

particle poetics: a working bibliography

Note to any visitors

I've been collecting texts that illuminate what particle poetics (sometimes called *quantum poetics*) is or might be or might have been historically. Feel free to peruse the collection, so long as you note that it is, indeed, working. Many of the annotations are simply blurbs or relevant quotations for now. I try to provide citations where other writers' summaries have proved helpful for me; if I've overlooked this or not gotten back to it yet, I intend to do so and appreciate any conversation in this regard. I consider this a document for dialogue and mutual inspiration.

Background

In December 1900, Max Planck presented a paper on "the elementary quantum of action." The poets alive at the time took note, becoming obsessed and searching, in turn, for the tiniest chunks of poetic material they could find. They asked, what is the most irreducible unit of a poem? Is the smallest bit an *image*, a *rhythm*, a *word*, a *vortex*? Regardless of what you know of either history, you have likely experienced some of that serious, Modernist chunk-hunting. Indeed, it might have ruined poetry for you in grade school, because our truest experience of a poem transcends any of the poem's individual pieces.

Over a hundred years later, the writer and editor Gilbert Adair sensed that our growing understanding of particle physics has had a lasting, dynamic relationship with our poetry. In response, he curated a discussion on *Jacket2*, inviting poets to consider how their engagement with science and scientific terms goes beyond recycling language. Adair postulates that contemporary poets do more than use terms like *electron* or *wave* or *valence* as vehicles for metaphor: responding to quantum mechanics, poets conceive of new disciplines.

What are these new disciplines? My scholarship is always seeking answers to this question, and new questions in response to those answers. TMy scholarship in turn inspires my creative and pedagogical work, which often brings me back here.

Building on work by scholars like Daniel Albright, the below texts have helped me learn to distinguish between what I think of, now, as **"particle" vs. "wave" poetics**. I have been particularly influenced by the scholar and poet Amy Catanzano, whose work explores "why poetry and physics are capable of jointly investigating our most fundamental questions about the universe." If you are to start somewhere, consider starting with her *Imaginary Present*.

criticism/philosophy/literary studies

Adair, Gilbert et al: "Like a Metaphor: Ongoing Relationships Between Poetry and Science" [Jacket2](#)

"Gilbert Adair's feature on poetry and science, comes together as a response to [PoemTalk #22](#), on Louis Zukofsky's Anew. Collecting a number of poems, critiques, and dialogues between eleven poets who share an interest in science — **Rae Armantrout, Amy Catanzano, John Cayley, Tina Darragh, Marcella Durand, Allen Fisher, James Harvey, Peter Middleton, Evelyn Reilly, and Joan Retallack** — this feature explores how scientific discourse might be incorporated by poets not simply as a source of metaphor but as an 'independent discipline.'" — from the editorial intro

Albright, Daniel. *Quantum Poetics* .

Publisher's overview:

"Quantum Poetics is a study of the way Modernist poets appropriated scientific metaphors as part of a general search for the pre-verbal origins of poetry. In this wide-ranging and eloquent study, leading Modernist scholar Daniel Albright examines **Yeats's, Eliot's, and Pound's** search for the elementary particles from which poems were constructed. The poetic possibilities offered by developments in scientific discourse intrigued a Modernist movement intent on remapping the theory of poetry. Using models supplied by physicists, Yeats sought for the basic units of poetic force through his sequence A Vision and through his belief in and defense of the purity of symbols. Pound's whole critical vocabulary, Albright claims, aims at drawing art and science together in a search for poetic precision, the tiniest textual particles that held poems together. Through a series of patient and original readings, Quantum Poetics demonstrates how Eliot, Lawrence, and others formulated what Albright calls "a wave-theory of poetry," a mode of expression intended to create telepathic intimacy between writer and reader and to encourage a whole new way of thinking about poetry and science as two different aspects of the same reality. This comprehensive study from a leading scholar of Modernism is a fresh examination of the relationship between science and Modernist poetry."

