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"God in his blank spaces"
Quantum Theology in Tim Lilburn's *Names of God*

The poetry and poetics of Tim Lilburn have evolved in complex and challenging ways over the last three decades. His literary expressions encompass aspects of religious mysticism, Greek philosophy, arcane knowledge, ancient and modern science, medical pathology, and deep ecology, among other subjects. Especially in his philosophical and ecological concerns, Lilburn has affinities with contemporary Canadian poets such as Dennis Lee, Don McKay, Jan Zwicky, and Robert Bringhurst. Mark Dickinson identifies Lilburn as the "catalyst" (65) of this highly credentialed yet still somewhat unfamiliar group that has been engaged over the last twenty years in continuing conversations about poetry as an essential and vital means of coming to understand our present reality. According to Dickinson, these poets are redefining our relationship to nature by asking "foundational questions about how we perceive and think and relate to non-human nature, questions that encourage us to look beyond the language of sustainability and reconsider the basic facts of our very existence" (62). Through his poetry, Lilburn evinces a fundamental desire to probe deeply into new ways of understanding our existence through reimagined encounters with this non-human world and to search for "the erotic life" ("Philosophical" 96) in the deepest philosophical, ecological, and spiritual senses of the term. But while these concerns are manifest in his more recent work and his conversations on poetics and philosophy with the aforementioned poets, it is helpful to see just how early in his poetic career Lilburn was already formulating some of his most important insights by breaking through what Dickinson has identified as "a rigid division in Western thought that has kept thinking and singing separate from each other for hundreds of years" (62).

Critical studies of Lilburn by Darryl Whetter, Gregory Maillet, and Jenny Kerber have focused on themes of desire, ecology, and spirituality. These articles, along with reviews of his poems, have clustered primarily around Lilburn's later publications such as *Moosewood Sandhills*, *Orphic Politics*, and the Governor General's Award-winning *Kill Site*. Such studies most prominently feature the intensely observant and contemplative consciousness for which he has become recognized. His later poems, along with philosophical essays in such collections as *Living in the World as if It Were Home*, permit detailed exploration of his concentrated focus on the relationship between the self and the "othered" worlds of nature and the body made strange. However, such intensive focus also characterizes Lilburn's relatively neglected earlier poetry, particularly the concluding five-poem sequence in his first collection, *Names of God*, published in 1986. Already evident in this sequence, wresting evocative and challenging images from the complexities of twentieth-century physics, are the contemplative dynamics of his later work. Simultaneously, the poems of this erstwhile Jesuit embody some complex theological concerns. More specifically, Lilburn's intricately entwined scientific and theological contemplations in these poems establish fundamental aspects of his poetics, particularly regarding connections between the underlying paradoxes of quantum physics and apophatic or "negative" theology, a search for "God in his blank spaces" (Lilburn, *Names* 94). This sequence implicitly *and* explicitly challenges a worldview embodied in both Newtonian and Einsteinian classical physics, with their assumptions of an ultimately understandable and coherent universe, and an ontotheology based on a God that can be known through and perhaps even contained by language. By challenging this world view, the sequence also reflects a poststructural awareness of and concern for the paradoxical nature and limits of language itself. While aspects of the scientific and the theological complicate much of Lilburn's later poetry, they are seldom involved as fully as in these early poems.

The five poems comprising the sequence explore the nature of God, the cosmos, light, mind, and matter. The sequence begins with two poetic portraits, one of Albert Einstein and one of Niels Bohr, giants of twentieth-century physics whose legendary debates on the nature of quantum physics, particularly at the 1927 Solvay conference in Brussels, Belgium, infuse both these and the three following poems. The entire sequence reflects a contemplative desire that weaves through theology, cosmology, photology, and teleology, a desire that is as intellectually slippery and as imaginatively stimulating as its tantalizing yet often obscure objects.

