

FROM "OF MOTION, THE EVER-BRIGHTENING ORIGIN"

Daniel Tobin

Georges Lamaitre (1894-1966), who fought in and survived many of the major battles of the First World War as well as the Nazi occupation of Europe during the Second, was a Belgian mathematician, theoretical physicist, and Jesuit priest whose insights during the 1930s and 1940s provided solutions to physical problems stemming from Einstein's general theory of relativity and quantum mechanics that Einstein himself did not foresee. Though a lesser-known figure in cosmology, he was the first to develop a theory of an expanding universe through the explosion of a "primeval atom," what has become known as "the big bang."

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(Stream)

Jubilant billowing from the choir loft, throngs in song,
the faithful processing through the chapel's threshold,
bearing with them the statue, image of the apparition:

the sun dancing in its window in the clouds, the sun
a burning halo raining petals, in the center of its seal
Joseph with infant Jesus, around them daylight stars.

"How can one avoid being skeptical, Coimbra seeing
nothing of the witness, of the events at Fatima?"
You, caught in the crosshairs of your paths to truth:

the piety of feasts, statistical notions, Masses and mass,
and energy immanent *in Galilean local coordinates*
while the universe speeds its breakneck transcendence,

the galaxies sanctuaries in recession without end.
So you saw lambda on the right hand not the left,
Einstein's crystalline sphere in pin-point balance

tipped from the equation: "The cosmological constant
may be compared to iron rods hidden inside a building,
indispensable to the structure of any synthesis more vast."

Saw photons decoupled into light in an instant's surge.
 Saw horizons cooling and calibrated out of the fog.
 Saw, before Oppenheimer, stars in radial collapse,

him leaving you un-cited. And the Princeton letter
 with the master's judgment: *I am unable to believe
 that such an ugly thing should be realized in nature.*

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(Nexus)

To you nonetheless comes the invitation, to mingle
 with Einstein, Gödel, Bohr: and so to enter life
 inside the magic circle, its vivid talk, your star again

in ascent, though the good son sadly begs to decline,
 that future eclipsed behind the orbit of your duty.
 Turn, then, to Pascal's double infinity, infinite depth,

infinite immensity, and nature a Janus face of cold
 extremes, vast extents, where mind drifts uncertainly,
 and everything seen *an imperceptible dot* stretched

above *the greater nothingness beyond our reach*—
 seeing in him your shadow double, mathematician,
 priest, drawn by both to the *astounding processes*.

Observe: to derive a solution to the problem of three
 bodies, in space or scalar field, how the perturbation
 of one in motion with the other is caused by the third.

Observe: geometry at the quantum level is nonlocal,
 the Planck threshold a phase from which spacetime
 emerges, before which no space no time, nowhere.

Observe: Contrary to Pascal, one cannot deduce God
 from infinite nature. Better to prefer *deus absconditus*,
 God supremely inaccessible, hidden, unknowable.

But from the unknowable, the known and its motion,
 all in concert. *These extremes touch and join by going
 in opposite directions, and meet in God, in God alone.*

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(Contratemp)

All one, one would believe, and *Behind Every Door,*
 God: the pope in his prayerful speech bearing witness
 to the august instant of the primordial *Fiat Lux*,

*confirmation of the contingent universe from the hands
 of the creator, well founded deduction, a bursting forth
 from nothing into a sea of light, gesture of generous love.*

Never, it appears, will you live it down, Pius's piety
 the confirming gaffe, your "two paths" confused,
 and you returned from Rome, bruising into class,

unlike (students noted) your irrepressibly cheerful self,
 by your lights the primordial atom still unproven,
 curtailed, perhaps, by an earlier stage of contraction

unaccounted for as yet in all empirical data, in all
 the exacting equations clarifying a lens on the known:
 the phoenix universe you entertained, "very beautiful."

Or the fact when wave functions collapse, it's the eye
 parsing the probable into the real, extemporizing all
 possible outcomes, many worlds, the real it turns out

more prodigal than Pascal's infinities, finitudes rolling
 just beyond the glass edges of science and faith
 in the bottoming abyss below before, now, and after

in which, in your time, you labor behind the scenes
 to salvage the Truth, its necessity, its separateness:
 the fraught message of telling your infallible pope no.

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(Agnus)

George Gammow

“Mary had a little lambda. His fleece was Jesus—Ha!
Of course, back in Odessa as a child, I had to discover
for myself, so I take communion in Orthodox Church,

run home with bread and wine secreted in my cheek,
place it under microscope—I see no transubstantiation.
That’s experiment that made me, Gamow, a scientist.

Can you imagine, from hocus pocus to nucleosynthesis,
how in first five minutes light, dense particle soup,
recombines to form self, then bridges unbridgeable path

to make hydrogen, helium, all our heavier elements
without which no inflation, so no so-called Big Bang,
since priest could not account for equal values: stretch

of cosmic rays across scope of universe from this mix
I call *ylem*, from Middle English word for substance.
When Pope says this or Pope says that I have great fun,

add chunks of speech to my own paper, watch eyebrows
rise, not God. But priest is excellent, better with math
than me, I admit, though he still believes in fairy tales.

It took an atheist to see what must remain at radio end
of spectrum, and how his swelling lambda came to be,
I who with my wife once braved Black Sea in a kayak

to escape Soviet Union—a failure. How I’ll never forget
sight of this dolphin I glimpsed through a passing wave
illuminated, just then, by sun sinking below horizon.”

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(Anthropic)

This process of coming to life: autocatalysis of wave
to particle, particle to wave, from indeterminacy,
such that the photons fuse, the sun shines, the clay,

crystalline in its shallow pool, flickers into motion
so that in time the observer might observe, so that
in mind's conjuring what had come to be must be

brought before the mind as though it had not been,
could not be, until fashioned from the probabilities:
and all that might have been, too, fanning out deeply.

*The theory says a lot, but does not really bring us any closer
to the secret of Der Alter, the Old One, so Einstein
confided to Born. And now the master's dead is he*

gifted with the Old One's secret, and your mother,
the windows of both their faces shaded and shut?
All goes onward and outward, nothing collapses—Whitman:

except the wave function out of its eternal now
behind the proton's spin, before Planck's length waxes
from nothing, and nothing there until it's measured.

Who measures the dead? *For our perpetual vows
Canon Lemaitre designed a brilliant course, how the life
of the mind carries the image of a nebula expanding,*

*spirit formed in contact with matter, the world-lines
of our becoming a further transcendence promising
what follows. Pure miracle? No. A phase. A threshold.*