Branscum, John Yu . "Poetry As A Quantum Phenomenon." *North American Review*, Northamericanreview.Org, 2016,

<https://northamericanreview.org/open-space/8263-2>. Accessed 9 Mar 2022.

quotations from essay (Sara needs to parse)

"Now, at the time I had this job I was also writing poetry, and I noticed very quickly that poetry could be productively viewed as having quantum effects too. For me,

this is tied to what I see as one of the key distinctions between poetry and prose. Although, of course, there's all kinds of poems, and all kinds of prose, in general poetry has a lot more to do with the associational and symbolic subconscious, with its gleeful fondness for wordplay, and fluid identities, spaces, and narratives. Prose by contrast traffics more in the everyday Newtonian world of linear causality, logic, denotation, and fixed identities."

The cheshire cat effect, quantum contextuality

"Another quantum effect one sees in poetry is what's called **quantum contextuality**. In terms of language, this simply means that a word's meaning changes depending on the words that it's entangled with. In this way, we can consider a single word as both a particle (having a set/collapsed dictionary meaning) and also as a wave function (in which meaning is not collapsed but rather dynamically entangled with the meaning of the words near it). This is an idea I borrowed from the science writer **Mark Buchanan** who points out in a September 5, 2011 article in *New Scientist* magazine, "Quantum Minds: Why We Think Like Quarks," that "the fuzziness and weird logic of the way particles behave applies surprisingly well to how humans think."

"Moreover, it potentially sharpens one's sense that poetry, versus prose, is a more unsettled genre, one that traffics in waves of probable meanings rather than settled ones, and that there's a value to resisting fixed and settled meaning in a poem in order to produce work that is multidimensional and dynamic."

Catanzano, Amy. *The Imaginary Present: Essays in Quantum Poetics*. University of Michigan Press, 2025.

March, Thomas. "A Review of: *Quantum Lyrics*." [Believer Mag](#). Nov 2007

"Central question: how many good poems can a person write about quantum physics?"

Oppenheimer, J. Robert. "Prospects in the Arts and Sciences," *Bulletin of the Atomic Scientists*, (1955) 11:2, 42-44, DOI: [10.1080/00963402.1955.11453555](https://doi.org/10.1080/00963402.1955.11453555)

["Rae Armantrout: Partly— New and Selected Poems."](#) Between the Covers podcast (2017).

Shimoda, Brandon. [“The Hiroshima Library: An Itinerant Reading.”](#)
[brandonshimoda.tumblr](#) & Shimoda, Brandon. *The Grave on the Wall*.

Wood, Charlie. “How Mathematical ‘Hocus-Pocus’ Saved Physics.” *Quanta Magazine*:
https://www.quantamagazine.org/how-renormalization-saved-particle-physics-20200917/?utm_source=pocket_mylist

Poetry Collections

Armantrout, Rae. *Entanglements*. Wesleyan University Press. (Poetry)
“[Entanglements is the product of a years-long interest](#) in science, particularly physics, by Pulitzer Prize winning poet **Rae Armantrout**. The collection includes poems from her previous books, as well as four new poems. Armantrout delved into books intended to make science accessible for the average person, as well as engaged in conversations with physicists. The title is inspired by the way particles can become so entangled that any space between them becomes irrelevant, but also by the way in which the author's daily life became entangled with the exploration of physics.”

Bolina, Jaswinder. *Carrier Wave*.
[More titles by Jaswinder Bolina](#)

Canaday, John. *Critical Assembly: Poems of the Manhattan Project*. University of New Mexico Press, 2017.

“With technical mastery and remarkable empathy, Canaday introduces readers to the people involved in the creation and testing of the first atomic bomb, from initial theoretical conversations to the secretive work at Los Alamos. *Critical Assembly* also includes brief biographies, notes, and a bibliography for further exploration about this critical event in world history.”

Catanzano, Amy. *Multiversal*.

Heck, April Naoko. *Nuclear Family*.