Indeed, a recurring focus in both Lilburn's early and recent texts is that of desire.[1] In *Living in the World as if It Were Home*, Lilburn comments that he is interested not in theology in the traditional sense but desire; he nevertheless qualifies that distinction by noting the close connections between theology and desire when he says "the sort of erotic experience that draws me has been cast either in Christian theological language or in the dialectical language of Plato." "The eros for the world," he goes on to say, "unfolds in the same way as dialectic and the eros for God have been understood to unfold" (xv). For Lilburn, both theology and philosophy are manifestations of desire. Indeed, the word *desire*, from the Latin *desiderare*, literally "*de-sidera*, from the stars," implies paradoxically both a derivation (in a physical sense) and a separation (in a spiritual sense) of human beings from the stars and, by extension, things heavenly. This concept partially informs both Judaeo-Christian theology and Platonic philosophy, albeit in different ways. This early sequence articulates a desire engendered by an awareness of this derivation and separation as powerfully as in Lilburn's later, more "worldly" poetry. Most importantly, these early manifestations of desire extend not only to the theological and philosophical, but significantly, and perhaps foundationally, to the scientific and the linguistic.

The opening poems of this sequence figure desire in terms of the two preeminent and often opposing physical theories developed in the early twentieth century, relativity and quantum physics, iconically represented by Einstein and Bohr respectively. By far the more famous of the two scientists, Einstein developed the special and general theories of relativity that radically transformed our understanding of classical Newtonian physics and our perception of the universe. Central to Einstein's theory are two important concepts, first that matter (mass) and energy are identical, and second that the speed of light is universally constant; the relationship between mass and energy is expressed as $e=mc^2$—that is to say, energy equals mass times the speed of light squared—a formula intriguingly illustrated in terms of desire in the sequence's opening poem "Albert Einstein, Berne Patent Office, 1905." The counterpart to this poem, "Niels Bohr at the Copenhagen Movies Thinks of the Happenstance of Matter," wryly encapsulates the spirit of the new quantum physics, represented by Bohr, which radically challenged the classical underpinnings of relativity. Relativity, a deterministic science, describes physical phenomena through equations leading to precise and predictable solutions. The equations of quantum mechanics, conversely, are based on probabilities. Although these equations lead in theory and in

practice to very accurate results and observations, precise predictions and outcomes are impossible. While Einstein had early recognized and predicted some important aspects of quantum physics, he resisted its inherent uncertainties throughout his later career, famously declaring more than once that "God does not play with dice," or variants of that phrase. These two poems, at once opposite and complementary, prepare the way for the dance of desire through theology and science in the three poems that follow.

The first poem arises from the famous papers Einstein published in 1905 while employed at the patent office as a "technical expert / third class" (Lilburn, *Names* 91), based in part on an early thought experiment involving "a person run[ning] after a light wave with the same speed as light" (Isaacson 26). In these papers Einstein explains the physics of Brownian motion, demonstrates the existence of "light-quanta" (photons) and the photoelectric effect, and outlines his special theory of relativity. Lilburn translates the mathematics of this last treatise into the poetics of desire by imagining Einstein travelling at light speed into the still source of matter. In a later essay "How to Be Here?" Lilburn writes that the "vector and velocity [of "a nostalgia for Paradise"] is desire leaning into the unknowable individuality of things; poetry is the artifact of this desire" (*Living* 6), an insight complemented directly by the imagery of this much earlier poem. On this high-speed voyage, Lilburn imagines—as Einstein himself possibly may have imagined—a seriocomic image of the rumpled scientist first encumbered by and then shedding the trappings of his body mass as his desire sharpens to the point of maximum velocity: with his "knees" wedged beneath his "chin," "his stomached lunch / of sausage and Gruyere . . . wobbling beneath him," his famous "carnival check suit burns from his skin" as the universe is squished into his "chest" (91). Einstein's desire reaches literally ecstatic proportions as his velocity approaches the speed of light and he becomes "light, spirit-joy-jet" as "[s]peed sharpens mass to spirit and spirit to koinonia" (91).[2] Then, having reached light speed, desire's maximum velocity, Einstein perceives matter frozen in time, he being coeval now with any light-transmitted information:

> Then, abreast original fire's white zing, a high soprano of speed,
> he gazes across the solemn, silent promontory of matter,
> the chrysochloric head of this light wave, the light wave he loves
> and understands by love, staring at its frozen fields
> of shivering spark, desert still. He finds here stoppedness, impossibility,
> and rubs the flames where his two eyes had been. (92)

