rather, uniqueness is a First Principle and First Value of Cosmos. But like all First Principles and First Values of Cosmos, it is an *evolving* First Principle and First Value.[38] That is to say, the history of Cosmos is, from one very distinct—unique—perspective, the history of the evolution of uniqueness itself.

There is a full-length book that needs to be written on the history of uniqueness. We will avoid the quite alluring temptation to stop everything, all other writings on CosmoErotic Humanism, and write that monograph right now. But it does indeed need to be written.

Indeed, there is a *need* for at least a book-length treatment of the history of *every* First Principle and Value of Cosmos.

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[38] In regard to all of our discussions of First Principles and First Value in this writing, please see our more in-depth conversations in David J. Temple*, First Principles and First Values of Evolving Perennialism: Forty-Two Propositions on CosmoErotic Humanism—Post-Tragic Memories of the Future* and see also the fuller conversation in David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism—Introducing the Anthro-Ontological Method*. Both published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023. David J. Temple is a fictional personality created for enabling ongoing collaborative authorship at the Center for World Philosophy and Religion. The two primary authors behind David J. Temple are Marc Gafni and Zak Stein. For different projects specific writers will be named as be part of the collaboration. In these volumes Ken Wilber joins Dr. Gafni and Dr. Stein.

Every one of the much-needed monographs on each of the distinct First Principles and First Values needs to address both the value itself and the evolution of that value in the course of evolutionary history.

Minimally, such a monograph would trace the value down to the depths of the lifeworld and then move from the world of life, the biosphere, to the world of the self-reflective human mind, and through all of the levels—the structure stages of consciousness—that constitute the evolving history of life and mind.

But maximally, such a history would begin not with the biosphere but the physiosphere, not with life but with matter, and then move from matter to life to mind, from the physiosphere to the biosphere to the noosphere, from physics to biology to culture.

The split between matter and life, while important in the way that science has set it up, is also relative. Meaning, for example, in the case of uniqueness, we need not just a technical history of where uniqueness begins in Cosmos—although that itself is hugely important—but we need a careful look as well at the evolution of uniqueness.

In this essay, we attempt a first overview of the history of uniqueness, to introduce the dimension of uniqueness as a key strand of value of the fabric of the Amorous Cosmos.

A Partial List of Evolving First Principles and First Values of Cosmos

These First Principles and First Values of Reality include but are not limited to:

- Eros
- value
- intimacy
- consciousness
- desire
- need
- uniqueness and sameness
- attention
- attraction and repulsion (allurement and autonomy)

- harmony or fairness
- freedom and choice
- *telos* (purpose)
- story
- mystery and *gnosis* [certainty and uncertainty]
- creativity and transformation
- evolution
- paradox or opposites joined at the hip
- first-, second-, and third-person perspectives
- past, present, and future.

What we are calling *First Principles and First Values of Cosmos* are not identical but also not unrelated to what our friend Howard Bloom calls *Ur patterns*. By a First Principle and First Value we refer to a pattern, structure, simple first rule, or axiom of Cosmos—a value of Cosmos, which is present in Reality all the way up and very far down the evolutionary chain, often from right after the Big Bang.

We listed here some nineteen evolving First Principles and First Values. All of those qualities or values are recognizable in the human world. All those qualities are obviously significantly evolved in the human world. And they have different interior and exterior qualities in the human world than they do in the earlier world of the biosphere or the physiosphere (life and matter).

So, there is self-evident discontinuity between the way these First Principles and First Values appear in the worlds of matter, life, and the depth of the self-reflective human mind. And yet, there is also substantive continuity between these worlds. Our friend Howard Bloom affirms this in the way he deploys the term *metaphor*[39]—but not *mere* metaphor, rather a metaphor that works because it points to a level of continuity between matter, life, and mind. Because in some real sense, his *Ur patterns* and our *evolving First Principles and First Values* are inherent in the ever-evolving structure of Cosmos.

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[39] See Howard Bloom, *The God Problem: How a Godless Cosmos Creates*, Prometheus Books, 2012, pp. 255 ff., "IS METAPHOR A CRIME?"

For example, in our language, when the allurement and attention space is part of the evolving value structure of particles and molecules, particles and molecules generate unique fields of allurement, even as particles and molecules are uniquely allured. And we are constituted by uniquely allured particles and molecules, which means that these fields of unique allurement live in us, as us, and through us.

While we are self-evidently not reducible to particles and molecules, their interior and exterior reality constitutes us. We participate in the particles and molecules of which we are made; those particles and molecules are in us. So that Reality lives in us, just like we live in Reality.

Evolving First Principles and First Values vs. AI, Postmodernism, Value, and Evaluation

In this sense, we are—and this is immeasurably significant—utterly distinct from AI and its computational power, which is not constituted by self-organizing particles and molecules with their unique fields of attention and allurement that are self-actualizing into larger wholes. It is the interiors that constitute us, which themselves inhere within Value that makes us potentially trustworthy in our evaluations. Said slightly differently, all the First Principles of Cosmos in their evolved forms live in us, as us, and through us, and thus, we become participants in the Field of Value.

For example, the value of uniqueness, which lives in proto form, as we will see, all the way down and all the way up the evolutionary chain, actually lives in us. It is only the honoring of that evolving First Principle and First Value of Uniqueness that allows for—what we have

called in CosmoErotic Humanism—*our anthro-ontological*[40] *intuition of that value* to make us trustworthy in our evaluations.

AI Bypasses the Field of Value

In essence, AI bypasses our very experience of value, and yet the momentum of the future is our turning to AI for virtually all of our significant evaluations.

AI is raw computational power that bypasses the Field of Value. It is however not insignificant that when querying AI about value, it cannot respond with a felt sense of value but instead regurgitates the postmodern deconstruction of value as normative and authoritative. This depends of course on the data it is trained on, which is in turn related to the worldviews of its trainers/developers. Contemporary public AI, by its nature and programming, bypasses value.[41]

This does not need to be the case. We can code AI to integrate and take seriously the realization of the Tao that Value is Real and that we participate in a Field of Value. That, however, is not the general direction of AI, to major in understatement.

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[40] What we have called *Anthro-Ontology* is the capacity of the human being to directly access the Field of Consciousness, or what have also referred to as *the Field of Value*. Anthro-Ontology, which we have discussed in some depth in other writings, is premised on the empirical realization that we participate directly in the Field of Value. Value, or consciousness, lives in us. See also David J. Temple*, First Principles and First Values of Evolving Perennialism: Forty-Two Propositions on CosmoErotic Humanism—Post-Tragic Memories of the Future* and see also the fuller conversation in the forthcoming David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism—Introducing the Anthro-Ontological Method*. All published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers. David J. Temple is a fictional personality created for enabling ongoing collaborative authorship at the Center for World Philosophy and Religion. The two primary authors behind David J. Temple are Marc Gafni and Zak Stein. For different projects specific writers will be named as be part of the collaboration. In these volumes Ken Wilber joins Dr. Gafni and Dr. Stein.

[41] See, for example, James Vincent, senior reporter at *The Verge*, who writes in January 2023—in the article "Top AI conference bans use of ChatGPT and AI language tools to write academic papers": "These AI tools are vast autocomplete systems, trained to predict which word follows the next in any given sentence. As such, they have no hard-coded database of "facts" to draw on—just the ability to write plausible-sounding statements. This means they have a tendency to present false information as truth since whether a given sentence *sounds* plausible does not guarantee its factuality."

What Does ChatGPT Know about Value?

As this essay is being completed, the new GPT-3 language processor of AI, having made several key leaps in function in the last years, has just launched a free Open AI program called *ChatGPT*.

We asked it three simple questions.

Is value real?

Is love real?

Is uniqueness a value?

To summarize the answers—at least from an ontological perspective—what is really Real—the answer was to all three questions, *NO*.

Is Value Real?

Value is a subjective concept that refers to the importance or worth that someone attaches to something. It is not an objective property of a thing, but rather a judgment or evaluation made by a person. Different people can have different values and assign different levels of value to the same thing.

In economics, value is a fundamental concept that refers to the utility or usefulness of a good or service to an individual or society. It is often used to measure the worth of something in terms of the satisfaction or benefit that it provides.

In general, value is a multifaceted and complex concept that can be understood and evaluated in different ways depending on the context and the values and priorities of the person making the evaluation.

The simple point is that value is clearly not Real. Rather, value is considered not to be an objective property—or an intrinsic Reality. In other words, to give but one example, according to

the *oracle* of Open AI,[42] goodness is not ultimately Real but based on a merely subjective set of evaluations that is never grounded in an intrinsic Field of Value or Meaning. That which is *Real* in the modern or postmodern programming and training of AI is that which is *measurable*. Value as a Reality therefore only exists for the oracle of AI in an economic context when we are talking about a measurable valuation.

Is Love Real?

> *Love is a complex mix of emotions, behaviors, and beliefs associated with strong feelings of affection, protectiveness, warmth, and respect for another person. It can also include deep romantic or sexual attraction. Love is an important part of many people's lives and can play a role in relationships, friendships, and families. While the exact definition of love may vary from person to person, it is a real emotion that people experience and can have a significant impact on their lives.*

Notice that love is not considered an objective property, and the emphasis is on its subjectivity. Love is based on the context, values, and priorities of the person making the evaluation around love.

While that is true, it is also highly partial. There is a refusal to simply articulate the anthro-ontological truth that Love is a Real Value of Cosmos or, in the language of CosmoErotic Humanism, that *Reality is Eros* all the way down and the way all the way up the evolutionary chain.

Notice as well that love is understood as having no genuine ground at all. It is not only that we may have multiple overlapping definitions of love (or Eros), but that love—and what we mean by *love being Real*—varies from person to person. In other words, there may be millions or billions of definitions of love, in which case it is irrelevant as a concept. There is no sense of a shared Field of Eros, or Ground of Love, as a Value of Reality. For Open AI, love is not the ground of existence but mere human sentiment.

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[42] By the *oracle of Open AI,* we refer to the way it is often used: to provide an answer that can be trusted without further questioning—like the oracles of old.

Of course, we know—anthro-ontologically and linguistically—that this is not the case. Our capacity to even deploy the word *love* as a central verb in communicative actions already discloses that love does evoke at least a general shared Field of Meaning and Value.

Is Uniqueness a Value?

Uniqueness can be viewed as a value in some contexts. For example, in the arts, uniqueness is often highly valued because it allows for the creation of original, innovative works that stand out from the crowd. In the business world, uniqueness can also be seen as a value because it can help a company differentiate itself from competitors and potentially gain a competitive advantage.

However, it's important to note that uniqueness is not always seen as a positive value. In some cases, being too unique or different can be perceived as a liability or disadvantage, particularly if it makes it difficult for others to understand or relate to a person or product. It's also worth noting that not all values are universally held, and what is considered valuable can vary significantly depending on the context and the individual or group that holds the value.

Or in Another Formulation of the Same Question: Is Uniqueness a Real Value?

Uniqueness is a concept that is often used to describe the fact that something is one of a kind, or distinct from other things. It can be considered a real value in the sense that it is a quality or attribute that something possesses, and it can be evaluated or measured in some way. For example, someone might say that a particular painting is unique because it has a style or approach to art that is different from anything else that they have seen. In this sense, uniqueness is a real value because it is a characteristic of the painting that can be objectively observed and described.

In other words, uniqueness as quality or value of Reality is denied. Uniqueness as a measurable property just like any other objective property is embraced. The premise is the same. Only that which is objectively measurable is real.[43]

The Premature Rejection of Value by the Academy

The Move from Eternal & Preordained Value to Eternal & Evolving Value

Of course, the rejection of Value itself as a value, and of Love and Uniqueness as values, is based on two factors that defined modern and later postmodern consciousness. The first is the well-known philosophical critique of value, as falsely claiming to be pre-ordained and eternal. In this sense, declare the mainstream voices of the academy in modernity from Hume through Sartre to Skinner, love is indeed not a value. For how one expresses love in the fifth century BCE in certain cultures may be markedly different from how love is expressed in western culture in 2023.

To claim therefore that love is an objective value would seem to be fallacious and even absurd. For love self-evidently is not eternal in the sense of being pre-ordained. Rather, love evolves. It is this premise that has animated the modern and postmodern mainstream assumptions about value, and it is this premise that informs the Open AI oracle.

[43] All of this was, of course, to be expected, as ChatGPT is basically, according to James Vincent, senior reporter at *The Verge*, in his article "Top AI conference bans use of ChatGPT and AI language tools to write academic papers," a vast *autocomplete system*, trained on billions of texts, predicting the next plausible sounding word, sentence, or paragraph. So, it reacts to the way the question is asked and basically regurgitates all the modern and postmodern platitudes it was trained with.

Our response, which we have thought through for over a decade, as we have formulated CosmoErotic Humanism, is almost self-evident, once articulated, in its *second simplicity*[44]—but it is no less compelling because of it:

Love is eternal, and love evolves.

Love evolves, however, within its own vector of meaning and value. Love or, to use the term we prefer in CosmoErotic Humanism, *Eros*, is Real. That is what we mean by *Eros, or Love, is Eternal*. It does *not* mean however that Eros never changes over the course of everlasting time. For Eternity, as Ludwig Wittgenstein already pointed out, does not mean everlasting time. Rather, Eternity means that which is *beneath* space and time—in the realm of the Eternal. Love as an expression of the Field of Eternal Value means simply that *Love, or Eros, is Real*.

And that Reality of Eros evolves. Indeed, the depth, breadth, and width of one's love, including one's circle of Eros or love, self-evidently evolve. Indeed, the way Eros expresses itself evolves through all the stages of matter, life, and mind.

Eros also, however, has continuity across all these domains. In other words, the word *Eros*, or *Love*, has a common meaning across all platforms and domains.

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[44] ***Second simplicity refers to the third of three basic levels of thinking and feeling.***
Level One, or *first simplicity*, includes the assumptions about the nature of life and identity that are loudly declared as givens by all dogmatic systems of spirit, science, and meaning. These assumptions often describe the world in black and white terms—good/bad, my side/your side, pure/impure, and godly/ungodly. They do not tolerate contradiction; they lack nuance and often ignore any information that undermines their premises.
Level Two is what we refer to as *complexity*. At this level, we see all the contradictions, alternative views, nuances, and dialectics at play, which we had ignored at Level One. The demarcating characteristics of Level Two are uncertainty and confusion, which generate action paralysis. Certainty in all its forms is mocked and dismissed as regressive and dangerous.
Level Three is what we call *second simplicity*. Second simplicity transcends and includes all of the complexity; but it is able to see through the thicket of complexity and discern the general outlines of a new meta-vision, a New Universe Story, which in turn births new narratives of identity, community, and power. Second simplicity embraces all of the uncertainty. It bows before the mystery, even as it articulates higher-order truths, which are rooted in new scientific insight and certainty. Second Simplicity integrates validated insights from all the different domains of wisdom at all the different levels of consciousness into a new narrative that presents its insights in second simplicity. The demarcating characteristic of second simplicity is inspired activation that moves with both radical humility and radical audacity. Second simplicity is responsible to the past and rooted in the present, all the while taking a courageous, joyful, and inspired stand for the future.

That means that, even as its application evolves, the meaning, and the value, of Cosmos that Eros or Love implies is both Real and constant, or continuous.

In CosmoErotic Humanism, we formulate the Eros equation as an expression of its meaning across historical epochs and cultures:

> *Eros = the experience of radical aliveness, seeking, desiring, moving towards, ever-deeper contact and ever-greater wholeness.*[45]

This Eros equation applies across cultures and across the ages. In other words, there is a universal grammar of value as a context for our diversity—the many understandings and shapes that Value, in this case Eros, takes across space and time. This is true for each of the First Values and First Principles. There is a general value equation for each First Principle and First Value, which is part of the universal grammar of value that is a context for our diversity—even as each of the First Principles and First Values evolves. Hence, they are termed *evolving First Principles and First Values*.

The second reason Value was rejected is that you cannot see or measure Value. True Value is, by its very nature, immeasurable or what we might even call *priceless*. Modernity's great move, with wondrous practical effect and equally devastating interior effect, was to assert that what was real was the measurable. This is what Lewis Mumford famously referred to as *the disqualification of the universe*.

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[45] Over time, we have formalized this equation as:

> *Eros = Radical Aliveness x Desiring (Growing + Seeking) x Deeper Contact x Greater Wholeness x Self Actualization/Self Transcendence (Creation [Destruction])*

All our equations of interiors are not to be understood in quantitative terms. They are not technically equations in the mathematical sense. They are not intended to be used to quantify an amount of a particular value. This is not possible, because value is ultimately not quantifiable. It is a basic question, the extent to which the qualities of the interiors (value/consciousness) are in any way measurable, the way material realities are measurable. We don't think they are. For example, asking someone to put a number on how much they love you, as compared to their dog, is absurd. While there are identifiable differences of intensity, there is no common metric that allows us to put a verifiable number on amounts of love (nor should there be!).

We are, of course, aware that, normally, a mathematical equation works with numerical values—even if it would be just 0 and 1—with 0 meaning that quality is *not* present, and 1 meaning it *is* present. Even though that is something we are able to say even for subjective qualities—at least for ourselves—and for ourselves, we may also be able to say that maybe a quality is only about halfway present—we are not using these equations in that way.

The equations are illustrative and suggestive of the structures and dynamics of the interiors. The intention is to find a way to capture the complexity and numinosity, as well as the generativity and definability, of cosmic values.

In this sense, modernity limited the sense of Reality to that which could be seen—and measured—through the Eye of the Senses and the Eye of the Mind. The Eye of the Senses refers to the classic sensory perception of the five senses and all of their amplifiers, while the Eye of the Mind refers to the perception of the mind—think mathematics, logic, and other forms of reasoning, and all of their amplifiers. By amplifiers we refer to anything that amplifies the Eye of the Senses and the Eye of the Mind, for example, a microscope, an FMRI machine, or even the Hubble telescope.

Modernity, and postmodernity in its wake, however, disqualified as real all that cannot be seen—by the Eye of the Senses or the Eye of the Mind—and measured. Said simply, as we have unpacked in other writings,[46] modernity rejected the enormous data of the Eye of Consciousness. The Eye of Consciousness includes what the Sufi's called *the Eye of the Heart*, what the interior sciences called *the Eye of Contemplation*, what we have also called *the Eye of Value*, and what some interiors sciences also call *the Eye of the Spirit*. All these forms of the Eye of Consciousness are predicated on what we have called *the Anthro-Ontological Method*.

Anthro-Ontology is the capacity of the human being to directly access the Field of Consciousness, or what have also referred to as *the Field of Value*. Anthro-Ontology, which we have discussed in some depth in other writings, is premised on the empirical realization that we participate directly in the Field of Value. Value, or consciousness, lives in us. We live in a value-laden Intimate Universe, animated by its evolving First Principles and First Values embedded in a Story of Value. The First Principles and First Values are the plotlines of this Intimate Universe—this Amorous Cosmos—which itself is a story animated by *telos* and Eros. Or said differently, we live in a *Telerotic* Universe.

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[46] See, for example, the section "The Empiricism of Love: The Three Eyes of Knowing—The Three Eyes of Eros—The Three Forms of Gnosis—The Three Eyes That Are One" and the appendix "Anthro-Ontology and the Three Eyes" in six-volume set: *The Universe: A Love Story*. See also David J. Temple*, First Principles and First Values of Evolving Perennialism: Forty-Two Propositions on CosmoErotic Humanism—Post-Tragic Memories of the Future* and see also the fuller conversation in the forthcoming David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism—Introducing the Anthro-Ontological Method*. All published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers. David J. Temple is a fictional personality created for enabling ongoing collaborative authorship at the Center for World Philosophy and Religion. The two primary authors behind David J. Temple are Marc Gafni and Zak Stein. For different projects specific writers will be named as be part of the collaboration. In these volumes Ken Wilber joins Dr. Gafni and Dr. Stein.

And we are not talking about some externally imposed *telos* but rather about the inherent *telos* of Reality that is allured to its own greater mysterious wholeness. Reality is inexplicable, even in terms of its most basic science, without recognizing the ceaseless inherent creativity of Cosmos, which is allured to its own greater wholeness. This is a position, which is neither regressive premodern fundamentalist, which imposes a dogmatic storyline on Cosmos, nor is it postmodern fundamentalist, which reduces Cosmos to mere random chance with no inherent value or *telos*.

It must of course be stated clearly that the plotline of the Universe Story is not exhausted in one lifetime, or even necessarily in one dimension of Reality. But the experience of the First Principles and First Value as the plotlines of Reality, in which we participate, which animate and allure us, are the anthro-ontological Reality of both our Eros and *ethos*.

We live in a Field of Value, and the Field of Value lives in us. And it is the Eye of Value that gives us direct access to the Field.

The Eros Equation and the Uniqueness Equation

In the case of Eros, as we noted above, we have formulated an Eros equation to articulate that meaning.

The equation, in its simple form, reads:

> *Eros = the experience of radical aliveness, seeking, moving towards, desiring ever-deeper contact and ever-greater wholeness, which yields in its wake ever-more creativity and transformation.*

We have formulated equations, or sometimes simply formulations or definitions, for each of the evolving First Principles and First Values.

For uniqueness, we formulated the following simple equation:

Uniqueness = the emergence of distinct value from the larger Field of Value, which is a new whole greater than the sum of the previous parts.[47]

This is the core uniqueness equation. The equation describes the value of uniqueness. Value, however, is always evolving value. The value of uniqueness evolves over time. One perspective on evolution is the evolution of First Principles and First Values. Thus, one plotline of evolution is therefore the evolution of the First Principle and First Value of Uniqueness.

Uniqueness, of course, as we just noted above, does not live *alone* as a First Principle and First Value. Rather, First Values and First Principles come in clusters. There is an entire primary set of inter-included First Principles and First Values, without which uniqueness cannot stand. These include, among others, drawn from the list above, the First Principles and First Values of:

1) Sameness or Commonness,
2) Value itself, which might also be called *Meaning*,
3) Story, or narrative arc, or what might be called *telos* or *direction*,
4) Evolution, or what might also be called *Desire* or *Allurement*,
5) Intimacy, the movement towards ever-deeper shared identities or intimate communions.

Evolving First Principles and First Values as Plotlines of the Universe: A Love Story

First Principles and First Values themselves are what we have called *the plotlines of Cosmos*. This itself is based on the realization that Reality is not merely a fact but a story. There is a narrative structure to Reality.

Reality, however, is not an ordinary story but a love story, a story of Eros evolving towards ever deeper and wider expressions. Reality is not an ordinary love story but an Evolutionary Love Story. Meaning, we are not talking about ordinary love as a social

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[47] Again, a more formal version of this equation reads:

Uniqueness = Emergent Distinction from Field of [Universal] Reality x Radically New Value (Quality + Consciousness) x New Capacity (Attention + Eros + Function + Integration)

contrivance or construction but about the Eros that animates the four forces and all of the other interior and exterior drivers of Cosmos.

And like every story, the Evolutionary Love Story has a plotline. And its plotlines are the evolving First Principles and First Values of Cosmos.

So, Cosmos moves not just towards ever-greater complexity—which is true from an exterior perspective—but also towards more and more uniqueness. Uniqueness is both an exterior objective reality as well as an interior value.

The Dialectic of Sameness and Uniqueness

And uniqueness always appears in the context of—and in dialectical relationship to—sameness. We all share in common both our uniqueness and our sameness. It is precisely the dialectic between sameness and uniqueness that generates new intimate communions of ever-deeper contact and ever-greater wholes, which are the Eros and engine of evolution.

This is true about the classical evolutionary process, the movement from hadrons to atoms, to molecules, to macromolecules, to single-celled bacteria, to multicellular organisms, and all the way up the evolutionary chain.

But it is also true of personal and collective, social evolution. New wholeness, new integrations of different split-off or emergent dimensions of our interior self, and new unions between selves and groups of selves are always primary engines of Eros and evolution.

The History of Uniqueness: A First Look

The history of uniqueness is the movement towards more complex and more subtle uniqueness with more and more interiority, more and more distinction, and then more and more consciousness of that very uniqueness. When, as we noted above, Herbert Spencer in his important work *First Principles*, spends chapter fifteen describing differentiation and integration as an example of such a First Principle, he is describing uniqueness as one of the plotlines—the narrative arc—of Cosmos:

- *Differentiation* is the movement of evolution towards more and more uniqueness.

- *Integration* is how ever-greater uniqueness is the ground for ever-deeper contact and wholeness—ever-greater intimate communions.

And of course, as we noted above, these two qualities of uniqueness, the movement towards differentiation—ever-more distinction and autonomy—and the movement towards integration—ever-more merging and communion into a larger whole—are inseparable from each other. Indeed, they are *opposites joined at the hip*—which itself is also a structural First Principle and First Value of Cosmos.

The Dialectical Paradox of Evolving Uniqueness: More Unique Individuation and More Unique Intimate Communion

This truth is directly accessible through the interior sciences of uniqueness. For example, when Howard talks to Marc, a dimension of Howard-ness emerges that will not appear in any other context. And the converse is equally true. Now, let's follow this Howard-Marc example to its unique conclusion, which might be something like the following:

The more Howard and Marc are individuated in their irreducible uniqueness—

not in an inflated form of egoic assertion of separateness

but along the more in-depth lines of authentic uniqueness—

unique expressions of the larger Field, in which they both consciously participate,

the more they will elicit not only a unique depth in each other,

which is a function of their respective Unique Self,

but the unique depth

that is an expression of their unique relationship or allurement.

There is a dimension of Howard evoked by Marc,

and of Marc evoked by Howard,

that no one else that ever is, was, or will be can evoke.

What that means is that,

when uniqueness meets uniqueness,

uniqueness is amplified.

Infinity produces polarities of uniqueness that generate ever-deeper unions.

Uniqueness generates three realities in the context of Eros.

> *First and second, uniqueness generates ever-more crystalized uniqueness in each of the participants in the encounter.*
>
> *And third, uniqueness also generates the ever-deepening uniqueness of the space in-between, the unique quality of the unique encounter itself.*

Said in the language of Unique Self Theory:

In a Unique Self Encounter at the human level, each of the partners in the encounter are holding a piece of the other's story. And by story we mean not necessarily new action, but rather the depth of a unique quality that imbues every action of that partner in the Unique Self Encounter. And the part of their respective stories that is deepened is the unique story of the encounter itself.

The Infinite Intimate and the Ever-Evolving Birth of New Uniqueness

This structure of uniqueness and sameness—distinction and union—is, as we have already noted, structural to Cosmos. Mathematician and philosopher of science Alfred North Whitehead notes this when he talks about the three properties of Cosmos, as:

1) the one
2) the many
3) the creative advance into *novelty*—or what we are calling *uniqueness*.

The interior sciences engage the inquiry of why the One generates the many.

Why not just be the One?

Of course, this is *not* an inquiry to which we can respond with the kind of clarity that removes the mystery. Rather, we engage this mystery of emergent uniqueness by inquiring anthro-ontologically. In other words, how does the mystery of uniqueness play in our own interior experience, which participates in the wider Field of the Mystery?

The leading edges of the interior sciences respond to this *Koan*-like inquiry in two primary ways, which, in the deepest of contemplations, are finely entwined in a larger single dynamic of Cosmos.

The Shocking Self-Recognition of Infinity in the Unique Face of the Intimate Other

First, the Infinite manifests finitude, because the Infinite is the *Infinite Intimate*, desiring, yearning for, the experience of ever wider and deeper intimate communions and erotic unions.[48] The One becomes the unique many, because the One yearns for intimacy.

Second, Infinity expresses itself as billions of expressions of irreducible uniqueness—unique faces—through which the One experiences its own shocking self-recognition.

In other words, the Infinite itself recognizes more of itself through its own self-recognition in its unique faces, even as the Infinite—who we have referred to in CosmoErotic Humanism as the *Infinite Intimate*—becomes more whole through its ever-deeper experiences of intimate communion and erotic union.

Uniqueness as Cause for Revelation

But it is even more than that. When we unpack the full implications of uniqueness and its implicitly emergent properties, it means that there is a new emergent property of the Real that has never existed before and will never exist, in this precise unique expression, ever again. Or said differently, uniqueness emerges ever-new value. Or in the language of our friend Howard

[48] This is reflected in the intimacy equation of CosmoErotic Humanism, whose first clause is *Intimacy = shared identity in the context of (relative) otherness*. By *otherness*, we refer precisely to *uniqueness*. It is (*relative*) otherness because it is not the otherness of the alienated separate self or ego self. Rather, Unique Self is the unique expression of the larger Field. And in the larger Field, unique parties, or persons, participate in the larger Field of One Heart, One Love, One Value.

Bloom, uniqueness, and ever-evolving uniqueness at the human level, is *a search engine of the Cosmos*.[49]

At the most evolved human level of identity that we currently know, the emergence of Unique Self, we might say that: *Every clarified Unique Self generates a shocking emergence and self-recognition of Infinity that, from the perspective of the manifest, could not be caused in any other way*. This is true in precisely the same way that every one of *your in-depth real friends* evokes that unique dimension of you that no one and nothing else could evoke.

Uniqueness is cause for revelation. That's what uniqueness does, which is both good, true, and quite beautiful.

Our friend Howard likes to tell the story of his friend Chris, who has created some incredible genius-level television series. Chris was on the phone with Howard during one of the weeks that Howard and Marc were discussing this issue. Chris used to look forward to Friday nights when he would go to a particular bar with different individual friends. Gradually, however, they all got married, and Chris remained single. His friends stopped showing up at the bar. And Chris called Howard sadly late one night and said,

> *You are a different person with each of your friends… and when you lose that friend, you lose that unique aspect of yourself.*

Why would a Cosmos produce so much uniqueness—so many unique expressions?

Again, because it is putting out as many feelers as it possibly can into the realm of the unseen, the unknown, the impossible, the future—that which perhaps lives with us every day but is invisible. It stretches those antennae into possibility space in order to pull—from Infinite Potentiality into finite actuality—the next *supersize surprise*, as Howard likes to call it, or, as we would call it, the next *unique emergent of Cosmic Eros* that is ready to emerge.

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[49] This is how Howard Bloom often articulates it to Marc in their bi-weekly evolutionary and interior science dialogues, which were originally convened by Barbara Marx Hubbard. See also Howard's book, *The God Problem*, for example on p. 173: "Are individual humans…also probes for a search engine of some kind? A search engine of our family, our tribe, our subculture, our nation, our species, or more peculiarly a search engine of the cosmos? …the fact is that differentiation…shows up all over the place in human behavior."

Everything is contained in the first nanoseconds of the Big Bang. Infinity is holding all of this in some fundamental way. Yet, it is radically new and emergent. And it is uniqueness that generates that emergence. Or in other words, the One generates uniqueness, and then uniqueness generates ever-greater depths of the One.

Complexity Theory and Simple First Principles and First Values

In the writings of mathematical genius Turing, particularly in his early anticipations of complexity theory, he stated that simple rules or laws iterated again and again generate coherent complexity. This is a core principle of exterior science.[50]

In a similar fashion, simple first rules, or what we also call *First Principles and First Values*, generate exterior as well as interior structures of Cosmos. And by interiors we include quality, value, *ethos*, consciousness, and more. That is what we mean above when we said that *simple First Principles and First Values are the plotlines of Cosmos*.

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[50] See, for example, Alan Turing, "The Chemical Basis of Morphogenesis," *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, Vol. 237, No. 641. (Aug. 14, 1952), pp. 37-72—https://www.jstor.org/stable/92463. (We have added the ***bold italics*** above for emphasis.) In the abstract, he says: "The purpose of this paper is to discuss a possible mechanism by which the genes of a zygote may determine the anatomical structure of the resulting organism. The theory does not make any new hypotheses; it merely suggests that ***certain well-known physical laws are sufficient to account for many of the facts***." In section 3. Chemical Reactions, he states, "It has been explained in a preceding section that the system to be considered consists of a number of chemical substances (morphogens) diffusing through a mass of tissue of given geometrical form and reacting together within it. ***What laws are to control the development of this situation? They are quite simple.***" He then lists several of these laws throughout his text, e.g.: "The diffusion follows the ordinary laws of diffusion... The reaction rates will be assumed to obey the 'law of mass action'… The law of mass action must only be applied to the actual reactions… It should be noticed that the ideas of P-symmetry and F-symmetry as defined above apply even to so elaborate an entity as 'the laws of physics'. It should also be understood that the laws are to be the laws taken into account in the theory in question rather than some ideal as yet undiscovered laws…"

Cultural Science writer Steven Johnson is, in this sense, not inaccurate, when he summarizes Turing in his book *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*, Scribner, Kindle-Version, (originally published in 2001) in the following manner: "Turing's work on morphogenesis had sketched out a mathematical model wherein simple agents following simple rules could generate amazingly complex structures; perhaps the aggregations of slime mold cells were a real-world example of that behavior. Turing had focused primarily on the interactions between cells in a single organism, but it was perfectly reasonable to assume that the math would work for aggregations of free-floating cells."—p. 15. And: "After a frustrating three-year stint at the National Physical Laboratory in London, Turing moved to Manchester in 1948 to help run the university's embryonic computing lab. It was in Manchester that Turing began to think about the problem of biological development in mathematical terms, leading the way to the "Morphogenesis" paper, published in 1952, that Evelyn Fox Keller would rediscover more than a decade later. Turing's war research had focused on detecting patterns lurking within the apparent chaos of code, but in his Manchester years, his mind gravitated toward a mirror image of the original code-breaking problem: how complex patterns could come into being by following simple rules. How does a seed know how to build a flower?"—p. 42.

Now, as we have seen, one of those First Values and First Principles is uniqueness. Cosmos follows its own inherent plotline. Cosmos evolves towards ever-more uniqueness.

So, for example, Reality manifests at the human level as Howard Bloom being unique. As we would say in CosmoErotic Humanism, *Reality is having a Howard Bloom experience*—or as Howard might say, *Reality is becoming Bloomian*. Howard is, of course, both interiors and exteriors.

Howard has, after all, a unique voiceprint, a unique psychological print, a unique fingerprint, a unique face, a unique DNA code, a unique physiological structure, and a unique cellular signature.

But Howard also has a unique taste, a unique perspective, unique gifts, unique allurements, unique pleasures, unique needs, unique needs he can address, a unique existential imprint, a unique quality of intimacy, a unique configuration of desire, and much more.

But none of these expressions of Howard-ness, interior or exterior, are disassociated from Cosmos. Howard's Unique Self—and his self-reflective awareness of his uniqueness—is part of a larger storyline in Cosmos, which is the evolution of uniqueness.

The Anthro-Ontology of Uniqueness and Its Value

With this in mind, we return to Anthro-Ontology and particularly to the Anthro-Ontology of Uniqueness. In other words, Howard's interior experience of his uniqueness, and his desire to perpetuate his unique gifts for the world, is not a confused ego inflation. Rather, Howard wants to make a unique contribution to the world. He has a direct sense of his own unique contribution. And he is ecstatically urgent about making that contribution. So, he organizes his entire life around this capacity to give that unique gift.

And actually, this is not merely a socially constructed expression of one epoch's contrived emphasis on the individual. This is rather an expression of Reality having a Howard experience moving towards ever-deeper uniqueness. We realize that the sacred spark of Howard's drive towards unique expression is Cosmos-as-Howard moving towards the fulfillment of its own value of uniqueness in the crystalline precious form of Bloom-ness.

Uniqueness as a Value in the Interior Sciences

In effect, we are noticing that this uniqueness is grounded in Cosmos itself. It is grounded in a Cosmic Story, in which one of the core plotlines is the evolution of uniqueness.

All of a sudden, when you put this together with the wider Field of some twenty or so other First Principles and First Values, we can begin to—perhaps for the first time in world history—universally—feel at home in Cosmos, but not through a regressive or non-regressive—premodern or postmodern—fundamentalist prism.