Jordan, A. Van. *Quantum Lyrics*. Norton & Co 2009

“This ambitious collection explores the intersection of the infinite world of physics with the perplexities of the human condition. Employing both narrative and cinematic structure, Jordan re-creates the lives of Albert Einstein, Richard Feynman,

and comic book superheroes—the Green Lantern, the Atom—and also reveals himself in poems of recollection and loss.”

Lerner, Ben. *Mean Free Path*. Copper Canyon, 2010.

“In physics, the “mean free path” of a particle is the average distance it travels before colliding with another particle. The poems in Ben Lerner’s third collection are full of discrete collisions—stutters, repetitions, fragmentations, recombinations—that track how language breaks up or changes course under the emotional pressures of the utterance. Failures of communication articulate what escapes description. Lines are often out of order or belong to several possible orders simultaneously, inviting the reader to collaborate with the poem. Both a book of love poems and a book about the difficult possibility of writing love poems within a commercialized and militarized language, *Mean Free Path* is at once Lerner’s most personal and most formally adventurous work.” — blurb from [Copper Canyon Press](#)

Labatut, Benjamin; transl. West, Adrian Nathan. *When We Cease to Understand the World*.

Lowen, Cynthia. *The Cloud that Contained the Lightning*.

Nogues, Collier. [“Display Status,” The Volta](#)

- plus the rest of the 2015 Volta issue
- her *The Ground I Which I Stand* multimodal book of poems

Parra, Nicanor; transl. Unver, David. *Antipoemas: New and Selected*

Stone, Bianca. *What is Otherwise Infinite*.

notes

VOCA playlist: Poets to Check Out/Listen To

Armantrout, Rae. [“Entanglement.”](#) & [“Cosmology & Me”](#)
Berssenbrugge, Mei-mei. [“Hello, the Roses.”](#)
Cervantes, Lorna Dee. [“Shooting the Wren.”](#)
Dozal, Gabriel. [“You Look at Crossers, You Look Just Like Them.”](#) from *The Border Simulator*
Eisen-Martin, Tongo. [“I Imitate You”](#)
Galvin, James. [“The Uncertainty Principle.”](#)
Harjo, Joy. [“Talking with the Sun”](#)
Holub, Miroslav. [“Spacetime”](#)
Lerner, Ben. [“Mean Free Path.”](#)
McNickle, D’Arcy. [“Man Hesitates But Life Urges.”](#) read by Jennifer Elise Foerester
<https://poets.org/poem/man-hesitates-life-urges>
Miller, Jane. [“Metaphysics at Lake Oswego.”](#)
Shimoda, Brandon. “Trinity, Neutrality, the Draft”
Sikelianos, Eleni. [“what will the baby be shaped like...”](#)
Som, Brandon. [“Antenna.”](#)
Tejada, Roberto. [“Carbonate of Copper.”](#)
Toscano, Rodrigo. [Excerpts from Explosion Rocks Springfield.](#)
Waldman, Anne. [from Manitee/Humanity.](#)
Wallace, Joni. “Red and Blue Planets.”

Vicuña

- <https://voca.arizona.edu/reading/rosa-alcala-january-30-2020>
- <https://voca.arizona.edu/track/id/60301>

<http://jacketmagazine.com/40/toscano-knight-theater.shtml>

re Sobin: “But if Objectivism is about the object, Sobin’s poetry is often equally about its opposite, the negated.” Later in the same review, Klein observed, “With commas, hyphenations, and enjambment, he forces attention to the parts and particles, solid or hollow, that make up the words we know—“re- / member,” “with- / out,” “ab- / sence”—and our sense of being that comes from them.”

glossary

See [Particle Physics Vocabulary](#) & CERN's [Vocabulary page](#)

dress

Fermions

“Gun method”

LHCb (Large Hadron Collider beauty)-- One of the four large experiments that will study the collisions at the LHC.

Renormalization

Quantum Tunneling