At this absolutely still and impossible point, the scientist and the poet have achieved the imagined consummation and obliteration of desire in loving communion with the light wave that has transformed his eyes into sympathetic flames. Within the poem, love appears to transcend and replace language as the medium of understanding as light transforms matter into the pure energy of spirit. However, the "stoppedness, impossibility" that Einstein finds here are paradoxically countered by the words themselves; the poem, like Einstein's thought experiment, achieves only a mental transcendence. Thus the poem's final lines point with wry understatement to the transcendent awareness achieved by the violin-playing scientist as "Ecstasied, wholly othered," his "catgut nerve" becomes the "live wire of the wave's note, a trembling c—" which, "for a musical man . . . / is convincing" (92). "C" is at once number and musical note, pointing to the achieved harmony of Einstein's classical physical theories, theories that, while complex, satisfy the desire of the observer in his observations of an independent reality. "C" is also, of course, a mere sign whose ironic connotations in the poem are completely dependent on their linguistic context. The poem holds these "trembling" and unresolvable possibilities in an impossible tension where desire is satisfied only in the imaginative sense, indirectly pointing toward the next poem in the sequence.

If desire is at least poetically achieved within this rendering of Einstein's classical thought experiment, it is overtly frustrated in the quantum universe of Niels Bohr. In his recent book, *Quantum: Einstein, Bohr and the Great Debate about the Nature of Reality*, Manjit Kumar notes that "[f]or Einstein, a belief in the existence of an observer-independent reality was fundamental to the pursuit of science" (263). However, for Bohr the opposite was in fact the case: "For Bohr," writes Kumar, "the transition from the 'possible' to the 'actual' took place during the act of observation. There was no underlying quantum reality that exists independently of the observer" (263). This implies a paradoxical aspect of modern physics, that subatomic particles do not exist until they are observed. This scientific paradox was to prove a psychological barrier to Einstein who pitted his theories against those of Bohr—and of other quantum theorists such as Heisenberg, Schrödinger, and Dirac—a duel that he was to fight and lose. Indeed, the motif of a duel is central to this second poem, "Niels Bohr at the Copenhagen Movies Thinks of the Happenstance of Matter," where he expresses the paradox of desire for a reality having no independent objective existence. The title and opening lines reflect Bohr's enthusiasm for gunfights in the popular westerns (Kumar 141) of the relatively new art form of the cinema. More importantly,

they reflect an insight he derived from these gunfights that, like his insights into the behaviour of subatomic particles, runs counter to common sense, when Bohr observes that the "evil man," drawing first, "has died again, died as always, his chest exploding / with the late-drawing hero's virgin slug" (Lilburn, *Names* 93). Commenting on recent "laboratory gunfights" studied by a research team at the University of Birmingham that confirm that the duellist who draws first normally loses, Tom Feilden notes that Bohr had earlier conducted this same experiment with his colleagues using cap guns. According to Feilden, when "Bohr noticed that the man who drew first [in the westerns] invariably got shot, and speculated that the intentional act of drawing and shooting was slower to execute than the action in response . . . [he] always drew second and always won" (n. pag.). Bohr demonstrated that instinctive responses are fractionally quicker than conscious decisions: "Here is something beyond doubt: the inspired hand / outsprints the tricky draw" (Lilburn, *Names* 93). The counterintuitive conclusion of these lines is similar to many concepts of quantum physics dating back even to Thomas Young's 1801 famous double-slit experiment with light interference, the surprising results of which demonstrated the wave/particle duality of light. A universe governed by the probabilities of quantum physics will draw against the classical theory of relativity in the succeeding poems.

In Lilburn's conception of relativity, the dominant imagery appears to be of light and love; in his conception of Bohr's quantum physics, it is gunplay, both in the dangerous and benign meanings of the term. Indeed, the larger concepts of play and chance combine with the serious pursuits described in the poem, as Bohr muses on another physicist, Ernest Rutherford, "plink[ing] helium ions at a hole in nothing / trigger happy as a rodent-popping farmboy," and even Yahweh "play[ing] with fire, casting blown coals / with the grin of a crooked croupier" (*Names* 93). Desire is either frustrated or sublimated, or its fulfillment perpetually postponed, since its objects can never be precisely determined. In a bizarre, superficial sense, the physicist, like a malevolent but inquisitive deity, is shooting in the dark at a target that reveals itself only after the shot has been fired. Instead of consummation achieved through the imagined intellectual unity with light, as with Einstein, here the efforts of desire to locate the Other are met with "God's dark laughter" as matter whirls in an erotic *danse macabre*: "electrons lark a fervent calypso; they houchie-couchie in a Hungarian fit / round the muscle-bound proton. God is play" (*Names* 93). For Einstein this would be a diabolical craps game with a vengeance, as quantum and classical physics collide chaotically.