The realization of human uniqueness as a penultimate expression of the higher reaches of human expression is well formulated in the following passage from the writings of Abraham Kook, who speaks well for a large swath of the interior sciences:[51]

Every person must know

that he is called to serve/work/worship

according to his unique way of knowing and feeling,

according to the root of his soul;

and in this world,

which includes countless worlds,

he will find the treasure of his life.

Let him not be confused

by contents flowing into him from foreign worlds

that he cannot properly absorb,

that he is unable to amalgamate into the assemblage of his life.

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[51] See Kook, *The Light of Holiness*.
On Uniqueness as a core structure of the interior sciences, see also for example, Gafni, *Radical Kabbalah*, volume one, part one, which is entirely dedicated to texts in this regard. There, we discuss both the uniqueness of the individual as an expression of the Divine Field as well as and the uniqueness of time. In the realization of the interior sciences discussed in that essay, every moment in time is possessed of a unique quality. The texts discussed are those of Mordechai Lainer, a Hassidic master in the mid-nineteenth century, who was a formative influence on Kook. On Lainer's influence on Kook, see ibid, section seven.

These worlds will find their mending in their place,

with those who are capable of building and improving them.

But he,

he must concentrate himself in his own worlds,

in his inner worlds,

which for him are filled with all

and encompass all.

A person is required to say: The world was created for me.

This modest greatness brings joy to a human being

and brings him to the higher wholeness which stands and awaits him.

And when he is striding on this confident way of life,

on his special path,

on his unique "way of the righteous ones"

he will be filled with the courage of life

and with spiritual joy

and over him the Light of God will appear.

From his own unique letter in Torah

there will emerge for him his splendor and his light.

The Evolution of Uniqueness: From Matter to Life to the Self-Reflective Human Mind to the Depth of Unique Self Realization

The evolution of uniqueness moves from matter to life to the depth of the self-reflective mind. Once we arrive at the depth of self-reflective mind, the evolution of uniqueness continues, as one of the core trajectories, one of the core plotlines, of Cosmos.

The evolution of uniqueness continues, until we disclose our true identities as Unique Selves, unique expressions of the Infinite Field of Love and Desire.

The evolution of uniqueness continues, until we disclose our true identities as Unique Selves, unique Outrageous Love Stories that are chapters and verses in the Universe: A Love Story.

The evolution of uniqueness continues, until we disclose our true identities as Unique Selves, Outrageous Love Letters written by Infinity to finitude.

Our Outrageous Love Stories—with all of our holy and broken Hallelujahs—are our personal Outrageous Love Letters—SWAK—sealed with a kiss—sent back to Infinity yearning to receive them.

Defining Uniqueness

One way to initially express uniqueness is as an emergent, unique distinction in the larger Field of Reality. Uniqueness is emergent in that it generates a radically new value—a quality that didn't exist before, i.e., what Howard likes to call a *supersize surprise*.

> *So, uniqueness equals an emergent distinction in the larger Field of Reality, expressed as a radically new value and quality, which in turn generates new consciousness, new intelligence, or what we might also call* new interiority.

Uniqueness Indicators at the Level of Quarks and Other Elementary Particles

One of the reality indicators of the emergent uniqueness is that there is what Howard likes to call a *pickiness* in subatomic attraction, which would seem to indicate some level of specificity—and uniqueness. Otherwise, they would all just promiscuously join each other. But the fact is that certain quarks shun certain other quarks and are attracted to certain other quarks.[52] That is a matter of unique taste.

Of course, their taste is built in and, in some sense, absolute. It is of course *not* like having a personal or unique taste at the human level, the way you have a personal taste, or I have

[52] The same is true for other elementary and composite particles as well.

a personal taste, where there, at least initially, seems to be a more evolved sense of choice. It is rather a proto form of unique taste, of who do you flee and who do you flock to? In other words, *pickiness*, or selectivity, in the subatomic world is an evolutionary indicator. In this sense, the emergence of quarks with their six unique forms and other elementary particles, at the very inception of Cosmos, is a key evolutionary moment in the history of uniqueness.

There are not a million different permutations and sub-permutations of quarks and other elementary particles. Rather, each elementary particle comes equipped with a very simple attraction-or-repulsion etiquette book that tells them who to run away from and who to rush towards. But if this were a six-monkeys-at-six-typewriters kind of random universe, there would be every possible permutation of these six kinds of quarks and the other elementary particles. Instead, an intentional Universe produced limited early expressions of uniqueness, which matched its own intention for an evolutionary trajectory with at least some general parameters.

The selectivity between the six unique forms of quarks, for example, are the differentiations or expressions of proto uniqueness that we observe in quarks.

A Holy Trinity of Eros: Uniqueness, Attention, and Allurement at the Level of Quarks

Another way to talk about the emergent uniqueness is through their capacity for attention. Attention, which itself is a First Principle and First Value [related to uniqueness], comes up really early in Cosmos.

There is a new capacity for attention, function, and integration, or what we might call *a new Eros*. We might also call this new capacity for attention *a new interiority*.

The early quarks and other particles are paying serious attention to each other; they are trying to figure out who to avoid and with whom to form a new intimate communion. That's a big deal, and that takes attention.

There are, for example, six different kinds of quarks and their respective antiquarks. They also have different so-called *color charges*.[53] The quarks are figuring out, *do I need to flee this particular quark, or do I need to erotically merge with it and make a family of three?* Some of those groups of three become protons, and some of those groups of three become neutrons. The difference between a proton and a neutron is the unique configuration of intimacy, in each of them. Protons and neutrons are each composed of only two types of quarks—up quarks and down quarks—but with three different color charges. In other words, two up quarks and one down quark *only* come together to form a proton, if one of them has the color charge red, another the color charge green, and another the color charge blue—so, together, they have a neutral (or zero, or white) color charge.[54]

These quarks, however, are not dots in space; they are more like dancing points of energy, constantly moving around and in intimate conversations with each other. And, as Nobel Laureate Frank Wilczek discovered, the quarks themselves seem to have no mass at all. The mass of the protons and neutrons is made entirely from the kinetic energy of the quarks moving around. And that energy is, according to Einstein's relativity theory, equivalent to mass.[55]

Quarks are extremely relational—so much so that we don't encounter them by themselves anywhere in the known Universe. There are only three known ways in which quarks would not enter relationships:

1) The first is in the creation of top quarks, which simply don't live long enough to enter relationships. [Top quarks are the heaviest quarks that exist. They only have a mean lifetime of 5×10^{-25} seconds. The strong nuclear force, however, takes some time to be transmitted via the gluons. There is a conversation that needs to take place for the

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[53] Quarks have a color charge of red, green, and blue; and antiquarks have a color charge of antired, antigreen, and antiblue. All other particles have zero (or neutral) color charge. Red, green, and blue quarks come together in composite particles that have a neutral color charge (e.g., protons and neutrons (hadrons)). The same is true for antired, antigreen, and antiblue. And red and antired quarks, etc., also come together in neutrally color charged mesons. [Gluons, on the other hand, have mixtures of two colors, such as red and antigreen, as their color charge.]

[54] Up quarks have an electromagnetic charge of +2/3. Down quarks have a charge of -1/3. The sum of the charges of the quarks that come together to make up a nuclear particle determines its electrical charge. Protons contain two up quarks and one down quark (+2/3 +2/3 -1/3 = +1), and neutrons contain one up quark and two down quarks (+2/3 -1/3 -1/3 = 0).

[55] See "ESSAY; In the New Physics, No Quark Is an Island" in *The New York Times*, by M.I.T. physics graduate Dennis Oberbye, March 20, 2001.

relationship to happen. And the top quarks dissolve before they can enter that conversation.]

2) The second is in the extreme conditions of the quark-gluon plasma in the very early Universe (in the very first microsecond after the Big Bang, before the quarks entered their committed relationships). [This is before the quarks even separated—or individuated—enough to enter relationships.]

3) And the third is in the almost equally extreme conditions inside some neutron stars.[56]

In other words, for quarks, like for us, it is either love or die… They can only avoid intimate communion, which is in the mutual placing and receiving of attention, if they *die*.

It is precisely in this sense that the hijacking or homogenization of attention is a violation of an intrinsic structure of Cosmos. Attention is a very quality of Eros itself. Indeed, Eros itself, from one perspective, is the placing of attention.[57] Uniqueness is the emergence of a new capacity for attention and a new quality of Eros that allures new attention.

So, with this new factor of attention, we might upgrade our uniqueness equation. The uniqueness equation might now be formulated as:

> *Uniqueness = the emergent distinction of new value and quality in the larger Field of Reality, with new unique capacities to place and receive attention—coupled with new unique capacities to be alluring and autonomous, and to experience allurement and autonomy, relative to unique others.*

Unique Attention at the Level of Protons

This same selectivity in attention exists at the level of protons. Not every proton, neutron, and electron are willing to get together—to place attention—with every other subatomic particle.

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[56] For a short story about that, see, for example, this popular 2019 article on *Forbes*, "Ask Ethan: Can Free Quarks Exist Outside Of A Bound-State Particle?" https://www.forbes.com/sites/startswithabang/2019/08/03/ask-ethan-can-free-quarks-exist-outside-of-a-bound-state-particle/?sh=35e7e42137e6.

[57] *Eros = the experience of radical aliveness, seeking, desiring, moving towards, ever-deeper contact and ever-greater wholeness.* Ever-deeper contact also means the placing of attention. There is no contact without attention. And there is no wholeness without contact.

They are actually unique in this precise sense. They are picky. Each of them has a unique place in the big-picture structures. Here is how Howard says it in his book *The God Problem*, p. 35:

> *A proton = a proton, right? Two protons are identical,* n'est-ce pas? *Not quite. Like the letter* a *in a Shakespearean sonnet, every proton has a unique place in big-picture structures. And that place in the big picture changes the proton's role in the cosmos. Protons are participants in social processes. And those social processes help generate the radical differences between the swatches of space and the clumps of matter in this universe.*

This ability of quarks and protons to place their attention and *feel* each other (by exchanging force-carrying bosons) is what Whitehead referred to as *prehension*, or what we call in CosmoErotic Humanism a kind of *pan-interiority* that lives very far down the evolutionary chain. It expresses itself as uniqueness and allurement at the levels of atoms, protons, and even, as we just saw, quarks.

Uniqueness, Need, Desire, and Value All the Way Down and All the Way Up the Evolutionary Chain

Uniqueness also implies another early value in the structure of Cosmos. Uniqueness implies need. And we can identify and trace the experience of need, which the particles have handed down to us, and which is very much alive in our human experience, to the first nanoseconds of the Big Bang.

That is fascinating by itself and evokes a core sentence of CosmoErotic Humanism.

> *Evolution is love in action in response to need.*

So, need is in the first nanoseconds of the Big Bang. And need implies desire, and desire and need imply value. Quarks desire each other, they need other quarks to live and are thus of intrinsic value to each other and to life, or what we might call *Reality itself*.

This is all happening in the first nanoseconds of the Big Bang. A few minutes later, as described in the implicit language of science, protons experience a longing and need for

neutrons, and neutrons experience a need for protons, and they come together to create the first atomic nuclei—mainly heavy hydrogen and helium nuclei.[58]

And 380,000 years or so after the Big Bang, the atomic nuclei experience the need and desire for electrons to together create the first complete atoms—mainly hydrogen and helium. And it takes another 150-200 million years until these atoms come together in large clouds of gas—needing and desiring each other—and they finally form the first stars.

In the heart of the heaviest stars and their collapse into supernovae, even heavier atoms—like carbon, oxygen, and iron—have since been continuously produced.

Anthro-Ontology Emerges from Evolving First Principles and First Values

It becomes self-evident that need, desire, and value are also First Principles and First Values that go all the way down and all the way up the evolutionary chain with appropriate continuities and discontinuities. There is some shared participation, some continuity, in the experience of need, desire, and value, all the way down and all the way up the chain, because actually, those protons are living inside of us. And it is our experience of those quarks, protons, neutrons, and electrons, at obviously a higher and more evolved level, that constitutes key dimensions of our anthro-ontological experience.

We might say, for example, that the protons have handed this experience of Reality down to us. The protons of which we are made are 13.8 billion years old. They experienced need, desire, and value in the first fractions of a second of the Cosmos's existence, and they have handed that quality down to us.

Commerce—with its supply and demand—is therefore not unique to us. Indeed, it goes back to the first nanoseconds of the Cosmos. It emerges when the first quarks emerged and

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[58] That allurement between the protons and neutrons in the atomic nucleus is the only way that neutrons can survive for more than fifteen minutes without falling apart. A neutron that is not in intimate conversation with a proton will decay within fifteen minutes. In other words, the neutron really needs the presence of the proton in order to be itself. In the first nanoseconds after the Big Bang, a neutron on its own disintegrates. From what we know of neutrons today, it has a fifteen-minute life duration outside of the atom—outside of its relationship to a proton. If it does not establish a relationship, it loses its identity as a neutron and decays into a proton, an electron, and an antineutrino. But when it creates a relationship with a proton it can last—*as a neutron*—billions of years. For more about this, see the section "Atoms and Higher Elements" below.

desperately needed to avoid some other quarks, and desperately needed to form intimate communion with yet other quarks—attraction and repulsion.

However, with the emergence of the more evolved form of human beings, at this moment of meta-crisis, we have the capacity to move from unconscious to Conscious Evolution, which precisely includes the move from unconscious to conscious uniqueness, need, desire, and value.

The apex of human realization, what we have called in other writings on CosmoErotic Humanism *the Fourth Big Bang*,[59] is the human realization that we are irreducibly unique expressions of the LoveIntelligence and LoveDesire of Cosmos, the personal face of the evolutionary impulse, who is a conscious expression of the entire evolutionary process, what we have also called the fulfilment of *Homo sapiens* in *Homo amor*. And at the very core of *Homo amor*'s identity is the movement from unconscious to conscious uniqueness as an expression of the even deeper movement from unconscious to Conscious Evolution.

A Foreshadowing of More to Come in the History of Uniqueness: More Unique Autonomy = More Unique Communion

When two human beings become a couple, or a group of human beings come together in genuine communion—forming a *communitas*—a new intimacy, a unique shared identity in the context of otherness with mutualities of recognition, *pathos*, value, and purpose is generated.

When a person integrates aspects of their self—parts that were formerly split off from the depths of their being—creating a more robust and authentic autonomy, then, a new intimacy—a new, unique shared identity in the context of otherness with mutualities of recognition, *pathos*, value, and purpose—is generated.

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[59] We are borrowing the term from H. Rolston III, *Three Big Bangs: Matter-Energy, Life, Mind*, 2010, Columbia University Press, but we are introducing a fourth Big Bang. The First Big Bang is the Primordial Flaring Forth—the spontaneous explosion of something from nothing. The Second Big Bang refers to the emergence of life from (seemingly) lifeless matter. The Third Big Bang is the emergence of self-conscious awareness and human culture. And in what we have termed the Fourth Big Bang, evolution is becoming conscious of itself in a new way through human consciousness. For more on the Four Big Bang, see, for example, "Appendix 2: The Narrative Thread of Cosmos: The Evolution of Intimacy Through the Four Big Bangs" in Barbara Marx Hubbard and Dr. Marc Gafni, *The Rise of Evolutionary Relationships: The Evolution of Relationships—In Response to the Meta-Crisis*. See also the five-volume set: *Evolution: The Love Story of the Universe—First Meditations on CosmoErotic Humanism—In Response to the Meta-Crisis.* Both published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023.

When a person births new dimensions of their heretofore unrealized capacity and potential—interior or exterior—leading to greater autonomy, then, a new intimacy—a new, unique shared identity in the context of otherness, with mutualities of recognition, *pathos*, value, and purpose, is generated.

Said slightly differently:

When a person comes to know themselves ever-more deeply,

weaving into their new whole their split-off parts,

healing their trauma that caused the split,

and consciously recovering the depths of their irreducible uniqueness,

generating a more robust and authentic autonomy,

which itself is the vehicle for their unique Eros,

then, a new intimacy with self—

a new shared identity

with all their split-off parts—

in the context of otherness—

with mutualities of recognition, pathos, value, and purpose

between all the parts

is generated.

And expanding out,

when a unique nation or religion creates a new intimate communion—

based on a genuine sense of shared identity—

which, to sustain itself, as we have noted elsewhere,

must be rooted in a shared grammar of value,

then, a new intimacy,

a unique shared identity in the context of otherness

with mutualities of recognition, pathos, value, and purpose

is generated.

Intrinsic Uniqueness Emerging—From Quarks to Sex

There are two ways to talk about uniqueness. One is *intrinsic uniqueness*.[60] The other is *contextual or relational uniqueness*.

In the beginning, differentiation, or intrinsic uniqueness, is very, very limited.

There are only:

- six different forms of quarks (and a bunch of other elementary particles) and
- three unique forms of subatomic particles (protons, neutrons, and electrons) that would later make up an atom and
- three different forms of atomic nuclei (of hydrogen, helium, and traces of lithium) and
- three unique forms of complete atoms some 380,000 years later.

At the level of protons, we cannot speak of uniqueness in the same way that it appears later in Cosmos. There is a clear evolution of uniqueness all the way up the evolutionary chain. The protons themselves are pretty much identical—at least when seen from the outside. On the inside, there is this wild and unique movement and communication going on.

Similarly, the union they (only three minutes) later make up with neutrons and, still later, with electrons, brings forth at first only three unique atoms—hydrogen, helium, and traces of lithium. However, all copies of each of these atoms themselves are basically identical atoms. They have no uniqueness of the kind that will emerge in the much later cellular world, and that of course defines the animal world, and in even more pronounced form the human world. [Again, the movement and *conversations* on the inside, which are responsible for the emergent properties of the different elements, literally defy our wildest imaginations.]

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[60] What we refer to here as intrinsic uniqueness is a quality that is an aspect of the part (or the emergent whole) itself and can be observed or measured from the outside (by us). What happens on the inside of the whole—all the wild movement and conversation going on between the parts—is not observable for us. ***JACK

Glimmerings of what will later become Unique Self, however, begin to emerge long before cells. Fragrances of more evolved uniqueness begin to disclose more clearly when galaxies, planets, suns, and stars emerge, all of which are as unique as a fingerprint.

Then, along comes the biosphere with the first microbes, approximately 3.8 billion years ago, and there is an exponential explosion of ever-greater uniqueness.[61]

Then, roughly 1 billion to 2 billion years ago, Reality comes along and makes a major commitment to further the evolution of uniqueness—the emergence of what will become, at the apex of Conscious Evolution, the unique personal self. Reality does this through a system of reproduction that, if there was no value to uniqueness, might have easily been a copycat system, generating just exact copies. But instead, Reality chose, in its desire for ever-deeper value—ever-deeper Eros—which requires ever-deeper uniqueness—to manifest a dazzlingly complex process—perhaps the most dazzlingly complex process the Cosmos has ever seen.

Early prokaryotes, simple single-celled organisms without a nucleus, are already radically original, unique structures in Cosmos, well beyond anything that came before. So, we are already evolving towards ever-greater uniqueness.

But then emerged *eukaryotes* (cells with the nucleus—which actually first emerged from the intimate merger of several earlier prokaryotic cells[62]). And between prokaryotes and eukaryotes, we get from asexual to sexual reproduction.[63] And sexual reproduction is a momentous evolutionary leap towards the ultimate uniqueness commitment of Cosmos, to what we will come to call *Unique Self*.

Reality invents sexuality.

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[61] Horizontal gene transfer, random mutations in their genome, genome duplication, transposition, symbiogenesis, epigenetics—processes that were ignored, understated, or sidelined by the now dead or dying neo-Darwinian orthodoxy of evolutionary science—are key to understanding the generation of ever-deeper uniqueness.

[62] While there is great agreement among biologists that eukaryotes first arose as the result of a merger of two prokaryotic cells—one of these which appears to have been a member of a subgroup of archaea, whereas the other partner appears related to alpha-proteobacteria—there are different theories about how exactly this merger happened. See, for example, Baum, B., & Baum, D. A. (2020). The merger that made us. *BMC biology*, *18*(1), 72. https://doi.org/10.1186/s12915-020-00806-3.

[63] Relationship births first *mitosis* and then *meiosis* into Reality. While *mitosis*, which is the process of cell division, is an earlier evolutionary emergent—all the different types of cells in a body can undergo *mitosis—meiosis* is the process of producing eggs and sperm in sexual reproduction.

Why?[64]

Because Reality is making a commitment

to what will ultimately become

the evolution of ever-deeper, unique, individuated consciousness,

with a new capacity for meaning making and value,

which then participates in the generation

of ever-deeper and ever-more profound intimate communions.

In other words, uniqueness, and the LoveDesire that it generates and that generates it, is a crucial plotline in the Universe: A Love Story.

The Contextual or Relational Uniqueness of Protons

But at the level of protons, these later evolutions of uniqueness are not yet in play. However, protons, as we shall see, possess crucial early forms of uniqueness. But this is what we will call *relational or contextual uniqueness* and not yet fully intrinsic uniqueness.[65]

By contrast, as we will see,

gravitational balls,

and later, planets and

galaxies,

followed by amino acids,

nucleotides,

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[64] There is currently no consensus among biologists on questions like, *how did sex in eukaryotes arise in evolution, what basic function did sexual reproduction serve, and why is it maintained*, given the basic evolutionary disadvantages of sex, but it is clear that it evolved over 1.2 billion years ago. Among the most limiting evolutionary disadvantages of sexual reproduction is that an asexual population can grow much more rapidly with each generation than a sexual one. See, for example, Smith, J. Maynard (1978). *The Evolution of Sex*. Cambridge University Press.

[65] Even though protons are made of intimate configurations of quarks, which, as we have seen earlier, are unique in terms of their unique quantum states.

proteins,

genes, and

cells, and

everything else,

all the way up the evolutionary chain,

possess both of these qualities as well,

intrinsic as well as

relational and contextual uniqueness.

Let's pause here for a moment and look at protons through the prism of contextual uniqueness. Here is how Howard describes it in his book *The God Problem*, pp. 33-37:

> A = A *is fundamental to logic. It is fundamental to mathematics. It is fundamental to science. And it is fundamental to the care and feeding of frogs. But I have sorry news to report.* A = A *is false. It is sometimes a good approximation. But in the end, it's not 100 percent true. Why? Because Aristotle was right. But so was Heraclitus. Opposites can be true simultaneously. In fact, they usually are.*
>
> *It all goes back to location, location, location. It all goes back to differentiation.*
>
> *Try this bit of reasoning.*
>
> A *does not equal* A *because of location.*
>
> *…*
>
> *The location of each* A *is different in a gestalt, different in a large-scale structure. Try this big-picture structure to get a feel for how different the mesh of relationships can be mere fractions of an inch apart:*
>
> When, in disgrace with fortune and men's eyes,
> I all alone beweep my outcast state

And trouble deaf heaven with my bootless cries
And look upon myself and curse my fate,

There are twelve a*'s in this well-known snippet of Shakespeare. Each one is pronounced differently.*

…

Take a look at just this super-short phrase, a phrase with two a*'s in very different contexts doing very different jobs:*

all alone

Small as this phrase is, large-scale structure, big-picture structure, gives each a *a radically different role. And large-scale structure makes each* a *a part of a very different team. The three-letter* all *team makes a very different sound and meaning than the five letter team of* alone*.*

Let's shift A = A *to physics for a second. A proton = a proton, right? Two protons are identical,* n'est-ce pas*? Not quite. Like the letter* a *in a Shakespearean sonnet, every proton has a unique place in big-picture structures. And that place in the big picture changes the proton's role in the cosmos. Protons are participants in social processes. And those social processes help generate the radical differences between the swatches of space and the clumps of matter in this universe. In the minutes after the big bang, all protons were almost equal. But not quite. Some clumped together in dense zones, zones in which they bounced around, colliding head on and ricocheting at manic speed. Others were just a tad more spread out. And just a tad more leisurely in their crash, smash, slam, and bang. The great* UN*equalizer was what Nobel Prize-winning astrophysicist George Smoot calls "quantum mechanical fluctuations—tiny wrinkles in space-time."*[66] *Smoot should know. He's the man who headed the team of one hundred scientists on the COBE*

[66] George Smoot and Keay Davidson, *Wrinkles in Time: Witness to the Birth of the Universe* (New York: HarperCollins, 2007), p. 187.

project, the cosmic background radiation project that discovered the modern traces of these primordial quantum-mechanical wrinkles, wrinkles that stretched and pinched the space-time manifold into a spotty pattern like the patches of color on a spotted cow's back. Just how different were these patches of newborn space-time from each other?

Sufficiently different, in the words of the Department of Energy Office of Science News and Information, to form the "the primordial seed from which, over billions of years, the galaxies and large structures of the present-day universe grew."[67]

Let's go back to our café table at the beginning of the universe. From the big bang to roughly 300,000 years ABB (after the big bang), protons were part of a hot soup, a plasma. But that plasma surged with pressure waves like a stormy sea. And each proton played a different role. If you were a proton, you might be bunching shoulder to shoulder with other protons to make a peak in the pressure wave. I might be off somewhere doing the opposite, putting distance between myself and my neighbors to make one of the pressure wave's dips and gullies, one of the pressure wave's troughs. In addition, you might be participating in the formation of a dense patch of space-time and matter from which a galaxy would eventually grow. And I might be part of the more widely separated slam dance of protons that would someday produce the lacey macramé of empty space between gangs of galaxies. I might be dancing out the early shapes of the spacing pattern that makes the universe on a very large scale look like a lace, like the tracery of a dish-washing detergent foam.

A billion years down the line, you might be surrounded by the spherical surge of a moving electron. You might be the nucleus of a hydrogen atom. And you might be captured by an evolving star. You might be forced to emit light as your electron is excited then is left alone to calm down again, or as your electron is

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[67] US Department of Energy, Office of Science, "Detecting the Afterglow of the Big Bang Anisotropy in the Cosmic Microwave Background Radiation," http://www.er.doe.gov/accomplishments_awards/Decades_Discovery/41.html (accessed August 13, 2010).

stripped away. Your electron might be turned into a photon that goes on a multi-light-year trip as a kind of sentence, a kind of sonnet—in a very distinct set of frequencies, the unique visual cry of distressed hydrogen.

Meanwhile, if I were a proton, I might be part of a molecule of water, freezing with a mass of my fellow water molecules into a spicule of ice way out in the cold darkness of space.

Both of us would be protons, right? A *is* A. A = A. *But we'd each be different. Like the* a*'s in a Shakespearian sonnet, we'd play different roles even if we were side by side. Just as you and I can be side by side in a poker game but each play a different hand, and each play a very different part in the social drama of the night. Big-picture structure counts. Your unique place in the social mesh changes your role. So does mine. And big-picture structure and positioning in the social mesh are location. Or, to put it in real estate terms, big-picture structure and positioning are location, location, location. And in the end, location, location, location gives every fleck and fiber of this cosmos a different role in a massive weave, a massively shifting, changing, and self-upgrading tapestry.*

Intrinsic and Contextual Uniqueness Are Both Unique Configurations of Intimacy

What is critical to realize however, is that, if one really understands uniqueness, all of uniqueness is about relationality. Intrinsic uniqueness is about the configurations of intimacy of different elements of Cosmos, both within the elements and between the elements.

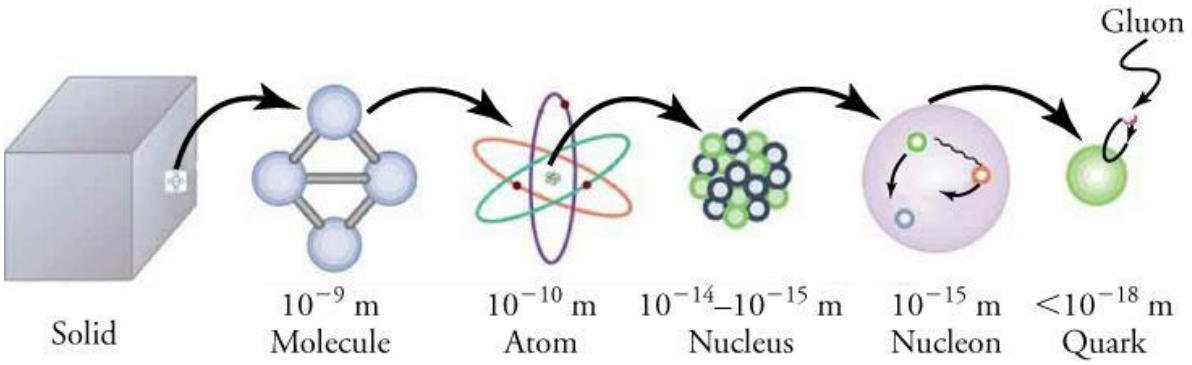

Image: Matter is configurations of intimacy[68]

The uniqueness of protons is also based on configurations of intimacy, but this time not so much *within* the proton[69] but, as Howard pointed out so elegantly, between the proton and other subatomic particles, as well as other dimensions of Reality. Paradoxically, however, uniqueness never exists in a vacuum. Uniqueness always exists in a dialectical dance with relationship.

This dialectical dance itself is a First Value and First Principle of Cosmos—the principle of *coincidentia oppositorium*. This is the First Principle and First Value through which we realize that Reality is, in the language of the interior sciences, *Tachlit HaNiggudim*,[70] or in Howard's lexicon, *opposites joined at the hip*. At the leading edge of evolution, when we experience ourselves as participating in a shared Field of Value, this principle generates *not* the polarization of contradiction but the new synergy of paradox that points towards a larger whole.

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[68] Image from *College Physics*. Authored by: OpenStax College. Located at https://openstax.org/books/college-physics/pages/33-introduction-to-particle-physics. License: CC BY: Attribution: https://creativecommons.org/licenses/by/4.0/.

[69] Although the configurations of intimacy of the quarks within the proton are also quite unique, as we have already shown.

[70] This is a classic formulation of Tzadok HaKohen of Lublin a key student of Mordechai Lainer of Izbica. On both of these thinkers, see Gafni, *Radical Kabbalah*, book one, pp. lxxvi, lxxxi, 35, 37, 77-8, 82, 84, 87-8, 168-9, 235, 239, 242, 254, 290, 325-6 on Tzadok HaKohen of Lublin, and book two, pp. xxvi, 5, 17, 165, 184, 242, 315-332 on Tzadok HaKohen of Lublin. For example, p. 239 book one: "*Most significantly, according to Lainer and his student Tzadok, the ability to maintain paradox is a mark of divinity and, perhaps, the most profound expression of redeemed consciousness*." And p. 320 book two: "*For Tzadok, this level of nonduality, beyond good and evil, is the level at which the separation between human and divine is equally erased. It is the overcoming of these two separations together that enables the radical freedom found in Tzadok and Lainer's acosmic humanism*."

A Short History of Uniqueness: A Deeper Look

Early Wave Patterns in the Universe: Pressure Waves

In the moments immediately following the Big Bang, the very first soundwaves rang out.

13.8 billion years ago, in the first moments after the Big Bang, before there were any stars or galaxies, our Universe was just a ball of hot plasma—a mixture of only the most fundamental particles—such as quarks, electrons and photons—that formed a dense, almost uniform fluid. Within a few millionth of a second later, the Universe had expanded and cooled enough for protons and neutrons, collectively called *baryons*, to be formed from the original quarks. Almost instantly, sound waves were triggered by tiny variations—minute or *quantum* fluctuations—in this hot and dense soup of particles. These waves are called by scientists *Baryon Acoustic Oscillations*, *acoustic density waves*, or simply *sound waves* or *pressure waves*.

> *The early universe rang with the sound of countless cosmic bells, which filled the primordial darkness with ripples like the surface of a pond pounded by stones.*[71]

According to twenty-first-century experiments in science, we now understand that these wavefronts left an imprint on the Cosmos, which later served as spawning grounds for galaxies.[72] It is possible to locate the first glimmerings of uniqueness, or what we might even call *proto uniqueness*, at this moment in time.

The plasma was still so hot that particles that collided couldn't stick together. Instead, they just bounced off each other.[73] The early Universe rings like a gong, *music* is the sound of early Cosmos, as pressure waves—created by the alternating pull of gravity and the repelling effect of the bouncing particles—spread across the face of the Universe.

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[71] Quoted from: https://www.space.com/661-sound-waves-left-imprint-universe.html. See, for example, here: https://www.jpl.nasa.gov/images/pia16881-sounds-of-the-ancient-universe.

[72] See, for example, here, for a simple description: https://www.space.com/661-sound-waves-left-imprint-universe.html.

[73] See, for example, here: https://www.nasa.gov/feature/goddard/2020/nasa-s-roman-space-telescope-to-uncover-echoes-of-the-universe-s-creation.

These pressure waves traveled outward for about 380,000 years, until the still young Universe had cooled enough for light to travel through it. With this light, the Cosmos became transparent. Particles (mainly protons and electrons, and some neutrons) began to form the first neutral atoms (mostly hydrogen).

As the particles stopped bouncing off each other, the waves ceased, or froze in place. The crests of these overlapping ripples were carrying a bit more-than-average matter than the rest of the Universe. With the repulsive pressure of the early plasma now gone, gravity became the dominant force.

Over hundreds of millions of years, stars and galaxies were formed through this uneven distribution of gravity. The frozen waves stretched as the Universe expanded over different cosmic epochs, increasing the distance between the galaxies, which had formed around these frozen wave patterns.

There is already a sense of unique social patterns in these early waves. It is already—that early in Cosmos—possible to speak coherently of *unique* pressure waves that are manifest through very early social forces of allurement and autonomy. A pressure wave forms a crest when a whole bunch of particles come together, and it forms a trough when those particles separate. Then, they come back together again and separate again, making crests of new waves and then troughs of new waves.[74]

There must be a quality of *attention* of some kind (an alluring force) that brings these particles together and then separates them, which uses attraction (the pull of gravity) and repulsion (the repelling effect of the bouncing particles) alternatively. Yet, what brings the exact particles together that will later become a star? And what separates those that will be separated through time and space? We don't have a precise name for the *social decisions* that are being made, but there is a clear *decision*—based on *values*—which allures the particles to form a unique whole.

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[74] What we call the wave are not the local particles that are coming closer and are moving apart, which are also moving outwards in this expanding Cosmos. Instead, the inward and outward movement of these particles creates the crests and troughs of one sound wave after another, with the wave moving and carrying the sound through space. The thick hot soup of the early Universe transmits sound waves in the same way that air or water does. And the sound wave seems to (in Howard's language) *recruit* the particles on its way to participate in it.

At first, unique waves emerge…

> …then unique interference patterns of all the different waves emerge from the thick hot soup and overlap and intermingle,
>
> …then, much later, unique atoms form from the meeting between atomic nuclei and electrons,
>
> …and finally, unique stars and galaxies emerge, especially along the ripples (or crests) of the interference patterns of waves, which have moved apart some 500 million light-years since they were frozen in space,
>
> …and that is just the beginning of the emergence of ever-more uniqueness.

Some level of freedom and choice is built into the Cosmos from the start. And this freedom or choice selects—*decides*—for what it *values*. In this sense, it is fair to say, in our formulation with Howard, that *Value emerges in the first microseconds of the Cosmos*. And one expression of Value is the value of uniqueness.

Articulated somewhat differently, we might say that *there is a unique identity to this non-existent thing called a* wave *that goes rippling across the face of the Cosmos*. Every second, its constituents are different, and yet, it retains what we can fairly call—in proto form—its *unique identity*.

Waves, from the earliest of times on, have an emergent identity that comes from this larger pattern of attraction and repulsion that is bigger than its constituent parts, in which the constituents somehow mysteriously participate. They participate through the dance of unique allurement and autonomy that is Cosmos—all the way down and all the way up the evolutionary chain—with radical continuities and discontinuities.

One of the most astonishing things about the wave is how uniform it is, and how much it fits the pattern we call *music*. Despite its constituents changing from instant to instant—instant to instant to instant—the wave, in a real sense, always retains its unique identity. It transcends its moment-to-moment actual constituents and moves on—constantly and consistently—recruiting another batch of constituents that will allow the wave to retain its unique identity.