What is the object of desire in a universe with no observer-independent reality? The two opening poems just discussed, one dealing with the properties of light on a cosmic scale and the other with the quantum mechanics of subatomic particles, establish the paradoxical concepts informing the following poems. These explore the question of the ultimate object of desire, from intertwining scientific and theological perspectives, as indicated by the title of the next poem in the sequence, "A Theology of Subatomic Particles." While the poems do not necessarily reflect any sustained attempt to achieve a Grand Unified Theory of physics and theology, they nevertheless offer some imaginative connections, dancing around the desire for theological and scientific understanding and expression. Yet they are not mere exercises in natural theology, using science to arrive at a direct understanding or proof of God. Instead, they offer the opportunity to contemplate ontology from both theological and scientific perspectives, from perspectives often considered at odds with each other. And while these poems may not demonstrate, as physicist-theologian John Polkinghorne avers, that the "true Theory of Everything . . . is trinitarian theology" (*Quantum* 110), they complement Polkinghorne's conclusions about connections between theology and physics. The desire for understanding and knowledge informing both these disciplines is complicated and enriched by its exuberant poetic portrayal; the object of this desire is at once both nothing and everything.

The poems in this sequence that weave together scientific and theological concepts, bringing the reader close to both reality and mystery without ever really arriving, are illuminated by the thoughts of physicist Werner Heisenberg on the problems of direct description in his essay "Language and Reality in Modern Physics." Heisenberg notes that "the concept of complementarity introduced by Bohr into the interpretation of quantum theory has encouraged the physicists to use an ambiguous rather than an unambiguous language" (81). From this he argues that the limitations of language necessitate such usage in a scientific field that lacks the expectation of objective certainty: "One might perhaps call [this expectation of certainty] an objective tendency or possibility, a 'potentia' in the sense of Aristotelian philosophy" (82). Further, the language used to describe this *potentia* is "a language that produces pictures in our mind, but together with them the notion that the pictures . . . represent only a tendency toward reality" (82). Certainly such thoughts generally complement the insights of poststructuralist theories that deny textual certainty. Yet, just as it does in the use of language by quantum physicists, a desire—albeit ultimately

unfulfilled—for connection between the word and the world persists in these poems. More specifically, they embody a palpable desire to approach some understanding of "God in his blank spaces," or at least its *potentia*. One route toward such understanding involves an awareness of Paul Ricoeur's "limit-expressions" (122) which, as David E. Klemm has noted, "function to transgress or overturn the normal course of metaphoric process, and to intensify its effect so that the forms of language 'converge upon an extreme point which becomes their point of encounter with the infinite" (Ricoeur 109; qtd. in Klemm 64). Whether Lilburn actually achieves this extreme point of encounter is undeterminable; whether he *approaches* it, achieving *potentia*, is worth considering.

The three poems concluding the sequence are entitled, in order, "A Theology of Subatomic Particles," "Photons," and "Light's Chant." Implicit in the first title but also informing the others is the presence of "limit-expressions" linking physics and theology. In what way, if any, can quantum mechanics contribute an understanding of a divine presence; or is such an understanding closed to scientific inquiry? From the perspective of ordinary language and reason, perhaps the two must remain perpetually separate, science treating the essence of the physical world and theology dealing with non-empirical matters of faith. Yet Lilburn's poetry suggests that the world of subatomic particles may be a point of convergence for the two. Polkinghorne has argued in *Science and Theology* that "just as quantum theory is forced by its actual experience to wrestle with the strange duality of wave and particle, so Christian theology is forced by its actual experience of the risen Christ to wrestle with the strange duality of humanity and divinity" (100). He later acknowledges that the "Christological counterpart of quantum field theory still remains to be discovered" (*Quantum* 90). But he draws a significant potential analogy from this regarding the possibility of a "dual-aspect monism, a mind/matter theory [that] might be possible if it too incorporated within itself a degree of intrinsic indefiniteness," later suggesting that within an "ontologically interpreted chaos theory . . . [a]ctive information might prove to be the scientific equivalent of the immanent working of the Spirit on the 'inside' of creation [wherein] the spiritual character of divine influence would correspond to pure input of information" (*Science* 61; 89). These dualities—wave/particle, mind/matter, and human/divine—stretch across the complex playing field of the three concluding poems.

The first, "A Theology of Subatomic Particles," comprises three sections: "In the Atomic Canyons," "Palpable White Utterance," and "A Dance without

a Dancer." This last subtitle, with its nod towards Yeats' poem on desire "Among School Children," is one of several literary allusions that explore self-transformation through desire. These include *Alice in Wonderland*, T.S. Eliot's *Four Quartets*, and the myth of Prometheus. In the opening section, readers are taken on a fantastic voyage deep into subatomic space, "hearing" the "tingngngngngngng," "dadahdahdahdahdahdaaaaaaaaa," and "fzzzzzzzzzzzzz" of infinitesimal particles hurtling through God's "blank spaces" of the "atomic canyons" (*Names* 94). As significant as the sound imagery, however, is the creative imagery of subatomic light. Lilburn refers at one point to "Xvarenah mushroom clouds in the aphasia / Of the spoken world," a direct reference to the "sacred, seminal, luminous, and fiery fluid" of Zoroastrianism (Eliade 104), not so much to equate this with an achieved desire, but to reach toward what Mircea Eliade has called "the 'experiential' character of the majority of the mythologies, theologies, and gnoses based on the equivalence: light-divinity-spirit-life" (95). These lines offer an example of Ricoeur's "limit-expression." The phrase "Xvarenah mushroom clouds" embodies a complex metaphorical image, a divinely hallucinogenic vision of an atomic explosion—the ultimate solution to the equation $e=mc^2$. This image asserts itself even while being threatened with erasure both on the page and in the mind, by the term "aphasia," the failure of language to speak the "world"/word. The figurative complex of these two lines is a transgression, to use Ricoeur's terminology, of the normal metaphoric process. It offers the possibility of a "point of encounter with the infinite" (Ricoeur 109) through what Northrop Frye, adapting Giambattista Vico's idea, calls the "hieroglyphic" type of verbal expression, one that does not directly describe or define but achieves "the feeling that subject and object are linked by a common power or energy" (6). In other passages, references to subatomic light are couched in Christian terms, as the poet chants—with echoes of both Christian liturgy and Maha Mantra— "Lumen, lumen, lumen, / Lumen Christi, Christi, fire" (94), likening the subatomic particles to

> Christic chunks of energy
> With the translucent faces of children, quanta, children,
> Little golden children, subnuclear anawim, with golden,
> Pre-Raphaelite wavicle hairdos (94)

The complex imagery of this passage personifies scientific phenomena through both sobering and whimsical tropes. The imagery of children as "subnuclear anawim" (a Hebrew term for the unprotected or dispossessed) is paradoxically juxtaposed with the idealized artistic rendering of "wavicle"s

(the scientific term for the wave/particle duality of light) as aspects of the children's "hairdos." In the second half of this section, readers return to their full-sized selves, experiencing the connections to this subatomic world in real time, where through their eyes and ears "The living mind hears photons flick slag tails of mathematics / Across the photosensitive palate of the soul" and "a mazurka of particles pizzicatoed / On the taut ganglion of cognitive strain, the expectant nerve / Wanging against its soundbox of bone nahnahnahnahnah" (94). Such lines contain several limit-expressions that oscillate between energetic imaginative absurdities and a profound potential logic that approaches but never arrives at an objective assertion of the text's theological and scientific dimensions.

The poem may be read in the context of apophatic theology, a searching for God in "his blank spaces," spaces that, according to the postulates of quantum physics, do not exist until one begins looking for them. As Jenny Kerber (86-87) and Gregory Maillet (228) have noted, Lilburn's poetics embodies apophaticism, the *via negativa*, involving a contemplation of the divine through the process of negation. Lilburn may be trying to wrench his readers into a counterintuitive perception of a cosmos that has no independent existence beyond our observations. But while the physics of such a perception may be relatively new, the process is not, owing much to the early Christian mystics, particularly Pseudo-Dionysius the Areopagite who conceives of the ineffability of God as "the Divine Dark" ("Christianity"). According to Pseudo-Dionysius, "[t]hrough a gradual process of ascension from material things to spiritual realities and an eventual stripping away of all created beings in 'unknowing,' the soul arrives at 'union with Him who transcends all being and all knowledge'" (*Mystical Theology*, chapter 1; qtd. in "Christianity" n. pag.). He also writes in *On the Divine Names* (echoed in Lilburn's title), "[c]reation is a process of emanation, whereby the divine Being is "transported outside of Himself . . . to dwell within the heart of all things. . ." (iv. 13; qtd. in "Christianity"). What Pseudo-Dionysius was postulating much earlier, without any direct knowledge of quantum physics, is reflected now in Lilburn's poetic sequence with, perhaps, greater immediacy and relevance.