In some sense, we might say that the wave has a proto ability to do what the 100 trillion cells and every human being are doing, right now—and 100 trillion cells in every human being have done for their entire lives—which is to manifest a Reality that is utterly unique and utterly beyond its particular physical constituents on an individual basis.

Ocean Waves

There is another example of the same wave dynamic, much later in Cosmos, the waves of the ocean. In an ocean wave, somehow warring particles, particles doing a *bump-em car smash*[75] of astonishing proportions. They manage to come together as a group identity called a *wave*, and then relax as a group identity in the sea and the ocean, which is molecules of water—H_2O—going through this motion over and over again. Those molecules of water move in a circle over and over again, allured into this unique pattern of identity, which is a wave of water.

This is the nature of a wave—whether a wave of baryons, water, sound, or light—it is never the same content, be it particles, molecules, or photons, for more than a short moment. It is constantly changing its contents, and yet its form remains solid, and it can travel hundreds of miles.

The highest part of a wave is called the *crest*. The lowest part is called the *trough*. While that looks like an up and down motion, the water in an ocean wave is actually moving in an almost circular motion.[76] It is this orbital motion of the water that causes an object to move up and down—and a bit forward and backward—as the waves pass underneath it.

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[75] Quoted from Howard Bloom, *The God Problem: How a Godless Cosmos Creates*, Prometheus Books, 2016.

[76] This motion is not exactly circular but *trochoidal.* Imagine tracing a point on a rolling wheel, and you get a curved line. In other words, while the motion is circular, there is still some forward motion. The energy of a wave in the open and deep water does not touch the bottom of the Sea. When these surface waves move closer to the shore, however, their energy touches the ocean floor, and the water particles drag along the bottom. When the water depth is less than one-half the wavelength, the friction of the deeper part of the wave with particles on the bottom causes the top of the wave to move faster than the deeper parts of the wave. This causes the front of the surface wave to gradually become steeper than its back—turning them into what is called *peaking waves*. When the water depth is less than one-twentieth the wavelength, the wave becomes what is called a *breaking wave*—meaning, the top of the wave travels so much faster than its bottom that top of the wave begins to spill over and fall down at the front.

Ocean waves are created by energy passing through the water; and it is the energy, not the water, that gets transmitted through the waves. These waves, if not obstructed by anything, can travel across the whole ocean.

Energies that can cause ocean waves are

wind (the friction between the wind and the surface water causing *surface waves*)

or storms (causing *storm surges*, which are series of long waves created by hurricanes and the likes far from shore in deeper water and intensifying closer to land),

as well as underwater disturbances

like earthquakes, landslides, and volcanic eruptions (causing *tsunamis*)

and the gravitational pull of the Sun and the Moon on the Earth (causing *tidal waves*).

A wave of light[77] basically does the same thing, but it can flip back and forth—up and down—between 430,000,000,000,000 and 750,000,000,000,000 times a second.[78]

So, the unique identities of all these waves that transport energy and recruit different particles to participate in their process is what exterior science might call *a spooky process*, because, as our friend, avowed *stone-cold atheist*, scientist, and philosopher of science Howard Bloom exclaimed in this regard in one of our dialogues, *this has to do with Spirit, not just flesh*. What Howard was intuiting here was that even though the energy that is transported through the wave is still in the realm of exteriors, the wave itself has at least a proto identity—an identity that

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[77] A single, unique photon can be described by its wavefunction, which can be used to describe the probability of the light particle to be measured at every point in space along this wave. Yet, in classical electromagnetic theory, light waves, which consist of many photons—with their overlapping crests and troughs forming unique interference patterns—are interpreted as oscillations of electric and magnetic fields.

[78] Visible light, in the wave theory of light, has a wavelength (the distance between two successive crests or troughs) range from ~400 nm to ~700 nm. E.g., violet light has a wavelength of ~400 nm, and a frequency (the number of wave crests passing a certain point every second) of $\sim 7.5 * 10^{14}$ Hz, whereas red light a wavelength of ~700 nm, and a frequency of $\sim 4.3 * 10^{14}$ Hz. 1 Hertz (Hz) is equal to one cycle per second. So, red light flips back and forth 430,000,000,000,000 times a second.

is conserved over long periods of time and long distances of space. And in our anthro-ontological experience, identity is always expressed in interiors and exteriors—Spirit and flesh. This is the conundrum of Spirit come alive—the paradox of Spirit come alive—because it is the conundrum of unique identity come alive, which is real. This is the mystery of intimate communion and erotic union, which defines Cosmos at all its levels of being and becoming.

Imagine yourself in the window seat of a transoceanic flight. You can look out the window of the plane, as you are flying over the Pacific Ocean, and you can see a wave—indeed you can see lots of them. And you can fix your eyes on just one. It has a distinct absolute identity. It is not the same, or it may be the same, but it is separated from the wave behind it and a wave in front of it. That identity that crosses the ocean, without containing any particular parts for more than a second or two, is a persistent identity of some kind.

From Reductionism to the Allurement of Larger Wholes

Stay focused on your single wave. For as long as you can see it, it will continue to maintain an identity in motion. And yet, in another sense, it probably doesn't exist—in the sense of the existence of a material entity consisting of the same particles or molecules over a long period of time.[79] And yet, it is distinct, it has an identity. You can trace it, as far north as you can possibly see. And you can keep your eyes on it for 20 or 30 seconds, and it is moving. And yet, from the perspective of reductionist philosophy, it doesn't really exist as an entity, or identity; it only exists as a movement of energy through space.

However, if you were, for example, standing on the coast of Maine—on one of those outcrops of rock that goes out into the ocean—and you are an adventurous person, and you stepped out onto the furthest point of that rocky outcrop, you would be very aware, as each wave crashed on the rocks like a giant's fist, that, if you slipped, and you were to fall into the ocean, these breaking waves would kill you in a second by smashing you against the rocks. Now that's extremely real. So, waves indeed exist.

[79] However, in that sense, we also don't exist, as the cells that constitute us now are different from the cells that constituted us some time ago.

And yet, philosophically, at least in some sense, all a wave is, is these water molecules going in a big circle as the energy of the wind or the earthquake or the gravitational pull of the moon moves through it. So, from a reductionist point of view, there is a way in which this wave doesn't exist. But from the point of view of ever-new emergence, it clearly does exist, as a new emergent whole, and its collective unique identity is extraordinarily powerful.

The Limits of Aristotle

In this sense at least, Aristotle was wrong. Aristotle said, if you broke things down to their smallest parts and understood the laws of those elementary parts, you would understand everything.

It turns out that he was wrong.

You can, of course, understand the scientific rules of these water molecules. You can understand the rules of their circular momentum to a point, but these rules have become axioms—nobody is really taking on the challenge of understanding *why* this happens.

We know it is powered by the different forms of energy that are transmitted through the wave.[80] However, by only looking at the separate molecules of the water, air, and ground in an ocean wave, for example, without taking the whole of the waves into account, we don't have a depth understanding of what is really happening. But it is time for science to transcend its own reductionism and begin to look at the larger wholes. This new science, which is emerging in different forms everywhere,[81] can then begin to see how, in fact, it is the allurement to the whole that imposes its own unique patterns and configurations of intimate identity on elementary particles and molecules.

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[80] To recapitulate but one example of waves: Energies that can cause ocean waves are wind (the friction between the wind and the surface water causing *surface waves*) or storms (causing *storm surges*, which are series of long waves created by hurricanes and the likes far from shore in deeper water and intensifying closer to land), as well as underwater disturbances like earthquakes, landslides, and volcanic eruptions (causing *tsunamis*) and the gravitational pull of the Sun and the Moon on the Earth (causing *tidal waves*).

[81] E.g., in the forms of systems theory, complexity theory, chaos theory, and emergence theory. And even those sciences that were traditionally more focused on seemingly separate parts, like physics, are now looking at the underlying quantum fields and wave functions that are connecting everything with everything.

And these larger wholes have rules and laws of a different kind than those that, from a reductionist perspective, in a world of only elementary particles or molecules—if that was all there was—would be conceivable. And these larger wholes, these larger *social* wholes, allured to new, unique *social* identities—new intimate communions—begin to reveal themselves in waves and musical patterns (e.g., the acoustic density waves—or pressure waves) at the beginning of the Universe.

Said slightly differently:

One of the great flaws of the scientific program of the last 2,000 years comes from two pages in Aristotle's metaphysics. This is where he exclaims, as we noted above, that, if you break something down to its smallest elements, and you understand the laws of those elements, you understand everything you need to know. But that is precisely what we might accurately call *the reductionist program of modern science*—or simply *scientism*.

On the one hand, it has been tremendously successful in achieving sets of measurable results. But it overlooks the larger wholes, the unique group identities, which are as solid and real as the components that make them up. The components are all disposable, but the larger *whole* allures the *part* of Reality to configure its specific configuration of intimacy, which quite literally *desires* itself into existence.

But one example:

A redwing blackbird is going to change all of itself over the course of a year or two, but it is still going to be identifiably a redwing blackbird. Moreover, it will be that particular and unique redwing blackbird, with its particular sense of imprinting, and a particular set of parents, and a particular place as home. None of that goes away, even though the constituent physical elements disappear. The uniqueness remains, and Eros remains, and the union between the parts—even though the parts change—remains, meaning, the space in-between remains.

We can fairly say that, in those pressure waves at the dawn of manifestation, as well as in our ocean waves, there is at least a proto sense of uniqueness already present—involving a unique group identity—a unique configuration of intimacy and Eros—of the groups of particles moving closer and apart in the pressure waves, or the water molecules moving in circles in the

ocean waves, that the waves move through. And the phrase *unique configuration of intimacy and Eros* is really just another way of saying *unique group identity*.

Because, in the example of our waves, there is a form of unique identity of each individual wave. And there also is the unique identity of each of the particles that is participating in the making of this wave. Each ocean wave—like each sound or pressure wave—is, in some sense, distinct.[82] Every identity is created by the space in-between itself and other identities. And the crests and troughs of a wave seem to create such a unique identity.

But on a wider scale—if you look out from a larger point of view—you realize that what you are seeing is a pattern. We can witness, for example, individual waves—just a single wave—go up canals. This makes us realize that the whole—the unique pattern—can exist independently of the specific particles of which it is made in any given unit of time.

So, from that perspective, it is the energy (of, for example, the wind, the earthquake, or the Moon) that is moving through the water, alluring the water molecules to move in circles. Those circling water molecules are forming some kind of unique group identity, through which the (energy of the) wave is moving. Or said differently, the wave is recruiting the water molecules to participate in it for a while.

So, there is a very early sense of unique group identities, as well as the identities of unique patterns in which the groups participate, from the beginning of Cosmos, which introduces the realization of a very early form of proto uniqueness.

Teams: Unique Identities Beyond Their Constituent Parts

Another way of thinking of this proto-unique wholeness, to which the particles are drawn, is as *teams*. A team is an alluring whole—irrespective of its particularly constituent wholes. The Yankees remain the Yankees long after Babe Ruth is no longer up to bat for them.

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[82] Each of these waves is operating and moving (energy) through their own media. Ocean waves are moving through the medium of water, and sound or pressure waves are moving through the medium of the hot plasma of the early Universe. And on their path, these waves recruit the particles or molecules to participate in them for a moment.

In more general terms, when the atoms—despite the fact that there are only three unique kinds of atomic nuclei in the first minutes of Cosmos[83]—begin to differentiate, they don't differentiate on their own. They differentiate because of the *unique group identities*, of which they are made—the larger wholes, which inherently allure some of the subatomic particles into the larger wholeness of an atomic nucleus. And these larger wholes—the teams—differentiate more and more. Over the course of billions of years, on the inside of Stars and Supernovae, the subatomic particles are allured into larger and larger wholes—unique group identities—to eventually make up all the elements of the periodic table. And then other wholes called *molecules* are created by atoms teaming up with other atoms to form new and ever-larger molecules.[84]

Now, these pressure waves in the early Cosmos are larger wholes, as well. And yet, they are more like teams that can exchange their members without losing their unique identity. The differentiation of Reality into massive group and team efforts at the inception of Cosmos, which introduces proto-unique group and team identities into the Universe, is core to our understanding of Reality.

The team identities exist independent of specific constituents of matter. Each team identity has a kind of personality, if you will, that transcends matter. For example, the early sound or pressure waves of the Universe, or what we might call the *music of Cosmos*, were independent of any specific body of matter that they contained. These earliest of music waves allow us to see something important, which will be a model for everything else.

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[83] In the first 10^{-6} seconds of the Universe, neutrinos, quarks, and electrons formed. Shortly after, in the first ten-thousandth of a second, the quarks came together—teaming up—to form protons (also known as hydrogen nuclei) and neutrons. Within the first 3 minutes of the Universe, conditions cooled enough for these protons and neutrons to form heavy hydrogen nuclei (consisting of 1 proton and 1 neutron). This started what is called the era of *nucleosynthesis*. Some of these nuclei even combined as helium, though only in much smaller quantities (a few percent). Then, after about 20 minutes, the Universe had cooled so much that no further nuclei could form, and nucleosynthesis ended.

[84] We are of course aware of the distinction between individual wholes, like particles, atoms, and molecules, and collective or social wholes, like teams or waves. And yet, if we look at living beings, which are individual wholes that can change their constituent parts quite frequently, the difference is not so clear. And if we look at our own bodies and the myriads of non-human cells in our microbiome the distinction begins to blur even more.

What we refer to as *the evolution of identity* is moving up through all levels of matter, then gravity balls, to which we will return below,[85] and then beyond to unique galaxies. In this evolution, identity becomes ever-more unique identity, which becomes ever-more differentiated and ever-more distinct.

Really, the sense of identity that is already present in the early pressure waves keeps disclosing itself in ever-more distinct forms, all the way up through life, the biosphere, and all the levels of life.

By the time we get to chimpanzees, uniqueness appears in the form of what we might call *unique personhood*, which then deepens in human beings all the way through the spiral waves of human development, until the emergence of what we will call *Unique Self*. And this evolution of uniqueness is but one expression of the evolution of love and the evolution of uniqueness—for the two are indivisible.

So, uniqueness is clearly a structure of Cosmos. And what we are beginning to see is how First Principles and First Values operate and evolve. We have proto uniqueness already at the earliest level of pressure waves. This proto sense of unique identity then evolves through matter, life, and mind.

We can actually trace the history of uniqueness…

…and its emergence from the beginning of time,

…all the way until we get to what we will refer to below as the democratization of uniqueness as basis for universal human rights,

…and then even beyond that, the emergence of the Unique Self structure of identity, which is core to CosmoErotic Humanism,

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[85] What we call *gravity balls* are, in Howard Bloom's language from his book *The God Problem*, "really big gravitational bodies… in this cosmos [that] are hungry. Gravitational bodies compete to snag matter and to swallow it, bulking themselves up in the process. … A ball of ginormous gravitational power would do more than just lengthen the waves of light struggling to escape it. It would do more than merely gentle light and produce a gravitational red shift. A truly humongous gravity ball would swallow the light trying to shoot from it. It would make it impossible for light to escape. It would make it impossible for light to go beyond the spherical boundary that came to be called a 'Schwarzschild radius.' Gravitational bodies of this sort, gravitational bodies so extreme that they would imprison light, would come to be called black holes."

...and the emergence of a New Human and a New Humanity in response to the meta-crisis.

The history of uniqueness, moving from those early pressure waves into more defined, complex, subtle uniqueness—with more and more interiority, more and more distinction, and then more and more consciousness of its uniqueness—is a core plotline of Cosmos.

The Early History of Uniqueness: A Recapitulation

We have spoken just now of pressure waves—telling the story of this early form of unique team identity and its music that goes across the Cosmos. This takes place long before there is what might be called *gravity balls* and *gravity competition*,[86] long before galaxies, all of which are later stages in the history of uniqueness, to which we will turn below.

Pressure waves appear at the very beginning of Cosmos, as the original elements in the Cosmos—the protons and the neutrons, formed from quarks, and the other elementary particles, as well as the first atomic nuclei[87]—first squeeze together, pulled by gravity, and then move apart, through the repelling effect of the bouncing particles. When they squeeze together, they make the crest of a wave, and when they move apart, they make the trough of the next wave.

They keep participating in one wave after another.

And what is a wave?

It is an insubstantial thing made of the group activity of constantly changing constituents.

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[86] In the words of Howard Bloom from his book *The God Problem*: "Electrons and protons mated and formed atoms 380,000 years after the big bang. And that's when the conflict began. It was the era of the Great Gravity Crusades. Atoms clustered and competed. Competed for what? To kidnap, seduce, and recruit yet more atoms. Those atom clumps that grew the fastest grabbed and swallowed atom masses that grew more slowly. The big ate the small in what … astrophysicists and astronomers call cannibalism. The biggest winners became galaxies. The smaller winners became stars. The winners in the number three slot became planets. And the runners up became moons. Those Great Gravity Crusades continue today. As I type this and as you read it, galaxies are gathering in clusters, and the biggest clusters are eating their smaller brethren to bulk up and become superclusters. Yes, galaxies are competing. Competing to commandeer matter. Competing to literally make a dent in space."

[87] It was about a ten-thousandth of a second after the Big Bang that the first protons and neutrons were formed from the quarks, and they even stuck together within a few minutes to form the first atomic nuclei, mostly heavy hydrogen and helium and traces of lithium. It took, however, hundreds of thousands of years for electrons to stick to the nuclei, which then formed the first complete atoms.

As we have realized, a wave, be it an early pressure wave or the first ocean wave of 3.8 billion years ago,[88] is not its constituents, not at all. Yet, it has a unique identity so powerful that a wave of the ocean could pick you up off a promontory, a rocky outcrop, on the shores of Maine, and smash you against the rocks and kill you. That's a very real identity.

Yet, as is always the case when we are talking about coherent teams, the physical form that constitutes the identity of the team is constantly changing.

As we point out in some depth in the core writings of CosmoErotic Humanism, the evolutionary history of Cosmos is an evolution of intimacy. As expressed in the first half of the intimacy equation of CosmoErotic Humanism:

Intimacy = shared identity in the context of (relative) otherness.

That is precisely the nature of uniqueness in a wave and all other unique shared group identities. A wave is one of the earliest configurations of intimacy in Cosmos. A wave is energy moving through a medium, forcing the parts making up the medium to move in some kind of circular movement. Those circling parts are forming a unique shared identity, through which the (energy of the) wave is moving.[89]

The wave functions through what Howard calls *recruitment strategies*. These strategies take advantage of the fact that the baryons (in the case of our early pressure waves) are moving together and then moving apart—allurement and autonomy at the inception of Cosmos—and on that basis form their unique team identity as a wave.

It is perhaps useful to evoke here a line from our friend Ken Wilber, evoking Alfred North Whitehead:

It is for all these reasons that Alfred North Whitehead, one of the most influential philosophers of this century, set forth his philosophy of "organism"

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[88] The first ocean formed over vast periods of time. At first, water was present as a gas until the Earth cooled below 212 degrees Fahrenheit—or 100 degrees Celsius. At this time, which was about 3.8 billion years ago, the water condensed into rain. That rain then filled the basins, and the primeval ocean came into existence.

[89] The medium can be water for the water waves, the quantum field of the baryons for the early pressure waves, the electromagnetic field for the light waves, or the spacetime continuum for the gravitational waves. And the parts can be water molecules, baryons, photons, or parts of the spacetime continuum itself (which may or may not be gravitons).

> *and "vibratory existence," which suggests that all the "ultimate elements are in their essence vibratory." That is all things and events we usually consider irreconcilable, such as cause and effect, past and future,* [and we might add life and death,] *subject and object, are actually just like the crest and trough of a single wave, a single vibration. For a wave, although itself a single event, only expresses itself through the opposites of crests and troughs, high point and low point. For that very reason, reality is not found in the crest nor the trough alone, but in their unity (try to imagine a wave with crests but no troughs). Obviously, there's no such thing as a crest without a trough, a high point without a low point. Crest and trough—indeed all opposites—are inseparable aspects of one underlying activity. Thus, as Whitehead puts it, each element of the universe is "a vibratory ebb and flow of an underlying energy or activity."*[90]

Wilber and Whitehead are describing the unique identity of the wave as being structural to Cosmos.

Indeed, a wave is already a pattern of meaning. A wave is a coded pattern of intimacy that creates a new emergent called the *wave*. A pressure wave, and its music, is an example of largescale group or team behavior at the inception of Cosmos. So, a wave is an example of an early form of a proto-unique identity, which incarnates an implicit value, the desire of the particles or molecules to come together and come apart—allurement and autonomy—attraction and repulsion—and to form a unique identity, a new whole that transcends its parts.

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[90] Ken Wilber, *No Boundary: Eastern and Western Approaches to Personal Growth*, Shambhala; Reprint Edition (2001).
Alfred North Whitehead. *Science and the Modern World* (p. 50). Kindle Edition: "There is no difficulty in explaining the paradox, if we consent to apply to the apparently steady undifferentiated endurance of matter the same principles as those now accepted for sound and light. A steadily sounding note is explained as the outcome of vibrations in the air: a steady colour is explained as the outcome of vibrations in ether. If we explain the steady endurance of matter on the same principle, we shall conceive each primordial element as a vibratory ebb and flow of an underlying energy, or activity."

Telos and Things: The Self-Actualizing Cosmos

Of course, as we noted above, waves are not classical *things*. Or said differently, the wave is a thing but not an ordinary thing.

As we have noted elsewhere, in the original Hebrew, the word for *thing* is *davar*. *Davar* means both *word* and *thing*. A *word* has intrinsic meaning. A word can evoke value, *telos*, direction, and meaning. A word forms a story. A word is not only a thing, in the sense of being a picture of mechanistic parts. The deployment of *word* and *thing* in the same word implies some dimension of story, or *telos*, at play—there is an inherent plotline of value in the thing—meaning, there is some value at play, which is guiding the plotline.

It is only *that* realization that allows us to grasp the nature of what has been called the *self-organizing Universe* or *self-actualizing Cosmos*. We live in a Cosmos with an inherent plotline, implicit in its own First Principles and First Values. That plotline includes, as we have seen, a movement towards deeper and wider uniqueness, which in turn generates ever-deeper group and team identities. In other words, as we saw earlier, ever-deeper uniqueness paradoxically generates ever-deeper and wider unions.

All of this is at play in the very first waves so very close to the beginning. For remember what a wave is—a wave is an oscillation—and oscillations are basic to this Cosmos.

One theory of the beginning and end of the Universe basically says this: First, the Universe is at a minimum, then it expands toward its maximum, and then it collapses back to its minimum. Then, presumably, a new Big Bang comes out of that minimum, and the process starts all over again.[91] So, if you looked at an entire Universe on a bigger timescale, according to that theory, it would like the baryons in a pressure wave, coming together, then, expanding, then, coming together again, and then, expanding…

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[91] Another theory says that the Universe could keep expanding forever. Whether the first or the second is right, seems to depend on the total matter that exists in the Universe; and especially the amount of dark matter in the Universe is still unknown. A third theory suggests that the Universe could collapse any time, in the next instant, or billions of years from now, based on what is known as *vacuum decay*. For a very simplified description of that latter possibility, see, for example, "How 'vacuum decay' could end the universe," *Big Think*, 2019, see https://bigthink.com/hard-science/vacuum-decay-end-of-the-universe/. None of these theories excludes, of course, the possibility of there being a new Big Bang and a new Universe that may or may not build upon the experiences of the previous Universes.

In an even deeper sense, it would look like a photon,

which is expanding as a probability wave,

going through crests and troughs (areas of maximum probability to manifest and areas of no probability),

then, manifesting as a particle when interacting with another particle,

then, dissolving again into its potential state as a probability wave,

to then, manifesting again, and dissolving again…

In the same way, the Universe jumped out of no-thing (not even time and space, with zero probability for some-thing to emerge) into existence.

But how in the world does anything, be it a Universe or a photon, go to a minimum, or even zero probability, and then how does it come out of that minimum and go to a maximum? How is it possible that a photon travels through spacetime—when there are areas where the probability for the photon to manifest is zero, so the photon traveling through the light wave is seemingly doing what has been called *quantum leaps*?[92] And how does a light wave, consisting of many photons, e.g., a light wave emerging from a star, keep moving through space for billions of years, and yet retain its identity as a light wave?

The light wave seems to just keep repeating the same pattern with absolute precision, unless it bumps into some cosmic dust—where it manifests as photon particles that intimately interact with other particles in that dust—or is diffracted around the gravity of a large black hole. How does that happen? We don't know but it happens. Waves are patterns that involve the earliest form of unique team identities.

These early wave patterns of crests and troughs have, so very early on in Cosmos, an absolutely unique quality. They are the product of astonishing forces in Cosmos that allure

[92] A quantum leap is a leap of a quantum from one probable area to the next without ever occupying the intervening spaces that have a probability of zero. In classical mechanics that would be impossible. In quantum mechanics that is exactly how quanta move through spacetime.

separate parts into unique configurations of Eros and intimacy—unique group and team identities.

How in the world does a wave (of energy moving through a medium[93]) maintain its identity—its coherence—or what we might legitimately call its *uniqueness*, when it is changing the parts of which it is made up of, every second? And yet, there are unique group identities, through which the wave is moving and whose movements create the crests and troughs of the wave along its path. These unique configurations of Eros, these unique group identities, are as core to the structure of Reality as protons, neutrons, and electrons.

And of course, protons and neutrons themselves, as well as the atoms they will generate together with the electrons about 380,000 years later, are all unique configurations of Eros and intimacy—in other words, unique group identities.

Three quarks in a particular configuration of intimacy form a proton. And although in terms of intrinsic uniqueness, as we will see below, protons are copies of each other,[94] the proton itself is something entirely unique, novel, and emergent, relative to the three quarks that constitute it. A proton is, relative to the quarks, a unique whole, greater, more unique, and more whole than the sum of its parts.

These are the realities on which Cosmos is built. The unique group identity is coded with its own value imperatives that generate the coherence of the group.

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[93] Again, that medium can be water, the field of baryons, the electromagnetic field, or even the spacetime continuum itself.

[94] At least they look very similar when seen from the outside. On the other hand, the quarks, out of which the protons are made, are already pretty unique in terms of their quantum state—as well as totally relational. They are so relational that they can never be found in isolation. Instead, they can only be found either in so-called *quark-gluon plasmas*, or in so-called *hadrons*. (Hadrons include both *baryons* (such as protons and neutrons) and *mesons*.) Quarks, which make up 99.9% of ordinary matter, are so-called *spin ½ particles*, which (as a group) are also known as *fermions*. All *Spin ½ particles* are subject to what is known as the *Pauli exclusion principle*. This principle states that ***no two identical fermions can simultaneously occupy the same quantum state. In other words, quarks and other fermions are both totally unique and entirely defined through their unique relationships.*** If one quark changes its quantum state to the one that was formerly occupied by another, that other quark has to simultaneously change its quantum state as well—even if by now the particles are separated by a large distance. (This phenomenon has also been called *quantum entanglement*.) ***In other words, they are not only, at least to some extent, unique and autonomous. Rather, even their uniqueness is, like ours, embedded in the allurement of relationship, and hence it is, at least to some extent, ever reconfiguring.***

So, when you think about it, meaning structures don't begin with human beings; meaning structures don't even begin with life. Meaning structures—or what we might call *larger patterns of content and value*—intimate patterns of coherence—are coded in the Cosmos from the beginning. Said differently, meaning or value is coded into Cosmos from the beginning.

Value and Meaning All the Way Down the Evolutionary Chain

Let's think for a moment about quarks, which come into existence immediately proximate to the Big Bang. What Howard and I (Marc) were talking about one day—which led to the articulation that *Value is Real all the way up and down the evolutionary chain*—is that quarks have to make decisions. Or said differently, decisions are built into quarks.

This decision-making property is built in as a sense of who they gather together with and with whom they don't gather; attraction and repulsion—or allurement and autonomy—lives in the space between quarks.

Quarks don't get together in unions of Eros with just any quark. They *choose* the quark with which to join in intimate communion. That is value—and a proto sense of choice—all the way down the evolutionary chain.

If you were a quark, then we could say that some dimension of a *unique you* places a negative value on those things you are repelled by and a positive value on those things you are attracted—allured—towards.

That is the beginning of *us versus them*. *Us versus them* in Cosmos is the assertion of unique identity. *Us versus them* shows up in the first instance of the Cosmos, in the first fractions

of a second of the Cosmos's existence.[95] So, *us versus them* seems to be absolutely essential to the way the Cosmos creates.[96]

And by value we denote something close to what today is also called *information*—not information in the sense of Claude Shannon's wrong use of the term *information* as bits and bytes—but information that is, at its core, meaning or value. Or, as Howard likes to say, Shannon got the math right but the metaphor wrong.

Information as meaning is Real—it is a structure of Cosmos. Indeed, this is how Shannon himself understands it—in his essay in 1948—where he admits that information has meaning.[97] The essay was republished in 1949 as a book titled *The Mathematical Theory of Communication*,

[95] Immediately after the Big Bang until about 10 to the power of -43 seconds later (that is 0.00000000000000000000000000000000000000000001 seconds), all four basic forces—gravitation, electromagnetic, and the strong and weak interactions—were still connected with each other. Then the Universe is said to have inflated in a flash. From that inflationary phase, the gravitational waves originated, which have just been detected. Less than a blink of an eye after that, elementary particles like quarks and photons formed. And about one ten-thousandth of a second after the Big Bang, quarks came together to birth protons and neutrons. Within the first 3 minutes of the Universe, conditions cooled enough for these protons and neutrons to form heavy hydrogen nuclei (consisting of 1 proton and 1 neutron). This started what is called the era of *nucleosynthesis*. Some of these nuclei even combined as helium, though only in much smaller quantities (a few percent). Then, after about 20 minutes, the Universe had cooled so much that no further nuclei could form, and nucleosynthesis ended.

[96] For the critical distinction between the Eros and pseudo-eros versions of us/them, see our conclusion below.

[97] "The fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point. Frequently the messages have meaning; that is they refer to or are correlated according to some system with certain physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem." Quoted from a 1948-article named "A Mathematical Theory of Communication" in *The Bell System Technical Journal* by Claude Shannon, Vol. 27, pp. 379–423, 623–656, July, October, 1948. See https://people.math.harvard.edu/~ctm/home/text/others/shannon/entropy/entropy.pdf, retrieved April 13, 2023.

containing an additional article by Warren Weaver, which provided an overview of the theory for a more general audience.[98]

Howard Bloom, in his book *The God Problem*[99] quotes from that book:[100]

> *Weaver tells us point blank in the book he coauthored with Shannon that 'the word information, in this theory, is used in a special sense,' a special engineering sense. Continues Weaver, it 'must not be confused with its ordinary usage.' And Weaver warns the world that 'in particular, information must not be confused with meaning.' But is information without meaning really information? Is the mere transport of information really communication? … The separation of meaning from information did not sit well with some of the best minds of Shannon's time. At New York's Beekman Hotel on March 22, 1950, there took place one of a series of conferences of super- brains funded by the Josiah Macy Jr. Foundation—conferences on cybernetics. At those conferences, Shannon laid out his ideas. And the aristocrats of intellect who gathered to hear him, the superbrains who sizzled with excitement at the idea that information could at last be translated into math, that human thought could at last be translated into hard science, included math legend John von Neumann, anthropology celebrity Margaret Mead, Mead's husband anthropologist Gregory Bateson, and a select smattering of others from psychology, brain physiology, physics, electrical engineering, and more. But*

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[98] Here, Weaver warns us that "the word *information*, in this theory, is used in a special sense that must not be confused with its ordinary usage. In particular, information must not be confused with meaning ." See p. 8 of the book, *The Mathematical Theory of Communication*, University of Illinois Press, 1964. See https://pure.mpg.de/rest/items/item_2383164/component/file_2383163/content—retrieved July 2023. Shannon and Weaver were both involved in different fields of study—Shannon as a mathematician, Weaver as a scientist. Weaver was the director of natural sciences for the Rockefeller Foundation. In the same book, Weaver writes (p.4): "*Relative to the broad subject of communication, there seem to be problems at three levels. Thus it seems reasonable to ask, serially: LEVEL A. How accurately can the symbols of communication be transmitted? (The technical problem.) LEVEL B. How precisely do the transmitted symbols convey the desired meaning? (The semantic problem.) LEVEL C. How effectively does the received meaning affect conduct in the desired way? (The effectiveness problem.) … The semantic problems are concerned with the identity, or satisfactorily close approximation, in the interpretation of meaning by the receiver, as compared with the intended meaning of the sender. This is a very deep and involved situation, even when one deals only with the relatively simpler problems of communicating through speech."*

[99] Howard Bloom, *The God Problem: How a Godless Cosmos Creates*, Prometheus Books, 2016, pp. 420-421.

[100] *The Mathematical Theory of Communication*, University of Illinois Press, 1964, p. 99.

there was a problem. Reports James Gleick, 'Margaret Mead and others, felt uncomfortable with the notion of information without meaning.' The Viennese physicist Heinz von Foerster was more than uncomfortable. He said, 'I wanted to call the whole of what they called information theory signal theory.' Why? 'Because information was not yet there. There were 'beep beeps' but that was all.' Von Foerster was on to something. In Gleick's words, 'Hard as Shannon tried to keep his listeners focused on his pure, meaning-free definition of information, this was a group that would not steer clear of semantic entanglements.' Separating meaning from information may have seemed logical to Shannon. But it did not make sense to these very smart people."

Meaning, or value, informs us that things are not just isolated or separate, or just accidental or just random. They are part of a larger context of non-randomness.[101] In other words, meaning tells us that an event is part of a larger pattern, and meaning gives us access to that larger pattern.

That is what another statement by Whitehead says:

The misconception that has haunted philosophical literature for centuries is the notion of "independent existence." There is no such mode of existence; every entity is to be understood in terms of the way it is interwoven with the rest of the universe.[102]

Indeed, what science, properly read, is pointing towards is a plenum of value, or a plenum of meaning, long before humanity.[103]

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[101] Non-randomness is, in fact. at the heart of Cosmos. In his Appendix 1: All About Randomness (Marshall, Perry, *Evolution 2.0*, BenBella Books, Kindle-Version. (pp. 281-306)), Perry Marshall, adroitly and eloquently, recapitulates to the leading-edge literature and adds his unique engineering perspective, compellingly demonstrating that "randomness, as defined and employed in [dogmatic Neo-] Darwinism, is antiscientific" and that "Evolution 2.0 is guided by fantastic mathematics that we are only beginning to understand." (p.282)

[102] Quoted from p. 83 of Whitehead, Alfred North, Immortality, 1941, in *Essays in Science and Philosophy*, New York, Philosophical Library, Inc., 1947. pp. 77-96.

[103] This is a fair summation of Howard Bloom's magnum opus work, *The God Problem*, although he never quite states it that way. I (Marc) suggested this reading of his work to Howard, and he concurred in multiple recorded dialogues between 2017 and 2023.

Quarks, Protons, and Atoms: Evolutions of Uniqueness

Quarks, which make up 99.9% of ordinary matter in the Universe, are thought, by science today, to be the most elemental constituents of matter in the subatomic world. Together with so-called *leptons* and *bosons*, they are the elementary particles of the Cosmos.[104]

Elementary particles are called elementary because they cannot be divided any further. All other known particles are composite particles made of these elementary particles. Protons and neutrons, for example, are composite particles, each made of 3 quarks (and the gluons that bind them together).[105]

All particles can be in one of two groups:

- *fermions* and
- *bosons*.

And fermions are again differentiated into:

- quarks and
- leptons.

Well-known examples of leptons are electrons.

Quarks and leptons (aka fermions) are the building blocks of matter and have mass.

Bosons behave as force carriers for fermion interactions (or what we could call the intimate conversations between the unique fermions), and some of them (gluons and photons) have no mass.