This apophaticism also informs the second section, "Palpable White Utterance," whose opening lines allude both to Einstein's contention that God is subtle but not malicious and the first words of Psalm 145:3, "Great is the Lord": "Subtle / as this / White music blanching nerve / Like tungsten, this song shivering against bone, / Is the Lord . . ." (Lilburn, *Names* 95); this is immediately followed by a possible allusion to Psalm 145:21, "Square

roots upon cubes, cubes upon cubes / Ssssssyllables of his Holy Name" (95). But far from the reverent affirmation expressed in the Jewish *ashrei* of which this Psalm is a part, here the scientific and poetic knowledge moves further into the unknowing that is characteristic of apophaticism, where God's "Holy Name" is simultaneously invoked and made strange through both the abstract and concrete connotations of mathematical (and sinisterly sibilant) syllables. The blank (apophatic) spaces of this section constitute "a time-independent wavefield" where "light and spirit / Spirit and light, meet . . . in Limbo's dark lobe of nonsense . . . nuded of matter, transfixed by the sex smell / Of the animal other" (95). The contradictory aspects of the imagery's eroticism (if light and spirit are "nuded of matter," whence the olfactory signals?) create another limit-expression for deeper contemplation of the absent divinity. As in the first section of this poem, mind, devoid of matter, becomes "the dark, / The proto-air" where nothing exists but "the abnegating principle of swiftness" through which matter is suddenly spoken into being on "a stem of speed blooming / Mass like a flower, a white rose ohohohohohooooooooo. / Palpable white utterance. / World formed on a fire tongue" (95). This imagery alludes directly to the apocalyptic vision at the end of Eliot's "Little Gidding," "When the tongues of flame are in-folded / Into the crowned knot of fire / And the fire and the rose are one" (48). However, unlike the certainty of Eliot's lines, Lilburn's imagery resists closure as Einstein continues his light-speed joy-ride on a blossoming rose ("ohohohohohooooooooo") even as divine speech and creation assert themselves in the final line, "World formed on a fire tongue," recalling both the Paraclete of Acts 2:3-4 and the Logos of John 1. These and the concluding lines also both juxtapose and combine the *fiat lux* of Genesis and the Big Bang of science into a startling, disorienting, and darkly comic third image grounding the cosmic in the quotidian: "The bag lady in the park explodes! / Her bonfire hand phoenixes from a photon inferno within her bones / And rolls an orange from her bag, a fireball" (Lilburn, *Names* 95). Is this dazzlingly alliterative display of images merely a figurative description of a homeless woman reaching for her breakfast? More likely it involves the narrator archly asserting that creation is not a singularity; it is constantly unfolding in the most ordinary as well as the most extraordinary acts and natural processes, including poetic creation, a reminder of the ubiquitous power of the equation $e=mc^2$.

But, as the poem's final section, "A Dance Without A Dancer," indicates, these are fictions of a classical, knowable cosmos. Beneath these fictions "Is

God in his blank spaces, / In his boredom, dicing jackpot combinations of c=wf, e=mc^2" (96).[3] Is this apparently sarcastic image reflective of Lilburn's own view of a cosmos constituted by quantum mechanics, or is it possible that even this image of a dice-playing God is part of a larger as yet unknowable design? Whatever the answer, beneath these fictions "Is desire's vibrating dialectic toward combustion / That flares a pandemonia of stunning apparitions / Rilled with shaking light" that eventually "Shimmers, cools, / Hardens firm into the temperate, blue planet of the eye" (96). And perhaps in the coalescent imagery of these final lines is the satisfaction of imaginative desire and the identification of its object, regardless of the quantum "jackpot combinations" that may have been necessary to form the "blue planet of the eye."

The final two poems, "Photons," and "Light's Dance," continue to juxtapose an objective knowable cosmos with one that may not exist apart from our observation. "Photons," while imaginatively stimulating, promises the hopeful fulfillment of desire but in the end appears to resolve nothing. In particular, the poem's metaphors tease out the implications of Gilbert Ryle's earlier attack on philosophy's "official doctrine" promulgated by dualist Rene Descarte (11-18) which Ryle infamously dubbed "the dogma of the Ghost in the Machine" (15-16). Ryle's refutation of Descartes' mind-body duality also reflects emergent thinking in the 1940s from the relatively new science of quantum mechanics. Physicist Erwin Schrödinger argues from his atomic and subatomic research that life exists essentially because genetic material has enough organization to overcome the atomic entropy that would otherwise level it (73-74). From this material basis of life he extrapolates in *Mind and Matter* that consciousness is essentially a process manifesting itself in the "*learning* of the living substance" (99). This monistic view of life was later to acquire much greater impetus in both the physical and social sciences. Indeed, physicist Roger Penrose has even proposed a controversial theory that quantum oscillations in the brain's microtubules are responsible for what we term consciousness (133).

In "Photons," the material reductionism behind such approaches tends to become a source of desperate irony:

> Look at us. Look at us. Cognizant potentia coiled
> in a panic spring, pattern of our fated spin of one,
> helixed by desire, signatured by a Cain-like X, which is us mostly truly, but
> not-us. Our soul's an adolescent rash; gasoline auroras
> of appetite menace flashpoint. Believe us, self hurtling from self—
> vocation—is terrible. Yet it's a joke,
> the casino touch of our lives, the Lord's Gedankenexperiment,

> our skull bones dice rolling
> from His hands, as He flicks a wrist, shoots, and wonders
> what world the world will be. (Lilburn, Names 97)

On the one hand, these lines reflect a nihilistic resignation to the absurdity of existence in a quantum universe where we are merely subject to the forces and laws of its creation, here personified as a reckless crap-shooting "Lord." The double helix of our DNA and its specialized chromosomal forms ("Cain-like X"), ironically echoing the themes of Genesis 3 and 4, both engender our desire and lead us into exile. On the other hand, the lines also reflect a dualistic view of human nature, if not in the sense of Descartes' "official doctrine," then in what is implied through the assertion of such images during our "transcendent microsecond" of existence through "the rocketry of will" (98). In other words, if the universe is no more than the sum of its quantum processes, what then is the value of such poetic—or indeed of any—exploration? The poem's final lines hold out a grammatically ambiguous conclusion: "We do not matter. Lumina Christi. / Broken body of spark confettiing the blank spaces" (98). The pun of the quotation's first sentence embodies aspects of both classical and quantum physics. "Do" and "matter" may be read as expletive followed by (negative) verb, that is to say, our existence is meaningless, which, in a purely mechanistic world, may be so. Alternatively, with a slight shift of focus, the word "do" may be read as an active indicative verb itself, the object of which is "not matter"; that is to say, our doings transcend matter, and there is more that defines our existence than the interplay of subatomic particles. In the first instance, the "Lumina Christi [light of Christ]" is no more than an immeasurable scattering of photons in the blank subatomic spaces of existence. In the second instance, if we "do not matter" in the sense of performing beyond the material aspect of our existence, then the "[b]roken body of spark" with its allusions to the crucifixion can indicate meaning beyond the blank spaces it illuminates. An unresolvable duality akin to the wave/particle duality of light concludes this poem, transitioning from particles to waves in the next.

"Light's Chant," the final poem, cradled by two phonemes of the yogic "om [aum]," rides its self-generated waves in an elegant hymn to an essentially Christic creator and creation that, while not negating the indeterminacy of quantum theory, affirms the beauty of a classically determined cosmos. Light appears in several forms. It is "a dance, a dance, a golden musculature of flame, / flexed in a choreography of desire" (99); it is "a wind, a fire-spermed wind . . . a dance, / a radical pirouette on an absent foot" (99); it is, especially,