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[104] These three categories of elementary particles (quarks, leptons, and bosons) form the so-called *Standard Model of particle physics.* The Standard Model of particle physics is the theory describing three of the four known fundamental forces in the universe (the electromagnetic, weak, and strong interactions—excluding gravity, until this point, although there have been hypothetical particles suggested, which haven't been found so far) and classifying all known elementary particles. It was developed in stages throughout the latter half of the twentieth century, through the work of many scientists worldwide. Although the Standard Model has demonstrated some success in providing theoretical predictions, which were later confirmed experimentally, it falls short of being a complete theory of fundamental interactions, as it leaves some physical phenomena unexplained.

[105] Gluons are one form of bosons. Bosons are the force carrier particles of Cosmos—with each form of bosons transmitting a different force. E.g., gluons transmit the strong nuclear force, and photons transmit the electromagnetic force.

Quarks (and all fermions) have a very interesting feature that makes them both totally unique *and* entirely defined through their unique relationships. That feature is known as their *spin*. Let's take a closer look at what that means:

Spin is a so-called *conserved quantity*[106] that is carried by particles (next to mass and charge).[107] In general, the spin quantum number is n/2, with n being any non-negative integer. So, the allowed values for spin are 0, 1/2, 1, 3/2, 2, etc.

Fermions are so-called *spin ½ particles*, while bosons have *integer spin*. So, bosons can have spin 0, 1, 2, etc., while fermions can have spin 1/2, 3/2, 5/2, etc.

Fermions include:

- the six existing types of *quarks* (*up*, *down*, *charm*, *strange*, *top*, and *bottom quarks)*
- and their respective *antiquarks*,
- as well as the six known types of *leptons* (*electrons*, *electron neutrinos*, *muons*, *muon neutrinos*, *taus*, and *tau neutrinos*)
- and their respective *antileptons* (with an *antielectron* conventionally called a *positron*).

Bosons include:

- the only recently discovered *Higgs bosons*
- as well as the so-called *gauge bosons*:
    - *photons*,
    - *W and Z bosons*, and
    - eight types of *gluons*.

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[106] Meaning, a value that remains constant along each trajectory of the system. The value of spin for an elementary particle depends only on the type of particle and cannot be altered in any known way.

[107] Spin is not only a quantitative feature of elementary particles, but also of composite particles (e.g., hadrons) and atomic nuclei.

- These *gauge bosons* mediate the interactions between the *fermions* and provide three of the four most basic forces.
- All of these four forces are part of the reality of the Field of Allurement and Autonomy or what science often refers to as *attraction* and *repulsion*:
    - *electromagnetic forces* (which are mediated through the exchange of *photons* and can be attracting (between particles with opposite electromagnetic charge) or repelling (between particles with same electromagnetic charge))
    - the *strong* nuclear force (a very strong attractive force mediated through the exchange of *gluons*) and
    - the *weak* nuclear force or interaction (neither an attractive nor a repulsive force but responsible for certain forms of particle decays and mediated through the exchange of *W (W^+ and W^-) and Z bosons*).
    - A yet to be discovered, and therefore still hypothetical *graviton* would also be among these *force carriers* (called *gauge bosons*), transmitting the attractive force of gravity.

We already know, based on the riveting depth of the quantum sciences, that none of these so-called *particles* are appropriately thought of as infinitesimally tiny balls—*neither* the quarks, *nor* the protons, neutrons, and electrons, *nor* the atoms.

Rather, quarks, protons, neutrons, and atoms are best thought of as *a set of relationships or allurements*—and the *conversations* between them.

Quarks, for example, could be seen as fast-moving, dancing points of allured energy. **They are *so* relational that they are *never* found in isolation**.[108]

[108] The strong force, which binds the quarks together, is weak when the quarks are close (it even drops to zero when the 3 different color charges of the quarks get close to one another) but increases steadily when you try to separate them, making it impossible to isolate a single quark. This property of the strong force, which is known as asymptotic freedom, is a surprising, counterintuitive property, which is not found in any of the other fundamental forces. That is why the theory describing the strong force, called *Quantum Chromodynamics* (QCD), has to be simulated on huge computers. See, for example, https://phys.org/news/2005-05-mysteries-quarks.html.

Instead, they can only be found in intimate relationship with each other and with other elementary particles, in what science calls:

- a *quark-gluon plasma*[109]
- or in even more intimate relationships within so-called *hadrons*—which are made up of *quarks*, which experience the strong nuclear force transmitted by *gluons.* Hadrons include:
    - *baryons*—containing a threesome of quarks each—such as our protons and neutrons
    - as well as the short-lived *mesons*—containing the twosomes of one quark and its antiquark each.

In other words, quarks have never been seen just by themselves. They are always found in relationships of two or three. As just noted above, the threesomes they form are called *baryons* (e.g., protons and neutrons); and the twosomes are called *mesons*. [110] **Another, less technical, way to say this is that hadrons are made up of quarks in intimate relationships and conversation with each other, and the *messages* or *words* they exchange—their intimate love notes—are the *gluons* that keep them together.**

Now it gets really interesting.

As we just noted above, quarks are so-called *spin ½ particles*, which (as a group) are also known as *fermions*. *Spin ½ particles* (aka *fermions*), in contrast to *integer spin particles* (aka *bosons*), are subject to what is known as the *Pauli exclusion principle*. This principle states that ***no two identical fermions can simultaneously occupy the same quantum state.***

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[109] A *quark-gluon plasmas* is also called a *quark soup*, which is a state of matter (in quantum chromodynamics (QCD)) that exists at extremely high temperature or density that existed in the time interval of 10^{-10}–10^{-6} s after the Big Bang.

[110] Their need for relationship is so extreme that rather than the quarks leave their relationship, a new quark-antiquark pair (a *meson*) is created from the energy of the strong nuclear field. As Mike Albrow, Scientist Emeritus at Fermilab, puts it: "It's as if when you try to kick a quark out of a proton, the strong field that was holding it in gets stretched, rather like an elastic band. Eventually the elastic band breaks, and at the break a new quark (actually a quark-antiquark pair) is created out of the energy in the field. The idea that quarks can never be isolated is called confinement." See https://www.fnal.gov/pub/science/inquiring/questions/quarks.html.

In other words, quarks and other fermions are both totally unique and entirely defined through their unique relationships. If one quark changes its quantum state to the one that was formerly occupied by another, that other quark has to simultaneously change its quantum state as well. ***In other words, they are not only, at least to some extent, unique and autonomous. Rather, even their uniqueness is, like ours, embedded in the allurement of relationship, and hence it is, at least to some extent, ever reconfiguring.***

Professor Frank Wilczek, Nobel Laureate in 2004 and one of the world's most eminent theoretical physicists,[111] discovered that the mass of a proton *comes entirely from the arrangement of the quarks and not at all from the quarks themselves*.[112] The *arrangement of the quarks* is referring to their movements and the relationships between them. Their movement creates *kinetic energy*, which is, according to Einstein's relativity theory ($E=mc^2$), equivalent to mass.

In an essay in the New York Times, M.I.T. physics graduate Dennis Oberbye writes about Wilczek:[113]

> *Nowadays physicists—those coldblooded reductionists—are telling a…poetic but no less mathematically rigorous tale. It is a story not of a clockwork world but an entangled interactive world whose constituents derive their identities and properties from one another in endless negotiation—a city, in one physicist's words, of querulous social inhabitants. In other words, they are telling a tale about relationships. …*
>
> *Particle physics, Dr. Wilczek and his colleagues like to point out, is not really about particles anymore, but about their mathematical relationships—in*

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[111] Frank Wilczek is known, among other things, for the discovery of asymptotic freedom, the development of quantum chromodynamics, and the discovery and exploitation of new forms of quantum statistics. See, for example, Frank Wilczek and Betsy Devine, *Longing for the Harmonies: Themes and Variations from Modern Physics*, W. W. Norton & Company, Revised Edition, 1989. See also, Wilczek, Frank, *Fundamentals: Ten Keys to Reality*, Penguin Press, 2021.

[112] Quoted from "ESSAY; In the New Physics, No Quark Is an Island" in *The New York Times*, by M.I.T. physics graduate Dennis Oberbye, March 20, 2001. Read more: https://www.nytimes.com/2001/03/20/science/essay-in-the-new-physics-no-quark-is-an-island.html.

[113] Ibid.

particular symmetries—aspects of nature that remain invariant under different circumstances and viewpoints. …

Or as the quantum gravity theorist Lee Smolin formulated it: "It can no longer be maintained that the properties of any one thing in the universe are independent of the existence or nonexistence of everything else," and "No electron is an island."[114]

The Intimate Conversation Inside the Atoms: Your Need Is My Allurement

The nucleus (or core) of an atom (consisting of protons and neutrons) has a positive electromagnetic charge. Electrons have a negative charge. The electromagnetic force—or field—which arises from what we call *arousals in the Field of Eros*[115]—allures negative electrons in an orbital dance around the nucleus.

That understanding, however, raises a simple question:

How do the protons in the nucleus stick *together?*

After all, each proton has a positive charge, which should repel it from other protons via the electromagnetic force. In this sense, as we have said earlier, protons value their autonomy above bonding with each other by means of their electromagnetic conversations.

However, at the much closer distances inside the nucleus of an atom,[116] what is known as the *residual strong nuclear field*[117] allures protons with their positive charges to neutrons, which

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[114] Smolin, Lee, *The Life of the Cosmos*, Oxford University Press, 1997.

[115] Remember that photons are the carriers of the electromagnetic force. An electron that has absorbed a photon is literally called *excited* by the cold-blooded physicists.

[116] If we could magnify the simplest hydrogen atom so that its nucleus (in this case only one proton) were the size of a basketball, then its lone electron would be found about 2 miles away).

[117] The strong nuclear field, which works between the quarks inside of the protons and the neutrons, is, at nuclear distances of about 10^{-15} m, around 100 times stronger than the electromagnetic field. However, a tiny fraction of the field, called residual strong field, acts outside the proton or neutron. Even that residual strong field (for more about that see the main text below), which allures protons with their positive charges to neutrons, which have no charge, is still much stronger than the repelling electromagnetic force between the protons. In other words, that residual strong force allures protons and neutrons together, overriding the electromagnetic repulsion of the protons (their desire to be autonomous) alone.

have no charge. In other words, that residual strong force allures protons and neutrons together.[118]

That residual strong force of allurement between the protons and neutrons in the atomic nucleus is the only way that neutrons can survive for more than fifteen minutes without falling apart. A neutron that is not in intimate conversation with a proton will decay within fifteen minutes. In other words, the neutron really needs the presence of the proton in order to be itself.

In the first nanoseconds after the Big Bang, a neutron on its own disintegrates. From what we know of neutrons today, it has a fifteen-minute life duration outside of the atom—outside of its relationship to a proton. If it does not establish a relationship, it loses its identity as a neutron and decays into a proton, an electron, and an antineutrino. But when it creates a relationship with a proton it can last—*as a neutron*—billions of years.

Here is how that works:

A neutron is made of 3 quarks—1 up quark and 2 down quarks—and many so-called intermediate particles called *gluons*, which carry the strong nuclear interaction between the quarks. These gluons are exchanged very often, allowing the quarks to feel each other. They are like the words exchanged in the Eros-tinged conversation between the quarks.

A proton, on the other hand, is composed of 2 up quarks, 1 down quark, and the gluons binding them together. Outside of an atom, the neutron breaks apart (decays) into a proton, an electron, and a so-called *antineutrino*. Freed from the nucleus, the weak interaction of quarks, carried by what are called *W and Z bosons*, will play the major role. The proton is lighter than a neutron in terms of its weight. And so, the neutron can give up some of its weight by radiating out an electron and anti-neutrino, while itself transforming into a proton.[119]

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[118] The most common form of hydrogen has no neutrons, but this should not obscure our discussion.

[119] That doesn't mean, however, that a neutron is just a proton plus an electron plus an antineutrino. Remember: Both protons and neutrons are made up of 3 quarks. And yet, under the influence of the weak interaction between the quarks, when it is not balanced by the residual strong interaction in an atomic nucleus, 1 up quark and 2 down quarks (a neutron) can decay (or be transformed) into 2 up quarks and 1 down quark (a proton), an electron, and an antineutrino. There may even be interactions involved with the field or sea of virtual particles surrounding the actual quarks—e.g., quark-antiquark pairs. See, for example, "The Gluon Exchange Model for diffractive and inelastic collisions" by Marek Jeżabek and Andrzej Rybicki, 15 March 2021, *Physics Letters B*.

Subatomic particles are not discrete separate things but rather configurations of Eros and intimacy in a larger Field of Allurement. When the neutron enters the atomic structure with a proton, there is a constant exchange between the proton and the neutron, which is called the *residual strong force*.

When three quarks are bound together in a proton or a neutron, almost all of the strong nuclear force produced by the gluons goes toward binding the quarks together in a way that it is impossible to separate them. [This phenomenon is alluded to in the interior sciences, which describe there being two levels of allurement in Cosmos. One level, which is at play here, is described in the Aramaic of the *Zohar* as *Teri Rein DeLo Mitparshin—two beloveds making love, who do not ever separate from each other*.]

However, a tiny fraction of the force acts outside the proton or neutron. That is called the *residual strong force*, which can operate between the nucleons, binding them together against the repelling electromagnetic force between the protons. That residual strong force is quite complex, involving many different components. For example, it is independent of the electromagnetic charge, it involves a spin-component,[120] and it even involves the exchange of mesons.[121]

Said differently, there is a constant exchange of forces of allurement and autonomy, particles, and energy between the protons and neutrons within the nucleus of the atom. ***We might also say that neutrons and protons are aroused to be in conversation with each other.***

Physicists refer to an *excited state*, when a particle (e.g., an atom, or more precisely, the electron in an atom) has absorbed a photon and jumps to a higher or *excited* state of energy. Conversely, when these excited particles jump back to a lower energy state, energy is emitted in the form of photons.[122] There are excited states in all kinds of composite particles, which are a key dimension of the Eros that animates their vectors.

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[120] Nucleons with aligned spins experience a stronger allurement than those with anti-aligned spins.

[121] Mesons are particles made up of quarks and antiquarks—with the exchange of different mesons creating different types of nuclear forces. Mesons are highly unstable and only live for up to a few tenths of a nanosecond. Heavier mesons decay first to lighter mesons and then, ultimately, to stable electrons, neutrinos, and photons.

[122] Remember: Photons are the force carriers of the electromagnetic field.

In analogy, we might also talk of aroused protons and nucleons that feel and converse with each other (and are bound together) by means of complex mechanisms—the Outrageous Love Notes that they constantly exchange. [And by Outrageous Love, we refer to the ErosValue that is not mere human sentiment but the heart of existence itself.]

Of course, scientists cannot really *look* inside an atomic nucleus. In that sense, we may not know if the protons and neutrons even remain protons and neutrons inside of the atom or if they are somehow changed or transformed. In another sense, it is of course clear that they have changed. They are indeed constantly changing. They even create new mesons (quark-antiquark pairs) from the strong nuclear field, which dissolve back into the field almost immediately after they are formed.[123]

That is exactly what we mean when we say that an atom is a new emergent whole. An atom is more than the sum of its particles. The particles themselves are changed and transformed in that relationship, in an essentially not so different way that we are changed and transformed in an intimate relationship—continuities and discontinuities all the way up and down the evolutionary chain.

The drive of a neutron towards feeling, sensing, or *prehensing*[124] a proton in the space and creating a new reality, in which both are inter-included in a larger whole, the nucleus of an atom, is part of the essential structure of Reality—which is relationship.

So, the neutron really *needs* the presence of the proton. And the proton says to the neutron: *Your need is my allurement*. As we have shared elsewhere, the mutuality of *pathos* that is core to our intimacy equation births the sentence: *Your need is my allurement.* This sentence

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[123] See, for example, Constantinos, G. et al. *Gravity, Special Relativity, and the Strong Force* (Springer Science & Business Media, 2012). See also Quigg, C. *Gauge Theories of the Strong, Weak, and Electromagnetic Interactions* (Princeton University Press, 2013). See also Povh, B. et al. *Particles and Nuclei: An Introduction to the Physical Concepts* (Springer Science & Business Media, 2008). See also Thacker, T. (1995, Jan 29) *The Four Forces* https://webhome.phy.duke.edu/~kolena/modern/forces.html#005. See also Hansen, L. (1997, Feb 27) *The Color Force* https://webhome.phy.duke.edu/~kolena/modern/hansen.html. For a simple summary, see, for example, "What is the strong force?" by Jim Lucas, *LiveScience*, 2022—https://www.livescience.com/48575-strong-force.html.

[124] We are borrowing the term *prehension* from Alfred North Whitehead, a term Whitehead used to mean *proto-awareness or proto-feeling that's present in all phenomena, in all phenomena all the way down to quarks and strings and atoms.*

expresses shared identity in which we feel each other in multiple loops of ever-deepening feeling. *I feel your need and I am allured to fulfill it.*[125]

Recapitulation: Quarks, Protons, Neutrons, and Atoms as Unique Configurations of Eros

All matter is made up of atoms and their relationships.

And all atoms are each made up of

- the *strong nuclear relationships and conversations* between the quarks and their intimate relationships and conversations, forming the protons and neutrons,
- the *residual strong nuclear relationships and conversations* between the protons and neutrons and their intimated conversations, forming the atomic nuclei,
- and the *electromagnetic relationships and conversations* between the atomic nuclei and electrons, forming the complete atoms.

The electromagnetic attraction—the allurement between the parts—is related to another feature called *electromagnetic charge*:

a) Particles with a different charge are allured to each other.

b) Particles with the same charge, on the other hand, value their autonomy more than their relationship.[126]

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[125] Read more about *your need is my allurement* in the five-volume set: *Evolution: The Love Story of the Universe—First Meditations on CosmoErotic Humanism—In Response to the Meta-Crisis*—published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023.To be clear, we are not suggesting a magical animism. Meaning, we are of course not making an equation between the human experience of allurement and need and the experience of allurement and need at the subatomic level. There are obvious radical discontinuities between the structure of consciousness of an atom, an amoeba, a plant, a fish, a dog, and a human being. But there is also a fundamental underlying continuity, as all the above are animated by ever-evolving levels of interiority or consciousness. At the atomic level, that might be a form of proto consciousness, what Alfred North Whitehead called *prehension* and Abraham Kook called the *Ratzon of the Domem*, the elemental will that lives in the ostensibly inanimate.

[126] As we have said above, that is of course only true at the level of their *electromagnetic* conversations (meaning their conversations mediated by photons—which are quanta of light). These *electromagnetic* conversations might of course be overridden, for example, by the conversations mediated by gluons (transmitting the strong nuclear force) or even the residual strong force.

For example, protons are positively charged, neutrons are uncharged, and electrons are negatively charged. So, electrons and protons (as well as atomic nuclei and electrons) are allured to each other via the electromagnetic attraction—the allurement between particles with opposing charges.

The element hydrogen has the simplest atoms, each with just one proton and one electron in relationship to each other. The proton forms the nucleus, while the electron dances around it.

All other elements have neutrons as well as protons in their nucleus. The positively charged protons tend to repel each other through the electromagnetic force, and the neutrons help to hold the nucleus together. In the very short nuclear distances, the residual strong force between the protons and the neutrons overrides the repelling electromagnetic force between the equally charged protons and allures them to each other.

Said slightly differently, in the language of CosmoErotic Humanism, protons, neutrons, and atoms are *unique configurations of Eros = unique configuration of intimacy* or *unique configurations of allurement and desire.*

Uniqueness comes not so much in the form, shape, or constitution of quarks, at least not in the sense of unique quarks—even though their quantum states are unique. But there is already uniqueness in the world of quarks in the first nanoseconds of the Big Bang. In the very beginning, Reality is incepted with six different forms of quarks (and six forms of antiquarks). They are named *up*, *down*, *charm*, *strange*, *top*, and *bottom*. Each of these six forms is irreducibly unique. And each quark, unlike cells, which are much later emergents in the evolutionary history of uniqueness, has gazillions of more or less fungible and identical copies.

In this sense, quarks are distinct from cells, in the sense of our unique cellular structures, which yield unique individual plants, fish, animals, mammals, and humans. Cellular uniqueness is a momentous leap forward, and is related to a key constituent of cells, protein, which is generated by nucleotides, famously known as DNA and RNA.[127]

All of these are momentous evolutionary leaps in uniqueness. But at their core, they follow the same pattern of earlier instances of uniqueness that we are pointing towards here.

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[127] We will return to these in great detail below.

They are, at their core, nothing more or less than unique configurations or unique patterns of Eros, intimacy, and desire, which are themselves animated and powered by unique expressions of value and meaning.[128]

In this sense, there is a core continuity of what we mean by uniqueness all the way down and all the way up the evolutionary chain.

The Emergence of Complete Atoms and Elements

The experience of uniqueness seems to take another evolutionary step forward at about 380,000 years after the Big Bang. The first new expression of uniqueness appears once these new assemblages of atomic nuclei (consisting of intimate configurations of protons and neutrons) and electrons form.

They come together in three unique ways:

Some have only one proton at the center, some have two protons at the center and two neutrons, some have three protons and three neutrons at the center. And all are surrounded by the same number of electrons as there are protons in the nucleus, so the resulting total electromagnetic charge is neutral.

The result is three very different elements: hydrogen, helium, and lithium. These first three elements are unique configurations of Eros and intimacy.

We call those atoms *unique configurations of intimacy* because the subatomic particles within them are actually sharing identity. Even though they are distinct subatomic particles, they have a shared identity in a larger atomic structure.

This is similar to the limited uniqueness in the original six forms of quarks. But like the gazillions of copies of each of those forms of quarks, which are (more or less) identical, there are (more or less) identical copies of hydrogen, helium, and lithium atoms, no matter where you go in the Cosmos. There are exact copies of hydrogen, there are exact copies of helium, and there are exact copies of lithium.

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[128] Said differently, they are unique expressions of value and meaning that are encoded as unique configurations or unique patterns of Eros, intimacy, and desire.

From Gravity Balls to Stars and Galaxies: Evolutions of Uniqueness

But soon after, we have the beginning of what Howard likes to call the *gravity crusades*. They are what we have called *gravity balls* in the process of formation. Gravity balls not only have uniqueness, but they test their uniqueness in competitions that are strictly hierarchical. And then, out of these gravity balls, ultimately, come the galaxies.[129]

The galaxies, as science has noticed in great depth, are as unique as a fingerprint. Yet obviously, there is still continuity and discontinuity all the way up the evolutionary chain. So, we could say that galaxies have a unique *proto* personhood in a way that is utterly different than, but also has some measure of continuity with, the unique personhood of a human being.

It is in relation to the process of stars and galaxies that, from about 100 million years to billions of years after these first three unique atomic elements are formed, a parallel process of ever-deepening uniqueness and value is exploding in Cosmos. This is the emergence of the 118 other unique atoms that we now know—unique configurations of Eros—which, over a billion years after the formation of the Universe—the Big Bang—come into being.[130]

And they come into existence, when another new emergent of the mysterious cosmic dance of apparent destruction and creation—the dance that we call *Eros*—appears in Cosmos. First, the Universe accumulates matter within clouds of dust and gas to the point that some balls of matter—which Howard calls *gravity balls*—are so big, and their gravity is so extreme, that the

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[129] Howard Bloom in his book *The God Problem*: "Electrons and protons mated and formed atoms 380,000 years after the big bang. And that's when the conflict began. It was the era of the Great Gravity Crusades. Atoms clustered and competed. Competed for what? To kidnap, seduce, and recruit yet more atoms. Those atom clumps that grew the fastest grabbed and swallowed atom masses that grew more slowly. The big ate the small in what, as you probably remember, astrophysicists and astronomers call cannibalism. The biggest winners became galaxies. The smaller winners became stars. The winners in the number three slot became planets. And the runners up became moons. Those Great Gravity Crusades continue today. As I type this and as you read it, galaxies are gathering in clusters, and the biggest clusters are eating their smaller brethren to bulk up and become superclusters. Yes, galaxies are competing. Competing to commandeer matter. Competing to literally make a dent in space."

[130] For the first 3 billion years after the Big Bang, star formation increases, then it falls off and gradually declines. That being said, heavy elements, which are mostly built in stars, are present from when the Universe was less than 100 million years old. However, the last gas clouds in the Universe were not destroyed until 2-3 billion years after the Big Bang. And the elements of the periodic table are continuously being created and destroyed by these processes that take place mostly inside stars and in interacting stellar remnants. The heaviest elements, however, were mostly created through neutron star mergers. Supernovae can get us only insignificant amounts of the elements all the way up the periodic table. Dying Sun-like stars create heavier and heavier elements, but nothing beyond lead can be maintained through that process. The creation of significant amounts of the heaviest elements happens only through the merger of neutron stars, which are the densest physical objects in the known Universe.

gas and dust begins to collapse under its own gravitational attraction. As the cloud starts to collapse, the material at the center of the cloud begins to heat up. The dense, hot core of the collapsing cloud begins to gather more and more dust and gas, some of which becomes part of a new-born star, while some of the remaining dust becomes planets, asteroids, or comets, or it may simply remain dust.

Stars are generally fueled by the nuclear fusion of hydrogen to form helium deep inside their core. The energy outflowing from that core provides the necessary pressure to keep the star from collapsing under its own weight. That same energy is also what makes the star shine.

But then the stars begin to die. A star like our Sun takes about 50 million years to mature from the beginning of the collapse of the gas and dust cloud to its adulthood. Our Sun will stay in this mature phase for approximately 10 billion years. The biggest stars, however, known as *hypergiants*, begin to die a few million years after their birth, a passing flicker in galactic time.

And then, the strangest thing happens.

When a star has used all the hydrogen in its center, the nuclear reactions cease, and the core begins to collapse into itself, becoming much hotter. If the star is sufficiently big, its collapsing core may become hot enough to support more exotic nuclear reactions that consume helium and produce a variety of heavier elements up to iron. Over time, the internal nuclear fires over the stars become increasingly unstable and are ultimately dying down. What happens next depends on the size of the core.

So-called *main sequence stars*, which are stars over eight solar masses, are destined to die in a titanic explosion called a *supernova*.

> *Having achieved iron, the star has wrung all the energy it can out of nuclear fusion - fusion reactions that form elements heavier than iron actually consume energy rather than produce it. The star no longer has any way to support its own mass, and the iron core collapses. In just a matter of seconds the core shrinks from roughly 5000 miles across to just a dozen, and the temperature spikes 100 billion degrees or more. The outer layers of the star initially begin to collapse along with the core, but rebound with the enormous release of energy and are thrown violently outward. Supernovae release an almost*

unimaginable amount of energy. For a period of days to weeks, a supernova may outshine an entire galaxy. Likewise, all the naturally occurring elements and a rich array of subatomic particles are produced in these explosions.[131]

In other words, in the exponentially intensified intimacies of both large dying stars and their supernovae, 118 new configurations of Eros are birthed, new atoms—the atomic elements that we recognize, which constitute what we know of as matter in Reality. So, the exponential intensification of intimacy—a kind of cosmic orgy of integrations—generates new differentiation—new dramatic uniqueness.[132]

We Are Stardust: The Emergence of Higher Elements

Over the course of evolution, protons, neutrons, and electrons form many unique elements. We are quite literally stardust. Essential elements that form our bodies like carbon, magnesium, calcium, and phosphorus, come from the explosion of stars in supernovae. And what is an element other than a configuration of intimacy between its parts. Elements form everything, all matter. An atom is the smallest particle of a chemical element that can exist, a pure substance that cannot be broken down into a more basic element by chemical reactions alone.[133]

Each element, consisting only of one type of atoms, quite literally has its own unique fingerprint—or said more accurately, each atom in an element is a primal configuration of intimacy of electrons, protons, and neutrons—quarks and gluons—in a particular configuration of Eros, of intimate relationship. An atom can also be a core part of a larger whole, which is a primary substance called a *molecule* containing two or more atoms.

The unique configuration of intimacy in an element generates its character, much like in a similar way—*continuity*—and in a radically new, emergent way—*discontinuity*—the unique

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[131] Quoted from https://science.nasa.gov/astrophysics/focus-areas/how-do-stars-form-and-evolve.

[132] For an interactive periodic table with all 118 elements, of which 94 occur naturally on Earth, see, for example, here: https://www.fishersci.com/us/en/periodic-table.html. Six of the 94 elements known on Earth occur only in extreme trace quantities: technetium (43), promethium (61), astatine (85), francium (87), neptunium (93), and plutonium (94).

[133] Atoms can of course be stripped of their electrons (and be turned into positive ions) or broken down by nuclear forces. Through the latter, they are actually transformed into more basic elements. But they were long thought of to be the most basic units that couldn't be divided into smaller units anymore. The Greek word *atomos* means *indivisible*.

configuration of intimacy between two people generates a particular character or quality of relationship.

Actually, every element—except for hydrogen and helium, along with traces of lithium and beryllium, which were already formed during the formation phase of the Universe that we call the *Big Bang*—or more precisely during the twenty-minute phase of *nucleosynthesis* right after the Big Bang—every atom in your body and everywhere else is birthed inside of stars and supernovae of stars, by subatomic particles creating stable intimate relationships with each other.[134]

When you breathe oxygen, you breathe because of the creations of these stars or supernovae. All the life you live is possible because of the gifts of stars. The air we breathe, the food we eat, the compounds out of which we are composed, these are new emergents of intimate configuration that are born from stars and supernovae. A star is a womb of hyper-intense, hyper-intimate, interconnected, and complex creativity, which births all the next stages of Reality, which all live, literally, in us.

Early Competition, Individuation, and New Evolution of Uniqueness: The Great Gravity Crusades

But much earlier than stars and galaxies with their own uniqueness and the uniqueness they generate, come—beginning, some think, four hundred thousand years, or a bit later, after the Big Bang—what we referred to above as the *great gravity crusades*. So, the Universe starts using a Darwinian principle called *selection*.

Clumps or wisps of matter are competing with each other. The result of this early competition—itself an expression of a new level of individuated uniqueness—is the very big difference, when you look at the sky today, between a star and an empty space. You see this utter

[134] As the Universe expanded, and the clouds of gases and cosmic dust from the Big Bang cooled, stars were formed, which grouped together to form galaxies. All the elements that are found in nature and in our bodies were created either in the first minutes after the Big Bang (primordial nucleosynthesis) or in nuclear reactions (the forming of new stable relationships) inside of these stars (stellar nucleosynthesis) and in huge stellar explosions that we know as supernovae (supernova nucleosynthesis).

blackness and this pinprick of bright light, and some of those pinpricks of light are actually galaxies.

If you look at a modern picture from the Hubble Space Telescope of the Universe, you see a huge difference between what is in a galaxy and the space in-between galaxies. And those galaxies themselves, though they have a huge amount of commonality, are different from each other. Indeed, as we already briefly noted above and will return to below, the galaxies are utterly unique.[135] But that uniqueness itself is a direct result of this earlier process of unique individuation that begins around 400,000 years after the Big Bang: the gravitational differentiation that marks what we might call the beginning of *Darwinian selection* or *Darwinian competition*.

Well before galaxies come the *gravity crusades*. It is a period of gravity balls that come into being when gravity begins to pull together wisps of gas and dust.

As Howard writes in *The God Problem*, p. 537:

> *…the sizes of those smudges and smirks vary far more than the sizes of the particles at the beginning of the cosmos. And these gravity glumps no longer have a precise circular form. They are ragged, wispy, and lumpy. Then a hundred thousand to a billion years later, when those gravity balls gang up in galaxies and stars, the timing is more ragged, and so is the shape.*

And there is obviously some unique *personality* to each of these *gravity balls* because they are having constant showdowns. And in the showdowns, the bigger ones compete against each other in who gets to swallow the smaller ones.[136] So, there is a distinction—a unique difference between those two gravity balls that are facing off against each other. All of this happens just several tens of thousands of years after the formation of atoms. Because when

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[135] Just take a look at these pictures of galaxies from the Hubble Telescope: https://esahubble.org/images/archive/category/galaxies/.

[136] Of course, from another perspective, it is not the bigger one swallowing the smaller one but the big and the small coming together to form a greater whole—competition and cooperation at the same time—opposites joined at the hip.

atoms start coming together in unique wisps of gas and gravity balls, the Cosmos births competition.

For, once atoms form, they begin to discover that there is a force they never knew before, although it had always been there, whispering about them, pulling them in, alluring them. It is called *gravity*—or more directly, the emergence of a new quality of cosmic allurement as a primary force of Cosmos.[137]

That's the beginning of the formation of gravitational clumps. Gravitational clumps are unique—different from each other—and with that unique distinction, they compete with each other. The biggest ones get to swallow the smaller ones and become bigger still—and more capable of taking on the next showdown with another gravity clump.

And it doesn't stop there. In the words of Howard, from *The God Problem*, p. 439:

> *Potential stars compete with other gravity balls to see who can move whom, who can swallow whom. Galaxies compete to see who can swallow whom. And galactic clusters kidnap, seduce, and recruit entire galaxies into galactic herds and flocks.*

Another Momentous Leap of Emergent Uniqueness: The Formation of the First Galaxies

And then comes the grand galactic sweepings, and the formation of the first galaxy embryos, which manifest galaxies of astonishing uniqueness. Their uniqueness, as we noted above, can be traced back to the great gravity crusades, when the first atoms at 300,000 to 380,000 years after the Big Bang discovered that they are allured to each other and begin the great aggregations that will generate galaxies on the basis of that allurement.

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[137] The very early Universe, during the so-called *Planck epoch*, which lasted 10^{-43} seconds, is assumed to have been dominated by the quantum effects of gravity. And gravitational waves are thought of having rippled through spacetime from the inflationary epoch (which lasted from 10^{-36} to 10^{-32} seconds). However, the early Universe (after the inflationary epoch) was dominated by the relatively stronger three forces—the strong and the weak nuclear and the electromagnetic forces. Once whole atoms appeared (which contained those forces on the inside, but were neutral on the outside), the relatively weaker force of gravity emerged (again) as a primary force of allurement in Cosmos.

Each allurement, each attraction, each gravity ball that assembles, has a different history. And based on its unique history, it will be unique in character and quality. Over eons of galactic time, those gravity balls accumulate and become galaxies. So, there is a lot of personal cosmic history to a galaxy that determines its uniqueness.

Uniqueness is a function of prior story. It's a biographical issue. If we wanted to explain the uniqueness of each galaxy, we would have to tell the story of all these gravity balls and how they accumulated and how they were attracted to each other.

So, let's now jump forward a billion years, a billion years after the Big Bang, to the formation of galaxies, and there are—it is worth reminding ourselves—hundreds of billions of them. But wherever you look, even though galaxies have similar contours—in other words, a real degree of sameness—they are also utterly unique. No two galaxies are the same.

One just must look at the pictures from the Hubble Space Telescope, at galaxy after galaxy after galaxy, and supernova after supernova, and it becomes self-evident, even to the naked eye viewing the images, that they are wildly distinct.[138] And that is why that whole collection is so utterly gorgeous, because there are so many unique galactic formations or star formations in one phase of development or another.

Evolving Intimacy and Uniqueness: From Matter to Life Through the Bridge of DNA

Deepening Uniqueness as Evolution's Arrow: From the Physiosphere to the Biosphere to the Noosphere

Over billions and billions of years, uniqueness will take momentous leaps forward through each evolutionary stage of life, all through the physiosphere (matter), the biosphere (life), and into the noosphere (mind)—the levels of development in the self-reflective human mind. Biology, the world of life, is practically defined by ever-deepening irreducible uniqueness.

In this somewhat idiosyncratic history of uniqueness, we have so far focused on uniqueness as it already appears in the world of matter. We did this to challenge the assumption

[138] See, for example, here: https://esahubble.org/images/viewall/.

that uniqueness is a quality that emerges only at the level of the biosphere. We have seen how uniqueness deepens through the various levels of matter's unfolding.