"fire's chrysalis, sinuous convections / feathering into flame, the body of Light, / spirit into flesh, flight into flare" (99). The lines suggest light's primacy, particularly through its wavelike manifestations and incarnations into matter, "flesh," and "fire." If matter is essentially energy in a highly specialized state, then such binaries as mind/matter or spirit/flesh lose their traditional signifying power while still retaining the sense of each separate term. Both terms remain signifiers of potential realities, but as quantitatively, not necessarily qualitatively different. The final lines of the poem and of the entire sequence recall Einstein's consummation with light in the opening poem as well as (again) the final lines of Eliot's "Little Gidding" and of Yeats' "Among School Children," with possible allusions to the *Bhagavad-Gita*:

> Ooooooooooo
>
> The birth of Light is a dance, a dance
> muscling the dancer from wind.
> The wind is the world forming
> on a tongue of fire. The wind is in the fire, a breathing. The world is
> a fire
> and ends in fire. Mmmmmmmmmmmmm (100)

These lines suggest no boundary between the material and non-material, the substantial and non-substantial. All is energy, in one form or another. Primal Light acquires being, figured as a "dance," again with emphasis on its wavelike properties. Matter is the manifestation of this dancing Light being muscled from the "wind," a "breathing" spirit that with the "tongue of fire" both forms and is the "world." Allusions to Trinitarian theology bracketed between the sounds of an Eastern meditative chant tend toward the tension of another unresolvable "limit-expression" in this conclusion that already contains within itself the negation (destruction by fire) of the powerful affirmation that it appears to express. "Mmmmmmmmmmmmm" is both the concluding phoneme of "Om" and ironic uncommitted response to the powerful images preceding it.

In "Contemplation and Cosmology," Lilburn says that apophatic knowledge is achieved through contemplation, "the moment when human knowing, lured by the possibility of perfect understanding, is thwarted, shamed, bent back on itself, but continues to know through this shame" (*Living* 27). The impossibility of perfect understanding from a theological perspective is effectively linked in the concluding sequence of *Names of God* to the impossibility, through quantum indeterminacy, of perfect understanding from a scientific perspective. Essential to quantum physics is how the

act of observing and measuring "collapses" a previously indeterminate wave function (Peacock 72-73). Essential to apophaticism is that the act of contemplation may not only create inner change but act as a "vector" that is not only "transcendental" but "bends . . . into the world" by "attend[ing] to things so finely themselves they fall beneath order, law" (Lilburn, *Living* 28). Both Lilburn's early and his later poetry reflect an individual consciousness not yet fully explained or understood, and, thus limited, serving to isolate the self and creating the potential for desire, figured in much poetry, theology, and philosophy as stemming from the need to reconnect with the stars of the heavens or their Creator. Lamenting the paradise remembered by this desire, Lilburn says in his essay "How to Be Here?": "When consciousness crosses the divide into the wilderness of what is there, it expects to find a point of noetic privilege: at last a clear view into the heart of things. But what it does find on the other side is further peculiarity, a new version of distance" (*Living* 4). While most of Lilburn's later poetry and poetics emphasize this "new version of distance," it is already evident in his earliest work, *Names of God*, an understanding of which is essential to comprehending his overall achievements.

Such insights, it may be argued, are best—or perhaps only—achieved through the practice of poetry. Robert Bringhurst has asserted, without being tautological, that "Poetry *is* thinking, real thinking. And real thinking is poetry" (155). Lilburn's early poetry prepares the way for his later work as both a type of singing and a type of thinking even as it already establishes itself as such. What Dennis Lee has said about some aspects of modern verse in general has particular, if unintended, relevance to the poetic sequence studied above: "It resonates with the formal intuitions of relativity and quantum mechanics, where an absolute frame of reference no longer exists" (41). As Dickinson argues, like Lee, Bringhurst, McKay, and Zwicky, Lilburn works with "the multiple resonances of words, the binding properties of metaphor, and other resources available to poets but off limits to prose writers . . ." (63) to arrive at the deep insights into fundamental relationships among poetic, theological, and scientific world views.

NOTES

1 Darryl Whetter observes, for example, that the word "desire" appears in eight of the thirty-three poems of *Moosewood Sandhills* (46).

2 *Koinonia* is a transliteration of the Greek word for fellowship or communion, with specifically Christian overtones in English usage, suggesting in the above quotation the idea of spirit being "sharpen[ed]" to direct communion with God.

3 c=wf: the length of a lightwave (λ (here w)) multiplied by its frequency (f) equals the speed of light (the constant c).

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