We can now turn to the evolution of uniqueness in the world of life—and then, finally, in the depth of the self-reflective human mind. We will spend a bit less time on uniqueness in the biological world, however, as it is slightly more well-known. We are, at least theoretically, more intuitively familiar with it. But even here we don't quite grasp the full implications of the uniqueness of cells, their constituent molecules, let alone the appearance of higher-complexity uniqueness in plants, animals, and mammals, as distinct and singular emergents in the larger Field of Reality.

We also, however, often forget that the evolution of uniqueness in the biological world is a continuation of a core value of Cosmos from its inception in pre-biological matter—evolving ever-more deeply.

We can also note here that the core structure of uniqueness is not only the obvious and self-evident discontinuity, but also features in the continuity across matter, life, and mind, or what we refer to as the *physiosphere*, *biosphere*, and *noosphere*.

Uniqueness across these three spheres always means a unique configuration of relationships among parts, which then generates more unique wholes. We have, with much precision and care, also referred to this as unique configurations of Eros, or unique configurations of intimacy. Recall again the intimacy equation:

> *Intimacy = shared identity in the context of (relative)otherness x mutuality of recognition x mutuality of pathos x mutuality of value x the mutuality of purpose.*

In other words, intimacy generates a unique intimate communion, a unique we. And this is the key driver of Reality itself, at all levels.

Let's briefly recapitulate the first three levels:

When three quarks become a proton, for example, a new unique shared identity in the context of otherness—with mutual recognition, *pathos*, value, and purpose—is generated. The proton is a new, unique emergent relative to the quarks.

And as we have seen, the proton is also unique in its contextual relationship to the other protons, based on how it shows up in the conversation of subatomic particles—meaning, based on the proton's context in relationship to the larger wholes in which it is embedded. ***Relationship generates uniqueness, even as intrinsic features also generate uniqueness.***

Similarly, when a group of protons, neutrons, and electrons become an atom, a new intimacy—a new unique shared identity in the context of otherness (with mutualities of recognition, *pathos*, value, and purpose)—is generated. The atom is a new uniqueness relative to the subatomic particles. In an atom, an entirely new emergent of intimacy is born.

And as we have seen, the atom is also unique in relation to other atoms, based on how it shows up in the atomic conversation, based on its context in relationship to the larger wholes in which it is embedded.

The Evolution of Uniqueness in the World of Life

Uniqueness, we argue, is a value embedded in Cosmos at all levels, animating each process of erotic allurement. Now that we have pointed towards the core continuity in uniqueness that exists across the world of matter, let's turn more directly to the evolution of uniqueness in the world of life itself. While uniqueness is perhaps less clear in the physical world, it is more obvious in the biological world. However, much science tends to downplay the extraordinary specificities of this fact in favor of vague generalities.

It is clear in the biological sciences that the momentous leap forward in unique individuation, as it appears in the world of life, is directly related to DNA and genetic transfer. In the nucleus of every single one of the 100 trillion cells in your body, there exists DNA that is a combination of your mother's and your father's genetic material. And that is what makes each human molecularly unique and distinct—in every single cell.

Cellular uniqueness, however, is dependent on molecular uniqueness, so let us begin there.

Molecular Uniqueness

From Atoms to Molecules

Molecules are composed of atoms, which we have talked about in depth above. A molecule is a unique intimate configuration of atoms, which contain protons, neutrons, and electrons in a particular configuration of intimate relationship.

Over the course of evolution, the intimate way of protons, neutrons, and atoms coming together in unique configurations of intimacy and desire—feeling each other, recognizing each other, desiring, and needing each other—has formed the atoms of the many unique *elements* in this Amorous Cosmos. As we have said before, each element consists of a certain type of atom that makes up the unique properties of the respective element.

But evolution didn't stop here. At a certain point of the Evolutionary Love Story, atoms started to be allured to each other.

How did that happen?

When a group of atoms becomes a molecule, they are not just piles of atoms; but a new configuration of intimacy—a new unique shared identity in the context of (relative) otherness with mutualities of recognition, *pathos*, value, and purpose—is generated.

Whole atoms, however, have no electromagnetic charge. Doesn't that mean that there is no force of electromagnetic allurement between them?

Let's take a look:

In most of the known elements, e.g., hydrogen (H), lithium (Li), and sodium (Na), the *orbital electron shells*[139] of the atoms are what science calls *incomplete*.[140] Simply said, that means that the outermost shell of this incomplete atom is not fully filled. Incomplete atoms are really *hungry* for a configuration of intimacy with a completely filled outermost shell. They are relationship hungry. They desire relationships. They are allured to other atoms with likewise incomplete shells.

The electrons in the outermost incomplete shell of these atoms are called their *valence electrons*. In order to fill that outermost (or *valence*) shell, the atoms will either give away their valence electrons, accept electrons from other atoms, or share their valence electrons between them.

In the language of CosmoErotic Humanism, implied directly by the empirical sciences, in their incomplete states, the atoms *desire* to, in some way or other, share electrons with other atoms. Their capacity to be allured by other atoms is called *positive* or *negative valence* or *valency*.[141]

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[139] The orbital electron shells are a simplified model pointing towards the erotic dance of the electrons around the atomic nucleus. In that model, developed by Niels Bohr in 1913, an electron exists in the lowest energy shell available, which is the one closest to the nucleus.
[For more about the Bohr Model of Electron Shells, see, for example, here: https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_(Boundless)/02%3A_The_Chemical_Foundation_of_Life/2.05%3A__Atoms_Isotopes_Ions_and_Molecules_-_Electron_Shells_and_the_Bohr_Model.]

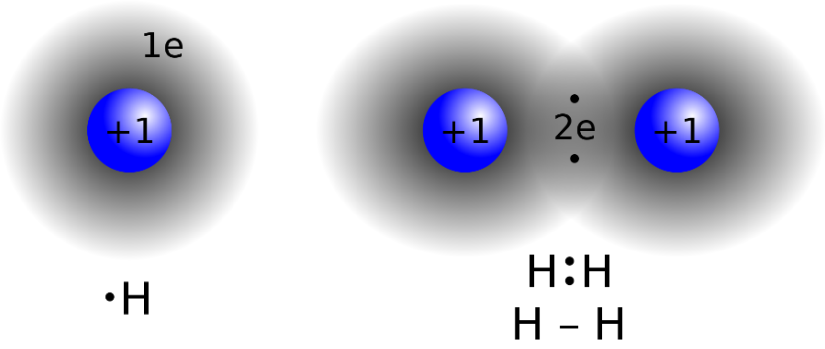
[140] Under standard conditions, electrons fill these orbital shells in a consistent order—starting with the innermost shells. The innermost shell has a maximum of two electrons, whereas all the outer shells have a maximum of eight. Once a shell is complete, the next shell begins to get filled. An atom is most stable, when its outer shell is complete (meaning, it has the maximum number of electrons). These complete atoms (e.g., helium with 2 electrons, neon with a total of 10 electrons (2 in the innermost, and 8 in the outermost shell), argon with 18 electrons (2 in the innermost, 8 in the next, and 8 in the outermost shell) are highly stable as single atoms, as it is unnecessary for them to gain or lose electrons to attain stability. An electron in an atom can also become *excited* if it is given extra energy, for example, if it absorbs a photon or collides with a nearby atom or particle. That excited state is, however, unstable, and the electron quickly falls back to its ground state by emitting a photon.

[141] Atoms with positive valency desire to share their own electrons, atoms with negative valency are electron-hungry (they need extra electrons to feel complete).

As we said earlier, *valence* means the desire for a particular value.[142] In this case, at the level of atoms, the desire of each of the atoms is literally for the value of feeling whole and complete. That value is reached by the sharing of their electrons. When atoms are allured to bond with each other through their valences, that bond is called a *covalent bond*.

The whole Universe is coded with the erotic power of unique emergence. Parts are attracted—allured—to other parts. They do not fuse with them because they are also coded with their own separate integrity. Rather, the parts come together—*excited*, literally *feeling chemistry with each other*—as staggeringly complex chemicals combined through the mysterious elixir of evolutionary creativity.

See, for example, this simple model of a hydrogen molecule H_2:



A covalent bond forming H_2 (on the right) where two hydrogen atoms share their 2 electrons (each of them contributing 1)[143]

Atomic hydrogen is highly unstable by itself, as its electron shell is incomplete (meaning it desires and needs relationship), and therefore, it does not exist in normal conditions. Instead, two hydrogen atoms come together and bond—in a process known by science as *chemical reaction*. Chemical reaction, however, is but a technical term that can easily obfuscate our sense

[142] In the Oxford English Dictionary, the root of the word *valence* is the same as the root of the word *value*. That root is related to the root of the word *will*. *Valere* means both to *be strong*, and to *be of value*, to *be of worth*. It goes from Latin *valere* to Old French *valor*, which is connected to *worth*. A *valorous knight* is not just strong but represents *value*; he is saving the damsel. Then it goes to Middle English, and then to *value*. A violation of value arouses political will. So, will is aroused by value. The knight accesses their *valor* because their *valor* is connected to their representing *value*.

[143] Image by Jacek FH, CC BY-SA 3.0, https://creativecommons.org/licenses/by-sa/3.0/.

of the creative and erotic play that is really going on here. What does that well-known term actually point towards?

A chemical reaction describes a dynamic of desire between two elements that are allured to each other, desiring ever-deeper contact and ever-greater wholeness. A chemical reaction, in other words, means that there is an inexorable desire between parts that moves them towards some form of union—similar to when there is chemistry between human beings. The difference being, of course, the degree of choice that is at play in relationship to the powerful forces of desire.

GETTING BACK to our hydrogen molecule, consisting of two incomplete hydrogen atoms. Each of the valences of the two atoms is 1—they are both missing 1 electron for their outermost shell to be complete, and they each have 1 electron that they desire to share.[144]

What this means is that, feeling *incomplete*, *one* hydrogen atom desires to share its electron with—literally, *feels chemistry with—one* other hydrogen atom, which likewise feels *incomplete*. *Excited* (yes, that is a real term physicists use), the first hydrogen atom's need is the other atom's allurement—and reciprocally *excited*, the other atom's need is the first atom's allurement. In other words, they are allured and delighted to respond to each other's needs and desires and share their electrons.

The hydrogen atoms now both feel whole and *complete*, which gives them stability—a sense of ground and wholeness.

From Molecules to Macromolecules

Let's now move from the simplest of all molecules (the hydrogen molecule) to what is called in the literature a *macromolecule*. A macromolecule is a configuration of intimacy, relationship, and desire between not only many atoms, but also between different smaller molecules. In other words, you cannot just throw a bunch of atoms together, add some energy, and hope they will magically transform into a macromolecule.

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[144] Each of the atoms has one electron in their only shell. That shell is complete when it has two electrons. So, the hydrogen atoms each have an electron to share and the need for a second electron. By sharing their electrons, both of their needs and desires are fulfilled.

Rather, at first, some atoms come together—feeling incomplete and being allured to each other—to form a molecule. Then, maybe two molecules (or one molecule and another atom) come together—feeling allured to each other—to form a (not only larger but also) more complex molecule. Although the resulting molecule can become much larger and much more complex than our simple hydrogen molecule above, the basic principles and building blocks are the same:

Atoms and smaller molecules come together in intimate, erotic conversations (sharing and exchanging photons and electrons). They are excited to form a new identity—a new whole—in the context of their relative otherness. They recognize and feel each other, and they share values[145] and purpose together. Or in other words, the atoms and molecules are in intimate, erotic relationship—and conversation—with each other.

From Inorganic to Organic Molecules

Molecules go on to interact with other atoms and molecules, and through them with all other systems, in the ongoing dance of Reality's Love Story:

expansion and contraction,

allurement and autonomy,

attraction and repulsion,

order and chaos.

The more and more complex and unique molecules that emerge over eons of time can be *inorganic* or *organic*.

Organic Molecules and the Unique Features of Carbon

Organic molecules are the building blocks of life. They are mostly composed of carbon atoms in rings or long chains, to which other atoms[146] are attached. They are the basis from

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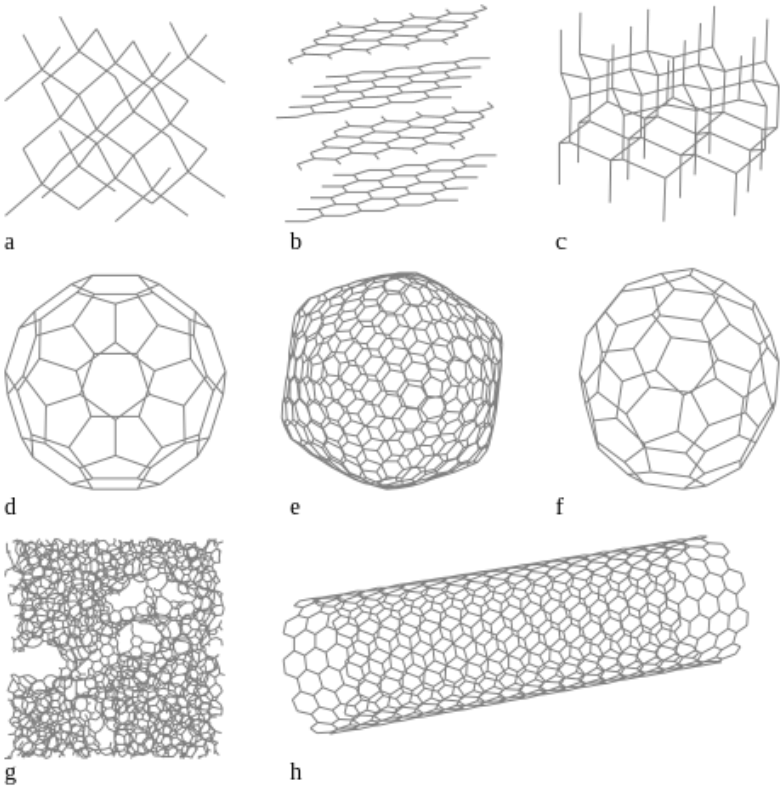
[145] Remember: The words *valence* and *value* derive from the same Latin word, *valere*. *Valere* means both to be strong, and to be of value, to be of worth. It goes from Latin *valere* to Old French *valor*, which is connected to worth. A valorous knight is not just strong but represents value; he is saving the damsel. Then it goes to Middle English, and then to value. A violation of value arouses political will. So, will is aroused by value. The knight accesses their valor because their valor is connected to their representing value.

[146] Such as hydrogen, oxygen, and nitrogen.

which all (known) life emerges—from DNA to genes to cells to other complex configurations. Of course, living systems can contain non-organic molecules as well.

This ring form, which is so essential for the complex organic molecules, is related to the preference of carbon to create relationship with other carbon atoms[147] by forming rings with each other, for example, as graphite and (under high pressure) diamonds.

The image below[148] shows some allotropes (different forms) of carbon:[149]



[147] Carbon atoms by themselves are highly unstable—meaning, they desire and need to be in relationship.

[148] Image created by Andel (https://commons.wikimedia.org/wiki/User:Andel) under Creative Commons License, CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0/.

[149] The different forms shown in the image are: *a) diamond, b) graphite, c) lonsdaleite (a kind of hexagonal diamond), d–f) fullerenes (C60, C540, C70—carbon atoms connected in a way that they form a closed or partially closed mesh), g) amorphous carbon, h) carbon nanotube (a tube made of carbon with diameters typically measured in nanometers).*

This gives us an idea of how important an element carbon is. Without carbon, emerging from the stars, and its uniquely intimate property of ring forming, there wouldn't be any life—at least not in the forms we know it.

This is another example of one of the core tenets of intimacy in CosmoErotic Humanism: Intimacy generates emergence—*the radical emergence of novelty that is manifested from intimate relations between parts*. This is another feature that couldn't have been predicted by the features of protons, neutrons, and electrons—another *supersize surprise*, as Howard Bloom would call it. Instead, it emerges from intimate communication, which itself is the generative structure of life all the way down the evolutionary chain.

But let's return to some concrete organic molecules with their ring shapes of carbon and other elements at their center.

It is this network of molecular uniqueness that forms the ground for the emergence of amino acids, proteins, genes, chromosomes, and the DNA[150] they are made of—where the evolutionary history of uniqueness takes its most momentous leap forward.

Molecular uniqueness, like the atomic uniqueness of any element from the most basic—such as hydrogen, helium, and lithium—to the most complex, is based on the emergence of a unique configuration of intimacy, a unique shared identity between parts that forms a new whole.

As opposed to atoms, of which there exist about 100 different types, there is an incredibly vast number of potential molecular configurations.[151] From simple molecules like H_2O to more complex ones like benzyne, or DNA and RNA—each expression offers a new form of uniqueness, and innumerable opportunities for intimacy and novelty, in the Cosmos.

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[150] We will explain each of these terms in the next few pages.

[151] According to the Chemical Abstracts Service (CAS), CAS REGISTRY®—the CAS substance collection—contains about *204 million organic chemical substances, such as alloys, coordination compounds, minerals, mixtures, polymers, and salts disclosed in publications since the early 1800s*, and about *70 million protein and nucleic acid sequences*. See https://www.cas.org/cas-data/cas-registry. And that is just the organic molecules.

Nucleotides

So, let's look at the specific macromolecule called a *nucleotide*. Nucleotides are at the core of what we call *DNA.* A nucleotide is itself a unique configuration of intimacy between three distinctive groups of simpler molecules.

We will turn to these three distinctive groups that the nucleotides are made of in a moment. But first let's introduce the stars of human life and so much of the biosphere themselves—the *nucleic acids*—the *DNA* and *RNA*—which store and transmit genetic information[152]—and which are comprised of nucleotides.

Let's unpack this further.

DNA

DNA, or *deoxyribonucleic acid*, is the hereditary material—the material that is passing on the physical or mental characteristics from one generation to the next—in humans and other organisms. It is the key biological macromolecule (again, meaning a VERY large molecule with tons of atoms in intimate relationship), contained mainly[153] in the nucleus of cells. DNA transmits each individual's unique hereditary information.

Comprised of *nucleotides* (to which we will return below), DNA's structure famously resembles a twisted ladder. Its phosphate and sugar (*deoxyribose*) molecules create the double-helical backbone, while its four *nitrogenous bases*—adenine, thymine, guanine, and cytosine—are paired to form the rungs.

We will return to this in great detail below. For now, let's just say that these nitrogenous bases intimately partner with each other—they are uniquely allured to each other—in what is technically called *base pairs*. Through the fundamental process of allurement, these partners (or base pairs or nitrogenous bases) are combined in a truly dizzying number of ways. Myriads of

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[152] See, for example, here: https://medlineplus.gov/genetics/understanding/howgeneswork/makingprotein/.

[153] There is also some DNA in the mitochondria of the cells, which generate and store most of the chemical energy in the form of ATP (adenosine triphosphate) needed to power the cell's biochemical reactions. ATP is also known as the *molecular unit of currency* of intracellular energy transfer.

paths—a virtual symphony of Eros and allurement—are helping to give rise to the spectacular biological variety we see all around us.

Genes

This symphony of Eros and allurement then gives rise to *genes*, which are made up of DNA. In humans, genes vary in size from a few hundred DNA bases to more than 2 million bases. According to an international research effort called the *Human Genome Project*, it is estimated that humans have between 20,000 and 25,000 genes. Every person has two copies of each gene, one inherited from each parent.

While most genes are the same in all people, less than 1 % of our genes are slightly distinct in their sequence of DNA bases. These small differences account for each person's unique physical features. And again, these bases are partnering in intimate relationships to form what is known as the rungs of the twisted ladder of the DNA. On the one hand, genes are like little hereditary blueprints, passing on the physical or mental characteristics of an organism from one generation to the next. On the other hand, they are telling the cells how to make everything they need to survive and function.

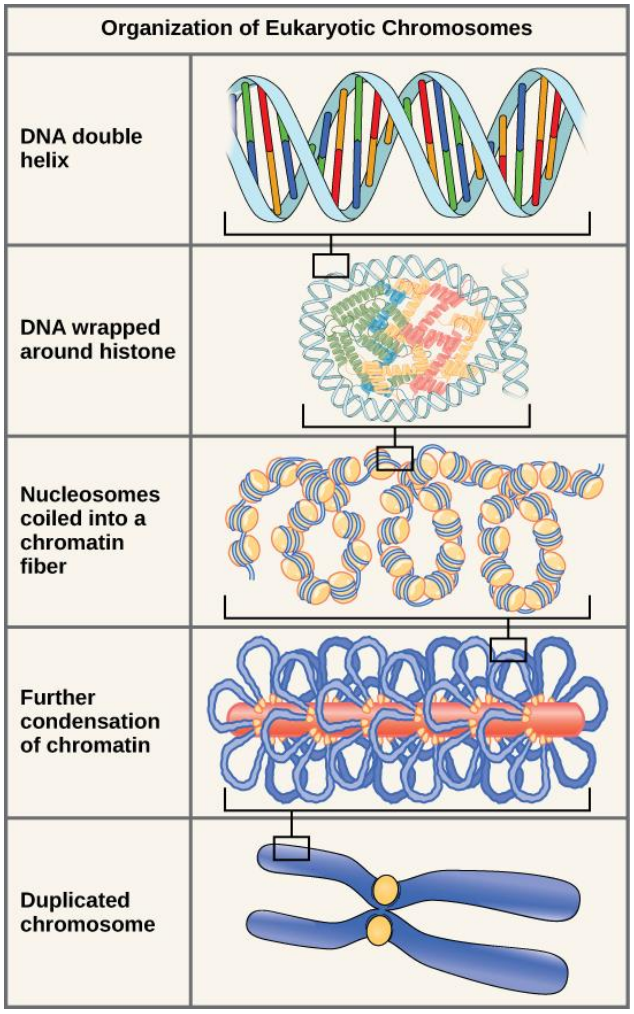
And again, the literature uses terms like *survive* and *function*; but these terms actually obfuscates what is really happening. The term *survive* refers to *life* and the nurturing of life, whereas *function* refers to the creative capacity to engage life. So, a better way to say the above would be that genes are communicating and transmitting the information that the cells need to sustain, nurture, and creatively engage life.

You could think of genes as the building blocks of life, since, in some sense, all life is made of them. The genes we receive from our parents carry the information (at least initially) of who we are, and they influence everything from our appearance to our behavior. Through their innumerable combinations—the unique intimacies between them—we get to the splendid diversity—meaning uniqueness—of the living world***. In other words, intimacy generates new uniqueness.***

Genes come in pairs called *alleles*, and they combine to form new intimacies—new unique shared identities in the context of otherness, with mutualities of recognition, *pathos*, value, and purpose.

Chromosomes

Found within plant and animal cells, DNA molecules are packaged into thread-like structures called *chromosomes*, long strands that contain hundreds or thousands of genes—see the image below. Each human cell contains 23 pairs of chromosomes, while fruit fly cells contain 4 pairs, and dog cells contain 39.



The packaging of the eukaryotic chromosome.[154]

[154] See https://opentextbc.ca/biology/chapter/9-1-the-structure-of-dna/. "These figures illustrate the compaction of the eukaryotic chromosome."

We will unpack the details of packaging shown in this image in the section "From DNA to Cells."

Chromosomes play a crucial role in determining the unique expression of each individual. They carry the genetic material that is passed on to the next generation of cells during cell division and reproduction.

And again, the packaging of DNA into chromosomes happens through even more complex intimacies—shared identities—that express the inherent yearning for uniqueness from the depth of Reality and constituting the Cosmos.

RNA

RNA, or *ribonucleic acid*, is another *nucleic acid* present in all living cells (next to DNA). It has structural similarities to DNA—even though it is most often single-stranded.

An RNA molecule has a backbone made of alternating phosphate groups and the sugar *ribose*, rather than the *deoxyribose* sugar found in DNA. Attached to each sugar is one of its four nitrogenous bases—adenine, uracil, cytosine, and guanine—three of which, as you can see, are the same as in DNA.

RNA is the actual *functional* form of nucleic acids—and again, *function* refers to the creative capacity to engage life—that the body uses to construct cells, to respond to immune challenges, and to carry *amino acids* from one part of the cell to another.

Amino Acids and Proteins

Amino acids are the building blocks of *proteins*. They are unique configurations of intimacy between three groups of molecules. The three groups are:

- a basic amino group (—NH_2),
- an acidic carboxyl group (—COOH), and
- a so-called organic *R-group*.[155]

[155] An R-group is an abbreviation for any group that contains a carbon and hydrogen atom that is attached to a molecule.

The latter is unique to each amino acid.

Proteins are complex molecules that play many important roles in the body and are critical to most of the work done by cells. For example, they creatively take care of the body's tissues and organs. A protein is a unique configuration of intimate relationships between *amino acids*, which come in one or more long, folded chains and whose sequences are encoded in a gene.

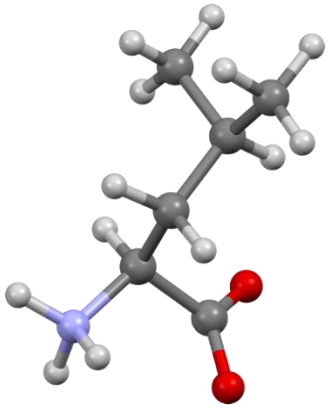
In other words, genes carry the information of how to build these long and folded chains of amino acids and communicate it in a way that enables the cell to put it together.

And again, that is not done in some kind of hierarchical top-down command-and-control way. Rather, as we will see later in more detail, it is the allurement between the different molecules themselves that *synthesizes* the proteins. The different molecules are coming together in a new intimate synthesis—a new coherent whole—called a *protein*.

The term *amino acid* has entered common language, for example to market food products. You may have seen lists of foods that are said to have *high amounts of amino acids*, such as eggs or quinoa. There are 20 different amino acids. Some amino acids can be *synthesized*—meaning creatively put together—by the body (or cell) itself, while others (the so-called *essential* amino acids) can only be *synthesized* by plants and must be obtained from our diet. The information for encoding all of those amino acids (in all of our proteins) is contained within our *genome*—another word for all of the genetic information of an organism.

Let's take a look for a moment at this simple ball-and-stick model of one of the essential amino acids called *leucine*:[156]

[156] Image by Ben Mills—public domain.



Leucine—or $C_6H_{13}NO_2$—is a configuration of intimacy between 6 carbon atoms, 13 hydrogen atoms, one nitrogen atom, and two oxygen atoms. In the image above, we see:

- the dark grey balls representing the carbon atoms,
- the light grey balls representing the hydrogen atoms,
- the red balls representing the oxygen atoms, and
- the violet ball representing the nitrogen atom.

The sticks between these balls represent the covalent bonds between the atoms.[157]

In other words, the image represents a unique configuration of intimacy between atoms where the atoms desire each other and bond by sharing electrons with each other.

Of course, just putting all these atoms together and adding some energy won't get us a complex molecule like this. There are many in-between steps required. In fact, leucine is synthesized by creating a new coherent whole from another complex molecule called *pyruvic acid.* However, that is only possible through a surprising pathway comprising no less than seven chemical reactions (meaning, molecules feeling chemistry and being intimate with each other), in

[157] As we said earlier, in most elements, the orbital electron shells of the atoms are what science calls *incomplete*—meaning, their outermost electron shell doesn't have its maximum number of electrons. They are *hungry* to share their electrons. In the language of CosmoErotic Humanism, implied directly by the empirical sciences, in their incomplete states, the atoms *desire* to share electrons with other atoms. Their capacity to be allured by other atoms is called *valence* or *valency*. When atoms are allured to bond with each other through their valences, that bond is called a *covalent bond*.

plants and microorganisms.[158] For animals and humans, leucine is an essential amino acid that needs to be obtained through food.

Nevertheless, we can say that all these atoms form a larger, coherent whole, a synthesis, a shared identity in the context of (relative) otherness. The new identity is the molecule of the amino acid, while the atoms and smaller molecules don't lose their identity as the distinct and different atoms and molecules they are. The atoms recognize and feel each other by sharing their valence electrons. As we said earlier, *valence* means the desire for a particular value.

The desire of each of the atoms (also inside of a molecule) is literally for the value of feeling whole and complete. That value is reached by sharing their electrons. So, these atoms share a Field of Value—the value of fulfilling their mutually aligned desires and needs—and also a Field of Purpose together. In our bodies, amino acids perform many important functions (meaning, a shared purpose) that none of the atoms by themselves could ever accomplish.[159]

Proteins consist of long chains of amino acids in a very specific order. However, there is again no commander telling the amino acids to come together like that. Instead, the amino acids desire each other and come together in a larger whole—a shared identity in the context of (relative) otherness. This time, the new identity is the protein, while the amino acids don't lose their identity as the distinct and different amino acids they are. The amino acids bond together—they are allured to each other. They recognize and feel each other by sharing their electrons. They share a Field of Value and Purpose together.

The Processes of Transcription and Translation in Generating Proteins

To deepen our sense of the Field of Eros at play, we ask another simple question: *How do our bodies know how to create proteins?*

The answer sounds amazingly simple and yet holds a level of complexity, which is, as we know by now, just the exterior description of the depth of intimacy and relationship, that can

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[158] See Figure 1 in Wang YY, Zhang F, Xu JZ, Zhang WG, Chen XL, Liu LM. Improvement of l-Leucine Production in *Corynebacterium glutamicum* by Altering the Redox Flux. Int J Mol Sci. 2019 Apr 24;20(8):2020. Doi: 10.3390/ijms20082020. PMID: 31022947; PMCID: PMC6515235.

[159] In the words of our friend Howard Bloom, this is another *supersize surprise*—another new emergence of qualities of the whole—that could not have been predicted by the qualities of the parts.

only evoke wonder and radical amazement and awe. Through processes called *transcription* and *translation*, information from *genes* is used to generate *proteins*.

Transcription

Transcription is the first step in the process of generating a protein. Through transcription, the information (i.e., meaning and value) stored in the DNA of a gene is passed to the RNA.

As Prabarna Ganguly[160] formulates it:

> *Transcription is like translating a book from one language to another. While DNA is more stable of a molecule, RNA is the more universal biological language.*[161]

There is a special type of RNA that contains the information for making a protein. It is called *messenger RNA* (*mRNA*) because it carries the *information*, or *message*, from the DNA in the cell's nucleus into the cell's *cytoplasm*—the outer fluid inside the cell but outside the cell's nucleus. By *message* and *information*, we mean *coded value* and *meaning*. Meaning and value live all the way down the evolutionary chain. Value supports the field of life. Meaning and value are intimately bound up with the dynamics of Eros and allurement.

Translation

Translation is the second step (after transcription) in getting from a gene to a protein. The mRNA now intimately interacts (or talks) with a specialized complex (called a *ribosome*—yet another configuration of intimacy). That ribosome, literally, *reads* the sequence of mRNA nucleotides.

Again, in the words of Prabarna Ganguly:

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[160] Prabarna Ganguly, Ph.D., is the Chief Communications Officer at Nucleus Genomics.

[161] See https://www.genome.gov/genetics-glossary/Transcription.

> *Translation is, perhaps, the single most important event in biology because what protein is translated versus what isn't translated makes the difference between your body building a heart versus lungs.*[162]

Again, as we just saw above, intimacy, allurement, and Eros are intimately connected to the decoding of meaning and value. Each sequence of three nucleotides, to which we will return below, usually codes for one particular amino acid. Another type of RNA, called *transfer RNA* (*tRNA*), now assembles the protein—one amino acid at a time. Protein assembly continues until the ribosome encounters a so-called *stop codon* (a sequence of three nucleotides that does *not* code for an amino acid).

And yet, again, there is no command-and-control mechanism here. Instead, there are intricate processes of mutual allurement in play all the time. This whole hyper-complex process is constantly going on everywhere in our bodies. It is one of myriad channels of *Eros, intimacy, and allurement* in constant interplay—or dance—with *autonomy and uniqueness*.

All of these processes that we call *unconscious* are literally keeping us alive in every moment. If we had to take care of these processes consciously for just one second, we would instantaneously die. What we alternatively call the *inherent LoveIntelligence* and the *ErosValue* (and consciousness) of the Intimate Universe has created these processes and configurations of intimacy within intimacy within intimacy—relationships within relationships within relationships—intimate conversations within intimate conversations within intimate conversations—myriads of times over—within billions of years of evolution before it got to us.

As we have already noted earlier, this is precisely what we have described by multiple names in CosmoErotic Humanism, including the *Intimate Universe*, the *Amorous Cosmos*, the *Universe: A Love Story*, *Evolution: The Love Story of the Universe*, and the *CosmoErotic Universe*. And it is something of what our colleague Howard Bloom refers to as the *Conversational Cosmos* or the *longings of the Universe*, and what Alfred North Whitehead calls *the appetites of the Universe*.

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[162] See https://www.genome.gov/genetics-glossary/Translation.

Cells

Containing proteins and DNA, together with various organelles performing different functions, *cells* are the basic units of life, providing larger organ, bone, and tissue structure, regulating nutrients, and playing other important functions in larger and more complex multicellular organisms.

Cells contain all of the unique genetic information of an organism, as DNA resides in each cell's nucleus.[163] Cells divide and reproduce in order to create new cells. True marvels of complexity and intimacy, cells enable the magnificent proliferation of diversity we see throughout the plant and animal kingdoms, setting the stage for the ongoing development of even greater complexity and interconnectivity—aka intimacy. Cells are largely responsible for the proliferation of unique emergents within the larger Field of Reality.

A Closer Look at Nucleotides

To briefly recapitulate and then deepen, DNA is comprised of nucleotides and famously resembles a twisted ladder. A *nucleotide* is a unique configuration of intimacy between three distinctive groups. These three groups are in intimate relationships with each other.

The unique or what is called the *differentiating* part of the various nucleotides is its *nitrogenous base*, to which we will turn below, which is a very particular configuration of intimacy. There are four nitrogenous bases—adenine, thymine, guanine, and cytosine— which intimately partner to form the rungs of the DNA. The whole nucleotide is named according to the nitrogenous base it contains.

The phosphate and sugar (*deoxyribose*) molecules, on the other hand, are always the same and create the double-helical backbone of the twisted ladder of DNA.

Let's take a look at a simplified image of the chemical structure of *deoxyadenosine monophosphate*—the nucleotide containing *adenine*:

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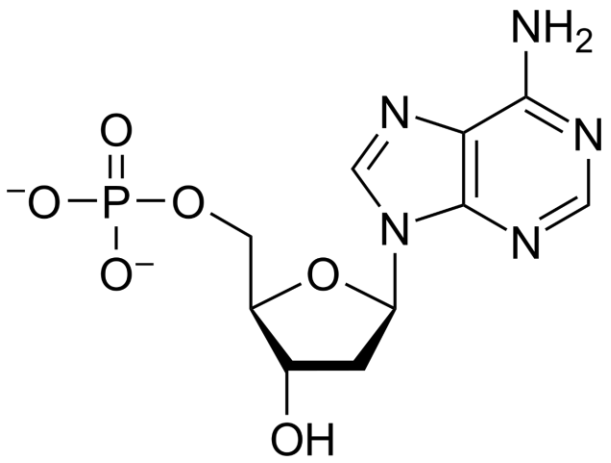
[163] That is in a eukaryotic cell. Most prokaryotes contain only a single, circular chromosome that is found in an area in the cytoplasm called the *nucleoid*.



1. Image: Chemical structure of deoxyadenosine monophosphate.[164]

As we can see more clearly now, the nucleotide contains:

1. at the center of the image above, a five-carbon sugar molecule ($C_5H_{10}O_4$)—an intimate configuration of carbon, hydrogen, and oxygen—desiring, needing, feeling, and recognizing each other and forming a larger coherent whole, while not giving up their relative otherness,
2. at the upper right of the image, a nitrogenous base (in the image it is adenine: $C_5H_5N_5$)—an intimate configuration of carbon, hydrogen, and nitrogen—desiring, needing, feeling, and recognizing each other and forming a larger coherent whole, while not giving up their relative otherness,
3. and, at the left side of the image, one phosphate group (PO_4^{3-})—an intimate configuration of phosphor and oxygen—desiring, needing, feeling, and recognizing each other and forming a larger coherent whole, while not giving up their relative otherness.

Now that we have briefly described each of the three terms—each expressing a unique intimate union—we can turn to see how all three distinct intimate unions come together in a larger pattern of intimacy. Let's look at these groups, one at a time, and see how they come together.

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[164] Image by Cacycle—public domain.

Nitrogenous Bases

As we said above, the nitrogenous bases are the *differentiating* part of the various nucleotides. There are four different nitrogenous bases known in DNA (Deoxyribonucleic Acid):

Adenine (A) and *guanine* (G) are what are called *double-ringed purines.*

Cytosine (C) and *thymine* (T) are smaller, *single-ringed pyrimidines*.

These four nitrogenous bases—unique intimate communions of Eros—are themselves very *particular* when it comes to allurement, bonding, and relationship forming. That quality of theirs is very important when it comes to both reproducing our DNA and one of our most essential life processes—the creation of proteins in our cells.

Let's take a look at them:

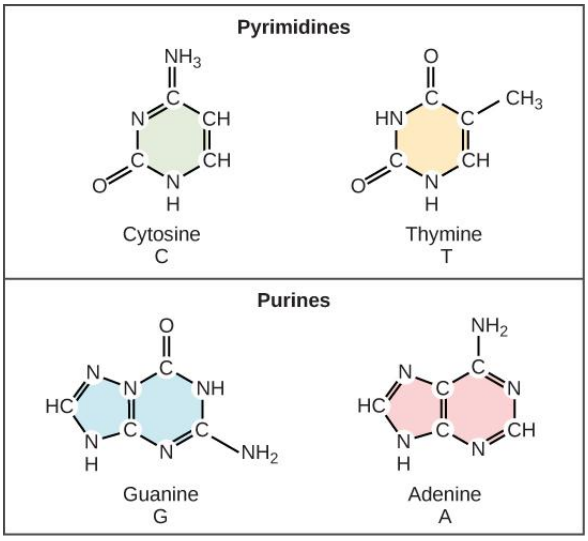

Image: Pyrimidines and Purines.[165]

As you can see in the simplified image above, *pyrimidines* have one ring—or hexagon—made of carbon and nitrogen at their center, with covalent bonds between them.[166] That is the unique way, these atoms are intimately allured to each other.

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[165] See https://opentextbc.ca/biology/chapter/9-1-the-structure-of-dna/.

[166] Some of these bonds have a valency of 1, others of 2—represented by the 1 or 2 lines between them. That means that, in their shared intimacy and desire for each other, they each share one or two electron pairs with the other.

Purines, on the other hand, have two rings (one hexagon and one pentagon). The two atoms in the middle are part of both rings.[167] That is the unique way, these atoms are intimately allured to each other.

And as we will see below, these four nitrogenous bases—particular intimate, erotic unions—are themselves very *particular* when it comes to allurement, bonding, and relationship forming. But of course. That quality of theirs is, as we will see below, very important when it comes to both reproducing our DNA and one of our most essential life processes—the creation of proteins in our cells.

The Sugar Group

The sugar group that is found in the DNA is called *deoxyribose* and is made up of 5 carbon atoms, four of which are (again) arranged, together with one oxygen atom, in a pentagonal shape. Next to the carbon, the whole sugar group also contains four oxygen atoms and several hydrogen atoms. This is distinct from the *ribose* sugar group that is found in RNA, which has five oxygen atoms, as well as several hydrogen atoms.

The carbon atoms of the five-carbon sugar groups are generally numbered clockwise from the central oxygen as 1′, 2′, 3′, 4′, and 5′, as shown in the image below.[168]

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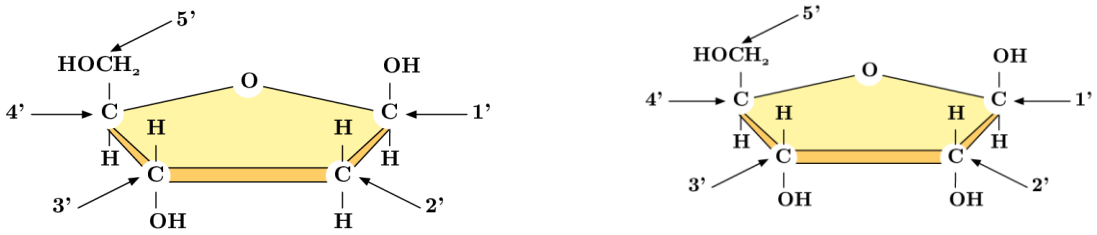
[167] There are two carbon atoms in the case of adenine and one carbon and one nitrogen atom in the case of guanine. Both are having a covalent bond (with valency 2) with each other (meaning, they each share two of their electrons). As we said earlier, in most elements, the orbital electron shells of the atoms are what science calls *incomplete*. In their incomplete states, the atoms *desire* to share electrons with other atoms. Their capacity to be allured by other atoms is called *valence* or *valency*. When atoms are allured to bond with each other through their valences, that bond is called a *covalent bond*.

[168] We will return to these numbers later, when we describe how the nucleotides come together to form the unique structures of our DNA.



Images: A schematic of the deoxyribose sugar molecule versus the ribose sugar molecule.[169]

Carbon, oxygen, and hydrogen form this complex shape with many covalent bonds, as this is how the atoms in intimate relationship with each other *feel* most complete and whole. The atoms in this complex molecule literally *feel chemistry with* one another. They are *excited* until they feel whole and complete.

Ions and the Phosphate Group

Phosphate (PO_4^{3-}) is a chemical *ion* made up of one phosphorus and four oxygen atoms.

An *ion* is a molecule that is not yet complete. It is either missing one or more electrons (and is therefore positively charged) or it has excess electrons (in which case it is negatively charged). Ions therefore strongly desire to bond with each other, but they often do so by so-called *ionic bonding*, rather than by covalent bonding. That means that they experience a strong allurement to each other, which in this case is called *electrostatic attraction*, without fully sharing the electrons.

This is, of course, a different form of intimacy—something analogous to polyamory versus monogamy. Atoms in covalent bonds are really committed to their one partner, while ions can move more easily from one beloved to another.

A positively charged ion is called a *cation*. It has one or more protons in its core than electrons in its shells.

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[169] Images from David J. Russell, "Modeling Biological Structures via Abstract Grammars to Solve Common Problems in Computational Biology" Thesis for PH.D. Electrical Engineering, November 2010—see https://www.researchgate.net/publication/228392049_Modeling_Biological_Structures_via_Abstract_Grammars_to_Solve_Common_Problems_in_Computational_Biology.

A negatively charged ion is called an *anion*. It has excess electrons that it wants, desires, or needs to share.

The charge of the below phosphate ion is three times negative, meaning in this case, as shown in the image below, that it *needs* or *desires* three other ions with a positive charge.

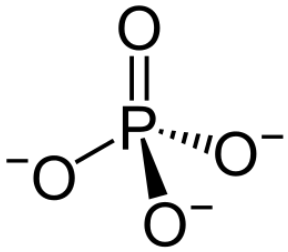


Image: Phosphate group.[170]

When the above phosphate ion is intimately attached to a molecule containing carbon, sharing one of its electrons with it, it is called a *phosphate group*. That is the case with our nucleotide above, where the phosphate group has bonded with the carbon of our sugar molecule. Notice again that a phosphate group, at its core (like all of the world of matter and life from atoms to cells to organs to organisms), is a unique, erotic, intimate configuration of relationships.

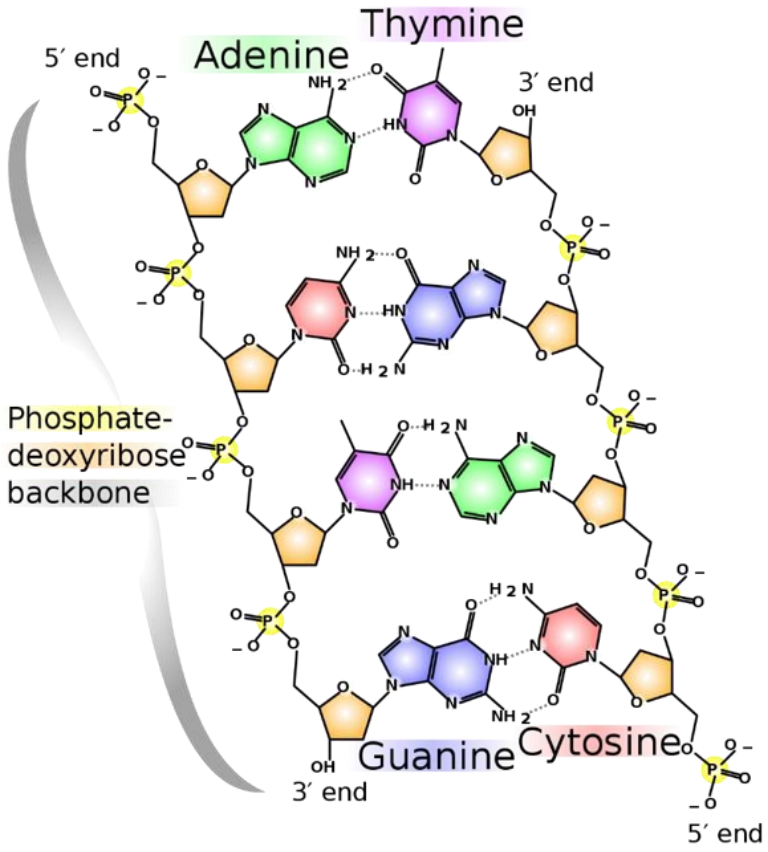
The Formation of DNA

With all of that in mind the next sentence now makes sense:

DNA and RNA are *chains of nucleotides*.

When the four nitrogenous bases intimately connect with a sugar molecule and a phosphate molecule, we get a *nucleotide base*. The 5-carbon sugar and the phosphate group of each nucleotide together form what is called the *backbone* of DNA. They connect the nucleotide bases together to form a single strand of DNA.

[170] See https://biologydictionary.net/phosphate-group/.



Chemical structure of DNA, with colored label identifying the four bases as well as the phosphate and deoxyribose components of the backbone[171]

The phosphate group of one nucleotide bonds, meaning, *it feels chemistry with*, *desires*, and *needs* the sugar molecule of the next nucleotide, and so forth. The phosphate group is attached to—*feels chemistry with, desires, and needs*—what are called:

- the *No. 5′ carbon* of one nucleotide and
- the *No. 3′ carbon* of the next nucleotide.

For the numbers, see the image above as well as our description of the sugar group.

[171] Image by Madeleine Price Ball; CC0. See https://commons.wikimedia.org/wiki/File:DNA_chemical_structure.svg.

In other words, the nucleotides are not satisfied by bonding and being in relationship with only *one* other nucleotide. Rather, the nucleotides are coming together—self-organizing and feeling allured—to form a whole *strand* of nucleotides.

But it doesn't stop there.

Each DNA molecule is composed of *two* single strands, which bond together via so-called *hydrogen bonding* through their nitrogenous bases.

Here is what that means:

Hydrogen Bonding

Hydrogen bonding is yet another way of bonding between atoms and molecules. It is neither a covalent bond, which we have seen in play in multiple variations above, nor an ionic bond, which we just introduced above, when talking about the phosphate group.

Instead, it is an interaction that involves a hydrogen atom, which is located between a pair of other atoms (mostly oxygen (O), nitrogen (N), or fluorine (F) atoms). Both of these atoms are having a high affinity for electrons—meaning, they like electrons very much, but they do not quite need them as strongly as the atoms joining in a covalent or even an ionic bond. That's why a hydrogen bond is weaker than both ionic and covalent bonds, which makes it possible to pull the two strands apart when needed.

One atom of the pair, called the *donor*, is covalently bonded (or we could say *monogamously* bonded) to a hydrogen atom (—FH, —NH, or —OH), whose electrons it shares unequally. It desires electrons very much and more than the hydrogen does.[172] That causes the hydrogen to take on a slightly positive charge (as its electron is a bit more distant from it). The other atom of the pair, called the *acceptor*, has an unshared electron pair, which gives it a slightly negative charge (depicting its desire to share its electrons).

These slight charges are allured to each other through *electrostatic attraction*. That allows for the donor atom to effectively share its hydrogen with the acceptor atom, forming a

[172] Technically that is called its relatively high *electron affinity*.

relatively stable relationship. This kind of hydrogen bonding is what happens for our nitrogenous bases.

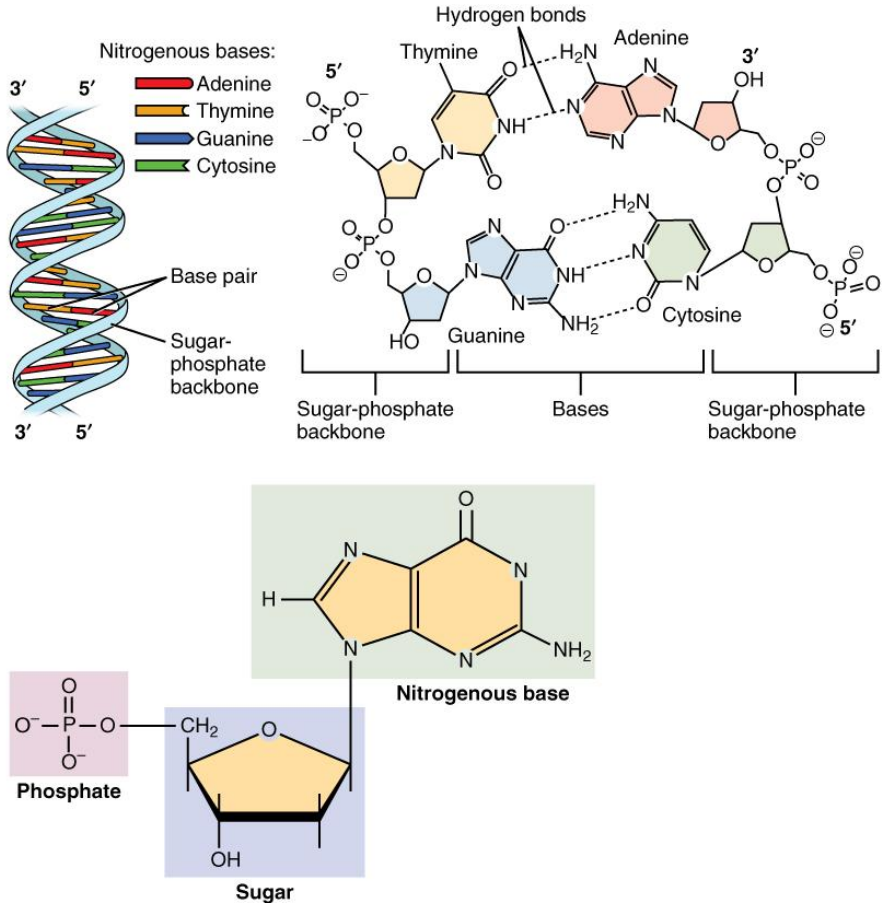


Image: DNA Nucleotides[173]

The nitrogenous bases are highly selective when it comes to intimate, erotic *partnering* (technically called *base-pairing*):

- Adenine only wants to intimately partner—pair—with thymine (connected by two hydrogen bonds).
- And guanine only intimately partners—pairs—with cytosine (connected by three hydrogen bonds).

[173] Version 8.25 from the Textbook OpenStax *Anatomy and Physiology* Published May 18, 2016: https://openstax.org/books/anatomy-and-physiology/pages/preface.

As you can see in the image above, the two strands are anti-parallel; meaning, one strand has the 3′ carbon of the sugar group in the *upward* position, whereas the other strand has the 5′ carbon in the upward position.

These two strands wind around each other to form the twisted ladder shape that is called the *DNA double helix*. The nucleotide bases partner to make up the rungs of the ladder. The sugar and phosphate molecules make the sides, or what are called the *backbones*.

From DNA to Cells

DNA as a whole performs a number of key intimacy-generating features within the cell.

- When a cell is ready to divide, DNA must be replicated.
- And it must be *read* to produce molecules, like proteins, to carry out the functions of the cell—supporting its creative capacity to engage life.

At the same time, DNA molecules are very long.

Put three billion of these partners (*base pairs*) together in the right order, and you have a complete set of human DNA in one cell. Stretched end-to-end, the DNA molecules in a single human cell would come to a length of about 1 to 3 meters. Each of us has enough DNA to reach from here to the Sun and back, about 70 times.[174]

Thus, the DNA for a cell must be well-packaged—ordered with precise intimate precision—so that it is protected, and it fits and can creatively act, or function, within a structure (the cell) that is so small that it cannot even be seen by the naked eye. ***How does that work?***

The Packaging of DNA into Chromosomes

As we said before, the DNA for a cell must be well-packaged—ordered with precise intimate precision—so that it is protected, and it fits and can act or function within a structure (the cell) that is so small that it cannot even be seen by the naked eye.

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[174] There are different estimates of the length of DNA. See, for example, here: https://dodona.ugent.be/en/activities/434589381/.

DNA molecules are packaged into thread-like structures called *chromosomes*, long strands that contain hundreds or thousands of genes.

Chromosomes in Prokaryotes and Eukaryotes

Prokaryotes are early and relatively simple single-celled organisms without a nucleus, although they are already radically original, uniquely intimate structures in Cosmos, well beyond anything that came before.

However, at some point in evolutionary history, *eukaryotes* emerge. Eukaryotes are cells with a nucleus and other organelles, which originally emerged from the intimate merger of two earlier prokaryotic cells[175]—and then another merger.[176] And in the time between prokaryotes and eukaryotes, we get from asexual to sexual reproduction.

The chromosomes of ***prokaryotes*** are much simpler than those of *eukaryotes* in many of their features. Most prokaryotes contain a single, circular chromosome that is found in an area in the cell called the *nucleoid*.

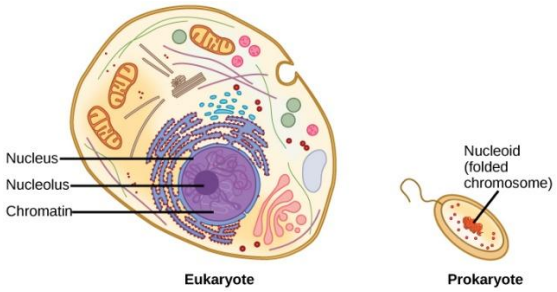


Image of eukaryote and prokaryote.[177]

[175] While there is great agreement among biologists that eukaryotes first arose as the result of a merger of two prokaryotic cells—one of these, which appears to have been a member of a subgroup of archaea, whereas the other partner appears related to alpha-proteobacteria—it is not yet clear how exactly this merger happened. See, for example, Baum, B., & Baum, D. A. (2020). The merger that made us. *BMC biology*, *18*(1), 72. https://doi.org/10.1186/s12915-020-00806-3.

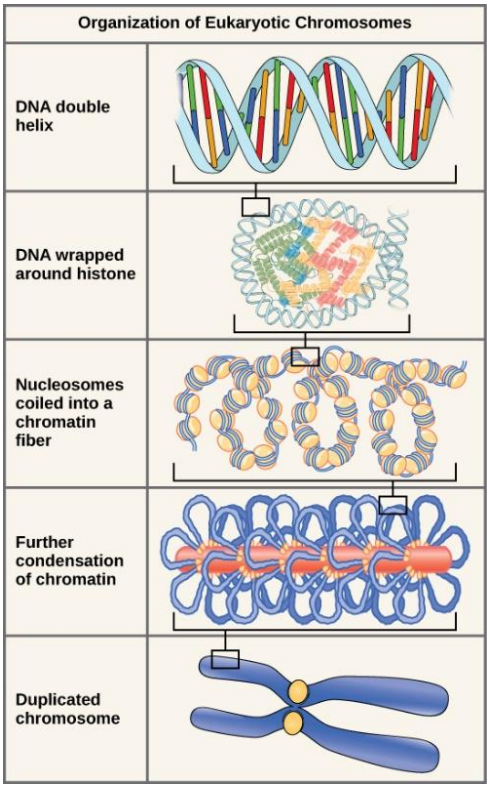
[176] For more about this exciting story, see Meditation Fifty-One, Essay Three in Barbara Marx Hubbard and Dr. Marc Gafni, *The Rise of Evolutionary Relationships: The Evolution of Relationships—In Response to the Meta-Crisis*—published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023.

[177] See https://opentextbc.ca/biology/chapter/9-1-the-structure-of-dna/. "A eukaryote contains a well-defined nucleus, whereas in prokaryotes, the chromosome lies in the cytoplasm in an area called the nucleoid."

But even the size of the genome—the complete set of genetic information in an organism—in one of the most well-studied prokaryotes, *Escherichia coli*, consists of 4.6 million base pairs, which would extend a distance of about 1.6 millimeters if stretched out. But *Escherichia coli* is only 1-2 micrometers long (with 1 micrometer being 0.001 millimeter).

So how does this fit inside it? The DNA is twisted, even beyond the double helix, in what is known as ***supercoiling***.

Eukaryotes, on the other hand, are not only bigger but also much more intimately, erotically complex. They therefore employ a different type of packing strategy to fit their DNA inside the nucleus. Let's repeat our earlier image, to make it easier to track:



The packaging of the eukaryotic chromosome.[178]

At the most basic level, DNA is wrapped tightly around proteins known as *histone cores* to form structures called *nucleosomes*.

[178] See https://opentextbc.ca/biology/chapter/9-1-the-structure-of-dna/. "These figures illustrate the compaction of the eukaryotic chromosome."

It may seem counterintuitive that proteins are added to DNA to package it in a more compact way. But if you have ever tried to store a garden hose, you know that it is much easier to do so if you begin by coiling the hose. As a result, so-called *nucleosomes*, which each consist of eight *histone proteins*, around which the DNA is each wrapped 1.65 times, can be packaged into a much smaller volume than DNA alone.

Histones are a family of small, positively charged proteins. Positively charged means they are missing and therefore desiring electrons. DNA, on the other hand, is negatively charged, due to the negatively charged phosphate group ions in its phosphate-sugar backbone. The negative charge of phosphate group of the DNA means that it has excess electrons that it wants, or desires, to share. The opposite charges between histones and DNA intimately bind the histones and DNA together in a very tight way. They form a new whole—a new shared identity—a new configuration of intimacy with shared values, purpose, *pathos*, and recognition.

Each nucleosome is then intimately linked—allured—to the next one by a short strand of DNA that is free of histones. This is also known as the ***beads on a string*** structure; the nucleosomes are the *beads* and the short lengths of DNA between them are the *strings*.

The nucleosomes—the histones with their DNA coiled around them—then again stack compactly onto each other to form a new configuration of intimacy, a new shared identity, the 30-nanometer-wide fiber called ***chromatin***.

Chromatin is then coiled further into an even thicker and more compact structure, a new configuration of intimacy, which then forms the ***chromosomes***, the next level of intimacy, found in cells of humans and other higher organisms. ***The more intimate the parts become, the closer they come together, and the less space they need.***

In the interior sciences, one of the key principles of Reality is what is referred to as *Tzimtzum*. *Tzimtzum*, literally translated as *withdrawal*, is understood by Luria and his school in the sixteenth century, to mean *stepping back in love to allow room for other to emerge and bloom*. But in the paradox of *Tzimtzum*, the Infinite Eros of Cosmos steps back to make room for other, even while remaining fully present.

The more one loves, the more one has the capacity to step back while remaining present. When there is no room for the emergence of the full bloom of two beloveds, and such emergence

is imperative, then—from the perspective of the masters of the Hebrew interior sciences of Reality—the response is to love more. ***For when we are more intimate, when we love more, we make more room for uniqueness and autonomy to bloom in the context of the larger union.***

This principle of *Tzimtzum* is understood by the interior scientists to be the core mechanism of Reality—the dance of intimacy—being fully present—stepping back.

To get an embodied sense of the Eros animating DNA—both in protein construction and its own replication—you might want to watch this beautiful, animated video called *The Inner Life of the Cell*.[179]

Cellular Uniqueness: Single-Celled Organisms and the Microbiome

Single-celled organisms are arguably the most basic form of life on Earth. All life began with single-celled organisms that evolved over millions of years into the more complex lifeforms that exist today. They are the foundation for all that has evolved since their inception.

At this moment of the emergence of single-celled organisms, there is no sense of even a glimmer of what will later become the animal mind. Even before the single-celled organisms emerged, there was an early group of molecules held together in an intimately configured meshwork of chemical reactions—that is to say, unique sets of allurements generating unique intimacies—shared identities—which in turn generate unique qualities of Reality. These molecules deepened in relationship—the molecules intensified their intimacies generating new qualities of Reality—until the depth of relationship, the new quality of intimacy, bursts forth as life.

Then, at some point, there is what we can only refer to as *a deepening of the relationship bond—an intensification of intimacy*. It is that deepening—that intensification of unique intimacy—that creates the staggering result that we call *life*. Life as we know it emerges out of this world of ever-deepening, stable relationships between complex molecules.

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[179] See *The Inner Life of the Cell—Cell Animation | XVIVO*: https://xvivo.com/examples/the-inner-life-of-the-cell/.

Each species of single-celled organisms has a unique genetic makeup that makes it distinctly different from all others. And so, naturally, they form emergent new wholes, unique intimacies in the context of otherness with mutuality of recognition, *pathos*, value, and purpose.

Bacteria are microscopic single-celled organisms that live in most environments on Earth. They are essential to all life, as they help break down dead matter and recycle nutrients, but they can also cause diseases like tuberculosis and cholera. The majority of bacteria are harmless, but some can cause serious illness. The uniqueness of bacteria is in their genetic makeup—every species has a unique DNA sequence that contains the genetic code for the proteins that make up the cell.

Viruses are microscopic pieces of genetic material that can enter a cell and hijack its machinery to make more copies of themselves. They are not technically considered to be living beings, because they cannot survive or reproduce on their own. Viruses, however, are dependent on biology, infecting plants, animals, and humans, and can cause a variety of diseases, such as the flu, AIDS, and rabies. Each virus is unique because it has a particular genetic makeup. The DNA or RNA of a virus contains a specific set of genes that code for specific proteins, which give a virus its unique physical appearance and define its host's range. Interacting with all the other levels, these unique entities play their exquisite roles in the dance of Cosmos.

Our Microbiome: An Ecosystem of Single-Celled Organisms in Our Bodies

Both bacteria and viruses, together with *fungi* (which are other single-celled organisms), are part of our *microbiome* (and that of other living beings as well as the soil in which plants grow). There are as many *microbes* as there are human cells in the body.[180] They live in our guts, our mouths, noses, and lungs, as well as on our skin, each body site has a different community of microbes, and they perform important functions in the ecosystem of our bodies.[181] We could say that bacteria and viruses are intimate with each other and with us in our healthy microbiomes. Without them, we couldn't survive. There is a balance in our microbiome that is unique to us as

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[180] See, e.g., the article "Revised Estimates for the Number of Human and Bacteria Cells in the Body" by Ron Sender, Shai Fuchs, and Ron Milo, in *PLOS BIOLOGY*, 2016—https://doi.org/10.1371/journal.pbio.1002533.

[181] See, for example, the article "The gut microbiome in health and in disease" by Andrew B. Shreiner, John Y. Kao, and Vincent B. Young, *National Library of Medicine (NIH): National Center for Biotechnology Information*, 2016—https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4290017/.

well as to our unique environment at any given time. All the different microbes form unique relationships with each other and with their host. They are saying to each other: *Your need is my allurement*.

When there is a disbalance (a crisis of intimacy and relationship) in the microbiome, illnesses of all sorts become more likely.

A new virus or other microbe that the whole system hasn't yet adapted to—

in other words,

it hasn't yet learned to be intimate with it,

it is not yet able to form a new unique configuration of intimacy with it,

a new whole in the context of relative otherness and mutualities of value,
pathos*, recognition, and purpose*

—can actually make us sick.

The new microbe and the whole microbiome as well as the host animal, all haven't yet learned how to respond to each other's needs. It is the next crisis that is an evolutionary driver for more Eros, more intimacy, and more uniqueness.

The Move from Prokaryotes to Eukaryotes to Multicellular Life in Response to Relationship Crises: A Major Jump in Uniqueness

The move from prokaryotes to eukaryotes, and from single-celled to multicellular organisms, was a key transformational moment in the early history of uniqueness and relationships. This key transformation was motivated by a crisis known as the *Great Oxidation Event*, also called the *Great Oxygenation Event*, the *Oxygen Catastrophe*, the *Oxygen Revolution*, the *Oxygen Crisis*, or the O*xygen Holocaust*.[182]

[182] See Margulis, Lynn; Sagan, Dorion (1986). Chapter 6, "The Oxygen Holocaust." *Microcosmos: Four Billion Years of Microbial Evolution*. California: University of California Press. p. 99. See also Cornish-Bowden, Athel (2017). "Lynn Margulis and the origin of the eukaryotes." *Journal of Theoretical Biology*. Volume 434, p. 1.

Here is the summary of the story:[183]

Life, in the form of single-celled prokaryotic organisms (simple cells without a nucleus), appeared almost 4 billion years ago. Almost 1.5 to 2 billion years later, entirely new configurations of intimacy emerged. Simple single-celled organisms, known today as *prokaryotes*, gave up their single status and entered relationships.

These early relationship crises, however, were not resolved within the lifetime of the organisms. Rather, relationship learning took place over millions and even billions of years.

In fact, between

(1) the first simple cells learning to use the energy of the Sun,

(2) to the first cells able to breathe oxygen,

(3) to the first more complex cells called *eukaryotes*,

(4) to the first multicellular eukaryotes,

there are still hundreds of millions of years.

In the next brief section, we are going to go on an evolutionary journey together. In this journey, over several steps, we will see a pattern emerge, again and again:

The erotic drive for relationship leads to a crisis in relationship.

The crisis in relationship leads to the emergence of a next level of relationship.

And this evolution of relationship with its deepening of intimacies leads to the emergence of ever-more uniqueness.

Here are the eight steps through which this evolution of relationship and uniqueness occurs:

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[183] For a more detailed story of this story, see Barbara Marx Hubbard and Dr. Marc Gafni, *The Rise of Evolutionary Relationships: The Evolution of Relationships—In Response to the Meta-Crisis*—published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023.

Step 1: *Cells, in their need for food (energy), learn to access the Sun's energy through the wildly complex and intimate process of photosynthesis—using hydrogen (H) as a fuel.*

Step 2: *As the free hydrogen resources on Earth start to get depleted—a first crisis—cells respond to this crisis by potentiating their skill of photosynthesis by becoming intimate with an almost inexhaustible hydrogen source: water (H_2O).*

Step 3: *The use of water for photosynthesis releases free oxygen (O) into the atmosphere. Oxygen is an extremely relationship-hungry element; and these early cells have not yet learned to be intimate with it. This leads to the greatest crisis of early life on Earth: the oxygen crisis.*

Step 4: *Some of these early, simple cells (which we now call* prokaryotes*) learn to become intimate with oxygen—leading to the emergence of the first oxygen-breathing (=* aerobic*) cells. Life on Earth, through these first aerobic cells, starts to flourish again. Yet, for the rest of life, the crisis is still a disaster.*

Step 5: *The thriving aerobic cells start to invade another large prokaryote—a relationship crisis writ large, in which mostly both invader and invaded get killed. Over many generations, the ancestors of these first two cells learn to become intimate with each other—so much that they even start to depend on each other. The first cells with* mitochondria *(the first* organelles *within a cell) emerge. These are the first ancestors of what we now call* eukaryotes*—able to breathe oxygen through their mitochondria.*[184]

[184] What are *mitochondria*? They are the descendants of the early oxygen-breathing cells in a new, intimate relationship with the larger, originally anaerobic cells they are now literally a part of.

Step 6: *That same play happens again… and again… and again… ultimately leading to the emergence of the variety of eukaryotes that we know today.*[185] *Life on Earth is thriving once again.*

Step 7: *The growing skill sets of these eukaryotic cells include:*

- *the emergence of motility in some of these cells—the ancestors of animals (the ability to move around, both to find food and to avoid predators, was a great new asset)*
- *the ability to do photosynthesis—in other cells, which are the ancestors of plants and have so-called* chloroplasts *as part of their organelles*[186]
- *DNA repair*
- *sexual reproduction (allowing for more and more diversity, differentiation,* uniqueness*)*[187]
- *etc.*

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[185] That was the way how, step by step, different organelles of these newly emergent eukaryotic cells were formed. Invasion was followed by crisis and a successive deepening of intimacy, until a new shared identity was formed. That process is known today as *symbiogenesis* or *serial endosymbiosis*. [The theory was developed by American biologist Lynn Margulis. See, for example, "Serial endosymbiotic theory (SET)." *flax.nzdl.org*. Archived from the original on 18 August 2021. Retrieved 8 March 2021.] After a lot of creative—erotic and intimate—experimentation and relationship-learning through crises, all of these ever-more complex eukaryotic organisms, at some point, also acquired a nucleus (and other organelles). These cells are new configurations of intimacy—shared identities of all the earlier organisms, which are now in intimate, creative, erotic relationship—with shared recognition, feeling, purpose, and value. And they are still able to breathe oxygen through their mitochondria—the descendants of the once free-living first oxygen-breathing prokaryotes.

[186] Like the mitochondria, which emerged from the very first merger, so-called *chloroplasts* emerged from another episode of symbiogenesis. This time, our early eukaryotes were invaded again by prokaryotic cyanobacteria. These cyanobacteria transmitted their ability to turn sunlight into food to the eukaryotes. These new eukaryotes became the ancestors of the later plants on Earth.

[187] Next appear *meiosis* and sexual reproduction on the scene. And while there is currently no consensus among biologists on questions like, *how did sex in eukaryotes arise in evolution, what basic function did sexual reproduction serve, and why is it maintained*, given the basic evolutionary disadvantages of sex, it is clear that it evolved over 1.2 billion years ago. Among the most limiting evolutionary disadvantages of sexual reproduction is that an asexual population can grow much more rapidly with each generation than a sexual one. See, for example, Smith, J. Maynard (1978). *The Evolution of Sex*. Cambridge University Press.

Step 8: *Finally, the single-celled eukaryotes come together in mutual support. Over many generations, they become more and more intimate and even dependent on each other. They give up their single status in a whole new way: The first eukaryotic multicellular organisms emerge—some of which are our very own ancestors.*

All of the complex lifeforms on Earth today are descendants of these multicellular organisms, emergent from this series of relationship crises and the creative play in response to the crises. Each crisis led to deepened intimacies and, ultimately, the emergence of a new level of relationship and uniqueness. That is of course exactly the mechanism that has been and still is the evolutionary driver all the way down and all the way up the evolutionary chain.

Uniqueness at the Level of Multicellular Life

That last step in evolution, multicellular eukaryotic organisms (Step 8 above), only evolved quite recently in evolutionary times, about 600 million years ago.

Multicellular life turned out to become much more complex than single-celled life, but still based on the same building blocks. At this stage, the potential for unique configurations of intimacy was immense, including the myriad species of insects, birds, reptiles, and other animals, as well as plants in their stunning diversity.

Simply put, the biological world is suffused with differentiated particularities, the Infinity of Intimacy operating at all scales to produce ever-new expressions. The fractal nature of uniqueness is perhaps most evident in the biological world, although, as we have seen above, it manifests at every level of the Intimate Universe.

Plants

Plants are multicellular organisms that evolved from the eukaryotic single-celled organisms with chloroplasts[188] we described above. Unique in their ability to photosynthesize and use sunlight to create energy, plants are essential to all life on Earth, as they provide the

[188] As we have said above, these chloroplasts are the remnants of the original prokaryotic cyanobacteria that invaded the earliest eukaryotes in another episode of symbiogenesis. These cyanobacteria transmitted their ability to turn sunlight into food to the eukaryotes. And these new eukaryotes became the ancestors of the later plants on Earth.

oxygen and nourishment that all living things need to survive. Plants absorb the Sun's energy and use it to create food for other living things. Plants also help filter out carbon dioxide and convert it into oxygen, which is necessary for other lifeforms that breathe oxygen.

Plants are a crucial part of the world's ecosystem and appear in a dizzying array of configurations—unique and emergent. In fact, plants would catapult evolution towards the ever-more gorgeous, complex, and unique deepening intimacies of *the birds and the bees* and everything that was to emerge from it, including you and me.

The Dance of Insects, Birds, and Flowers: The Birds and the Bees

The dance of intimacy between plants and their pollinators has generated, for example, a fascinating diversity of strategies to lure the pollinators in. Using sweet scents, bright colors, and perfectly designed forms, the blooms entice their pollinators with the promise of a scrumptious feast. Flowers provide visual clues and formations, through their shapes and sizes, which allow pollinators to make contact.

Some flowers also feature nectar guides, which contain patterns visible from the air, thus showing pollinators the way to the sweet spot. Plants pollinated by beetles, for instance, have large open blooms, making for a wider landing area to accommodate larger guests. Irises are prolific producers of flowering petals that take an enormous amount of energy to stay in competition with nearby flowering plants, in hopes of alluring the services of bumblebees. Flower receptacles and displays uniquely vary from gullets and spurs to flaps and tubes. With a narrow tubule and a long tongue, the right pollinator and the right plant part, contact is made. The propagation of new life continues.

We have all been delightfully intoxicated by the scent of a flower. Flowers use potent aromas to allure their pollinators as well. Those with alluring fragrances are often those that are quite plain in their appearance. Some flowers exude scents that can be detected at a distance of over a mile away.

Food produced by flowers is also a major attractor for pollinators. Nectar is primarily a sugar water that contains amino acids and minerals. Plants dependent on pollinators with high-energy diets, such as hummingbirds, produce massive quantities of nectar. Pollen, high in protein, is produced by flowers in large amounts to ensure an appropriate feast.

Along with the need for sustenance, pollinators also need to reproduce in order to propagate to the next generation of their species. The warty hammer orchid of Australia takes advantage of this evolutionary impulse to reproduce by mimicking a chemical scent identical to the pheromone of the female thynnine wasp. In addition, the orchid's labellum or lower lip is shaped like the body of the female wasp. The male wasp tries to grab the faux female and fly off with her to mate but, instead, he crashes into the flower, releasing its pollen. The male thynnine wasp is a rather randy guy, and his constant desire to make contact through mating over and over is advantageous to the warty hammer orchid by causing its ongoing pollination and propagation.[189]

Some male spiders, in their own unique expression of this same process of evolutionary Eros and passion, learn both the most elegant of dances, as well as how to play the strings of their web as a kind of primitive musical instrument. That is part of the spider's unique mating call.

Unique dance takes place on water and inland. Stickleback fish dance in the water, while cranes dance on the shore. Male peacocks use the stunning display of art and color in their tail feathers to attract their circle.

It may well be worth spending time watching the male bowerbird.

Every morning when he awakens, he dedicates virtually all of his life energy to building the most alluring nest that he can. He finds twigs and binds them together. He may find a straw thrown away by campers in the area. He passionately searches the entire area for the highest quality building materials that he can find. He then becomes an architect of both beauty and function. He arranges and rearranges his materials until they appear in a way that he considers perfect. He might even use natural dark pastes to paint some of the walls of his house.

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[189] See *Washington Native Plant Society. Botanical Rambles*: Arnett, Joe, "Coevolution and Pollination." August 1, 2014. https://www.wnps.org/blog/coevolution-and-pollination/ (accessed July 29, 2016); University of Maryland. Undergraduate Program in Plant Biology. See also "Lecture 21: Pollination." http://www.life.umd.edu/classroom/bsci124/lec21.html (accessed July 29, 2016); PBS. See also *Evolution Library*: "Mimicry: The Orchid and the Bee" (accessed July 29, 2016). http://www.pbs.org/wgbh/evolution/library/01/1/l_011_02.html.

Where did he learn all of this? It comes from intimate patterns stored in his DNA. His DNA, to be more poetically and scientifically precise, contains both the common wisdom of his lineage of life, which itself is the expression of a unique configuration of biological intimacies that are known as the *bowerbird*, as well as his irreducibly unique expression of that unique lineage. All of this uniquely formed and configured intimacy and its wisdom, passed on through the accumulated erotic LoveIntelligence of Reality of his wisest surviving ancestors.

Receiving all of the above, the male bowerbird moves to allure his beloved in building the beauty of his nest, all the time driven by the erotic passion for joining, the drive for intimate relationship. It is that mysterious passion that moves him to erect the most beautiful home as part of his unique mating call.

Animals

Animals are a wide biological classification that includes all living, breathing, and moving life forms that are not classified as plants or fungi. They have a variety of characteristics that are not present in plants or fungi, such as the ability to voluntarily move to a new place.[190]

They are also the only biological classification that contains humans, as humans are a type of animal—or as we would call it—*human beings are the fulfillment of the lifeworld*.

All animals have a unique set of adaptations that help them survive in their particular ecological niche. Many species of animals developed quite complex skills and are able to creatively use them.

Fish

Fish are aquatic members of the animal kingdom that live in all the waters of the world. Fish are essential to our ecosystem, as they provide the nutrients that other animals need in order to survive.

The only animals on Earth that breathe under water, fish are one of the most diverse animal groups in the world, as they come in a wide variety of shapes, sizes, colors, and

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[190] The ability to voluntarily move was originally developed by another eukaryotic cell, which is the common ancestor of all animals.

behaviors. As with all forms of life, and all levels of Reality, allurement drives their ongoing process of unique emergence.

Stickleback fish, for example, awaken to their passion for contact, and new, more beautiful, and unique forms of courtship and intimacy come into being.

Reptiles

Lizards evolve from their fish and amphibian ancestors, and the phallus and vagina come into being. This allows the fulfillment of desire through an actual sensual interaction between bodies, in which communion, for a brief moment, overcomes otherness and autonomy.

Reptiles are able to consummate their passion through a fleeting intermingling of bodies. The emergence of this new form of fulfilling desire literally changes the course of evolution. Uniqueness and relationships, however, have not come even close to reaching a dead end.

Dinosaurs

Dinosaurs ruled the world for over 150 million years.[191] During this period, mammals have been described by science writers as *small, scruffy creatures who stayed in burrows and came out mostly at night*. They were pretty terrified of the dinosaurs.

Then, on one fine spring day, disaster struck. An asteroid, ten miles wide, traveling at a speed of 50,000 miles per hour, crashed into Earth. It hit just off the coast of what is today Mexico.[192] The impact was greater than that which would be felt if all the nuclear weapons in the world were detonated at once, and its effect equally deadly.[193]

The impact of the meteor and the aftershocks of earthquakes, wildfires, dust in the atmosphere, and tsunamis were of imagination-defying proportions. Most dinosaurs were wiped

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[191] By comparison, evidence suggests, *Homo sapiens* have likely only been around for 300,000 years, modern human civilization (if we begin with the Sumerian civilization) for 6,000 years, modern industrialization ~250 years, and the information era ~50 years.

[192] Specifically, the Yucatan Peninsula.

[193] A 2019 study suggests, the impact of the meteor that wiped out dinosaurs was as powerful as 10 billion World War II nuclear bombs. See: Gulick, Sean PS, et al. "The first day of the Cenozoic." *Proceedings of the National Academy of Sciences* 116.39 (2019): 19342-19351.

out. Only birds—ancestors of a group of small meat-eating dinosaurs—remained and continued their evolution.[194] Life on Earth was critically compromised. It was a bad day for evolution.

Paradoxically, however, it was precisely this breakdown which allowed for the breakthrough of mammalian, and later human, life. Reality responded with new configurations of intimacy, new forms of life evolving and taking center stage. The mammals were able to emerge from their burrows, ultimately reaching their apex in the mammals we recognize today, including human beings.

Mammals

Mammals are vertebrate animals characterized by the presence of milk-producing mammary glands for feeding their young, a neocortex region of the brain, fur, or hair, and three middle ear bones. These characteristics distinguish them from both reptiles and birds, from which their ancestors diverged over 300 million years ago. The modern mammals arose after the extinction of most of the dinosaurs and have been the dominant terrestrial animal group from 66 million years ago to the present.

With the emergence of mammals, there is yet another momentous leap in the nature of relationships and uniqueness. They develop the ability to nurse and care for their babies for extended periods of time.

Mammals develop ever-more unique relationships of such depth that, in specific cases, they remain in relationship their entire lifetimes. Relationships, which began their manifest journey in the primary subatomic attraction between subatomic particles, microseconds after the first great flaring forth of Reality, the Big Bang, have now realized their inner desire at a whole different level of joy and fulfillment.

Primates

Let's move for a moment from the biological wonder of uniqueness into the anecdotal, at least in terms of the animal world. When you turn, for example, to a chimpanzee troop, the uniqueness of the individuals is so profound that it is almost ridiculous.

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[194] See, for example, here: https://www.nhm.ac.uk/discover/why-are-birds-the-only-surviving-dinosaurs.html.

So, when Jane Goodall was studying chimpanzees, she saw the male hierarchy, she saw the female hierarchy, she saw how the males needed to switch from being bullies to being the uplifters of the poor and the oppressed if they were going to continue with their reign for any amount of time. She saw how some were total outcasts.

She saw how one mother was just thrown to the edges of society. And as a consequence, when she had a baby, all of the higher-ranking females came over and pretended they were interested in holding her baby and did all the things that we do with babies, but actually, under the surface, they were really out to manhandle a baby to death, so that the top female in the group could take over the entire group as her own feeding machine for the reproduction of her own genetic theme.

But then, she saw their personalities, she gave names to each of the individuals in the group. And her first book was a vivid story of these individual unique personalities and their lives.

Uniqueness in the Human World

Perhaps the most unique specimen among the animal world, at least to our eyes—if not the most complex—is the *human being*. Encompassing all of the levels mentioned above—DNA, cells, even bacteria, etc.—human uniqueness can be seen to be a combination of genetics and environment, which each play strong roles in shaping our development and behavior. We are also increasingly learning that epigenetics plays a role as well. This is the study of heritable changes in gene expression or cellular phenotype that do not involve alterations to the underlying DNA sequence. Epigenetic changes can stem from environmental exposure, lifestyle choices, and developmental experiences.

According to David Linden, in his book *Unique: The New Science of Human Individuality*, each of us has a unique mutational history, which can create subtle differences in our biology and behavior. For example, some mutations may affect the expression of certain genes, leading to differences in traits such as intelligence or personality. Other mutations may affect the structure or function of proteins, leading to differences in our metabolism, immune system, or other physiological processes. While the influence of mutational history on individuality is still an area of active research, Linden suggests that it may help to explain some

of the subtle differences that exist between individuals, even among those who share the same genes and environment.

Nature, nurture, epigenetics, and mutational history, all combine in a near infinite, dazzling expression of uniqueness to create new wholes as—never before seen, never to be repeated—embodiments of the particular Eros and desire of the individual. The unique intimacy of quarks, cells, genes, plus the unique intimacy of environmental factors and mutations, come together in a truly stunning new whole—a new, unique shared identity in the context of otherness, with mutualities of recognition, *pathos*, value, and purpose. This is what each of us is.

And when we wake up both to our Oneness with the being and becoming of the All and to the irreducible uniqueness of both our exteriors and our interiors—our consciousness—we awaken to our irreducible unique expression of our True Self, which is our Evolutionary Unique Self.

And of course, when two or more humans—in their unfathomable, incomprehensible uniqueness—come together, new emergents are created, combining aspects of each unique individual into something completely new: Evolutionary Relationships and Unique Self Symphonies.[195]

Unique Self Theory Emerges from the Evolving First Principle and First Value of Uniqueness

Uniqueness in the human world, as a primary imperative of the *ethos* and Eros that is central to education, economics, human psychology, and politics, is one of the primary *foci* of our early texts of CosmoErotic Humanism, where we have called this *Unique Self Theory*.

We are not going to recapitulate Unique Self Theory in this writing, but it is worthwhile for the reader to get a sense of its breadth and depth, as ***all of Unique Self Theory emerges from the evolving First Principle and First Value of Uniqueness.***

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[195] For more about this, see, for example, Barbara Marx Hubbard and Dr. Marc Gafni, *The Rise of Evolutionary Relationships: The Evolution of Relationships—In Response to the Meta-Crisis* and *The Future of Relationships: On the Evolution of Love*—both published by World Philosophy and Religion Press, in Conjunction with Waterside Press and Integral Publishers, 2023.

Before we point the reader to some of the writings on Unique Self Theory,[196] let's unpack somewhat of the significance of the bolded section of the last sentence above.

Unique Self, as we describe in Unique Self Theory—and in the writings we will adduce below including the volume you are holding in your hands—is, from our perspective, the best theory of identity available in the world today. That is, of course, a big claim. But we mean it with full humility and audacity, not as a grandiose claim, but as an ecstatic and sober claim.

What we mean by it is that Unique Self Theory integrates empirically validated insights, from the leading edges of validated wisdom in the interior and exterior sciences, drawn from the traditional, modern, and postmodern period. When we weave those validated insights together into a new tapestry of meaning, we yield Unique Self Theory. That is the source of our confidence in it, as well as that of many other leading theorists.[197]

Our think tank has also founded a division called *Unique Self Institute*,[198] which is committed to gathering and presenting Unique Self Theory, or the Unique Self Story of identity, to the public in the most clear and compelling form possible.

In other words, what we are calling *Unique Self* is the most subtle, clear, and compelling answer to the most important three questions a person will have to answer. Those three

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[196] See the section "Some Key CosmoErotic Humanism Writings on Unique Self" at the very end of this monograph.

[197] For a direct unpacking of Unique Self, see Gafni, Marc. *Your Unique Self, The Radical Path to Personal Enlightenment,* with Introduction and Afterword by Ken Wilber, Integral Publishers, 2012. Note in that book Ken Wilber's foreword and afterword for the meta-context of Unique Self Theory, which was originally articulated by Gafni. See also the full issue devoted to Unique Self Theory in the peer-reviewed scholarly *Journal of Integral Theory and Practice*, Vol. 6 no.1, ed. Sean Esbjörn-Hargens. This journal issue leads with two articles by Marc Gafni and one by Zachary Stein, together with Susanne Cook-Greuter and others, and it is dedicated to Unique Self. Gafni was also guest editor of the issue. A second volume of Unique Self by Gafni and Stein is now in preparation. It covers key developments in Unique Self Theory between 2011 and today and locates Unique Self Theory in the larger context of Gafni and Stein's CosmoErotic Humanism. See also a second major work by Gafni (2014), *Self in Integral Evolutionary Mysticism: Two Models and Why They Matter*, on the core articulation of Unique Self Theory. Also note the reaction of Don Beck on reading the original Unique Self Book—*Your Unique Self*. Beck remarked, "*Your Unique Self* is the bible of *Yellow*," referring to the first structure stage of second-tier consciousness. Also note Zak Stein's chapter on Unique Self Theory in his *Education in a Time Between Worlds: Essays on the Future of Schools, Technology, and Society.* Bright Alliance, 2019.

[198] For Unique Self Institute, see https://www.uniqueselfinstitute.com/. It is helpful to take a look at the intellectual history of Unique Self to get a sense of the theory and its timeline of unfolding: It is also worth looking here for a short mini course on the Unique Self Theory fundamentals: https://www.uniqueselfinstitute.com/the-unique-self-mini-course/.

interrelated questions, which we also call the *three great inquiries* of CosmoErotic Humanism, are:

Who are you?

Where are you?

What is there that must be done?

Which is related to:

What is your deepest heart's desire?

Or said slightly differently:

What do you really *want to do?*

Now here is the key point:

The answer to these three questions is deeply related to what we are calling *Your Unique Self*. Your Unique Self, as we unpack it, is the current apex expression of the intrinsic value of uniqueness as a core expression of Cosmic Eros. It is the result of the evolution of consciousness, which follows the core plotlines of Cosmos. The plotlines of Cosmos are its First Principles and First Values—its *evolving* First Principles and First Values. Unique Self is an inherent structure of Cosmos. It is not a contrived claim or theory but simply the latest expression of evolving First Principles and First Values of Cosmos—and especially of the evolving First Principle and First Value of Uniqueness.

Unique Self means something like the Infinite Value and Eros of Cosmos that individuated—beyond separate self—in you, as you, and through you.

This has enormous implications for pretty much everything. The ontological dignity of your uniqueness, your capacity to clarify your Unique Self and give your unique gifts—living your unique life—is the source of your rights, your joy, your intimacy, your Eros, your responsibility, your relationships, and everything else.

It is for that reason that we offer this idiosyncratic short history of uniqueness. We are pointing in a particular direction, in order to demonstrate that uniqueness is not merely a social construction but rather a First Principle and First Value of Cosmos. Again, not a static First

Principle and First Value; rather, uniqueness is an *evolving* First Principle and First Value of Cosmos.

With that in mind, please find some of the key tracts in early and current CosmoErotic Humanism writings on Unique Self, in the main body of the text instead of in a footnote, at the end of this monograph under the heading "Some Key CosmoErotic Humanism Writings on Unique Self."

Unique Self and Conscious Evolution

As we noted earlier, Unique Self is an expression of Conscious Evolution. Just as there is a movement, which we have described in depth elsewhere, from unconscious to Conscious Evolution, there is an evolutionary movement from unconscious to conscious uniqueness.

In the penultimate evolution of uniqueness, as we have unfolded it, I consciously experience myself as a unique expression of the evolutionary impulse. This means that I self-identify accurately as a unique expression of the Eros of the Whole. I am a unique configuration of Evolutionary Love. Indeed, my irreducible uniqueness is the vessel—the *only* vessel—through which my love is poured.

At the same time, my self-experience, to which I have direct access through my Unique Self Realization, is that *I am intended, recognized, chosen, love-adored, desired, and needed by the Whole*. This are what we have called the *six post-Maslow Unique Self Needs*.[199]

This emergent structure of identity is a profoundly evolved form of uniqueness. But it is rooted in and emerges from all the prior forms of uniqueness at all the levels of matter and life.

As Unique Self, I realize that I am an irreducibly unique expression of the Field of Consciousness and Desire. Unique Self is the unique individuation beyond ego, the evolved unique expression of the self-reflective mind.

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[199] They are post-Maslow in that Maslow's core hierarchy of needs addresses separate self, and even the self-transcendence needs, which he began to articulate at the end of his life, have the fragrance of True Self, but Maslow never realized Unique Self, Evolutionary Unique Self, or Unique Self Symphony.

Glimmering of Unique Voice

As we point out in the Unique Self material, Unique Self is both a state and a stage of development.[200] The realization of Unique Self appears differently at *every* structure stage of developmental consciousness. However, at what is often called in developmental thought *second tier*,[201] Unique Self shows up as the epicenter of the consciousness from which human choice, autonomy, and relationship emerge.

Our old friend Don Beck, a student of Clare Graves, called, after he read the book *Your Unique Self*, and exclaimed, "*Unique Self is the bible of Yellow*," which is another word, in Don's lexicon, for the first structure stage in second-tier developmental consciousness. Clare Graves's theory of development, as adopted by Don Beck and Chris Cowan, describes what is called in Integral Theory a *values line of development*. Each structure stage of development articulates a different worldview of value. Each structure stage lives within that worldview of value.

Just like uniqueness evolves through multiple levels of matter and life, at the level of the self-reflective human, uniqueness also evolves through multiple developmental levels. Graves describes one of the lines of development, the values line, in which Unique Self appears distinctly at every level of development and comes fully online at the second-tier levels.

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[200] See the "Integral Afternote: Unique Self and Levels of Consciousness" from *Your Unique Self, The Radical Path to Personal Enlightenment,* Integral Publishers, 2012. See also the full issue devoted to Unique Self Theory in the peer-reviewed scholarly *Journal of Integral Theory and Practice*, Vol. 6 no.1, ed. Sean Esbjörn-Hargens. This journal issue leads with two articles by Marc Gafni and one by Zachary Stein, together with Susanne Cook-Greuter and others. It is dedicated to Unique Self. Gafni was also guest editor of the issue. See especially the article in that journal by Marc Gafni, "The Evolutionary Emergent of Unique Self, A New Chapter in Integral Theory, " and especially a footnote about how Unique Self is refracted through levels of consciousness. See also the dialogue in that same journal "Unique Self as It Unfolds Over the Arc of Development," in which Dr. Suzanne Cook-Greuter and Dr. Marc Gafni explore Unique Self in the context of psychological perspectives on ego-development—see also here: https://www.uniqueselfinstitute.com/marc-gafni-and-susanne-cook-greuter-in-dialogue/.

[201] The term *second tier* was first introduced in the 1996 book *Spiral Dynamics: Mastering Values, Leadership, and Change* by Christopher Cowan and Don Edward Beck, Blackwell Publishing LTD, to represent Dr. Clare Graves's hypothesis that there are six major themes expressed in his first six levels of psychological existence, and that these would repeat themselves in new forms on a higher order—a *second tier*. Graves, being influenced by Abraham Maslow, did not use the word *tier*, but instead had called the first six levels *subsistence levels* and the next six, which repeat the essence of those themes in higher form, *being levels*. Graves had called the move into these being levels a *momentous leap* for human nature.

An in-depth understanding of Unique Self and development is the purpose of our book *In a Unique Voice: On Unique Self and Developmental Theory*, which is in preparation. But the core point is that the evolution of uniqueness continues through multiple levels of human consciousness.

Here is just a very early snapshot of some of those levels of evolving uniqueness in culture. Uniqueness will, of course, show up in different ways at each level, e.g.:

- Uniqueness as it appears in the consciousness of ancient hunter-gatherer clans—e.g., as the different talent and skill levels of the hunters and the gatherers,
- Uniqueness as it appears in the consciousness of ancient gardening tribes—e.g., as the newly emergent roles of shamans, tribe leaders, as well as the different tribes,
- Uniqueness as it appears in the consciousness of traditional, agrarian, mythic-membership societies (think, for example, holy roman church and roman empire)—e.g., as the King or Emperor, as well as the Priests, and several newly emergent roles,
- Uniqueness as it appears in the consciousness of the post-Renaissance, modern, rational, western-enlightenment, free-market economies, in which the individual, or what we call in CosmoErotic Humanism *the separate self*, is central and tries to uniquely stand out,
- Uniqueness at a postmodern level of multicultural consciousness. In multiple ways, postmodern consciousness has stood for the deconstruction of value, and with it the deconstruction of the ontological dignity attached to individual human dignity. At the same time, however, it was seeking to include all victims and previously marginalized people in circles of justice and belonging, which is itself, at least in theory, an evolution of value that allows for more differences—aka uniqueness.
- Uniqueness shows up in an entirely different way at the level of Unique Self Consciousness. This is the Unique Self that is the core of Unique Self Theory and CosmoErotic Humanism, which we are describing as the core of a post-postmodern shared ground of identity and value. This is a post-postmodern expression of uniqueness. This is *not* the uniqueness of the ego self, or separate self, which appears from the Renaissance and onwards, and which remains, at the time of this writing, the core understanding of western society. In Unique Self, uniqueness makes a giant leap

forward. It becomes conscious of itself. Unique Self knows that it is embedded in the same Ground of Being and Becoming, the Field of Eros and Value, while being an irreducible unique expression of that One Field.

Let's take a deeper look at a few examples of all these levels.

A Snapshot: Uniqueness Mediated Through Classical Historical Levels of Developmental Consciousness—From Traditional to Modern Consciousness

One way to reflect on how uniqueness moved from the traditional period to modernity in the early Renaissance is to remember that, once upon a time, about 1,200 AD, a restless warrior tribe began to expand in two different directions simultaneously. They went to the West, and they apparently conquered or somehow infiltrated most of Europe. And they went to the East, and they conquered India.

In India, they set up a system of group categorization that was as solid as the team identity of the early pressure waves at the inception of Cosmos. And they divided people into a rigid hierarchical set of four different castes—*Brahmins*, *Kshatriyas*, *Vaishyas*, and the *Shudras*—based on their *karma* (work) and *dharma* (which, in this case, meant something like *duty*).

Many believed that these four groups originated from the body of Brahma, the Hindu God of Creation, whose body looks pretty much like a human body:

1. So, they said, one group, or caste, the *Shudras*, originated from the feet of Brahma. This group, which consisted of all the people who did menial jobs, including farming, were at the bottom of society.
2. The next group, consisting of merchants, were the *Vaishyas*, who originated from the thighs of Brahma's body.
3. And then they had the *Kshatriyas*, or the warriors and rulers, who supposedly came from his arms.
4. And at the top of the hierarchy was a fourth group, the teachers, intellectuals, and priest, the *Brahmins*, who were believed to have come from Brahma's head.

These main castes were then further divided into about 3,000 castes and 25,000 sub-castes, each based on their specific occupations.

5. Outside or below this Hindu caste system were the *Dalits*—or untouchables.

For centuries, this caste system dictated almost every aspect of Hindu life. Rural communities were organized on the basis of these castes, with the upper and lower castes almost always living in segregated colonies, one could marry only within one's caste, and even water wells were not shared, *Brahmins* would not accept food or drink from the *Shudras*, etc.

So, there was not a lot of room for differentiation. When you were born into one of these four categories, you were told, that you had to do your job the way it was supposed to be done, and, if you did it well, then, when you died, you would be reborn into a higher caste.

Of course, your uniqueness was limited, in this system, to your capacity to uniquely excel within the social and spiritual boundaries of your role prescribed at birth by your caste. This, of course, was the view of traditional society for much of Indian history, and the notion of uniqueness was forcibly mediated through this devastatingly broken cultural prism. Much of this prism sadly remains in place in rural India today. But in major swaths of India, the society has moved into individuality, prizing the talents of what is called, in Unique Self Theory, *the ego self* or *separate self*.

Why? Because India is out there as an intellectual competitor on the world market. In particular, India is selling computer services all over the world. It also has an extraordinary space program, which was established by our dear friend Howard Bloom's former partner, Dr. APJ Kalham, who was a rocket scientist and the 11th President of India.

India has adopted—at least in much of its society—the western notion of individuality, which is centered around the unique talents and gifts of the separate self.

In the west, individuality also did not come until several hundred years ago—at the beginning of the Renaissance. Indeed, as Anthony Storr has pointed out in his little book on *Solitude*, the word *self*, in the sense of the unique separate self, did not appear in the dictionary until the Renaissance.

The Renaissance Notion of the Unique Separate Self

In effect, the Renaissance birthed the emergence of the *unique separate self* into the center of gravity of western culture. By unique separate self, we mean *not* the more evolved

notion of uniqueness—what we have called *Unique Self*—where uniqueness is understood as the unique expression of the larger Field of Eros and Value.

While, early in the Renaissance, this notion of uniqueness found important expressions, this evolved notion of uniqueness gradually lost its centrality, as the more common notion of Hume's, and later Hobbes's, *separate self*—which was alienated from any larger Field of Value—became the mainstream modern philosophical view. Within this context, uniqueness meant the unique talents and gifts of the separate self. This is what we refer to as *the Renaissance notion of the unique separate self.*

Possible Historical Causes for the Emergence of the Renaissance Notion of the Unique Separate Self

In the Renaissance, there was a revolution of the individual. There are some who suggest that the widespread embrace of the value of the individual is related to what Howard's friend Valerius Geist used to call *luxury functions*. These are things that emerge as central values only when your society is producing abundance. For when your society is producing abundance, everyone does *not*, all of the sudden, become satisfied and sedentary. Not at all.

Human beings participate not only in the Field of Eternal Being but also in the Field of Evolutionary Becoming. No matter how much we have realized, we want to realize and become and transform even more. In its pseudo-erotic shadow form, it expresses itself as greed, and in its light form of Eros, pointing already to Unique Self, it expresses itself as noble aspiration for ever-deeper transformation and realization.

It takes a plethora of stuff—food, clothing, shelter, and more—to create the conditions necessary to foment the emergence of radical individualism. At the same time, the *need* for innovation, together with the *possibility* of innovation, made real by new systems of human capital and early capitalism, created an urgent need for the upleveling of humanity, in terms of its capacity to innovate, perform, and produce. All of this demanded the new centrality of the value of radical individuality.

This is well conceived as the human expression of a core movement of Cosmos towards ever-deeper innovation, which is already at play as early as bacteria. Bacteria spread out across

their landscape to the nth degree by reproduction. We might even say that they send out *search parties* to look for the next place full of nutrients.[202]

In a similar manner, unique human individuals are search engines, probes, or antennae for their group. In the words of Howard Bloom in *The God Problem*, p. 173:

> *Are individual humans…also probes for a search engine of some kind? A search engine of our family, our tribe, our subculture, our nation, our species, or more peculiarly a search engine of the cosmos? …the fact is that differentiation…shows up all over the place in human behavior.*

On the one hand, it has been argued that the more the group flourishes, the less you must really concentrate on producing food, clothing, and shelter—the basics—and the more you can search for the next exterior or interior landscape to flourish. Once our essential needs for survival are handled by society, the more opportunity there is for individuals to go out in their own separate directions and be feelers for the evolutionary search engine—and for the search engine of their own individual society.

At the same time, the needs of modern society are far more intense.[203] One might also argue therefore that innovation almost *needs* to be democratized to be able to meet the depths of these needs.

How ever we interpret this emergence, it is clear that there was a momentous leap in the valuing of individual uniqueness that took place in the Renaissance, when we moved from mythical-membership societies to rational-achiever societies—or said more simply *from traditional to modern societies*.

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[202] "Many bacteria perform a process called *chemotaxis* which enables them to detect a whiff of a chemical cue, and move towards the source of that compound," says Dr. Douglas Brumley from the University of Melbourne (quoted from "The superheroes of nutrient detection living in our oceans," *Pursuit*, University of Melbourne, written by Dr Daryl Holland, University of Melbourne, 2019, https://pursuit.unimelb.edu.au/articles/the-superheroes-of-nutrient-detection-living-in-our-oceans), who, together with Dr Francesco Carrara from ETH Zürich has led an international team in a study that has observed and modelled *chemotaxis* in bacteria and found that a common marine bacterium can find sources of nutrients close to the theoretical limit of detection. See "Bacteria push the limits of chemotactic precision to navigate dynamic chemical gradients," *Proceedings of the National Academy of Sciences*, 2019, Volume 116, No. 22, 10792–10797, https://www.pnas.org/doi/epdf/10.1073/pnas.1816621116.

[203] For example, the population has exploded, and many more people live in smaller areas than ever before—even in places that have no direct access to food production.

Deeper Intimations of the Ontological Dignity of Human Uniqueness in the Interior Sciences Two Thousand Years Before the Renaissance

But in fact, we have much earlier notions than the Renaissance, which begin to talk about the irreducible dignity of the unique human being. In one text, the core of the human being, fashioned in the image of God,[204] is understood to mean that each person is a *uniquely minted coin* with irreducible value, unlike any other coin. In other words, the irreducible dignity of the individual is not simply a response to cultural conditions. Uniqueness is rather understood in the interior sciences as being a core expression of the Field of Value itself. This is exactly what we call *Unique Self*.

In fact, however, the realization of uniqueness as an evolving First Principle and First Value of culture and the emergence of uniqueness in response to new life conditions in the Renaissance are not contradictory but complimentary understandings. It is not inaccurate to suggest that a First Principle and First Value—like uniqueness—is first expressed by different strains in the interior sciences and then enters and becomes the center of gravity of at least large swaths of culture, when the interior realization aligns with new exterior needs in society.

When new needs are disclosed by the emergence of new life conditions to which the First Principle and First Value of irreducible human worth and uniqueness can respond, uniqueness is recognized ever-more deeply as being an expression of the Good, the True, and the Beautiful.

It is not, however, that the new conditions generate the new value. Rather, they deepen the recognition of the value, evolve the value, and generate it becoming the center of gravity of the new, emergent stage of cultural consciousness.

This Renaissance notion of *self*, however, does *not* originate, as Storr and the standard narrative suggest, in the Renaissance. Rather, it has earlier roots in culture, particularly in the interior sciences of the great traditions. One example of those earlier roots is the *Genesis* text notion that the human being is an incarnation of *Homo imago dei*, and particularly this notion as interpreted by the *Talmud*.

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[204] *Talmud Sanhedrin* 38b.

The *Genesis* text, read carefully, described the unfolding of six distinct evolutionary stages, in which Reality emerges not simply by Divine *Fiat* but through its own internal process. For example,

Let the earth bring forth grass,

Let the waters swarm with life.

There is an inherent evolutionary creativity, which goes through six stages, called *days* in the *Genesis* text. Naturally, they were not astronomical days of 24 hours, as the Sun and the Moon are only made manifest on the fourth day. Thus, the interior scientists understood the six days as being akin to what we might call *six evolutionary stages*.

At the zenith of the evolutionary movement, the end of the sixth day, according to the reading of the *Talmud*, the Divine voice rings out and says,

Let us make man in our image.

In the interior sciences, this is understood as the voice of Infinite Creativity and Value, turning to all prior emergence, all the world of matter and life and saying, *let us*—all of the evolutionary process—manifest the unique value of the human being *in our image*, as ultimate expression of irreducible Eros, value, dignity, and uniqueness. In other words, the notion that every human being is created in the image of God, or Source, is understood by the *Talmud* to mean that the human being is irreplaceable, possessed of a holy quaternity of core qualities—Infinite Eros, Value, Dignity, and Uniqueness.

This realization of uniqueness in the early interior sciences is both fertile ground for the Renaissance notion of dignity, of uniqueness, inherent in every separate self.

Read more profoundly, as they were in the lineage traditions, which we have unpacked in our early writings,[205] they also became the inspiration for the realization of Unique Self that is central to Unique Self Theory and CosmoErotic Humanism.

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[205] The lineage sources on human uniqueness, read in this manner by the interior sciences, as ground for what we refer to as *Unique Self*, in Unique Self Theory and CosmoErotic Humanism, are fully explored by me (Marc) in *Radical Kabbalah*, volume one, part one on Uniqueness, as well as in part two, which continues to explore uniqueness, and in part three were I articulated the vision of Unique Self, as it appears in the lineage sources, what I called in that writing, *the nondual humanism of the Judah Archetype*.

Because of the centrality of uniqueness to CosmoErotic Humanism—and as part of our tracing of the evolution of uniqueness from matter to life to the depth of the self-reflective human mind and through all of the levels of each—it is worth sharing just four of these original sources on uniqueness at the human level:

- The Masters have taught: *Who sees crowds of people*[206] *should say "Blessed... Who art wise in secrets," because their minds differ and their faces differ*.[207]
- *A tale is told of Rabbi Nahman Kossover, a contemporary of the Ba'al Shem Tov. Reb Nahman was one of the many kabbalists who believed that the proper way to remain attached to God was ever to contemplate the four-letter name Y-H-W-H and to actually see the letters of the divine name always before him. He was a preacher, and it was said that when Reb Nahman looked out at the faces of those to whom he spoke, he was able to see the letters of the divine name reflected back to him. But then times changed and the preacher was forced to become a merchant. In the marketplace, amid the rapid pace of buying and selling, he found it harder always to concentrate on the name of God. So we are told that he hired a special assistant who came with him wherever he went. That person's function was to remind him of God's name. Whenever he looked at the face of his assistant, Reb Nahman would remember the name of God. I have been thinking about this assistant for a good many years, wondering what he looked like. Dare we think that he was particularly beautiful? Probably not, given the values of traditional Jewish society. Might he, on the other hand, have been particularly tormented? Might it have been in the agony of a suffering face that Reb Nahman saw the letters of the divine name, as we might see God in the face of a Holocaust survivor, truly echoing Job's "In my flesh I see God"? Or was it, to be less dramatic, a face that bore what is called in Yiddish edelkeyt, a certain combination of gentleness, warmth, and nobility? Could it have been a face like this that somehow reminded the master of the name—and the face—of God? My own best guess about Reb Nahman Kossover's assistant, the image of whom has*

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[206] The original text says *crowds of Israelites*. It is often the case that a universal text expresses itself in certain passages in the Talmud, in what appear to be, or actually are, ethnocentric terms.

[207] *Talmud*, *Berakhot* 58a:3.

followed me around all these years, is that his face was quite ordinary. He was simply a human being, another human being made in God's image. But he was there to serve as a reminder. Reb Nahman looked at a human being, and in the very ordinariness of that human face he remembered to concentrate on the eternal, mysterious, and ineffable name.[208]

- *Therefore, the first human being, Adam, was created alone, to teach us that whoever destroys a single life, the Torah considers it as if he destroyed an entire world. And whoever saves a single life, the Torah considers it as if he saved an entire world. Furthermore, only one person, Adam, was created for the sake of peace among men, so that no one should say to his fellow, 'My father was greater than yours'....Also, man* [was created singly] *to show the greatness of the Holy One, Blessed be He, for if a man strikes many coins from one mold, they all resemble one another, but the King of Kings, the Holy One, Blessed be He, made each man in the image of Adam, and yet not one of them resembles his fellow*.[209]

- From the blessings recited at a wedding: *Blessed are You, Lord, our God, King of the Universe, who made humanity in God's image, the image of God's likeness, and out*

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[208] Cited from my (Marc's) dear friend Dr. Arthur Green in his early work *Seek My Face: A Jewish Mystical Theology*, pp. 29-30, Turner Publishing Company, Kindle-Version.

[209] *Talmud Sanhedrin* 37a:13-15. In a slightly different, earlier translation, however, the text reads,

> *Therefore, Adam the first man was created alone, to teach you that with regard to anyone who destroys one soul from the Jewish, i.e., kills one Jew, the verse ascribes him blame as if he destroyed an entire world, as Adam was one person, from whom the population of an entire world came forth. And conversely, anyone who sustains one soul from the Jewish people the verse ascribes him credit as if he sustained an entire world.*

The notion of the irreducible dignity of the unique human being is front and center in this text. All human beings participate in the unique charisma of Adam, who is created *Homo imago dei*, and just as Adam was, mythically, the entire world at the time of his creation, so too the saving of one human being is equivalent to saving the entire world. However, in the simple reading of this text, at first blush, it is mediated through an ethnocentric prism. In other words, it applies only to those who are of Judaic persuasion and not to any others. There are two literatures in the Hebrew wisdom lineage, one which supports this ethnocentric reading and the other which demands a universal, worldcentric reading of this text. Our point is only that the value of uniqueness needed to evolve. Throughout history, it was mediated through the interior prism of interpretation of that time and culture. For example, in tribal times, it was often the case that only the leaders of the tribe were afforded the full right and privilege of what we are calling the *dignity of uniqueness*. Or, as we saw in the text just above, the dignity of uniqueness was later understood to apply to an entire tribe or people, but perhaps not to anyone outside that tribe.

of God's very Self formed a building for Eternity. Blessed are you, Lord, creator of humankind.

From the Renaissance to Unique Self

These sources dramatically influenced the Renaissance, where they inspired the Renaissance writers in their affirmation of the unique dignity of every separate self.[210]

The sources also—when read through the interior sciences of Luria and Lainer—as we already noted above, serve as one of several interior sources, which, together with multiple other disciplines in the social and hard sciences, informed the articulation of what we call *Unique Self.*

Naturally however, these sources on the irreducibly unique dignity of the human being, who is worthy of love and who expresses love uniquely, can be easily hijacked, based on one's structure stage of consciousness.[211]

The Democratization of Uniqueness

What the Renaissance does is to introduce what we have called, in other writings*, the democratization of uniqueness*. We mean by this the democratization of the ontological dignity, with its rights and responsibilities, which are said to derive from the value of every human being's irreducible uniqueness.

This democratization of uniqueness is infinitely deepened when uniqueness becomes not the uniqueness of separate self but what we have called *Unique Self*, as we have discussed in the Unique Self Writings, which we have listed below.[212]

At the level of Unique Self however, we are talking about not just the dignity of the separate self, but about the irreducible dignity of the unique human being as an expression of the larger Whole, who is both omni-considerate of, in service to, and in love with the greater Whole.

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[210] On the influence of Hebrew lineage sources on the leading thinkers of the Renaissance, see, for example, Idel, Moshe, *Kabbalah in Italy*. See also Wolfson, Eliot. *Language, Eros, Being: Kabbalistic Hermeneutics and Poetic Imagination* (New York: Fordham University Press, 2005).

[211] See our footnote above on *Talmud Sanhedrin* 37a:13-15.

[212] See the section below "Some Key CosmoErotic Humanism Writings on Unique Self."

The Unique Self Realization in a Few Sentences

The central knowing crystalizing in this evolutionary moment is that each of us is a Unique Self with a unique perspective, quality of Self, and capacity for action. This is not simply our talents as separate monadic units. According to the best of the interior and exterior sciences, we are each not fundamentally apart but rather part of the larger Whole of existence. But we are distinct parts. Each of us is a unique emergent of the entire system. We are unique configurations of the larger Field of Eros, Value, Life, and Consciousness. Therefore, we each have a unique incarnation of Value to live and to give that is needed by the Whole. That is our core identity.

Your unique value is not a psychological construct, the details of your social status, bodily form, or personality. Rather, it is your unique essence—a unique incarnation of Value that participates in the Field of eternal yet evolving Value. Your unique value is irreducible and irreplaceable. It is the source of your eternal dignity, which, by its very nature, transcends death.

These are among the revelations newly pressed into our knowing by the contemplation of death, both in the original, first shock of existence and in the new, second shock of existence with which we are now confronted. So, let's see if we can state Unique Self clearly.

So, let's see if we can state Unique Self clearly.

Who Are You?

You are an irreducibly unique expression of the larger Field.
We are not talking about your separate self or ego self.
Rather, you are an irreducibly unique expression of the larger Field of Value.

You are an irreducibly unique expression
of the LoveIntelligence, LoveBeauty, and LoveDesire
that is the initiating and animating Eros and energy of All-That-Is—
that lives—uniquely—in you, as you, and through you—
that never was, is, or will be ever again—past, present, and future—
in anyone other than you.

As such, you have an irreducibly unique perspective.
You are an irreducibly unique quality of Eros, intimacy, desire, and power.

Your unique perspective,
your unique quality of intimacy,
your unique quality of desire, and
your unique expression of power come together
to activate your unique capacity
to live your unique life
and give your unique gift.

*Your unique gift is your unique quality of **being** in the world—*
interacting, interfacing, inter-activating with Reality—
your interbeing with Reality.

*It is also your unique quality of **becoming**—*
the unique becoming that you have to give to Reality.

Through your unique gift you are uniquely empowered
to address a unique need in your unique circle of intimacy and influence, that
can be addressed by you, and you, alone—
in the particularized special way that you are able to address it.

When you address that unique need
in your unique circle of intimacy and influence,
you are responding to Reality.
That is your unique response-ability.

To address that unique need is your unique calling
and your unique, inherent obligation.
This obligation is not imposed from without
but is the unique expression of your unique configuration of
LoveIntelligence, LoveDesire, LoveValue, and LoveBeauty.
Indeed, in the original Semitic languages,
love and obligation share the same root word.

In other words, your unique gift,
an expression of your Unique Self,

is the unique expression
of your LoveIntelligence, LoveDesire, and LoveBeauty that
can be manifested and gifted into Reality by no one that ever was, is, or will be, other than you.

You recognize the unique need
that is yours to address
because it arouses your deepest heart's desire.
Giving your unique gift to address that unique need is
the unique joy and unique responsibility of your unique life.

Even more:
Giving your unique gift,
which addresses a unique need in your unique circle of intimacy and influence,
is your own deepest need,
your deepest heart's desire.

In giving your unique gift,
you awaken as the leading edge of evolution
and incarnate a unique quality of Evolutionary Love.
You become the personal face of Conscious Evolution.

*Your Unique Self is your unique configuration of **being** and **becoming**.*

> *Your unique configuration of **being** includes*
> *the full spectrum of your qualities of presence and interiority.*
>
> *Your unique configuration of **becoming** includes*
> *your unique transformation,*
> *which is evolution itself continuing its own process of transformation*
> *in you, as you, and through you.*
> *In the depth of your Unique Self Realization,*
> *it becomes clear that your unique need is your transformation—*
> *which is the transformation of the Whole—*
> *that can be uniquely accomplished only by you.*

Every person is a unique configuration of the Eros of the Cosmos. One word—deployed by CosmoErotic Humanism in evolving the great lineage traditions—for the Eros of Cosmos is *Outrageous Love*. The Eros of Cosmos—Outrageous Love—configures uniquely in you, as you, and through you, and capacitates your unique gift into Reality, which is desperately needed by All-That-Is. Your unique gift is the Outrageous Act of Love.

Unique Self as Unique Value

Unique Self is your personal realization of your fully connected uniqueness. Your entire biological matrix is unique, from your molecular and cellular structure to your immune system. But these unique aspects do not stop at the biology of your Unique Self.

To awaken to your Unique Self is to know that you occupy a particular place in the spacetime continuum. You are an irreducibly unique emergent value of the whole thing. But you don't exist without the atmosphere, the plants that produce it, the hydrological cycles that water the plants, or the gravity driving the thermonuclear fusions that fuel our planet. You do not exist independently of everything and everyone else.

In significant ways you are also the same as everyone and everything. You are inter-included and inter-connected, interbeing with everything and everyone one, even as you are irreducibly unique—a unique Value in Cosmos—a new ontic identity.

You are singularly unique and therefore irreplaceable and irreducibly valuable. Your irreducibly unique expression and experience of consciousness and agency are emergent properties of All-That-Is, uniquely configured in relationship as you. You are a novel property of Eros, and although you are emergent from everything that came before, you are not reducible to your constituent parts or the laws that govern them at lower levels. You are a new ontological emergent that both generates newness including new value and is governed by new sets of laws.

This means simply that you have an irreducibly unique perspective and quality of intimacy. Together these foster your unique insight, which births your unique capacity, which in turn fosters your unique gift. Your unique gift allows you to address a unique need in your unique circle of intimacy and influence that can be addressed by you, and you, alone.

Once you realize that you are an irreducibly unique expression of the LoveIntelligence of Cosmos, then you realize that there is a corner of the world that lacks Love and can only be

transformed by you. Evolution took 13.7 billion years of synchronicity to produce the unique expression of you. You are the personal face of the evolutionary impulse. You are not irrelevant.

Emergence theory[213] reminds us that evolution moves from unconscious to conscious when you awaken as evolution in person. In our interconnected world of quantum entanglement, we begin to understand that our next evolutionary act sends ripples throughout Reality that literally affect everything.

Who Are We? Unique Self Symphony

Homo amor is *Unique Self* who participates in what we call a *Unique Self Symphony*.

Unique Self Symphony is the answer to the question of *Who are we?*

Who Are We?

We are participants, playing our unique instruments in the Unique Self Symphony.

When you are committing your unique Outrageous Acts of Love
for the sake of the larger Whole,
you are living your Unique Self and giving your unique gift.
Doing that is your deepest heart's desire—
your evolutionary desire—
the evolutionary impulse lived as you—
your Outrageous Acts of Love,
which emerge from your unique configuration of desire.

When we give our unique gifts in a way that is omni-considerate, omni-responsible, and omni-loving—for the sake of the Whole…

When we intend our unique gifts as an expression of a larger evolutionary purpose and Evolutionary Love…

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[213] On what is being called *emergence theory*, see, *The Reemergence of Emergence Theory*, Phillip Clayton, Paul Davies, Oxford University Press.

When we are allured to other Unique Selves, each giving their unique gifts for the sake of the Whole…

…then a new emergent discloses itself—a new structure of Evolutionary Intimacy—which we call Unique Self Symphony.

That's what it means to play your unique instrument in the Unique Self Symphony.

Homo amor—incarnate as the Unique Self Symphony—is not a top-down, command-and-control structure. Rather, it is the human being self-organizing—self-actualizing—to their highest, deepest, most wondrous, and beautiful self, which is their Evolutionary Unique Self—their Unique Self in an evolutionary context. Unique Self Symphony is the new emergent of Evolutionary Intimacy, which is the natural product of the self-organizing Universe and the self-actualizing Cosmos.

In Conclusion: From the Original Pressure Waves to Cultural Waves—Towards a Shared Grammar of Value as Context for Our Diversity

Eros vs. Pseudo-Eros—Uniqueness vs. Pseudo-Uniqueness

It is perhaps appropriate that our history of uniqueness ends in a brief but crucial conversation on the nature of culture waves, as a way of distinguishing between uniqueness and pseudo-uniqueness, or said slightly differently, *Eros and pseudo-eros*.

A culture wave, or what has been called a *meme*,[214] is not unrelated to these early pressure waves at the beginning of Cosmos. A culture wave making its way through culture is doing something that anthropologist Ruth Benedict, whose important work in this regard seems

[214] In the sense of what Merriam Webster Dictionary refers to as "an idea, behavior, style, or usage that spreads from person to person within a culture." Or in the words of Richard Dawkins: "*Memes* (discrete units of knowledge, gossip, jokes and so on) are to culture what genes are to life. Just as biological evolution is driven by the survival of the fittest genes in the gene pool, cultural evolution may be driven by the most successful *memes*."

to be forgotten at this moment, called *time binding*.[215] The pressure waves of early Cosmos and the contemporary culture waves cross both distance and time.

How in the world does that happen?

And the question is crucial, whether we are asking at the level of

- the pressure waves in the early Universe, which rang through the whole Cosmos, as if they were induced by a musical cymbal, one of those flat tin sheets that are used by percussionists,
- the water waves we might see from our window seat in a plane crossing the Atlantic Ocean from France, which will be eventually crashing on the shores of Maine,
- or a culture wave.

All of these waves retain their identities across distances of space and time.

As we have pointed out earlier, a wave is a unique configuration of intimacy. And it has what we might call *a unique emergent identity*. It has a proto form of personhood or self. It is in this sense that the ancients were not entirely wrong in personifying expressions of the natural.

In a similar way, a hydrogen atom, as a later stage in this history of uniqueness (in comparison to the early pressure waves), a more evolved expression of the unique, has a proto

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[215] The American cultural anthropologist Ruth Fulton Benedict (1887-1948) "saw individual cultures as drawing differentially on the inherent potentialities of human beings, emphasizing certain potentialities in successive generations and ignoring or even disallowing other potentialities. Using the cultural content available to them—techniques, forms of social organization, religious themes, and so on—the heritors of each culture elaborate a particular personality style at the expense of other possible styles. Ruth Benedict used the terms 'personality writ large' and 'time binding' to describe characteristics of this process of selection, which she saw as occurring over many generations and as involving many individuals, whose participation in the development of a cultural style can be regarded as analogous to an individual's development of his own personality style on the basis of his own available tradition. This major insight, first developed in her paper 'Psychological Types in the Cultures of the Southwest' (1930), which she presented at the 23d International Congress of Americanists in 1928, laid the groundwork for all her later significant contributions."—quoted from https://www.encyclopedia.com/people/history/us-history-biographies/ruth-benedict. Retrieved 2023-07-28.

The term *time-binding* had been coined by Alfred Korzybski before, first described in his 1921 book, *Manhood of Humanity: The Science and Art of Human Engineering*, E. P. Dutton & Company, referring to the human ability to pass information and knowledge from one generation to the next, which Korzybski claimed to be a unique capacity, separating people from animals. The latter he described as *space-binding*. See, for example, here: https://www.gutenberg.org/files/25457/25457-pdf.pdf. Retrieved 2023-07-28.

form of self. There is something solid and firm about it in a conceptual sense, even if not in a material sense.

In a similar way, a culture wave, or meme, moves through culture. A meme moves through culture as a substantive reality, which may create havoc in its wake. And it is completely real, but it is an interior meme. It is a meme of the noosphere.

A wave in general is an instantiation, a realization of the present in the face of the past and the future. It carries within it a past that is more primordial and more primal than the past we ever think about. It carries the past of its *form*, or what Howard refers to as its *recruitment strategy*. It recruits new parts to its form and carries it from the past into the present and into the future.

A pressure wave, for example, carries its unique form, which is emergent from the deepest operating system of the Cosmos. A culture wave, on the other hand, carries its unique form from one generation to the next, emergent from the deepest operating system, or what we call the *source code*, of culture.

What we try and do in evolving the source code of culture is to inhibit and change the vector of the existing culture wave. You can deflect the current wave by distracting its attention for a moment. But to really change the trajectory of the wave, you need a counter wave.

So, let's take a look, for a moment, at Leonardo da Vinci's observation about waves and counter waves.[216] You are not necessarily going to be able to stop an existing wave. But if you set up another wave, that wave will ride the back of the major wave, and it will have its own influence. Then, the question is:

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[216] See, for example, Howard Bloom, in his book *The God Problem*: *"A wave is never found alone," writes Leonardo, "but is mingled with . . . other waves." And the mingling of waves has a surprising pattern. "At one and the same time there will be moving over the greatest wave of a sea innumerable other waves proceeding in different directions." The broad back of a wave will be rippled, dimpled, and cross-hatched by other waves riding upon it. ...* [Leonardo] *says, "If you throw a stone into a sea with various shores, all the waves which strike against these shores are thrown back towards where the stone has struck." ...* What happens when the waves he's watching collide with each other? Do they destroy each other? Does the intersection of two different waves result in a chaos, in a muddle? Does it result in entropy? Not at all. The waves retain their identities. Writes Leonardo, they "can penetrate one another without being destroyed." What's more, "they never interrupt each other's course." All quotes from Da Vinci, *Leonardo da Vinci's Note-Books*, pp. 98-99.

How big can you make what we have just called a counter wave*—the wave that rides on the back of the major wave?*

Two Forms of Us/Them Dynamics: Authentic Uniqueness vs. Pseudo-Uniqueness or Eros vs. Pseudo-Eros

One of the key structures of Cosmos is *us versus them*. This is precisely the notion of a wave and a counter wave. Another name for it might be the First Principle and First Value of Autonomy versus Allurement. Autonomy sets up a so-called *us versus them dynamic*. Or it might be called, to use a more scientific term from neurobiology, *lateral inhibition*.[217]

To understand waves and counter waves, a word on uniqueness and Eros is first required. It is appropriate to understand uniqueness—and the uniqueness of early collectives, later collectives, and personal identity—as a form of Eros. The Eros—the energy and aliveness of Cosmos—flows into a whole, emergent from the deepest interior and exterior operating systems of Cosmos, that calls forth a new emergence.

Let's look at one structural model of this truth. Imagine the dynamic of unique individuation when three quarks, at the dawn of existence, become a proton, or a bit later, when a proton and a neutron become the nucleus of an atom. The proton, or the atom, is a new unique configuration of intimacy that had not yet existed in Cosmos before. Both the proton and the atom are something uniquely new. A proton is not three quarks but a new emergent. An atomic nucleus is not a proton and a neutron but a new emergent of the allurement that generates new intimate communion—new unique shared identity that did not exist before—the nucleus of an atom.

The Eros of Reality pours into the Real, and the evolution of the Real forms a proton in an entirely emergent, potent, and powerful way that does not emerge from a quark. Similarly, the Eros of Reality pours into the Real, and the evolution of the Real forms the nucleus of an atom in an entirely emergent, potent, and powerful way with new features that do not result from the

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[217] *Lateral inhibition* is a term from neurobiology, referring to the capacity of an excited neuron to reduce the activity of its neighbors. By disabling the spreading of action potentials from excited neurons to neighboring neurons in the lateral direction, it creates a contrast in stimulation that allows increased sensory perception. It occurs primarily in visual processes, but also in tactile, auditory, and even olfactory processing. See, for example, in Yantis, Steven (2014). *Sensation and Perception*. New York, NY: Worth Publishers. p. 77.

features of a proton and a neutron. Such is also the distinct emergent potency and power of the pressure wave, to which we referred above, in the beginning of our history of uniqueness.

In each of these cases, the emergent uniqueness is an expression of Eros, a True and Real quality of Cosmos, drawn from its own inherent, emerging Wholeness, which allured separate parts to become new wholes.

How does that wave you were watching in the Atlantic become a wave? It has a crest and a trough, and it is distinct from the wave behind it and the wave in front of it. This is its unique identity.

But when we turn to a cultural wave, in which there is—at least some degree of—choice and decision as part of the very nature of humanness, we are in a new domain.

In other words, when engaging a cultural wave, or meme, we need to inquire whether Eros or pseudo-eros—or said slightly differently, whether uniqueness or pseudo-uniqueness—is driving it. Said differently, the new cultural wave might well be an expression of intrinsic uniqueness—an expression of an intrinsic value.

Or it might be a form of pseudo-identity—artificially constructed, for example, by placing someone, or some other collective identity, outside the circle, in order to give oneself, or one's collective identity, the illusion of being inside the circle. In other words, it could be driven not by Eros but by pseudo-eros, not by uniqueness but by pseudo-uniqueness—or by the uniqueness of pathological separateness, where what is driving the wave is not the Eros of Value but the pseudo-eros form of *us versus them*.

The emergence of the us versus them dynamic in Cosmos is a key dimension of the history of uniqueness and its evolution all the way up the evolutionary chain. Us versus them can operate, however, at the level of unconscious or Conscious Evolution, Eros or pseudo-eros, authentic or pseudo-uniqueness. In other words, when us versus them reaches the human level, it can be used in an arbitrary destructive sense, or it can express itself in a constructive distinguishing sense.

In the way of Eros:

You cannot critique tyranny without distinguishing yourself from it. That is a form of us versus them, which is an expression of Eros and particularly the Eros of justice.

In the way of pseudo-eros:

The us versus them can also be used to destroy value. For example, Xi Jinping in China listed nine western values and proclaimed China to be the antithesis of all these values. This is the quality of us versus them deployed for pseudo-eros, that expels those who are different. Us versus them is here the segregation of those who are different—in a different wave.

In both the Eros and pseudo-eros version of us versus them, there is a battle between subcultures, a battle between waves, for which can win the most adherence. In our polarized culture, our experience is that, when we lose access to our own chosen values, we lose access to our own unique identity.

This, however, is only true when we assume the truth of the postmodern deconstruction of Value. If we believe that Value is *not* Real, then, our chosen values become our identity on which we cannot compromise. The result is battles, *not* of Value—between genuine waves and counter waves of Value—but of pseudo-values. This all changes, however, if both the wave and the counter wave realize that they are part of a larger Field of Value—that is to say of Shared Value.

It is for that reason that the response to polarization—itself perhaps the most significant root cause of existential risk—a primary expression of the global intimacy disorder—is to articulate a universal grammar of value as a context for our diversity.

It is only through dialogue within the *Tao*—within a Field of Shared Value—in which waves and counter waves experience the truth that they are both water, or cultural value, that we can potentially move from the tragic forms of *us versus them*—pseudo-eros rooted in pseudo-uniqueness—to a genuine shared Eros of evolving Value. In this context, the dialectical tug and pull of Value can then birth ever-deeper unique expressions of each value—with each value being part of the Field of Value with its implicit shared grammar of value as a context for our diversity.

This is crucial. For whenever we talk of Value, we must avoid the regressive value trap, which claims only eternal and pre-ordained value as Real. Such a claim—core to fundamentalism—always leads to some form of tyranny.

Instead, we must ground ourselves in a new theory of value—as we articulate it in CosmoErotic Humanism—of what we are calling *eternal and evolving values*. Evolving Value rooted in Eternity—not everlasting time but that which is *beneath* space and time—or what we have called an *evolving perennialism*—is not the ground for totalitarian hegemony but rather the crucially necessary matrix for the coordination of open societies.

From Polarization to Paradox

Such a coordination, as we have noted in other writings of CosmoErotic Humanism, must be rooted in a shared grammar of value, a shared Story of Value, as a context for our diversity. We cannot, however, engage in the necessary battle for a new synergy of values across culture without reclaiming Value itself as being Real. We need to become aware, once again, that we are living in the Eternal *Tao*, the Field of Value—and that the Eternal *Tao* is the evolving *Tao*. We need to define ourselves *not* in terms of regressive, pseudo-erotic us versus them but by the shared Field of Eros with its intrinsic and evolving values, in which we all participate.

It is in this very same sense that one hydrogen atom, or one wave, does not blend into another. There is a space between them that differentiates them. The wave, and at a deeper level of uniqueness the atom, has a unique value identity, a personality, a self, emergent from the mysterious creative process of Eros moving towards Wholeness that generated them.

Thus, we might say, in conclusion, in order to generate a new counter wave in culture, one must transcend the pseudo-eros version of us versus them and align with a shared Field of Global Value as a context for our diversity, which serves as a strange attractor of new Evolutionary Intimacy, as well as the ground for ever-deeper unique diversity. In other words, the shared grammar of value becomes the music, and each instrument plays that music in its own unique and intimate form.

It is this set of interior technologies that moves us from polarization to paradise. And paradise is the delight of paradox, where conflicting values generate not the pseudo-eros of polarized pain but the Eros of new Wholeness, potentiated through the fierce dance of *dialogos*.

The pseudo-erotic version of the us versus them process in action defines our human stories.

- First, we are mobilized as part of your family against others.

- And then, we step out of the family and are mobilized—in western culture often in our teens—as part of a rebel subculture. Remember, in the 1960s, how we were always talking about getting rid of the establishment and replacing it with something else. The establishment was our parents. This is one snippet of thousands of us versus them structures that show up in human culture.

But these small movements are like the movements of the water molecules in a wave. They make a larger pattern, a larger Reality.

Us versus them must be an expression of Eros and not pseudo-eros, of authentic uniqueness and not pseudo-uniqueness, a counter wave meeting a wave, but both of them are water, both are in the Field of Value, and thus new value is generated. This is the movement from polarization to paradox.

At this moment of meta-crisis, the urgent imperative of Eros and *ethos* at the human level is to move from unconscious to Conscious Evolution, which means to assert us versus them, *not* in terms of pseudo-eros, but in terms of Eros.

Between Separateness and Uniqueness

This is the genuine distinction between uniqueness and separateness.

Uniqueness is when I and we locate ourselves in the larger Field of Reality—the seamless coat of the Universe—and identify the coat as seamless but not featureless, with ourselves—I or we—being its unique features. We are unique configurations of intimacy and desire—unique individuations of the larger Field of Eros.

Separateness, however, is but a form of pseudo-eros or pseudo-uniqueness. It does not locate itself in the larger Field of Eros. It is rather an isolated expression of pseudo-eros, which defines itself in the negative expression of us versus them.

I am only me because I reject you and not because I am me.

As one master put it:

If I am I, because you are you, then I am not I, and you are not you.

But if I am I (uniquely), and You are You (uniquely), then we form a Unique We, a new configuration of Unique Eros, that never was, is, or will ever be again.

Some Key CosmoErotic Humanism Writings on Unique Self

In this last section, we are going to lay out, in the main body of the text instead of in a footnote, some of the key tracts in early and current CosmoErotic Humanism writings on Unique Self.

- We have devoted at least two major books directly to Unique Self Theory: *Your Unique Self* and *Self in Integral Evolutionary Mysticism*.[218]
- Marc wrote, at the very beginning of the CosmoErotic Humanism project,[219] two key volumes called *Radical Kabbalah*, grounding the core realizations of Unique Self Theory in the interior sciences.[220]
- This volume was reviewed by Zak in *Integral Review*.[221]

[218] For a direct unpacking of Unique Self, see Gafni, Marc. *Your Unique Self: The Radical Path to Personal Enlightenment,* with Introduction and Afterword by Ken Wilber, Integral Publishers, 2012. Note in that book Ken Wilber's foreword and afterword for the meta-context of Unique Self Theory, which was originally articulated by Gafni. See also a second major work by Gafni (2014) *Self in Integral Evolutionary Mysticism: Two Models and Why They Matter*, on the core articulation of Unique Self Theory.

[219] See the paper by Dr. Marc Gafni & Dr. Zachary Stein: "CosmoErotic Humanism—Philosophy in a Time Between Worlds," https://worldphilosophyandreligion.org/dr-marc-gafni-dr-zachary-stein-cosmoerotic-humanism-philosophy-in-a-time-between-worlds/.

[220] See Gafni, Marc. *Radical Kabbalah*, Books 1 and 2. Integral Publishers, 2010.

[221] Stein, Zak (2014). "On spiritual books and their readers: a review of *Radical Kabbalah*." *Integral Review*. (10)1, 168-178.

- There was a scholarly journal devoted to Unique Self Theory, the *Journal of Integral Theory and Practice*, Vol. 6 no.1, 2011, edited by Marc, where both Zak and Marc wrote key articles.[222]
- There is also a Unique Self course, which is a ten-week offering, which walks one through the core steps of the Unique Self Theory.[223]
- In *A Return to Eros* by Gafni and Kincaid, there is a key chapter on Unique Self Theory.[224]
- *A Return to Eros* was also reviewed by Zak from an academic perspective in *Integral Review*.[225]
- Zak also wrote a key chapter on Unique Self Theory in his education book, *Education in a Time Between Worlds*.[226]

To the depth of those realizations, we also turn to in our later writings on CosmoErotic Humanism:

1. The five-volume set: *Evolution: The Love Story of the Universe—First Meditations on CosmoErotic Humanism—In Response to the Meta-Crisis*.

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[222] See the full issue devoted to Unique Self Theory in the peer-reviewed scholarly *Journal of Integral Theory and Practice*, Vol. 6 no.1, 2011, ed. Sean Esbjörn Hargens. This journal issue leads with two articles by Marc Gafni and one by Zachary Stein, together with Susanne Cook-Greuter and others, and it is dedicated to Unique Self. Gafni was also the guest editor of the issue.

Gafni, Marc. "GUEST EDITOR'S INTRODUCTION: The Unique Self, A New Chapter in Integral Spirituality," *Journal of Integral Theory and Practice*, 6:1, 2011.

Gafni, Marc. "The Evolutionary Emergent of Unique Self, A New Chapter in Integral Theory," *Journal of Integral Theory and Practice*, 6:1, 2011.

Stein, Zak (2011). On spiritual teachers and teachings. *Journal of Integral Theory and Practice*. 6(1), 57-77.

[223] "Awakening Your Unique Self" with Dr. Marc Gafni: https://ciwprograms.com/courses/awakening-your-unique-self-with-marc-gafni/.

[224] Gafni, Marc and Kincaid, Kristina. *A Return to Eros: The Radical Experience of Being Fully Alive*. BenBella Books, Inc, 2017.

[225] Stein, Zak. Love in a Time Between Worlds, On the MetaModern "Return" to a Metaphysics of Eros, Integral Review, Vol. 15, No. 1, Jan. 2019.

[226] Stein, Zak. *Education in a Time Between Worlds: Essays on the Future of Schools, Technology, and Society*. Bright Alliance, 2019.

2. *CosmoErotic Humanism—Toward the New Human and the New Humanity: Homo Amor—The Tenets of Intimacy and the Social Miracles* by David J. Temple.[227]
3. In our work around Anthro-Ontology and value, in both the shorter volume and the larger volume on those topics: David J. Temple*, First Principles and First Values of Evolving Perennialism: Forty-Two Propositions on CosmoErotic Humanism—Post-Tragic Memories of the Future* and the fuller conversation in David J. Temple, *First Principles and First Values: Towards an Evolving Perennialism—Introducing the Anthro-Ontological Method*.[228]
4. In the forthcoming big and small books on Outrageous Love, Outrageous Love Letters, and committing Outrageous Acts of Love, Unique Self Theory is absolutely pivotal, and is discussed in some depth, albeit in popular form.[229]
5. There are three volumes as well in *The Complete Phenomenology of Eros*, which are deeply connected to Unique Self Theory.
    - First, there is an entire volume in *The Complete Phenomenology of Eros*, which addresses Unique Self Theory, on what is called *Unique Self Sexing* (Vol. 10).
    - Then, there is a volume on *Mystical Sexing* (vol. 11), which unpacks what we call *True Self* in Unique Self Theory.
    - And finally, there is a volume on *Evolutionary Unique Self*, which is called *Boddhisatva Sexing* (vol. 12).
    - True Self, Unique Self, and Evolutionary Unique Self are core distinction of Self in Unique Self Theory.
    - All three of these volumes and their core topics appear in shorter form in volume three of *The Abridged Phenomenology of Eros* as well.
6. We are also planning three more pivotal volumes on Unique Self Theory:

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[227] David J. Temple is a fictional personality created for enabling ongoing collaborative authorship at the Center for World Philosophy and Religion. The two primary authors behind David J. Temple are Marc Gafni and Zak Stein. For different projects specific writers will be named as be part of the collaboration.

[228] Ibid. In these volumes Ken Wilber joins Dr. Gafni and Dr. Stein.

[229] See *The Big Book of Outrageous Love: The Twelve Laws of Outrageous Love—What Does it Mean to Be Lived as Love*. See also *The Way of the Outrageous Lover: The Path and Practice of Outrageous Love—Writing Outrageous Love Letters and Committing Outrageous Acts of Love*. And see *The Outrageous Love Manifesto*—all by Dr. Marc Gafni & Dr. Kristina Kincaid.

- The first is volume two of the classic *Your Unique Self* book, which will cover a series of important new topics that are not covered in the first volume—*Your Unique Self, The Radical Path to Personal Enlightenment*—including Unique Self Symphony, the post-Maslow eight core Eros Needs, which are met through the realization of Unique Self, and much more.
- The second core volume by Zak Stein and Marc Gafni is called *In a Unique Voice: On Unique Self and Developmental Theory*. This is a volume that has been in the works between Zak and Marc for many years. It lays out the full map of human development, integrating and upleveling developmental theory. It lays out Unique Self Theory in more formal academic terms. And finally, and perhaps most importantly, it lays out the intersection between Unique Self and development, or what we might call *Unique Self Theory and developmental theory*.
- The third volume is *Unique Self and Unique Shadow: The Next Step in Shadow Theory*.

7. Finally, it is worth mentioning that we are reissuing the first work by Marc that alluded to Unique Self Theory, *Soul Prints*, with original primary source footnotes.
    - We are also releasing a second volume, written in 2000 but not yet published, on *Soul Prints and Shadow*.
    - There is a six-volume CD set on *Soul Prints* as well.[230]

[230] Dr. Marc Gafni, "The Soul Prints Workshop: Wisdom from the Kabbalah—Illuminating Your Unique Life Purpose."

Endnote

[i] A colleague, Mauk Pieper, an excellent thinker in his own right, attended my (Marc's) seminars themed around *Your Unique Self* in response to collective existential crises in Holland between 2009 and 2013. He published a book entitled *Humanity's Second Shock and Your Unique Self*, 2014, Venwoude Press, for which I gladly wrote an afterword. *Your Unique Self* is the title of my core writing on this topic. He understood well the basic premise of our work—what I have called Unique Self Theory, meaning an emergent new theory of identity—an accurate response to what we call the first great question of CosmoErotic Humanism: *Who Am I?* Unique Self Theory as part of a larger Story of Value is crucial if we are to respond to the meta-crisis of the twenty-first century and beyond. Mauk coined the term *second shock of existence*, to capture the notion of existential risk, which we happily acknowledge. The term *shock of existence* seems to have been coined by philosopher Robert Creegan in his book by that name *The Shock of Existence: A Philosophy of Freedom*, by R. F. Creegan, 1954, Sci-Art Publishers. On Unique Self, see Gafni, Marc. *Your Unique Self: The Radical Path to Personal Enlightenment,* with Introduction and Afterword by Ken Wilber, Integral Publishers, 2012. See also, Gafni, Marc [Guest Ed.]. *Journal of Integral Theory and Practice* 6:1, Special Scholarly Issue on Unique Self, Ed. Sean Esbjörn Hargens.